Phillips 66 Santa Margarita Remediation Project

Draft Environmental Impact Report

Prepared for:
County of San Luis Obispo
Planning and Building Department
976 Osos Street, Room 200
San Luis Obispo, CA 93401

Prepared by:
Oliveira Environmental Consulting, LLC
3155 Rose Avenue
San Luis Obispo, CA 93401
www.olive-env.com

September 2020

Phillips 66 Santa Margarita Remediation Project

Draft Environmental Impact Report

County of San Luis Obispo
Project Number PMTG2019-00065

Prepared for:
County of San Luis Obispo
Department of Planning and Building
976 Osos Street, Room 200
Contact: Cindy Chambers, Planner III
805-781-5608; cchambers@co.slo.ca.us
www.slocounty.ca.gov

Prepared by:
Oliveira Environmental Consulting, LLC
3155 Rose Avenue
San Luis Obispo, CA 93401
Contact: Jeff Oliveira, Principal Environmental Planner
805-234-7393; jeffo@olive-env.com
www.olive-env.com

September 2020

Table of Contents

List of Figures

List of Tables

Attachments

ES-1 Executive Summary

This section summarizes the characteristics of the proposed Phillips 66 Santa Margarita Remediation Project, alternatives considered in this EIR, environmental impacts associated with the proposed project, recommended mitigation measures, and the level of significance of project impacts after mitigation.

ES-1.1 Project Location and Setting

The proposed project is located on a portion of the Santa Margarita Ranch (APN 070-091-036) (Ranch) in the unincorporated community of Santa Margarita, San Luis Obispo County, California. The entire parcel is approximately 900 acres located on the east side of Highway 101, within the Agriculture land use category. Phillips 66 Pipeline Company LLC (Phillips 66) currently operates two parallel 8-inch diameter petroleum pipelines which traverse a portion of the site from the eastern side of Highway 101 to the Phillips 66 Pipeline Santa Margarita Pump Station located on the east side of El Camino Real. A 6-inch diameter natural gas pipeline owned and operated by Phillips 66 is also present within the pipeline easement. Please refer to Figure 1, Project Location, for additional details.

The pipeline alignment extends across the site for a distance of approximately 1.8 miles. Average surface elevations along the pipeline corridor from north to south range between approximately 975 feet above mean sea level (msl) in the floodplain areas near Yerba Buena and Santa Margarita Creeks, to approximately 1,000 feet msl in the terrace area that contains the historic ranch headquarters structures, and finally to an elevation of 1,090 feet msl in the hilly areas near Highway 101. Santa Margarita Creek, a seasonal tributary to the Salinas River, flows across the site in an easterly direction where it crosses onto the southern portion of the site. The creek then turns generally northerly, flowing through the remainder of the site.

Hydrocarbon-impacted soils have been identified within the pipeline alignment at two locations on the Santa Margarita Ranch. The proposed project entails excavation of impacted soils at two distinct segments of the pipeline alignment within the property. These segments are referred to as the Western Remediation Area and the Eastern Remediation Area. Work activities will occur on approximately 20 acres of the Ranch, including use of existing ranch access roads to the Western and Eastern Remediation Areas. Of this area, excavation will occur over a combined area of approximately 4.3 acres at the two segments, and the remaining project work areas will be used for staging and access.

Western Remediation Area

The Western Remediation Area is an approximately 750-foot segment of the pipeline alignment located on undeveloped pasture land in the southwestern portion of the property. The site is located approximately 1,000 feet east of Highway 101, and approximately 2,700 feet northwest of Highway 58 (El Camino Real) where the road traverses the western portion of the community of Santa Margarita. The width of the work site, including excavation areas and staging, varies from approximately 150 feet at the eastern end to less than 50 feet in the middle section (please refer to Figure 3, Conceptual Remedial Excavations, Western Excavation Area). The disturbance footprint for remedial activities is approximately 2 acres, including staging. The site is level at approximately 1,000 feet msl in the eastern portion and then gradually slopes to an elevation of approximately 1,100 feet msl in the eastern portion. Little Tassajara Creek, an intermittent tributary to Santa Margarita Creek flows in an east-west direction through the Western Remediation Area. Excavation activity will avoid creek resources and tree removal.

Eastern Remediation Area

The Eastern Remediation Area is an approximately 1,500-foot segment of the pipeline alignment located in the central portion of the property (please refer to Figure 4, Conceptual Remedial Excavations, Eastern Remediation Area). The alignment traverses a corral and is in proximity to existing ranch structures. The eastern end of the

segment is located near the top of the western bank of Santa Margarita Creek. The site is approximately 1,900 feet west of El Camino Real, north of Santa Margarita. The width of the excavation area varies from approximately 250 feet at the northeastern end to less than 100 feet in the southwestern section. The disturbance footprint for remedial activities is approximately 3 acres, including excavation areas and staging. The site is on level land at an elevation of approximately 1,000 feet above msl. Limited tree pruning or removal may be required in the developed areas of the ranch central event area. Excavation activity will avoid creek resources.

ES-1.2 Project Background

The purpose of the project is to implement remedial actions at the subject sites in accordance with a Corrective Action Plan (CAP and CAP Addendum 01), as approved by the Central Coast Regional Water Quality Control Board (Regional Board).

As discussed in the project CAP, the original study of the project site contamination was initiated during pipeline removal activities in 1994. At the time, the previous easement owners collected soil samples beneath the removed pipelines, some of which contained detectable concentrations of total extractable petroleum hydrocarbons (TEPH). Soil samples analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) did not contain detectable levels of benzene or toluene and detection of ethylbenzene and xylenes was limited to two soil samples only. As a result of the soil sampling in 1994, 13 individual areas of petroleum impacts at the site were identified and numbered in the order in which impacts were found. One of the smaller areas of potential impact, Site 21, was originally identified by a single soil sample in 1994. Three subsequent borings advanced at Site 21 did not identify impacts to soil. Therefore, there are now considered to be 12, rather than 13, areas of hydrocarbon impacted soil along the pipelines.

Subsequent to the initial site testing, a series of additional studies and extensive testing was initiated in order to inform the remediation program for the identified release. This includes subsurface investigations and soil borings in 1996 and in 1999, supplemental site-specific investigations to evaluate impacts to groundwater and to characterize separate phase hydrocarbon (SPH) encountered on groundwater in 2006, aquifer testing in 2009, site-wide soils assessment and additional soil borings in 2012 and again in 2013-2014, soil vapor surveys and risk evaluations in 2015 and 2017, and geophysical investigations to develop an image of the SPH plume in association with bedrock characteristics in 2016. This also included interim remedial actions and monitoring efforts, including manual SPH recovery and testing from 2006 to 2009, weekly SPH recovery from on-site monitoring/recovery wells in 2013, vacuum enhanced recovery evaluations in 2014, and extensive groundwater and surface water monitoring beginning in 2013. These efforts culminated in the preparation of the CAP that was approved by the Regional Board, which outlines the proposed remediation project goals, objectives and methods.

The primary activity entails excavation of impacted soils at varying depths and widths within the two-pipeline alignments and restoration to current grade.

ES-1.3 Project Description

As discussed above, the purpose of the project is to implement remedial actions at the subject sites in accordance with a CAP, as approved by the RWQCB. Please refer to Exhibit B, Project Figures, for a detailed depiction of the project location, overall site plan, and the Western and Eastern Excavation Areas.

The primary activity entails excavation of impacted soils at varying depths and widths within the two pipeline alignment areas as detailed in the CAP, and then backfilling of the excavations and restoration of the sites to current grade.

A total volume of 83,851 cubic yards of excavation are planned, as follows:

- 57,153 cubic yards of anticipated impacted soils
- 1,429 cubic yards of over-excavation contingency

- 22,219 cubic yards of clean overburden
- 3,050 cubic yards of anticipated seedbank (top 6-inches of surface soils)

The 1,429 cubic yards of over-excavation contingency are planned in the event that additional unanticipated impacted soils are encountered. The contingency volume is 2.5% of the anticipated volume of impacted soils.

A total volume of 92,670 cubic yards of backfill are planned, as follows:

- 14,885 cubic yards of slurry cement
- 52,516 bulk cubic yards of clean fill material from the onsite borrow source; this volume accounts for an additional 20% of fill material for compaction;
- 22,219 cubic yards of clean overburden which will be tested prior to use; and
- 3,050 cubic yards of clean segregated seedbank (top 6-inches of surface soil from the excavations).

Remedial Excavation

Impacted soil is proposed to be excavated to the prescribed depth, varying from 6 – 20 feet below ground surface or to the point of contact with shallow bedrock at each remediation area. The excavation process will entail several excavation techniques designed to protect and maintain structural integrity of the existing oil and gas pipelines which will remain active during Remediation Project activities.

Conventional excavation techniques are proposed in the Western and Eastern Remediation Areas outside of the pipeline easement to excavate to the proposed depths. The same techniques will also be used outside of a 2-foot radius safety buffer around the pipelines. Conventional excavation techniques utilize standard earth moving equipment such as an excavator, backhoe, or dozer.

Suction excavation is proposed for the Western and Eastern Remediation Areas to expose the pipelines as a safety measure to prevent inadvertently striking and breaching the pipelines with mechanical equipment. Suction excavation is similar to hydro-excavating or air-knifing but on a larger scale. Suction excavation utilizes high pressure dry air to break up the soil while vacuuming the loose soil into a seal-tight compartment. Suction excavation is considered a soft-dig technique and safe alternative to hand-digging of impacted soils adjacent to the pipelines.

Slot trenching is proposed along the pipeline easement to removed impacted soils beneath the pipelines. Slot trenching addresses the safety concerns associated with excavating along and beneath active pipelines where the span of the exposed pipelines will be greater than 15 feet and proposed excavation depth is greater than 10 feet (i.e. sections of Excavation 5 and all of Excavation 8). Slot trenching consists of excavating sets of 15 - 25-foot wide trenches perpendicular to the pipeline alignment at forty-five (45) linear foot intervals using a telescoping excavator. The telescoping excavator starts removing soil from underneath the pipelines allowing impacted soils around the active pipelines to fall into the trench for removal. The slot trenches are immediately backfilled with cement slurry. Once the slurry cures in the first set of slot trenches, a second set of slot trenches are installed adjacent to the first set of trenches in a "hopscotching" fashion. This method of “hopscotching” slot trenches allows for maximizing the span of the exposed pipelines while excavating beneath the pipelines and maintaining lateral and vertical support. The process of slot trenching is repeated until all the impacted soils beneath the pipelines are removed to the proposed depth. This technique is a safe alternative to using mechanical equipment to excavate around the pipelines and inadvertently striking the pipelines.

Dewatering

To minimize the accumulation of groundwater during excavation activities and the need for dewatering efforts, all excavations are proposed to be backfilled in a timely manner following collection of confirmation soil samples.

It is not anticipated that groundwater will be encountered for excavations ranging between 6 and 10 feet below ground surface since the depth to groundwater in the excavation areas ranges from 11 – 25 feet below ground surface.

The proposed excavation depth for two small areas of excavation (Excavation 5 and most of Excavation 8) is 15 below ground surface. It is anticipated that moist or lightly saturated soils may be encountered in these areas, but it is not anticipated that groundwater will accumulate, and dewatering efforts be required since the Remediation Project will be implemented in the dry season when groundwater elevation is at the lower range and most likely greater than 15 feet below ground surface.

The excavation depth of the most eastern end of Excavation 8 is proposed to 20 feet below ground surface if shallow bedrock is not encountered at a shallow depth. Heavily saturated soils and groundwater may be encountered in this portion of Excavation 8 and dewatering efforts may be required to facilitate removal of impacted soils to the proposed excavation depth. Measures to minimize the accumulation of groundwater will be implemented to the extent possible. However, in the event that dewatering efforts are required, submersible pumps, hoses, and fittings, or, vacuum trucks will be used for dewatering. All dewatered groundwater will be stored in temporary, portable steel tanks with secondary containment and activated carbon canisters for emissions control. The recovered groundwater from dewatering will be sampled for characterization prior to transport to an approved off-site disposal facility. Excavated impacted soil that is heavily saturated will be segregated and blended with other dry impacted soils to facilitate drying prior to being transported for off-site disposal facility.

Separate Phase Hydrocarbon (SPH) Recovery

SPH is not anticipated to be encountered during the excavation process as recoverable free product. However, it is anticipated that hydrocarbon-saturated soils may be encountered in the excavations proposed to a depth of 15 feet below ground surface or greater. If SPH free product is encountered, it is anticipated to be very limited in volume or as a layer on top of groundwater. In the event that SPH free product is encountered, it will be recovered from the excavation using appropriate technologies depending on the thickness and depth to groundwater. Recovery methods may include absorbent materials, recovery during dewatering efforts, or via use of a vacuum truck. The recovery effort will seek to maximize removal of SPH while minimizing groundwater recovery. The recovered SPH will be placed into portable steel tanks within secondary containment and activated carbon canisters for emission control. It is not anticipated that separate storage tanks will be required for SPH and dewatered groundwater.

Excavation Confirmation Soil Sampling

Once the limits of excavations have been achieved, confirmation soil samples would be collected from the sidewalls and bottom to document removal of hydrocarbon-impacted soil to the established cleanup goals in the CAP and to characterize remaining soils left in-place. Soil samples collected from the excavations will be analyzed for the following constituents:

- Total petroleum hydrocarbon (TPH) as gasoline range (TPHg), diesel range (TPHd), and oil range (TPHo); and
- Benzene, toluene, ethylbenzene and total xylenes (BTEX) and naphthalene.

Additional but limited over-excavation may be required based on the results of the confirmation soil samples. For planning purposes, the total volume of impacted soils to be trucked off-site for disposal includes a 2.5% contingency. Confirmation sampling details including frequency, quality control, and total number of confirmation samples anticipated are provided in the CAP.

Offsite Waste Disposal

Impacted soil is proposed to be transported under waste manifest by licensed haulers to an approved and permitted recycling/disposal facility. The disposal facility will be selected prior to commencement of Remediation Project activities. The preferred destination for impacted soil is Waste Management Inc. in Kettleman City, located in western Kings County, approximately 70 miles from the project site. Other potential locations include the Clean Harbors Buttonwillow facility or the McKittrick facility in western Kern County; these facilities are located approximately 100 miles from the Remediation Project. For evaluation of the air emissions, the Clean Harbors Buttonwillow Facility was assumed to account for the longest distance to a disposal facility.

All trucks for off-site hauling of impacted soils or other waste streams will access the Remediation Project via Highway 101 to Highway 58 to Stagecoach Road during non-peak hours only. Loaded trucks will travel west on Highway 58 from Stagecoach Road to Highway 101 north, to State Route 46 (Highway 46) east in Paso Robles, to State Route 41 (Highway 41) north at the James Dean Memorial Junction, to Waste Management in Kettleman City near the intersection of Highway 41 and U.S. Interstate 5 in King County.

Backfilling

The excavations are proposed to be backfilled using a combination of cement slurry, clean fill, segregated clean overburden and seedbank materials.

Backfilling outside of the pipeline easement will consist of a combination of clean fill, clean overburden, and re-spreading of the seedbank stockpile to finished grade. Clean overburden that has been inspected for sensitive cultural artifacts will be used to backfill 4 – 5 feet below top of grade. Clean fill will then be applied over the clean overburden to 6-inches below top of grade. Seedbank material will be used to backfill the top 6-inches to finished grade. Finished grade be will restore the original topography to the greatest extent possible.

Proposed Hauling Schedule

The implementation of the tasks discussed above are interdependent, the timing of which can be dependent on multiple factors. As such, the proposed trucking and hauling schedule is subject to change based on equipment availability, weather conditions, personnel shifting, etc. In order to accommodate the dynamic nature of the project and provide a hauling schedule for the required environmental impact analysis, three off-site trucking timeframes have been considered (Scenarios A, B and C) and have been adopted as part of the proposed project.

These three scenarios were evaluated in the air quality analysis and traffic assessment prepared for this project to ensure that air quality and traffic impacts remain below established thresholds to ensure that any of the potential hauling scenarios could be used in as individual schedules or in combination as needed during project implementation. The proposed scenarios are discussed below.

Scenario A.

It is anticipated that off-site hauling will be completed during daytime non-peak hours only as shown below. Under Scenario A, it is estimated that 35 – 37 trucks will depart the Project Area Monday through Thursday and 15 – 18 on Friday with an average of 8 trucks per hour.

Table ES-1. Scenario A Proposed Hauling Schedule

Dates	Days	Period	Time
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
	Friday	Daytime	9:00 AM to 12:00 PM

Scenario B.

If off-site trucking delays are encountered either due to truck availability or reallocation of personnel or equipment from loading trucks to other project activities, off-site trucking will continue into the evening non-peak hours as shown below. Under this scenario, the estimated number of trucks departing the Project Area will remain unchanged at 35 – 37 Monday through Thursday and 15 – 18 trucks on Friday. However, by increasing the duration of daily trucking by adding the evening shift, the average trucks per hour is reduced to 4 - 5 trucks. It should be noted, that in order to maintain compliance with air quality standards the number of trucks per day cannot be increased. Additionally, evening off-site trucking is limited to one hour past sunset at which time all trucking activities are required to cease.

Table ES-2. Scenario B Proposed Hauling Schedule

Dates	Days	Period	Time
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
		Evening	6:00 PM to 1 hour after sunset
	Friday	Daytime	9:00 AM to 12:00 PM

Scenario C.

If long term trucking delays are encountered either due to truck availability, weather conditions, or reallocation of personnel or equipment from loading trucks to other more critical project activities, it is probable that off-site trucking will cease or be reduced during the 2021 project period and would not be completed prior to the onset of the rainy season. Impacted soils that are not trucked off-site prior to the rainy season will be stockpiled and secured during the rainy months and trucking will resume in the early part of 2022.

Table ES-3. Scenario C Proposed Hauling Schedule

Dates	Days	Period	Time
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
		Evening	6:00 PM to 1 hour after sunset
	Friday	Daytime	9:00 AM to 12:00 PM
March to May 2022[1]	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
	Friday	Daytime	9:00 AM to 12:00 PM

[1] The off-site trucking that would resume in 2022 is estimated to occur between March and May. However, weather permitting, it is possible that off-site trucking begins earlier in the year.

Site Demobilization and Restoration

In undeveloped locations, backfilled areas will be graded to match the surrounding grade and lightly scarified. Salvaged seedbank material will be redistributed over the top 6-inches to the extent possible. An appropriate seed mixture and soil amendments, if needed, will be applied to promote revegetation of the disturbed areas and appropriate erosion controls will be installed.

In developed areas, ground surface will be graded to match the surrounding material (i.e., asphalt, road base etc.). Pre-existing roads, narrow-gauge rail, fences or other improvements removed during Remediation Project activities will be replaced in-kind. Removed vegetation will be restored/replaced in accordance with a restoration plan. All construction equipment and temporary facilities will be removed from the work areas upon completion of Remediation Project activities.

ES-1.4 Project Objectives

The objective for the proposed remediation project excavations is to pursue case closure from the Regional Board by:

- Removing contaminated soil exceeding the proposed cleanup goals identified below to a maximum depth of 10 feet bgs at Sites 2/4B and up to 15 or 20 feet bgs or encountered bedrock at Sites 9/11, respectively, subject to any limitations imposed in the excavation project entitlements or permits.

- Recovering measurable SPH on groundwater within open excavations to the extent practicable and within a designated timeframe prior to backfilling. For the purposes of this CAP, the definitions of SPH, measurability and recoverability to meet the project remedial action objectives are as follows:
  - SPH is defined as measurable separate phase liquid petroleum product, separate from water and floating on top of groundwater.
  - "Measurable" means SPH greater than one-fourth (1/4) inch in thickness.
  - "To the extent practicable" means that SPH will be removed until it is no longer present in Measurable quantities after having twenty- four (24) hours to recharge, provided, however, that the excavation will not be left open more than one week, unless a shorter time is required by applicable permits.
- Restoring the disturbed areas and removed surface structures/improvements to pre-existing conditions to the extent practicable, promoting revegetation and drainage of storm water, and minimizing erosion.
- Completing all site restoration activities without health and safety incidents including property damage and personal injury.
- Preparing a soil and groundwater management plan (SGMP) to address affected soil remaining in place on-site post-remediation.

No specified vertical cleanup goal is proposed to be utilized for excavations deeper than 15 feet bgs at Sites 9/11. Under the approved CAP and CAP Addendum, the cleanup approach to be utilized for excavations from 15 feet bgs to the shallower of bedrock or 20 feet bgs at Sites 9/11 is, to the extent practicable, to remove SPH where it has been identified, either prior to the commencement of remediation activities pursuant to the CAP or during the performance of remediation activities pursuant to this CAP down to 15 feet bgs.

ES-1.3 Summary of Impacts and Mitigation Measures

Tables ES-4 - 6 at the end of this section, contains a detailed listing of the environmental impacts of the proposed project, proposed mitigation measures, and residual impacts. Impacts are categorized by classes: Class I impacts are defined as significant, unavoidable adverse impacts, which require a statement of overriding considerations pursuant to Section 15093 of the *CEQA Guidelines* if the project is approved (see Table ES-4). Class II impacts are significant adverse impacts that can be feasibly mitigated to less than significant levels and which require findings to be made under Section 15091 of the *CEQA Guidelines* (see Table ES-5). Class III impacts are adverse, but less than the identified significance thresholds (see Table ES-6).

ES-1.4 Alternatives

Section 15126.6(a) of the CEQA Guidelines states that:

> *"an EIR shall describe a range of reasonable alternatives to the project or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives."*

As stated above, an EIR is required to consider a "range of reasonable" alternatives to foster informed decision-making and public participation. During the evaluation of possible remedial actions to address the hydrocarbon impacted soil on-site, the following were taken into consideration:

1. Remedial requirements from the Central Coast Regional Water Quality Control Board (RWQCB) including the following:
   a) exposure of chemicals of concern (COC) to human health;

b) cleanup goals with respect to Environmental Screening Levels (ESLs) and potential future land use; and

c) direct impacts to groundwater.

2. Impacts of the remedial actions to Ranch operations and events including the exposure of Ranch staff and visitors to COC;
3. Impacts to cultural and tribal cultural resources; and
4. Impacts to biological resources.

The nature of the proposed project consists of the prescribed requirements for site clean-up and remediation under the CAP and CAP Addendum and implemented under the jurisdiction of the Regional Board. This includes (but is not limited to) the methods for remediation, extent of the remediation and the boundaries for excavation, testing and treatment methods, remediation goals and objectives, disposition of impacted soils, technologies utilized, criteria for successful clean-up, etc. As such, the proposed remediation project represents a multi-jurisdictional effort to establish an approved project design to ensure a successful remediation effort that meets the requirements of all applicable agencies. Therefore, the County of San Luis Obispo is limited with respect to the ability to prescribe project alternatives.

CEQA requires the EIR to identify feasible alternatives to the proposed project that will avoid, or at least lessen, significant impacts associated with the project. CEQA defines "feasible" as follows:

> *"'Feasible' means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors."*

Two alternatives to the Phillips 66 Santa Margarita Remediation Project have been evaluated in this EIR. Each alternative is described below.

No Project Alternative: This alternative evaluates environmental conditions that would result if the proposed remediation project were not implemented.

Mitigated Project Alternative: This alternative evaluates environmental conditions that would result upon implementation of the proposed remediation project with all of the required mitigation measures identified in this EIR adopted into the project description.

Environmentally Preferred Alternative: The No Project Alternative would not disturb the site at all, so there would be no impacts to environmental resources, including (but not limited to) cultural and tribal cultural resources. There would also be no traffic, air quality, or noise generated. However, it would not fulfill the basic objectives of the RWQCB requirements, as there would be remaining impacts with respect to water quality and hazards that could affect future use of the site. Further, the No Project alternative would not preclude on-site contaminants from further polluting ground water sources in the vicinity.

Based on the potential for the No Project Alternative to reduce environmental impacts when compared to the impacts of the proposed project, it would be the environmentally superior alternative. The No Project alternative, however, would not implement any of the proposed projects' objectives. CEQA Guidelines Section 15126.6(e)(2) indicates that

> *"if the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify the environmentally superior alternative among the other alternatives."*

As required by CEQA, this section identifies the environmentally superior alternative. As shown in this EIR under Section 6.3, Mitigated Project Alternative, each of the impact issue areas were evaluated for the change in impact significance as a result of implementation of this Alternative. The net change of impact significance is noted at the end of each impact assessment.

The Mitigated Project Alternative includes redesign of key project elements intended to further reduce environmental impacts identified in the EIR. Specifically, this would consist of the adoption of the mitigation measures identified in this EIR into the design of the proposed remediation project as revised project elements intended to reduce environmental impacts to the extent feasible.

Otherwise, the Mitigated Project Alternative details would remain the same as the proposed project. As a result of the incorporation of the identified mitigation measures into this Alternative, implementation would result in reduced impacts related to air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, transportation and tribal cultural resources. This alternative would also fully implement the requirements of the RWQCB. Overall, this is considered the environmentally superior alternative.

ES-1.5 Incorporation of Studies, Reports and Other Documents

This EIR contains references to studies, reports and other documents that were used as a basis for, or a source of, information summarized in the body of the EIR. These documents are incorporated by reference in this EIR in accordance with Section 15150 of the CEQA Guidelines. Where a study, report or document is briefly cited or referred to for convenience in the body of this EIR, the reader should consult the "References" section of this document for the full citation.

ES-1.6 Areas of Public Controversy

Pursuant to State CEQA Guidelines § 15123(b)(2), this EIR acknowledges the areas of controversy and issues to be resolved which are known to the County of San Luis Obispo or were raised during the scoping process. An NOP was circulated for a 30-day public review period that began on June 20, 2020 and ended July 22, 2020. In addition, the County included an extensive stakeholder and jurisdictional agency referral program as part of the early project application process. This included coordination with the applicant team on preparation of the technical studies prepared in support of this project, and consulting with all jurisdictional agencies (including, but not limited to, the Air Pollution Control District, CDFW, US Fish and Wildlife Service, CalTrans, Native American Heritage Commission, and the Regional Board) throughout that process.

The County and applicant team also worked cooperatively with local Native American tribal representatives under the requirements of AB52 in order to coordinate the details of the project archaeological testing program, disposition of sensitive cultural and tribal resources, and monitoring of all subsurface testing. Through this coordination, and as reflected in the NOP responses (please refer to Attachment D), the primary issue area with potential for significant impacts considered controversial or of primary importance to stakeholders is considered to be cultural and tribal cultural resources, which will be the focus of this EIR. All of the other required environmental impact issue areas are analyzed under Attachment A, Initial Study Checklist.

Table ES-4. Summary of Significant and Unavoidable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class I: Significant and Unavoidable Impacts		
CULTURAL and TRIBAL CULTURAL RESOURCES		
Impact CTR-1. Implementation of the proposed Phillips 66 Santa Margarita Remediation Project could cause a substantial adverse change in the significance of known and potentially undiscovered tribal and archaeological resources that are either listed or eligible for listing on the National Register of Historic Places, the California Register of Historic Resources, or a local register of historic resources. This impact is considered to be Class I, significant and unavoidable.	The following mitigation measures are consistent with the recommendations provided in the project cultural resource studies and measures discussed with tribal representatives as part of the AB52 Native American consultation and project cultural resource team tribal outreach and would reduce impacts on archaeological resources to the extent feasible. **CTR-2(a): Avoidance Plan.** Prior to permit issuance the applicant shall submit an Avoidance Plan to the County Planning and Building Department that identifies areas where the avoidance of proposed excavation and earth disturbance is possible. Avoidance areas shall be identified based on the potential for significant impacts to known and undiscovered cultural and tribal cultural resources. The Avoidance Plan shall include an assessment of the nature of the hydrocarbon contamination in areas proposed for avoidance in relation to the potential for leaving contamination in place. Prior to submittal to the County, the Avoidance Plan shall be reviewed and approved by the RWQCB and appropriate jurisdictional agencies. The Avoidance Plan shall also include methodology and criteria for any discovery of human remains and the feasibility of select avoidance and shall include the factors considered for avoidance, the technical feasibility for avoidance and shall include a demonstration for achieving RWQCB remediation criteria for avoidance areas. The County shall submit the Avoidance Plan to the identified tribal group MLDs as designated by the State NAHC for review. The Avoidance Plan shall also specify that the boundaries of all avoidance areas shall be defined and an exclusion zone shall be placed around each avoidance area and labeled as "Environmentally Sensitive Area" in all documents. An exclusion zone is a fenced area where construction equipment and personnel are not permitted. The exclusion zone fencing shall be installed (and later removed) under the direction of a qualified archaeologist. If avoidance cannot be achieved, other forms of mitigation, such as data recovery, will lessen the impacts but will not mitigate the loss of integrity to a less than significant level. **CTR-2(b): Deed Restriction.** Prior to completion of remediation activities, the applicant shall submit a recorded deed restriction to the County of San Luis Obispo Planning and Building Department that protects all areas of known and potentially	Although impacts would be reduced through the above mitigation measures, no mitigation is available to avoid significantly impacting identified and previously unidentified cultural and tribal resources. Impacts would remain significant and unavoidable.

Table ES-4. Summary of Significant and Unavoidable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
	undiscovered cultural and tribal cultural resources within the project site from future disturbance related to construction or development. **CTR-2(c): Archaeological Data Recovery:** Prior to issuance of grading permits, an Archaeological Data Recovery Plan shall be submitted to the County of San Luis Obispo Planning and Building Department for review and approval. The Archaeological Data Recovery Plan shall include a program for recovering archaeological data and scientific samples from CA-SLO-1430. The approach to data recovery excavations, laboratory sorting, artifact analysis, reporting, and curation shall be driven by the Archaeological Data Recovery Plan to be prepared by a Registered Professional Archaeologist (RPA) who is familiar with both prehistoric and historic period cultural resources. The Archaeological Data Recovery Plan shall include the following: • a review of historic maps and aerial images to identify possible locations of historic period features and to document modern landscape modifications; • a prehistoric and historic period context; • a research design outlining important prehistoric and historic period themes and research questions applicable to CA-SLO-1430; • data requirements and appropriate field and laboratory methods and procedures to mitigate the effects of the project on CA-SLO-1430; • provide for a final technical report on the findings of data recovery at CA-SLO-1430; • agreement for curation and final disposition of cultural items recovered; • procedures for handling of human remains if found during data recovery; • outline involvement of the local Native American communities and their recommendations for data recovery; and • a public outreach program to inform both the scientific and local communities on the findings of data recovery. Data recovery shall be completed prior to the start of remediation activities. However, if appropriate, a staged data recovery approach may be implemented where the first stage of data recovery occurs prior to construction work and the second stage will occur in tandem with construction. The purpose of this approach is to collect a viable sample prior to construction and then use the construction process to open up and observe larger exposures. If features, artifact concentrations or human remains are encountered during the second stage, construction work will be diverted while controlled excavations target newly discovered deposits.	

Table ES-4. Summary of Significant and Unavoidable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
	In advance of this mitigation requirement, the applicant has prepared an "Archaeological Work Plan for CA-SLO-1430" (Applied Earthworks, Inc., February 2020). The goal of the effort described in this Work Plan is to collect and analyze data from CA-SLO-1430 in order to preserve important information that will be lost during remediation activities. The Work Plan provides a framework for the planned excavations at CA-SLO-1430 including fieldwork approach, handling of human remains, laboratory methods, and analysis and reporting for CA-SLO-1430. The project cultural resources team will use a mixed approach to archaeological excavations at CA-SLO-1430, employing a combination of methods to address depth and subsurface integrity of midden deposits, recover data from intact features, and use controlled backhoe excavations to identify and record intact features. The goal for fieldwork is to target areas that appear to contain intact archaeological deposits, recover sensitive cultural materials that will be highly impacted (i.e., destroyed during remediation), and try to locate any features or human remains prior to construction. The applicant's Work Plan shall be reviewed by the County Planning and Building Department against the requirements listed above under Mitigation Measure CTR-2(c). Additionally, the Work Plan shall be submitted to the tribal representatives identified through the project AB52 process for their review if requested. The Work Plan reviews and any appropriate revisions or additions shall be completed prior to initiation of remediation activities. Implementation of this mitigation measure will reduce impacts to the extent feasible. **CTR-2(d): Construction Monitoring:** Prior to issuance of grading permits, the applicant shall submit a Monitoring Plan, prepared by a subsurface-qualified archaeologist, for the review and approval by the County of San Luis Obispo Planning and Building Department. The monitoring plan shall include at a minimum: a) List of personnel involved in the monitoring activities; b) Description of how the monitoring shall occur; c) Description of frequency of monitoring (e.g. full-time, part time, spot checking); d) Description of what resources are expected to be encountered; e) Description of circumstances that would result in the halting of work at the project site (e.g. what is considered "significant" archaeological	

Table ES-4. Summary of Significant and Unavoidable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
	resources); f) Description of procedures for halting work on the site and notification procedures; and g) Description of monitoring reporting procedures. During all ground disturbing construction activities, the applicant shall retain a qualified archaeologist (approved by the County Planning and Building Department) and Native American tribal representatives to monitor all earth disturbing activities, per the approved monitoring plan. If any significant archaeological resources or human remains are found during monitoring, work shall stop within the immediate vicinity (precise area to be determined by the archaeologist in the field) of the resource until such time as the resource can be evaluated by an archaeologist and any other appropriate individuals. The applicant shall implement the mitigation as required by the County of San Luis Obispo. Upon completion of all monitoring/mitigation activities, the consulting archaeologist shall submit a report to the County of San Luis Obispo Planning and Building Department summarizing all monitoring/mitigation activities. **CRT-2(e) Cultural Awareness Training.** Prior to the start of ground disturbance, a qualified archaeologist shall prepare and provide a cultural resources awareness training to all field crew and supervisors. This training will include a description of the types of resources that may be found in the project area, an introduction to the Native American monitoring team(s) and their responsibilities, the protocols to be used in the event of an unanticipated discovery, the importance of cultural resources to the Native American community, and the laws protecting significant archaeological and historical sites.	
Impact CTR-3. Implementation of the proposed Phillips 66 Santa Margarita Remediation Project could disturb previously unidentified human remains. This is considered a Class I, significant and unavoidable impact.	**CTR-3(a): Discovery of Human Remains.** If potential human remains are encountered during remediation work, all earth disturbances within 100 feet of the discovery shall cease immediately and the area shall be delineated with clearly visible lath, flagging tape, or other marking. All activity within the delineated area shall cease and the project proponent shall comply with Section 15064.5 (e) (1) of the CEQA Guidelines and the procedures described in Section 7050.5 of the California Health and Safety Code. A Registered Professional Archaeologist shall inspect the remains and confirm that they are human, and if so shall immediately notify the County of San Luis Obispo and contact the County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner	Although impacts would be reduced through the above mitigation measures, no mitigation is available to avoid significant impacts related to the discovery of previously unidentified human remains. Impacts would remain significant and unavoidable.

Table ES-4. Summary of Significant and Unavoidable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
	determines the remains are Native American, the coroner shall contact the Native American Heritage Commission (NAHC). As provided in PRC Section 5097.98, the NAHC shall identify the person or persons believed to be the MLD from the deceased Native American. The MLD makes recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.	

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
AIR QUALITY		
Construction Phase Air Quality Impacts: As recommended by the APCD through their review of the proposed project (APCD, April 27, 2020), the project applicant team evaluated the construction impacts of this project using the most recent CalEEMod computer model. The modeling results indicate the maximum quarterly emissions will be less than the APCD's significance threshold values identified in Table 2-1 of the *CEQA Air Quality Handbook* (April 2012). The APCD concurred that the methodology used to calculate the peak quarterly emissions is appropriate for this project. However, Construction activities can generate fugitive dust, which could be a nuisance to local residents and businesses in close proximity to the proposed construction site. Although emissions modeling shows that the threshold is not exceeded, under direction from the APCD the proposed project has been determined to have the potential to generate construction emissions in excess of the thresholds established by the APCD. As such, impacts related to construction emissions are considered significant but mitigable.	Based on project input from the APCD, the following mitigation measures shall be implemented to ensure impacts related to project emissions are less than significant. **AQ-1: <u>Construction Permit Requirements</u>:** Portable equipment, 50 horsepower (hp) or greater, used during construction activities may require California statewide portable equipment registration (issued by the California Air Resources Board) or an APCD permit. The following list is provided as a guide to equipment and operations that may have permitting requirements but should not be viewed as exclusive. For a more detailed listing, refer to the Technical Appendices, page 4-4, in the CEQA Air Quality Handbook (April 2012). • Power screens, conveyors, diesel engines, and/or crushers; • Portable generators and equipment with engines that are 50 hp or greater; • Electrical generation plants or the use of standby generators; • Internal combustion engines; • Rock and pavement crushing; • Tub grinders; and • Trommel screens. **AQ-2**: **<u>Fugitive Dust Mitigation:</u>** To mitigate fugitive dust emissions related to project construction activities, the following shall be implemented: a) Reduce the amount of the disturbed area where possible; b) Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible; c) All dirt stock pile areas should be sprayed daily as needed; d) Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities; e) Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established; f) All disturbed soil areas not subject to	Implementation of required measures would reduce potential impacts to a less than significant level.

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD; g) All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used; h) Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site; i) All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114; j) Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site; k) Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible; l) All of these fugitive dust mitigation measures shall be shown on grading and building plans; and m) The contractor or builder shall designate a person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the APCD Compliance Division prior to the start of any grading, earthwork or demolition. **AQ-3**: **Measures for Reducing Emissions:** The required mitigation measures for reducing nitrogen oxides (NO_x), reactive organic gases (ROG), and diesel particulate matter (DPM) emissions from construction equipment are listed below: • Maintain all construction equipment in proper tune according to manufacturer's specifications; • Fuel all off-road and portable diesel powered equipment with CARB certified motor vehicle • diesel fuel (non-taxed version suitable for use off-road); • Use diesel construction equipment meeting	

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	CARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State off-Road Regulation; • Use on-road heavy-duty trucks that meet the CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation; • Construction or trucking companies with fleets that that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance; • All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit; • Diesel idling within 1,000 feet of sensitive receptors is not permitted; • Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors; • Electrify equipment when feasible; • Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and, • Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel. **AQ-4**: **Construction Phase Mitigation:** As stipulated by the APCD, in order to manage fugitive dust emissions, the Air Quality notes in the Grading Plan (drawing number G-01 and sheet number 2 of 28. AECOM, April 2020) submitted by the applicant as part of the Major Grading Permit application shall be required to be implemented as mandated mitigation measures for this project. Please refer to the attached Grading Plan for details on the required measures. **AQ-5**: **Off-road Construction Equipment Emissions:** As stipulated by the APCD, prior to the start of the project, the applicant shall provide proof to the County of San Luis Obispo that the final schedule and the final equipment list proposed for construction are consistent with the assumptions in the air quality modeling prepared for this project. The results of the consistency review shall be provided to the APCD. If review demonstrates there will be a significant difference in the final configuration of the project fleet and equipment list, the applicant shall recalculate the emissions, compare emissions to	

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	APCD construction thresholds, and, if necessary, work with the Lead Agency and APCD to update mitigation measures. Key information to provide includes the following specifics about the final equipment: • Off road equipment: Make, type, model number, CARB EIN, horsepower (hp), engine model year, engine Tier, and DOORS "compliance snapshot" for any fleet used on the project; and • Schedule: Start and end dates of both remediation and off-site hauling work. **AQ-6**: **APCD Permitting of Hydrocarbon Contaminated Soil Processes**: This remediation project shall require an APCD Authority to Construct permit to address proper management of the hydrocarbon-contaminated soil prior to the start of any earthwork. This permit shall include conditions to minimize emissions from any excavation, disposal or related process. This includes, but is not necessarily limited to, the conditions outlined under Mitigation Measure AQ-3. To the extent feasible, Phillips 66 shall contact the APCD Engineering & Compliance Division within 120 days before the start of excavation to begin the permitting process.	
BIOLOGICAL RESOURCES		
Special-Status Plant Impacts. With respect to special status plant species, the CDFW has recognized Grindelia camporum gum plant patches (Provisional Herbaceous Alliance) vegetation type as a California Sensitive Natural Community (CDFW 2018), and has given this community a California State ranking of S2 (imperiled). Equipment staging and temporary topsoil storage in the Western Remediation Area will result in a significant impact to several small colonies of Grindelia camporum. This is considered a significant but mitigable impact.	**BIO-1: Special-Status Plants:** Prior to any equipment staging, remediation work activities, or other activities occurring within the gum plant patch locations (please refer to Figure 4 from the project biological resources analysis under Attachment G of this EIR), gum plant seeds will be collected at the appropriate time from the plants located in these areas and properly stored for future seeding in the project area after the remediation work activities are completed. Additionally, after gumplant seeds are collected from the top 6 inches of the soil profile where the plants occur, the "seed bank," shall be salvaged and moved to a designated seed bank stockpile location. The salvaged soil stockpile shall be staked with orange spray-painted lath or other suitable staking, and labeled so that it is apparent the scalped soils are required to be preserved until original site contours are restored at the end of the proposed remediation project. After completion of the remediation work the seed bank shall then be spread back over the area where they were originally collected and finally, this area will be seeded with any collected gum plant seeds. Plantings shall be monitored by a qualified	Impacts to special status plants will be reduced to less than significant levels upon incorporation of required mitigation measure.

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	biologist ensure survivorship for a minimum of 3 years, or until such time that all project success criteria are met.	
Special Status Wildlife Impacts: In addition to special status plants, the proposed project has the potential to result in significant but mitigable impacts to special status wildlife. This includes the following species: Western Pond Turtle; Special Status Bats; American Badger; Nesting Birds; and California Red-Legged Frog;	**BIO-2: Western Pond Turtle**: A qualified biologist shall conduct a preconstruction survey of the enclosed Eastern and Western Remediation Areas within 24 hours of any activities being conducted in those areas. If a western pond turtle is identified within the enclosed Remediation Areas, or up against the fencing on the outside of the Remediation Areas, the turtle shall be captured and immediately relocated to suitable habitat in Santa Margarita Creek. Thereafter, the designated biological monitor and/or trained field manager shall survey the enclosed areas for turtles prior to work each day. During the spring and/or summer months, preconstruction surveys for turtle nest sites in uplands adjacent to suitable aquatic habitat shall be conducted within the 30-day period prior to beginning any work activities. If no nests are found, no further consideration for western pond turtle nests shall be required. If nest sites are located during preconstruction surveys within or adjacent to the proposed work areas, the nest site plus a 50-foot buffer around the nest site shall be fenced with orange construction fence until eggs hatch and young turtles disperse to the adjacent creeks. In addition, if nest(s) are located during surveys, moth balls (naphthalene) shall be sprinkled around the vicinity of the nest (no closer than 5 feet) to mask human scent and discourage predators. Remediation grading within the 50-foot buffer area shall be delayed until the young leave the nest or as otherwise advised and directed by the CDFW, the agency responsible for overseeing the protection of the pond turtle. If the CDFW allows translocation on any nestling pond turtles, it shall be completed by a qualified biologist under direction of CDFW. **BIO-3**: **Special-Status Bats:** In order to avoid impacts to roosting special-status bats, a tree survey shall be conducted no more than 15 days prior to commencement of remediation work activities by a biologist with known experience surveying for bats. Tree cavities and exfoliated bark that could provide roosting or maternity habitat shall be examined for evidence of use by bats. If roosts are found, a determination should be made whether there are young. If a maternity site is found, impacts to that tree will be avoided by establishment of a 50-foot non-disturbance	Impacts to special status wildlife will be reduced to less than significant levels upon incorporation of required mitigation measure.

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	buffer until the young have reached independence. If roost sites are found it is likely that no action is warranted. Eviction is unnecessary as valley oak trees will not be directly impacted by the proposed remediation project. **BIO-4**: **American Badger:** A qualified biologist shall conduct a preconstruction den survey no more than 21 days prior to site grading. If a potential den is located, infrared camera stations will be set up and maintained for three (3) consecutive nights at the potential den openings prior to initiation of grading/work activities to determine the status of the potential dens. If American badger is not found to be using the den, the burrow shall be filled, and site grading may proceed in the vicinity of this burrow(s) unhindered. However, if American badger is found using a den site within the area of proposed grading, the Applicant's biologist shall prepare a passive eviction plan. The plan will include details about evictions, provided it is not a natal den, the badger will be passively and humanely evicted from its den under guidance from CDFW if it could be impacted by grading or other remediation work activities. If a natal den is found, then an eviction plan will be prepared and submitted to CDFW for discussion and approval. Evictions shall not occur until CDFW approves the passive eviction plan. **BIO-5**: **Nesting Birds:** Nesting surveys shall be conducted no more than 30 days and again no more than 15 days prior to commencing with project activities if this work would commence between February 1 and August 31. The nesting survey shall include an examination of all trees within the project site and within 500 feet of the project area (i.e., within a zone of influence of nesting birds). The Bald and Golden Eagle Protection Act has special provisions for nesting eagles. As these eagles start nest construction or reconstruction in December/January, a survey for nesting bald and golden eagles shall be completed in February, and again in March. The survey area (i.e., zone of influence) should be extended to 1 mile from project area boundaries to the extent that this is practical or possible (private properties may preclude surveys on these properties). The USFWS's 2017 *Recommended Buffer Zones for Ground-based Human Activities around Nesting Sites of Golden Eagles in California and Nevada*	

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	recommends a 660-foot non-disturbance buffer from active bald eagle nests for projects of similar magnitude to the proposed project. If any eagle nest is discovered within one mile of the proposed project, a qualified raptor biologist with known experience working with eagles shall recommend a buffer of appropriate dimensions that are based upon the geographic position of the nest site in relation to the project. For example, hills create geographic barriers when between an eagle's nest and the job site, a barrier that would shield nesting eagles from disturbance that could otherwise occur in straight lines to the eagle nest. The buffer would be no smaller than 660 feet from any active eagle nest. This buffer shall be maintained until eaglets fledge the nest and are independent of the nest, or until the nesting attempt is otherwise completed. If other bird species are identified nesting on or within the zone of influence of the proposed remediation project, a qualified biologist with extensive experience establishing effective nesting buffers shall prescribe a temporary protective nest buffer around the active nest(s). The nest buffer shall be staked with highly visible fencing such as t-posts and two strands of yellow rope where the buffer(s) extend into the project area. Adequate nesting buffers shall be maintained 75 feet from the nest site or nest tree dripline for small birds (passerines) and 300 to 500 feet for sensitive nesting birds that include several raptor species known the region of the project area. Following completion of nesting surveys, if nesting birds are identified on or within a zone of influence of the remediation areas, a qualified ornithologist/biologist that frequently works with nesting birds shall prescribe adequate nesting buffers to protect the nesting birds from harm while the proposed project is constructed. The applicant shall have the option for reducing setbacks, if warranted, upon approval by monitoring biologist. No remediation or earth-moving activity shall occur within any established nest protection buffer prior to September 1 unless it is determined by the qualified ornithologist/biologist that the young have fledged and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed. At the end of the nesting cycle, when fledging young are independent of the nest as determined by a qualified biologist, the temporary nesting buffers	

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	may be removed, and construction may commence in the nesting buffers without further regard for the nest site. **BIO-6** Applicant-Proposed Measures: During the course of the biological investigations prepared in support of this project, including the review of biological reports by the County's biologist and subsequent review by CDFW and USFWS, several mitigating factors and recommendations have been incorporated into the project description by the applicant in order to reduce impacts to biological resources. The following project elements are considered to be mitigating factors that shall become required mitigation measures: • *Wildlife Exclusion Fencing:* The applicant shall install "ERTEC" wildlife exclusion fencing that completely surrounds each project remediation area in order to ensure that wildlife moving along Little Tassajara Creek and Santa Margarita Creek or elsewhere on the ranch property will be kept out of the project areas and not be impacted by the remediation work. A one-foot high sediment control panel (high density polyethylene sheet) incorporated by ERTEC into the bottom of the wildlife exclusion fence will ensure that silt and sediments are contained within the project area. The ERTEC shall be installed per the manufacturer's installation instructions. Escape funnels shall be installed to allow any wildlife inadvertently trapped inside the work area during installation a means to escape. Further, any openings or gates to allow access will be tightly secured at the end of each work day to ensure no gaps occur. To be certain that animals cannot successfully climb this fencing, the ERTEC fence shall be recurved along the top edge outwards away from the Remediation areas so that in the event an animal does climb the fence, it will not be able to get over the top of the fence and into the work area. The one-foot high sediment control panel, that functions like silt fence, is a best management practice that is used to control threats of downstream degradation of receiving waters. However, since remediation work would take place during the dry season, downstream waters will not	

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	likely be impacted. Additionally, since remediation work will take place inside fenced enclosures, no impacts to wildlife are expected. All wildlife exclusion fencing shall be maintained in good condition through completion of all earth-moving activities. A biologist shall inspect this fence every other week from installation through completion of all earth-moving on the proposed remediation project area and the day after any significant precipitation events (.25-inch or greater in a 24 hour period). The biologist shall also train the field manager how to perform the fence inspections so that on days the biologist is not present, the foreman can complete his/her own fence inspections. The wildlife exclusion fencing shall be removed upon completion of all remediation work activities. • *Project Schedule and Work Sequence:* Work is planned to occur over one consecutive construction season between April 19 and October 31, 2021 to avoid excavation activity during the rainy season. Trucking of exported material and other minor activities may continue past the end of October, weather dependent, in order to ensure that all impacted soil stockpiled at the project area during the preceding dry season excavation is removed. Any work that is completed outside of the ERTEC enclosed project areas (for example, truck hauling) shall have the following restrictions: ➢ Project work activities and/or off-site trucking shall begin after sunrise and shall cease no later than one hour after sunset. ➢ If for any reason off-site trucking occurs before or after these conditions, then all trucks shall be escorted by a qualified biologist that clears any wildlife encountered from the traveled path ahead of the trucks. ➢ Off-site trucking and all project equipment shall travel at a reduced speed limit of no greater than 15 miles per hours (MPH) between the project area and egress point. ➢ No work shall occur during projected rain events of 0.25-inch or greater with work planned to be delayed when the National	

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	Oceanic and Atmospheric Administration (NOAA) forecast calls for a 70% chance or greater of this type of precipitation event. In the event of significant project delays, off-site trucking of impacted soils may cease prior to completion of excavation activities at the end of October 2021. In this event, impacted soils shall be stockpiled and secured via implementation of an erosion control plan. Off-site trucking of the soils would resume in spring of 2022, weather permitting. • *Fuel Storage:* Fuel storage is not anticipated for the proposed remediation project. In the event that fuel storage is required within the project area, the fuel storage shall be in accordance with San Luis Obispo County and San Luis Obispo County Air Pollution Control District regulations, including preparation of a Hazardous Material Storage Plan and Hazardous Materials Business Plan. Fueling areas shall occur at least 100-feet from wetlands and/or waterbodies unless fueling is within the proposed excavation area and there is no opportunity for petroleum products to enter creeks or wetlands.	
GEOLOGY AND SOILS		
Slope Failure Impacts: The proposed remediation project entails excavation of impacted soil and backfilling with cement slurry or clean fill. Appropriate clean backfill soils and compaction methods will be used to ensure long-term stability of the excavated areas in accordance with County grading requirements. The hazards related to ground stability have been analyzed in the project geotechnical report, indicating that impacts related to unstable soil conditions during proposed excavation and impacts related to slope failure within excavations are considered significant but mitigable.	**GEO-1** **Excavation Slopes:** Based on the project geotechnical report, the maximum allowed mass excavation slope shall be 1H:1V. For any localized short term, temporary cuts steeper than 1H:1V, with no occupancy within the excavation, materials and equipment shall be set back from the top of the excavation beyond where a 1H:1V cut slope would daylight. The excavation contractor shall be prepared and responsible for adjusting and flattening slopes to maintain stability and safety given actual field conditions encountered. **GEO-3** **Backfill Construction:** Based on the project geotechnical report, it is understood that the remediation site, by removal and replacement of contaminated materials, will not include any structural development. However, the project includes design grades and slopes such that future settlement or differential settlement could result in significant impacts. Considering these conditions and criteria, the following requirements for the remediation mass excavation backfill with soil materials shall be implemented as follows:	Slope stability impacts will be reduced to less than significant levels with implementation of the required mitigation measure.

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	• The final clean subgrade below remediation excavation shall be scarified, brought to a moisture content within 2 percent of optimum moisture content, and compacted to a minimum of 90 percent of the laboratory maximum dry density, determined in accordance with ASTM D1557, latest edition; • Subsequent mass excavation backfill replacement material shall be a sandy, silty, clayey material with fines content of at least 20 percent. The material shall not be highly plastic or have expansive properties, with a plasticity index no greater than 20; • Mass excavation backfill replacement material shall not contain organics and should not contain isolated particle sizes greater than 6 inches; • The replacement soil backfill material shall be properly moisture conditioned prior to placement into the remediation excavations to minimize final moisture adjustment prior to compaction; • The soil backfill material shall be placed in loose horizontal lifts not exceeding 12 inches; • Prior to compaction, the soil backfill material shall be within 2 percent of optimum moisture content; and • The soil backfill material shall be compacted to a minimum of 90 percent of the laboratory maximum dry density, determined in accordance with ASTM D1557, latest edition.	
Groundwater Impacts: During subsurface testing, some groundwater levels have been measured a few feet above the deepest planned excavation depths, locally. These levels likely vary seasonally and as a function of rainfall magnitude. Because groundwater was noted at relatively shallow levels in some areas, impacts related to groundwater conditions are considered significant but mitigable.	**GEO-2 Groundwater:** In order to allow the excavation slopes discussed in the previous section and to be consistent with the associated OSHA soil type definition for allowance of such slope excavation geometry, groundwater conditions shall be maintained a minimum of 2 feet below the excavation depths at all times along with the prevention of active seepage conditions from the excavation slopes and bottom. Groundwater level monitoring shall be implemented during remedial excavation to confirm requirements are being maintained. The excavation contractor shall establish an approved groundwater control and monitoring plan, consistent with the groundwater monitoring outlined in the project CAP, with the ability to adjust and maintain the requirements with changing conditions.	Groundwater impacts will be reduced to less than significant levels with implementation of the required mitigation measure.

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
TRANSPORTATION		
Temporary Construction-Phase Traffic Impacts. During the project construction period, the project traffic report indicated that the study roadway segment will not be significantly impacted by the project. However, the study roadway segment will experience minor short-term increases in traffic during the peak construction period. The study roadway segment volume will return to pre-project operating conditions upon completion of project construction activities. Because the study roadway segment is anticipated to experience minor short-term increases in traffic, impacts related to temporary traffic increase during project implementation are considered significant but mitigable.	**T-1 Truck Turning Plan:** Truck turning analyses were conducted to develop truck turning plans to demonstrate the inbound and merging truck turns to and from the project access driveway. The turning plans were developed to disclose the anticipated footprints of incoming and outgoing trucks and to help develop any needed traffic enhancement and countermeasures to facilitate truck turning movements. The truck turning plan is provided in Appendix B of the project traffic assessment (please refer to Attachment I of this EIR). As shown in the plan, inbound trucks will execute a 90-degree turn from eastbound SR 58 to enter the project area, while exiting loaded truck traffic will safely merge into westbound SR 58 using the existing paved shoulder as an acceleration lane. The project shall incorporate this plan as a required element. **T-2 Traffic Control Measures:** The applicant shall develop and implement a project-specific traffic control and monitoring plan consistent with the size and scope of the project activity designed to minimize potential impacts to traffic flow. As feasible, proposed measures are required to include but are not limited to the following: • Use proper signs and traffic control measures in accordance with Caltrans and San Luis Obispo County requirements. All traffic signs, equipment, and control measures shall conform to the provisions specified in the Caltrans Manual of Uniform Traffic Control Device. Specific jurisdictional requirements will be identified during the plan review and approval process. • Deployment of flag persons to provide temporary traffic control, facilitate vehicle egress/ingress and assignment of roadway right-of-way during Project hauling operating hours. • Limit vehicular traffic to designated access roads, construction laydown and worker parking areas, and the Project Area. • Provide pre-construction orientation and briefing to Project workers and contractors on the desired Project access route and traffic safety measures.	Temporary construction-phase traffic impacts will be reduced to less than significant levels upon implementation of required mitigation measures.

Table ES-5: Summary of Significant but Mitigable Impacts, Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measures	Significance After Mitigation
Class II: Significant but Mitigable Impacts		
	• Encourage Project worker carpooling to minimize drive-alone worker trips. The proposed Traffic Control Plan is provided in Appendix C of the traffic assessment (please refer to Attachment I of this EIR). The Traffic Control Plan shall be incorporated into the project and shall be subject to Caltrans review prior to issuance of an Encroachment Permit.	

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
AESTHETICS		
Impacts to Visual Resources. With respect to the proposed remediation activities, project excavation will be performed within the boundaries of the Santa Margarita Ranch and will not be visible to surrounding public areas. Regarding visual impact to scenic resources, it is important to note that, according to County Ordinance 22.05.030(d)(3), a grading permit may be issued only where the Building Official first finds, where applicable, that: "The proposed grading will not create substantial adverse long-term visual effect visible from off-site." Based on the nature of the temporary construction activities, the absence of any proposed development, and the implementation of the County's LUO, LUE and General Plan, impacts to aesthetic resources and impacts related to glare and nighttime lighting are expected to be less than significant.	None required.	Less than significant.
AGRICULTURE and FORESTRY RESOURCES		
Impacts to Agricultural Resources. No "Prime Farmland", "Unique Farmland", or "Farmland of Statewide Importance", as mapped by the State Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, will be affected by the proposed temporary remediation project. Additionally, due to its temporary nature, the proposed remediation project would not directly or indirectly affect the existing cattle grazing immediately surrounding the project area. The agricultural operations associated with the Ranch would remain available during and after project implementation. The temporary nature of proposed project-related work in the Eastern and Western Remediation	None required	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
Areas would not directly or indirectly affect the existing cattle grazing immediately surrounding the project area, which is designated "Agriculture", by the County General Plan [Framework for Planning (Inland)]. No "forest land", "timberland", or "timberland zoned Timberland Production", as defined, is affected by the project. Therefore, this issue does not apply to the Project. As such, impacts are determined to be less than significant.		
AIR QUALITY		
Impacts Related to Conflicting With or Obstructing the Clean Air Plan. The proposed remediation project would be limited to temporary construction activities and would not result in operational activities, population, or vehicle trips beyond those considered in the Clean Air Plan. In addition, consistent with statewide regulations such as the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, project contractors are required limit idling time and reduce associated emissions and the project would be subject to fugitive dust control practices to further reduce fugitive dust emissions consistent with APCD Rule 401, Visible Emissions, Rule 402, Nuisance, and Rule 403, Particulate Matter Emission Standards. As such, impacts related to the potential for conflicting with or obstructing implementation of the Clean Air Plan are considered less than significant.	None required.	Less than significant.
Impacts Related to Exposing Sensitive Receptors to Hazardous Emissions. Construction activities would not be anticipated to expose sensitive receptors (residences and event attendees) to substantial TAC concentrations. In addition, with the implementation of required mitigation measures for	None required outside of those listed above.	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
construction phase air quality emissions, including the proposed construction schedule and overall distance to the nearest residences, impacts to sensitive receptors are considered less than significant.		
Impacts Related to the Potential for Exposure to Odors. Potential odors would be temporary and localized to the project area and the nearest receptors are located over 1,800 feet away. Therefore, the proposed remediation project would result in less than significant impacts related to emissions such as those leading to odors.	None required.	Less than significant.
BIOLOGICAL RESOURCES		
Impacts to Special Status Plant Communities and Wildlife Habitats. The proposed remediation project will avoid any tree removal and associated impacts to special status plant communities. Impacts to each of the special status plant communities and wildlife habitats listed below are considered less than significant: • California Sycamore Woodland; • Valley Oak Woodland; • Red Willow-Black Walnut Mixed Riparian Woodland; • Seasonal Wetlands	None required.	Less than significant.
CULTURAL and TRIBAL CULTURAL RESOURCES		
Impact CTR-1 Implementation of the proposed Phillips 66 Santa Margarita Remediation Project could cause a substantial adverse change in the significance of a historical resource which is either listed or eligible for listing on the National Register of Historic Places, the California Register of Historic Resources, or a local register of historic resources. This impact is considered to be Class III, less than significant.	None required.	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
ENERGY		
Impacts Related to Energy Use. The proposed remediation project will incorporate several measures to reduce emissions during short-term construction activities. In turn, these measures will result in fuel efficiencies. For example, heavy equipment will be outfitted to meet current emissions standards and haul trucks will meet the CARB's emissions standards for fuel-efficient engines. In addition, the proposed remediation project will incorporate several measures to reduce emissions during short-term construction activities. In turn, these measures will result in fuel efficiencies. Impacts related to energy use are considered less than significant.	None required.	Less than significant.
GEOLOGY and SOILS		
Impacts Related to Faulting or Ground Rupture. Several fault zones are located in the vicinity of the Remediation Project Area, including the Nacimiento Fault Zone and the Rinconada Fault Zone. The Rinconada Fault is zoned as potentially active under the California Alquist-Priolo Earthquake Fault Zoning Act (California Department of Conservation, 2019). However, no permanent structures will be constructed as a result of this short-term remediation project. The Grading Permit issued by the County will meet the Land Use Ordinance such that grading will not result in adverse effects or hazards to life or property. Impacts related to faulting or ground rupture are considered less than significant.	None required.	Less than significant.
Ground Failure, Landslides and Liquefaction Impacts. With respect to ground failure, landslides and liquefaction, the proposed remediation project	None required.	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
entails excavation of impacted soil and backfilling with cement slurry or clean fill. The proposed project is limited to the temporary excavation of contaminated soils and backfilling and does not include any structural development with the potential for being impacted by landslides or liquefaction. Impacts are considered less than significant.		
Erosion, Sedimentation and Groundwater Recharge Impacts. The Grading Permit issued by the County for the proposed project will meet the Land Use Ordinance, as applicable, such that grading will not result in accelerated erosion, stream sedimentation, significantly reduced groundwater recharge or other adverse effects or hazards to life or property. BMP implementation discussed above under Section III, Air Quality, will further reduce impacts related to erosion and sedimentation. Impacts related to erosion, sedimentation and groundwater recharge are considered less than significant.	None required.	Less than significant.
Paleontological Resource Impacts. With respect to paleontological resources, these resources have been identified within certain geologic formations within the Santa Margarita Ranch. Such resources have not been found within the proposed project disturbance area and are generally found within bedrock (Rincon Consultants, Inc. 2008). The proposed remediation project and excavations are limited to soil and will not excavate into bedrock. Therefore, the probability of encountering paleontological resources is considered low and impacts are considered less than significant.	None required.	Less than significant.
GREENHOUSE GAS EMISSIONS		
Impacts Related to Greenhouse	None required outside of those listed under Section	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
Gas Emissions. Remediation activities of the proposed project would generate a maximum of approximately 1,697 MT CO_2e, or 68 MT CO_2e, when amortized over 25 years. These emissions were quantified at the request of the APCD. However, the APCD considers the proposed remediation project to be limited to "construction" and as such, a numerical GHG threshold does not apply to this short-term construction-only project. Accordingly, the proposed project will not conflict with any stated policies related to Greenhouse Gases in the SLO County APCD CEQA Air Quality Handbook. Impacts related to GHG emissions are considered less than significant with the implementation of the mitigation measures listed under Section III, Air Quality.	III, Air Quality.	
HAZARDS and HAZARDOUS MATERIALS		
Impacts Related to Public and Environmental Hazards, Accidental Upset, Previously Documented Hazardous Materials Sites, Airport Safety, Fire Safety and Adoption of Emergency Response. Impacts related to public and environmental hazards, accidental upset, location of previously documented hazardous materials sites, airport safety, fire safety and adoption of emergency response plans are expected to be less than significant. In addition to the fact that the project consists of the cleanup and remediation of hazardous materials and the temporary nature of project activities, impacts related to hazardous materials are considered less than significant.	None required.	Less than significant.
HYDROLOGY AND WATER QUALITY		
Water Quality, Waste Discharge and Groundwater Supply Impacts. Impacts related to water	None required outside of measures listed under Section VII, Geology and Soils and implementation of the CAP/CAP Addendum and SWPPP.	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
quality standards, waste discharge, and groundwater supplies are considered less than significant with the implementation of the project CAP and CAP Addendum, SWPPP, and the mitigation measure GEO-2 discussed under Section VIII, Geology and Soils, as a requirement to ensure slope stability.		
Impacts Related to a Change in Long-Term Drainage Patterns, Soil Absorption, or Surface Runoff. Project excavation activity will result in short-term potential for off-site sedimentation/erosion. The proposed project includes implementation of a SWPPP with BMPs to avoid off-site sedimentation or erosion. Final grade contours will be replaced to pre-project conditions using clean fill and seedbank materials as part of restoration activities. Impacts related to a change in long-term drainage patterns, soil absorption, or surface runoff are considered less than significant with required SWPPP implementation.	None required with implementation of the required SWPPP.	Less than significant.
Impacts Related to Flood Hazards and Risk of Release Due to Inundation Impacts related to flood hazards and risk of release due to project inundation are considered less than significant with the implementation of the project CAP and CAP Addendum, SWPPP, and required mitigation measure GEO-2 under Section VIII, Geology and Soils, as a requirement to ensure slope stability. In addition, the project would not conflict with or obstruct a water quality control plan since the CAP and CAP Addendum has been reviewed by and approved by the Regional Board.	None required.	Less than significant.
LAND USE and PLANNING		

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
Impacts Related to Development with the Potential to Divide the Community. The unincorporated community of Santa Margarita is located south of the project area, where the closest residences are located approximately 2,500 to 3,000 feet south of the excavation locations, with a single-family residence located approximately 1,500 feet north of the Eastern Remediation Area. The proposed remediation activities are short-term and impacts related to development with the potential to divide the community are considered less than significant.	None required.	Less than significant.
Impacts Related to Conflicts with the Coastal Zone, Consistency with the Clean Air Plan and Land Use. The proposed project is not located within the Coastal Zone. Consistency with the Clean Air Plan adopted by the SLOAPCD is addressed above in Section III, Air Quality. As described throughout this analysis, the proposed remediation project includes various design features and mitigation measures. Implementation of these design features and mitigation measures, including consistency with the County's General Plan and Land Use Ordinance will ensure that the project is consistent with the governing land use authority documents. Land use impacts are considered less than significant.	None required.	Less than significant.
MINERAL RESOURCES		
Impacts Related to the Loss of Availability of Mineral Resources and Availability of Locally Important Mineral Resources. The proposed project is limited to the excavation of hydrocarbon-impacted soil and replacement with clean soil within an established easement on the Santa Margarita Ranch. The project is considered to be temporary in nature and no physical development is proposed	None required.	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
that would impact future mineral extraction. This impact is considered to be less than significant.		
NOISE		
Operational Noise and Ground Vibration Impacts. Construction activities are short-term and are expected to last for 6-months with an estimated kick-off on April 21, 2021. No long-term operational noise or ground vibration would occur as a result of the project.	None required.	Less than significant.
Noise Impacts to Sensitive Receptors. The operation of heavy equipment during construction activities would result in temporary increases in noise in the immediate vicinity of the site. However, this would be a temporary activity and would not impact sensitive receptors in the long term. Excavation will be conducted within the boundaries of the Santa Margarita Ranch property, which has no permanent population. The excavation activities will be conducted in coordination with Santa Margarita Ranch events and agricultural operations in order to further reduce the potential for impacts to sensitive receptors, and a complaint response protocol will be established in the proposed project Construction Work Plan (CWP). San Luis Obispo County Ordinance 23.06.042(d) exempts short-term project excavations provided such activities do not take place before 7:00 AM or after 9:00 PM any day except Saturday or Sunday, or before 8:00 AM or after 5:00 PM on Saturday or Sunday. The proposed remediation project activities will all occur within the time limitations of this Ordinance. As such, noise impacts are considered less than significant.	None required.	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
POPULATION and HOUSING		
Population and Housing Demand and Potential Displacement Impacts. Project-related personnel for this short-term construction project will be primarily sourced from the project region such that commuting to the project, with periodic hoteling, is a feasible alternative to requiring temporary or new permanent housing. Workers will access the project area for excavation operations on a frequent basis during the project construction period. However, no additional roads or new infrastructure will be constructed for the proposed project. Excavation adjacent to the existing pipelines will not induce further planned housing development. Therefore, impacts related to population and housing are considered less than significant.	None required.	Less than significant.
PUBLIC SERVICES		
Impacts to Fire Protection Services. With respect to fire protection services, fire prevention measures included as part of the project will include documentation in the Updated Site-Specific Health and Safety Plan (SSHASP) (e.g., access routes). This also includes conducting a kick-off meeting and safety drill at the start of work with participation from the County Fire Department; access to on-site fire water; minimization of welding (or, if welding is necessary, conducting welding under a hot work permit and use of a fire watch). Additional precautions will be taken during potentially hazardous weather conditions. In the event of a fire, project workers will evacuate and Fire Department and other local emergency management services will be notified. Impacts are less than significant.	None required.	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
Impacts to Police Protection. As it relates to the police protection, there is no housing or permanent population existing or projected within the project area under the proposed remediation project. The Santa Margarita Ranch is gated and maintains private security which is anticipated to be adequate to address security issues during short-term excavation operations.	None required.	Less than significant.
Impacts to School Facilities. Because the project would not include any housing development or permanent population, no additional demand for school facilities will result from project implementation and the project is not expected to increase demand on local parks or other public facilities.	None required.	Less than significant.
RECREATION		
Impacts to Recreational Facilities. The proposed project is limited to the temporary remediation/excavation activities discussed throughout this document, and does not include any development. The County's Parks and Recreation Element does not identify any public trails, parks, or recreational facilities in the project vicinity. Although the Ranch hosts private events, no off-site trucking is proposed during events or on holidays, weekends or Friday afternoons. Please refer to Section XV, Public Services, for a discussion of impacts related to parks. Recreation impacts are considered less than significant.	None required.	Less than significant.
TRANSPORTATION		
Impacts Related to Project Trip Generation. The addition of "Project Scenario A-C" added traffic will not change the forecast LOS D under Baseline (2021) No	None required.	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
Project Conditions, resulting in less than significant traffic impacts for all three peak analysis hours. Based on the LOS analysis, results all proposed project timeframes (Scenarios A, B and C) are viable options and are not anticipated to create new significant traffic impacts. After the remediation activity is completed, the project area would not generate any new trips, except for the occasional maintenance trips. Therefore, no operational impacts are anticipated.		
UTILITIES and SERVICE SYSTEMS		
Impacts Related to Relocation or Construction of Water or Wastewater Infrastructure. As it relates to the proposed remediation project, there is no housing or permanent population existing or projected within the project area. As such, there is no additional demand for permanent public utilities or services and impacts are less than significant.	None required.	Less than significant.
Water Supply and Wastewater Service Impacts. Water for the Project will be obtained from the existing on-site groundwater supply wells. The proposed dust control measures would use an estimated 10,000 gallons per day during typical remediation working days over a six-month work construction period (a total of about 4 acre-feet over a sixth-month period). Small amounts of additional water will be needed for irrigation during the initial phase of revegetation in the Eastern and Western Remediation Areas. This short-term use of water for dust control and other project water needs is not anticipated to have any long-term impacts on water availability or to affect the aquifer system. The Santa Margarita Ranch is not	None required.	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
currently served by wastewater infrastructure. Existing development on the Ranch property is served by individual on-site septic systems. The proposed project will be temporary and will not have any connection to, or place any significant demand on any community wastewater treatment system. Impacts are less than significant.		
Solid Waste Generation Impacts. With respect to the generation of solid waste, representative samples of hydrocarbon-impacted soil will be collected from each proposed excavation area for waste classification purposes. The samples will be analyzed for state and federal hazardous waste characteristics, including, but not limited to toxicity, reactivity, corrosivity, and ignitability. Soil analytical reports and waste profiling forms will be submitted to an appropriately permitted recycling/disposal facility for waste acceptance. Following waste acceptance profiling, the impacted soil will be transported under hazardous waste manifest by licensed haulers. The preferred destination for transported material is the Waste Management Inc. facility in Kettleman City in western Kings County, approximately 70 miles from the project area. Other potential locations include the Clean Harbors Buttonwillow facility or the McKittrick facility in western Kern County; these facilities are located approximately 100 miles from the project area. No impacted soil will be transported to the facility until acceptance documentation has been received.	None required.	Less than significant.
WILDFIRE		
Impacts Related to Impairing an Adopted Emergency Response or Evacuation Plan. El Camino Real is	None required.	Less than significant.

Table ES-6: Less Than Significant Impacts,

Mitigation Measures and Significance After Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Class III: Less Than Significant Impacts		
an adopted emergency response route to Highway 101. Appropriate measures would be followed to avoid conflicts with emergency response activities and other potential traffic conflicts. Proposed measures include communication protocols and procedures to suspend Project-related trips during emergency situations; use of traffic control flagger when trucks are entering or leaving the project site; and halting traffic in the event of an emergency situation**.** Impacts are less than significant.		
Increased Wildfire Potential Impacts and Need for Additional Infrastructure. The proposed project is limited to temporary remediation and excavation activity. The project does not include any structural development and would not introduce population that could be potentially impacted by a wildfire. Impacts are less than significant.	None required.	Less than significant.

1.0 Introduction

This document is a Draft Environmental Impact Report ("EIR") that evaluates the potential environmental effects associated with implementation of the proposed Phillips 66 Santa Margarita Remediation Project. The Phillips 66 Santa Margarita Remediation Project ("Remediation Project" or "Project") is located on a portion of the Santa Margarita Ranch ("Ranch") in the unincorporated community of Santa Margarita, San Luis Obispo County, California. Phillips 66 Pipeline LLC, a subsidiary of project proponent and Applicant Phillips 66 Company ("Phillips 66"), currently operates two parallel 8-inch diameter petroleum pipelines and a 6-inch diameter natural gas pipeline within an easement owned by Phillips 66 that that traverses a portion of the Ranch from the eastern side of U.S. Route 101 to the Phillips 66 Pipeline Santa Margarita Pump Station located on the east side of El Camino Real.

The proposed Remediation Project entails excavation of hydrocarbon-contaminated soil at two segments of the pipeline within the Ranch. These segments are located within the areas referred to as the Western Remediation Area and Eastern Remediation Area. Collectively, the Western and Eastern Remediation Areas, together with staging and stockpile areas and access roads, are referred to as the "Project Area" or "Remediation Project Area."

The proposed Remediation Project is planned to occur over one construction period between mid-April and the end of October of 2021. Remediation activities will be implemented in accordance with the Corrective Action Plan ("CAP") and CAP Addendum 01 (Stantec, 2019 and AECOM, 2019a) that were submitted to the Central Coast Regional Water Quality Control Board ("Regional Board") and approved on September 5, 2019 (Regional Board, 2019a). Please refer to Attachment D for a copy of the Regional Board approval letter with website links to the full CAP and CAP Addendum 01.

Project access is proposed via Stagecoach Road from State Route 58, to avoid trips through the town of Santa Margarita. Existing ranch access roads and bridges will be used to access the Western and Eastern Remediation Areas; and therefore no road improvements are required for the proposed Remediation Project.

A total of eight excavations are planned to depths varying from 6 to 20 feet below ground surface (bgs) and include Excavation Areas 1 through 4B in the Western Remediation Area and Excavation Areas 5 through 8 in the Eastern Remediation Area (please refer to Attachment E, project site plans, for a detailed depiction of the proposed excavation areas). Confirmation soil samples will be collected from the excavation base and sidewalls and analyzed in accordance with the CAP and CAP Addendum 01 to confirm that the established cleanup goals have been met. Excavations will be backfilled using cement slurry beneath the pipelines and "seedbank," clean overburden soil, and clean fill. The clean fill material will be obtained from a borrow source located on the Ranch, generated under a separate project permitted by the property owner. All excavations will be restored to match pre-construction grade. The excavations will consist of approximately 83,850 cubic yards of soil removal and approximately 92,670 cubic yards of backfill including the cement slurry.

As depicted in the attached project site plans, hydrocarbon-contaminated soil will be temporarily stockpiled in the Western Remediation Area and transported to an off-site disposal facility during non-peak hours, following sampling and characterization. The Project will utilize one or a combination of three soil hauling scenarios evaluated for compliance with air quality and traffic standards. In the event of Project schedule delays, hauling of hydrocarbon-contaminated soil may cease during the rainy season and resume in 2022.

The project's background, as well as the legal basis for preparing an EIR, is described below. Additional detail regarding the project components can be found in Section 2.0, Project Description.

1.1 Purpose and Legal Authority

This EIR has been prepared in accordance with the California Environmental Quality Act ("CEQA"), the State CEQA Guidelines, and the County's CEQA Guidelines. In accordance with Section 15121 (a) of the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3), the purpose of an EIR is to:

> *"…Inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project…"*

For the proposed remediation project, the EIR will serve as a Project EIR pursuant to Section 15161 of the *CEQA Guidelines*. A Project EIR is appropriate for a specific development project, or construction activity such as the proposed project. As stated in the *CEQA Guidelines*:

> *"…this type of EIR should focus on the changes in the environment that would result from the development. The EIR shall examine all aspects of the project, including planning, construction and operation."*

This report is to serve as an informational document for the public and County of San Luis Obispo decision-makers. The process will culminate with Planning Commission and Board of Supervisors hearings to consider certification of a Final EIR and a decision whether to approve the proposed project, possibly with conditions of approval.

1.2 Scope and Content of the EIR

In accordance with the CEQA Guidelines, a Notice of Preparation ("NOP") of a Draft EIR was circulated on June 20, 2020 to potentially interested parties. The NOP, included in Attachment C, indicated that all issues on the County's environmental checklist would be discussed in the Draft EIR. These include:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

However, through the preliminary Initial Study Checklist published with the project NOP, it was determined that most of the environmental impact issue areas would remain "less than significant" or "significant but mitigable." This is due to the nature of the remediation project, which consists of short-term temporary excavation and backfill activities that will return the site to its pre-construction conditions.

Although the majority of the environmental impact issues areas would be considered "less than significant" or "significant but mitigable," the project site proposed for remediation is overlain by a known significant archaeological and tribal cultural site (please refer to Section 4.1, Cultural and Tribal Cultural Resources). Remediation activities have the potential to directly impact these resources.

As such, the focus of this EIR will be the analysis of project impacts related to cultural and tribal resources. These resources will be discussed in detail under the environmental impact assessment section of this EIR (Section 4.0), including an overview of the comprehensive archaeological studies prepared in support of the proposed project, the efforts on behalf of the County of San Luis Obispo and the project team to coordinate with local tribal representatives, and a detailed analysis of project impacts and mitigation measures to reduce impacts to the extent feasible. The remaining environmental impact analysis for the issue areas that are "less than significant" or "significant but mitigable" have been analyzed in Attachment A, Initial Study Checklist.

This EIR addresses the issues referenced above and identifies potentially significant environmental impacts, including site-specific and cumulative effects of the project in accordance with the provisions set forth in the *CEQA Guidelines*. In addition, the EIR recommends feasible mitigation measures, where possible, that would reduce or eliminate adverse environmental effects.

In preparing the EIR, use was made of pertinent County policies and guidelines, existing EIRs and background documents prepared by the County. A full reference list is contained in Section 7.0, References and Preparers, of this EIR.

The Alternatives section of the EIR was prepared in accordance with Section 15126(d) of the *CEQA Guidelines* and focuses on alternatives that are capable of eliminating or reducing significant adverse effects associated with the project while feasibly attaining most of the basic objectives of the project. In addition, the EIR identifies the "environmentally superior" alternative from the alternatives assessed. The alternatives evaluated include the CEQA-required "No Project" Alternative, and a "Mitigated Project" Alternative.

The nature of the proposed project consists of the prescribed requirements for site clean-up and remediation under the CAP, which will be implemented under the jurisdiction of the Regional Board. This includes (but is not limited to) the methods for remediation, extent of the remediation and the boundaries for excavation, testing and treatment methods, remediation goals and objectives, disposition of impacted soils, technologies utilized, criteria for successful clean-up, etc. As such, the proposed remediation project represents a multi-jurisdictional effort to establish an approved project design to ensure a successful remediation effort that meets the requirements of all applicable agencies. Therefore, the County of San Luis Obispo is limited with respect to the ability to prescribe project alternatives.

The level of detail contained throughout this EIR is consistent with the requirements of CEQA and applicable court decisions. The *CEQA Guidelines* provide the standard of adequacy on which this document is based. The Guidelines state:

> *"An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of the proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but, the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good faith effort at full disclosure."(Section 15151).*

1.3 Lead, Responsible, and Trustee Agencies

The County of San Luis Obispo is the lead Agency under CEQA for this EIR because it has primary discretionary authority to determine whether or how to approve and issue the Major Grading Permit for the Phillips 66 Santa Margarita Remediation Project.

Responsible Agencies are other agencies that are responsible for carrying out/implementing a specific component of the proposed Remediation Project or have discretionary approval over the project. Section 15381 of the State CEQA Guidelines defines a "responsible agency" as:

> *"A public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For purposes of CEQA, responsible agencies include all public agencies other than the lead agency that have discretionary approval authority over the project."*

Trustee agencies have jurisdiction over certain resources held in trust for the people of California but do not have a legal authority over approving or carrying out the project. CEQA Guidelines Section 15386 designates four agencies as Trustee Agencies: The California Department of Fish and Wildlife (CDFW) with regards to fish and wildlife, native plants designated as rare or endangered, game refuges, and ecological reserves; the State Lands Commission, with regard to state-owned "sovereign" lands, such as the beds of navigable waters and state school lands; the California Department of Parks and Recreation, with regard to units of the state park system; and, the University of California, with regard to sites within the Natural Land and Water Reserves System. The CDFW is the only trustee agency for the proposed Remediation Project.

1.4 Areas of Controversy

Pursuant to State CEQA Guidelines § 15123(b)(2), this EIR acknowledges the areas of controversy and issues to be resolved which are known to the County of San Luis Obispo or were raised during the scoping process. An NOP was circulated for a 30-day public review period that began on June 20, 2020 and ended July 22, 2020. In addition, the County included an extensive stakeholder and jurisdictional agency referral program as part of the early project application process. This included coordination with the applicant team on preparation of the technical studies prepared in support of this project, and consulting with all jurisdictional agencies (including, but not limited to, the Air Pollution Control District, California Department of Fish and Wildlife, US Fish and Wildlife Service, CalTrans, Native American Heritage Commission, and the Regional Board) throughout that process

The County and applicant team also worked cooperatively with local Native American tribal representatives in order to coordinate the details of the project archaeological testing program, disposition of sensitive cultural and tribal resources, and monitoring of all subsurface testing. Through this coordination, and as reflected in the NOP responses (please refer to Attachment C), the primary issue area with potential for significant impacts considered controversial or of primary importance to stakeholders is considered to be cultural and tribal resources, which will be the focus of this EIR. All of the other required environmental impact issue areas are analyzed under Attachment A, Initial Study Checklist.

1.5 EIR Process

The environmental review process, as required under CEQA, is summarized below.

1. **Notice of Preparation (NOP).** After deciding that an EIR is required, the lead agency must file an NOP soliciting input on the EIR scope to the State Clearinghouse, other concerned agencies, and parties previously requesting notice in writing (CEQA Guidelines Section 15082; Public Resources Code Section 21092.2). The NOP must be posted in the County Clerk's office for 30 days. For projects of regional significance, the lead agency holds a scoping meeting during the 30-day NOP review period.
2. **Draft EIR.** The Draft EIR must contain: a) table of contents or index; b) summary; c) project description; d) environmental setting; e) discussion of significant impacts (direct, indirect, cumulative, growth-inducing and unavoidable impacts); f) a discussion of alternatives; g) mitigation measures; and h) discussion of irreversible changes.
3. **Notice of Completion.** Upon completion of a Draft EIR, the lead agency must file a Notice of Completion with the State Clearinghouse and prepare a Public Notice of Availability of a Draft EIR. The lead agency must place the Notice in the County Clerk's office for 30 days (Public Resources Code Section 21092) and send a copy of the Notice to anyone requesting it (CEQA Guidelines Section 15087). In addition, public notice of the availability of the Draft EIR must be given through at least one

of the following procedures: a) publication in a newspaper of general circulation; b) posting on and off of the project site; or c) direct mailing to owners and occupants of contiguous properties and others who have requested such notification. The lead agency must solicit comments from the public and respond in writing to all written comments received (Public Resources Code Sections 21104 and 21253). The minimum public review period for a Draft EIR is 30 days. When a Draft EIR is sent to the State Clearinghouse for review, the public review period must be 45 days (Public Resources Code Section 21091).

4. **Final EIR.** Following the close of the Draft EIR review period, a Final EIR is prepared. The Final EIR must include: a) the Draft EIR; b) copies of comments received during public review; c) a list of persons and entities commenting; and d) responses to comments.

5. **Final EIR Certification.** Prior to making a decision on a proposed project, the lead agency must certify that: a) the Final EIR has been completed in compliance with CEQA; b) the Final EIR was presented to the decision-making body of the lead agency; and c) the decision-making body reviewed and considered the information in the Final EIR prior to approving the project (CEQA Guidelines Section 15090).

6. **Lead Agency Project Decision.** Upon certification of an EIR, the lead agency makes a decision on the project analyzed in the EIR. A lead agency may: a) disapprove a project because of its significant environmental effects; b) require changes to a project to reduce or avoid significant environmental effects; or c) approve a project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted (CEQA Guidelines Sections 15042 and 15043).

7. **Findings/Statement of Overriding Considerations.** For each significant impact of the project identified in the EIR, the lead or responsible agency must find, based on substantial evidence, that either: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible *(*CEQA Guidelines Section 15091). If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision and explaining why the project's benefits outweigh the significant environmental effects.

8. **Mitigation Monitoring/Reporting Program.** When an agency makes findings on significant effects identified in the EIR, it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.

2.0. Project Description

This section describes the components of the proposed Phillips 66 Santa Margarita Remediation Project. The project includes a request for a major grading permit (PMTG2019-00065) from the County of San Luis Obispo for the excavation of impacted soils at varying depths and widths within the two pipeline alignment areas on the approximately 20-acre remediation site situated within the 900-acre Santa Margarita Ranch, including the backfilling of the excavations and restoration of the sites to current grade, as detailed in the project CAP.

2.1. Project Location

The proposed project is located on a portion of the Santa Margarita Ranch (APN 070-091-036) (Ranch) in the unincorporated community of Santa Margarita, San Luis Obispo County, California. The entire parcel is approximately 900 acres and is located on the east side of Highway 101, within the Agriculture land use category.

In the project vicinity, residential neighborhoods are located to the south of the subject property. To the north of the site is the residential community of Garden Farms. To the east of the site is El Camino Real and the active Phillips 66 Pipeline Company LLC (Phillips 66) Santa Margarita Pump Station. U.S. Highway 101 passes along the western boundary of the site with rural or undeveloped properties across the highway from the site.

Phillips 66 currently operates two parallel 8-inch diameter petroleum pipelines which traverse a portion of the site from the eastern side of Highway 101 to the Phillips 66 Pipeline Santa Margarita Pump Station located on the east side of El Camino Real. A 6-inch diameter natural gas pipeline owned and operated by Phillips 66 is also present within the pipeline easement. Please refer to Figure 1, Project Location Map, for additional details.

The pipeline alignment extends across the site for a distance of approximately 1.8 miles, crossing Santa Margarita Creek, Yerba Buena Creek, and an unnamed tributary, in addition to smaller drainage features. Santa Margarita Creek, a seasonal tributary to the Salinas River, flows across the southern portion of the site in an easterly direction. The creek then turns generally northerly, flowing through the remainder of the site.

Average surface elevations along the pipeline corridor from north to south range between approximately 975 feet above mean sea level (msl) in the floodplain areas near Yerba Buena and Santa Margarita Creeks, to approximately 1,000 feet msl in the terrace area that contains the historic ranch headquarters structures, and finally to an elevation of 1,090 feet msl in the hilly areas near Highway 101.

Hydrocarbon-contaminated soils have been identified within the pipeline alignment at two locations on the Santa Margarita Ranch. The proposed project entails excavation of impacted soils at two distinct segments of the pipeline alignment within the property. These segments are referred to as the Western Remediation Area and the Eastern Remediation Area. Work activities will occur on approximately 20 acres of the Ranch, including use of existing ranch access roads to the Western and Eastern Remediation Areas. Of this area, excavation will occur over a combined area of approximately 4.3 acres, and the remaining project work areas will be used for staging and access.

Western Remediation Area

The Western Remediation Area is an approximately 750-foot segment of the pipeline alignment located on undeveloped pasture land in the southwestern portion of the property. The site is located approximately 1,000 feet east of Highway 101, and approximately 2,700 feet northwest of Highway 58 (El Camino Real) where the road traverses the western portion of the community of Santa Margarita. The width of the work site, including excavation areas and staging, varies from approximately 150 feet at the eastern end to less than 50 feet in the middle section (please refer to Figure 3, Western Excavation Area). The disturbance footprint for remedial activities is approximately 2 acres, including staging. The site is level at approximately 1,000 feet msl in the eastern portion and then gradually slopes to an elevation of approximately 1,100 feet msl in the eastern portion. Little Tassajara Creek,

an intermittent tributary to Santa Margarita Creek flows in an east-west direction through the Western Remediation Area. Excavation activity will avoid creek resources and tree removal.

Eastern Remediation Area

The Eastern Remediation Area is an approximately 1,500-foot segment of the pipeline alignment located in the central portion of the property (please refer to Figure 4, Eastern Excavation Area). The alignment traverses a corral and is in proximity to existing ranch structures. The eastern end of the segment is located near the top of the western bank of Santa Margarita Creek. The site is approximately 1,900 feet west of El Camino Real, north of Santa Margarita. The width of the excavation area varies from approximately 250 feet at the northeastern end to less than 100 feet in the southwestern section. The disturbance footprint for remedial activities is approximately 3 acres, including excavation areas and staging. The site is on level land at an elevation of approximately 1,000 feet above msl. Limited tree pruning or removal may be required in the developed areas of the ranch central event area (no native tree species would be removed). Excavation activity will avoid creek resources.

2.2. Project Applicant

The applicant for the proposed remediation project is:

Phillips 66 Pipeline Company, LLC
Remediation Management
Contact: Mr. Edward Ralston, Program Manager
76 Broadway
Sacramento, CA 95818

In addition to the applicant, the proposed remediation project technical team is managed by Mr. Olegario Acosta (AECOM, Inc.). The subject property is owned by Mr. Rob Rossi.

2.3. Project Background

The purpose of the project is to implement remedial actions at the subject sites in accordance with a CAP and CAP Addendum 01, as approved by the Regional Board.

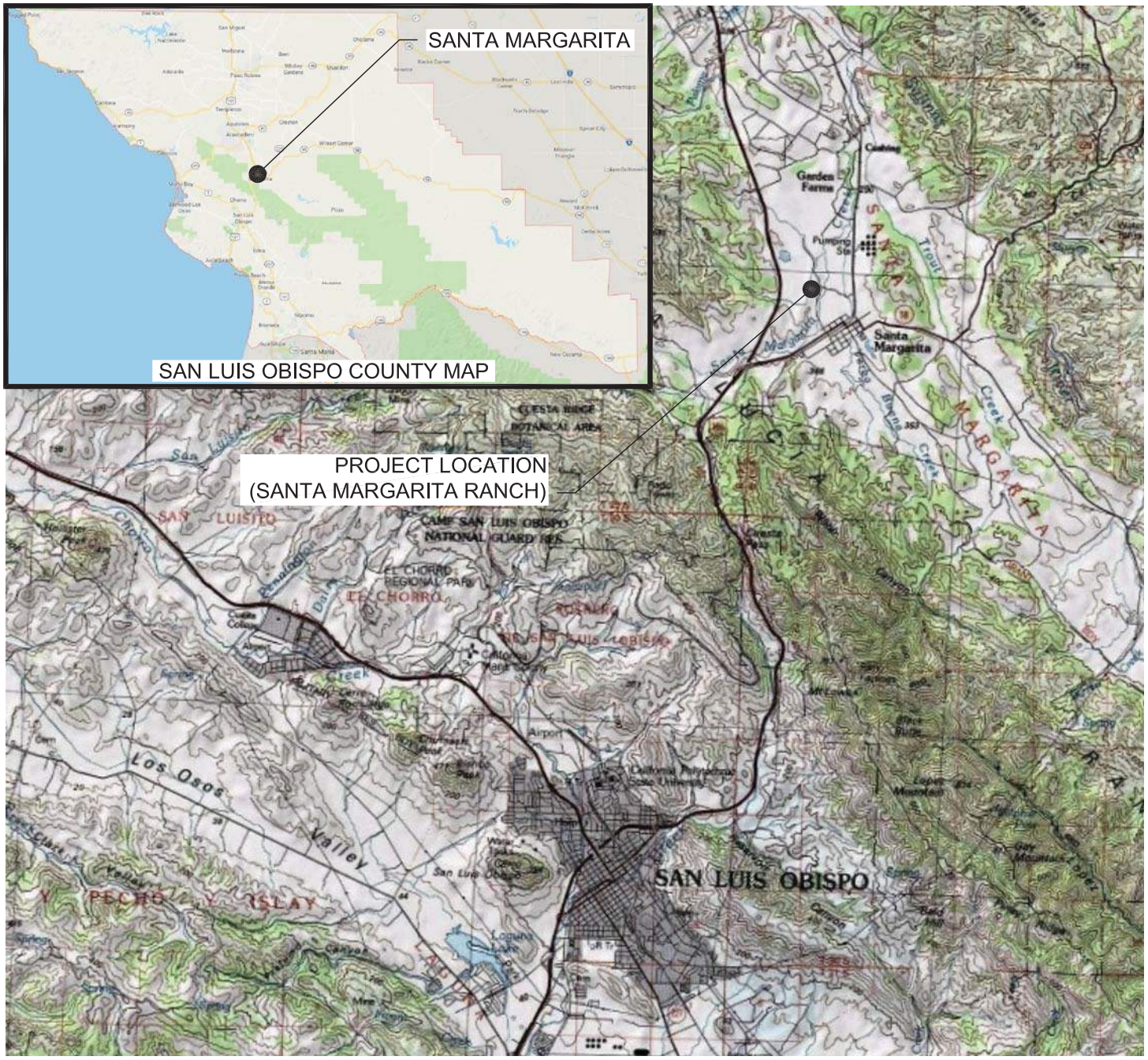
As discussed in the project CAP, the original study of the project site contamination was initiated during pipeline removal activities in 1994. At the time, the previous easement owners collected soil samples beneath the removed pipelines, some of which contained detectable concentrations of total extractable petroleum hydrocarbons (TEPH). Soil samples did not contain detectable levels of benzene or toluene, and ethylbenzene and xylenes (BTEX) were only detected in two soil samples.

As a result of the soil sampling in 1994, 13 individual areas of petroleum impacts at the site were identified and numbered in the order in which impacts were found. One of the smaller areas of potential impact, Site 21, was originally identified by a single soil sample in 1994. Three subsequent borings advanced at Site 21 did not identify impacts to soil. Therefore, there are now considered to be 12, rather than 13, areas of hydrocarbon impacted soil along the pipelines.

Subsequent to the initial site testing, a series of additional studies and extensive testing was initiated in order to inform the remediation program for the identified release. This includes subsurface investigations and soil borings in 1996 and in 1999, supplemental site-specific investigations to evaluate impacts to groundwater and to characterize separate phase hydrocarbon (“SPH) encountered on groundwater in 2006, aquifer testing in 2009, site-wide soils assessment and additional soil borings in 2012 and again in 2013-2014, soil vapor surveys and risk evaluations in 2015 and 2017, and geophysical investigations to develop an image of the SPH plume in association

Last saved by: CONNELLYJ1(2020-03-17) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\CEQA\60592267-SMME CEQA-FIG01-PROJ LOC MAP.DWG

ANSI A 8.5" x 11"



Source: USA Topo Maps ©2013, National Geographic Society, Contour Interval = 10'

Santa Margarita
Remediation Project
Phillips 66 - 76 Broadway - Sacramento, CA 95818
Project No.: 60592267 Date: April 2020

PROJECT LOCATION MAP

AECOM

Figure: 1

with bedrock characteristics in 2016. This also included interim remedial actions and monitoring efforts, including manual SPH recovery and testing from 2006 to 2009, weekly SPH recovery from on-site monitoring/recovery wells in 2013, vacuum enhanced recovery evaluations in 2014, and extensive groundwater and surface water monitoring beginning in 2013. These efforts culminated in the preparation of the CAP that was approved by the Regional Board, which outlines the proposed remediation project goals, objectives and methods.

The primary activity entails excavation of impacted soils at varying depths and widths within the two-pipeline alignments and restoration to current grade.

2.3.1. Source Characterization

Given the long history of pipeline operations, release of crude oil or semi-refined petroleum products may have occurred at different times and locations within the known investigation areas.

Based on site assessment data, constituents of concern ("COC") at the site include the chemical components of crude oil and semi-refined products such as gas-oil and naphtha, manifested primarily as TPH in the carbon range of C4 to C40. A discussion of potential and known COCs at the Project is provided below.

Total Petroleum Hydrocarbons

During the 2012 site-wide assessment alone, more than 1,800 soil samples were analyzed for full range TPH (carbon range C4 to C40). In soil, the dominant TPH fraction present is within the oil range (TPHo, carbon range C23-C40). However, many of the samples that contained elevated TPHo also exhibited equal to sub-equal concentrations of diesel range hydrocarbons (TPHd, carbon range C13-C22). At least 20 soil samples exhibited TPHd values which exceeded the corresponding TPHo concentration limit.

TPHg (carbon range C4-C12) have generally been reported at low concentrations. However, in 2012, five soil samples (four of which were from Site 11) exceeded the concentration limit for TPHg. The maximum reported TPHg value was 15,000 mg/kg in a sample from Site 11, which exceeded both of the corresponding TPHd and TPHo fractions.

In groundwater, TPH is also dominated by diesel and oil range hydrocarbons. In samples containing high concentrations of TPH, the diesel fraction commonly exceeds the oil fraction, likely reflecting the lower solubility of the higher molecular weight (oil range) hydrocarbons. Groundwater monitoring data from 1999 through 2016 indicates that TPHg has only been detected in one or more samples at Site 2 and Site 11. The highest reported TPHg concentration was 460 micrograms per liter (ug/l) in Site 11 groundwater. Please refer to the project CAP and CAP Addendum (website links for full CAP and CAP Addendum included in Attachment D) for a discussion of groundwater monitoring efforts.

Hydrocarbon characterization analysis of SPH collected from Site 11 indicates that C6-C12 compounds make up 13% of the hydrocarbons by weight and that C13-C26 hydrocarbons account for 26% of the total by weight. Analysis of SPH from Site 5 indicates a heavier hydrocarbon product, with only 3.2% by weight of lighter end compounds within the C6-C12 range.

Volatile Organic Compounds

Numerous soil and groundwater samples have been analyzed for BTEX and selected samples have been analyzed for the full list VOCs according to the California State Water Board. Of the BTEX constituents, benzene was detected in soil in only three of more than 1,800 samples analyzed in 2012. The detectable benzene concentrations were all from Site 11 soils, with a maximum reported value of 11 mg/kg. Groundwater monitoring data from 1999-2014 indicates that benzene was reported at concentrations greater than 1.0 ug/l in two groundwater samples, both from Site 1.

Previous analysis of full-list VOCs has primarily been limited to groundwater samples. In January 2014, VOCs were analyzed in groundwater samples collected from selected wells at Site 3, Site 5, and Site 12. VOCs were not reported in the groundwater from Sites 3 and 5, however, one well at Site 12 exhibited isopropylbenzene (18 ug/l), sec-butylbenzene (4.9 ug/l) and naphthalene reported at 35 ug/l.

Based on the analytical data and the lack of known or documented chlorinated solvent use or in conjunction with the petroleum pipelines, chlorinated VOCs are not considered as site-specific COCs.

Polynuclear Aromatic Hydrocarbons

During the 1999 assessment, soil samples from various sites were analyzed for PAH. The PAH compounds detected, and maximum reported concentrations in soil included fluorene at 6.9 mg/kg, 2-methylnaphthalene at 54 mg/kg, naphthalene at 22 mg/kg, and phenanthrene at 13 mg/kg.

Groundwater samples collected during annual groundwater monitoring between 1999 and 2010 were analyzed for PAH which were seldom detected. Groundwater samples collected in 2008 contained several PAH compounds, all at individual concentrations less than 1.0 ug/l. A groundwater sample from a newly constructed monitoring well at Site 12 in 2014 contained acenapthene (1.2 ug/l), acenaphthylene (0.24 ug/l), fluorene (3.3 ug/l), naphthalene (24 ug/l), and phenanthrene (1.3 ug/l).

Metals

24 soil samples collected at several investigation sites along the pipelines were analyzed for California regulated (Title 22) metals.

Arsenic was reported in the majority of the soil samples at concentrations exceeding the Tier 1 Environmental Screening Levels (ESLs). However, elevated background levels of arsenic are well documented in California soils, and the maximum arsenic detection (9.7 mg/kg) at the site is not significantly beyond the upper range of reported background levels for arsenic.

Nickel was reported in 10 soil samples above the current Tier 1 ESL of 86 mg/kg. Locally, soils derived in part from erosion of Franciscan formation ultramafic rocks are known to display elevated levels of nickel. The maximum nickel value reported in site soil was 200 mg/kg.

Based on the analytical data, metals are not considered a COC in connection with hydrocarbon releases for historical petroleum pipelines at the site.

Hazardous Waste Characteristics

Samples of investigation-derived soil and groundwater have been analyzed for hazardous waste characteristics for handling and disposal purposes. Soil and groundwater residual wastes have been characterized as non-hazardous. Based on results for flashpoint, SPH from Site 11 was previously determined to represent a hazardous waste.

2.4. Project Description

As discussed above, the purpose of the project is to implement remedial actions at the subject sites in accordance with the CAP and CAP Addendum, as approved by the Regional Board. Please refer to Exhibit B, Project Figures, for a detailed depiction of the project location, overall site plan, and the Western and Eastern Excavation Areas.

The primary activity entails excavation of hydrocarbon-contaminated soils at varying depths and widths within the two pipeline alignment areas as detailed in the CAP, and then backfilling of the excavations and restoration of the sites to current grade.

A total volume of 83,851 cubic yards of excavation are planned, as follows:

- 57,153 cubic yards of anticipated impacted soils
- 1,429 cubic yards of over-excavation contingency
- 22,219 cubic yards of clean overburden
- 3,050 cubic yards of anticipated seedbank (top 6-inches of surface soils)

The 1,429 cubic yards of over-excavation contingency are planned in the event that additional unanticipated impacted soils are encountered. The contingency volume is 2.5% of the anticipated volume of impacted soils.

A total volume of 92,670 cubic yards of backfill are planned, as follows:

- 14,885 cubic yards of slurry cement
- 52,516 bulk cubic yards of clean fill material from an the borrow source; this volume accounts for an additional 20% of fill material for compaction;
- 22,219 cubic yards of clean overburden which will be tested prior to use; and
- 3,050 cubic yards of clean segregated seedbank (top 6-inches of surface soil from the excavations).

Remedial Excavation

Impacted soil is proposed to be excavated to the prescribed depth, varying from 6 – 20 feet below ground surface or to the point of contact with shallow bedrock at each remediation area. The excavation process will entail several excavation techniques designed to protect and maintain structural integrity of the existing oil and gas pipelines which will remain active during remediation project activities.

Conventional excavation techniques are proposed in the Western and Eastern Remediation Areas outside of the pipeline easement to excavate to the proposed depths. The same techniques will also be used outside of a 2-foot radius safety buffer around the pipelines. Conventional excavation techniques utilize standard earth moving equipment such as an excavator, backhoe, or dozer.

Suction excavation is proposed for the Western and Eastern Remediation Areas to expose the pipelines as a safety measure to prevent inadvertently striking and breaching the pipelines with mechanical equipment. Suction excavation is similar to hydro-excavating or air-knifing but on a larger scale. Suction excavation utilizes high pressure dry air to break up the soil while vacuuming the loose soil into a seal-tight compartment. Suction excavation is considered a soft-dig technique and safe alternative to hand-digging of impacted soils adjacent to the pipelines.

Slot trenching is proposed along the pipeline easement to removed impacted soils beneath the pipelines. Slot trenching addresses the safety concerns associated with excavating along and beneath active pipelines where the span of the exposed pipelines will be greater than 15 feet and proposed excavation depth is greater than 10 feet (i.e. sections of Excavation 5 and all of Excavation 8). Slot trenching consists of excavating sets of 15 - 25-foot wide trenches perpendicular to the pipeline alignment at forty-five (45) linear foot intervals using a telescoping excavator. The telescoping excavator starts removing soil from underneath the pipelines allowing impacted soils around the active pipelines to fall into the trench for removal. The slot trenches are immediately backfilled with cement slurry. Once the slurry cures in the first set of slot trenches, a second set of slot trenches are installed adjacent to the first set of trenches in a "hopscotching" fashion. This method of “hopscotching” slot trenches allows for maximizing the span of the exposed pipelines while excavating beneath the pipelines and maintaining lateral and vertical support. The process of slot trenching is repeated until all the impacted soils beneath the pipelines are removed to the proposed depth. This technique is a safe alternative to using mechanical equipment to excavate around the pipelines and inadvertently striking the pipelines.

Dewatering

To minimize the accumulation of groundwater during excavation activities and the need for dewatering efforts, all excavations are proposed to be backfilled in a timely manner following collection of confirmation soil samples.

Last saved by: CONNELLYJ1(2020-04-03) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\CEQA\60592267-SMME CEQA-FIG02-SITE PLAN.DWG

ANSI B 11" x 17"

LEGEND

- PROPERTY LINE
- PHILLIPS 66 PIPELINES (3)
- LIMITS OF PROJECT WORK AREA
- EXISTING RANCH ACCESS ROAD

NOTES

1. WETLANDS AND OAK TREES WITHIN 10 FEET OF THE RANCH ACCESS ROADS TO BE USED BY THE PROJECT SHALL BE PROTECTED WITH ORANGE CONSTRUCTION FENCING OR OTHER BARRIER (TYPICAL SHOWN ON FIGURE, TO BE FIELD DETERMINED). OAK TREES WITHIN WORK AREAS ENCLOSED BY ERTEC FENCING SHALL BE PROTECTED WITH ORANGE CONSTRUCTION FENCING AT THE DRIPLINE.
2. RESERVOIRS PROJECT CONSTRUCTED BY LAND OWNER UNDER SEPARATE PERMIT (PMTG2016-00320) AND FOR SEPARATE PURPOSE WITH INDEPENDENT UTILITY.
3. SPAN BRIDGE PROJECT CONSTRUCTED BY LAND OWNER UNDER SEPARATE PERMIT (PERMIT #PMTG2019-00057) AND FOR SEPARATE PURPOSE WITH INDEPENDENT UTILITY.
4. THE AERIAL PHOTOS IN THESE DRAWINGS ARE PLACED FOR DIAGRAMMATIC PURPOSES ONLY AND ARE NOT INTENDED OR INFERRED TO AS BEING AN ACTUAL REPRESENTATION OF THE TRUE POSITIONS OF THE FEATURES THAT ARE SHOWN HEREIN. ANY DESIGN OR REFERENCE TO THE FEATURES AS SHOWN ON THESE DRAWINGS MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION OR DESIGN.

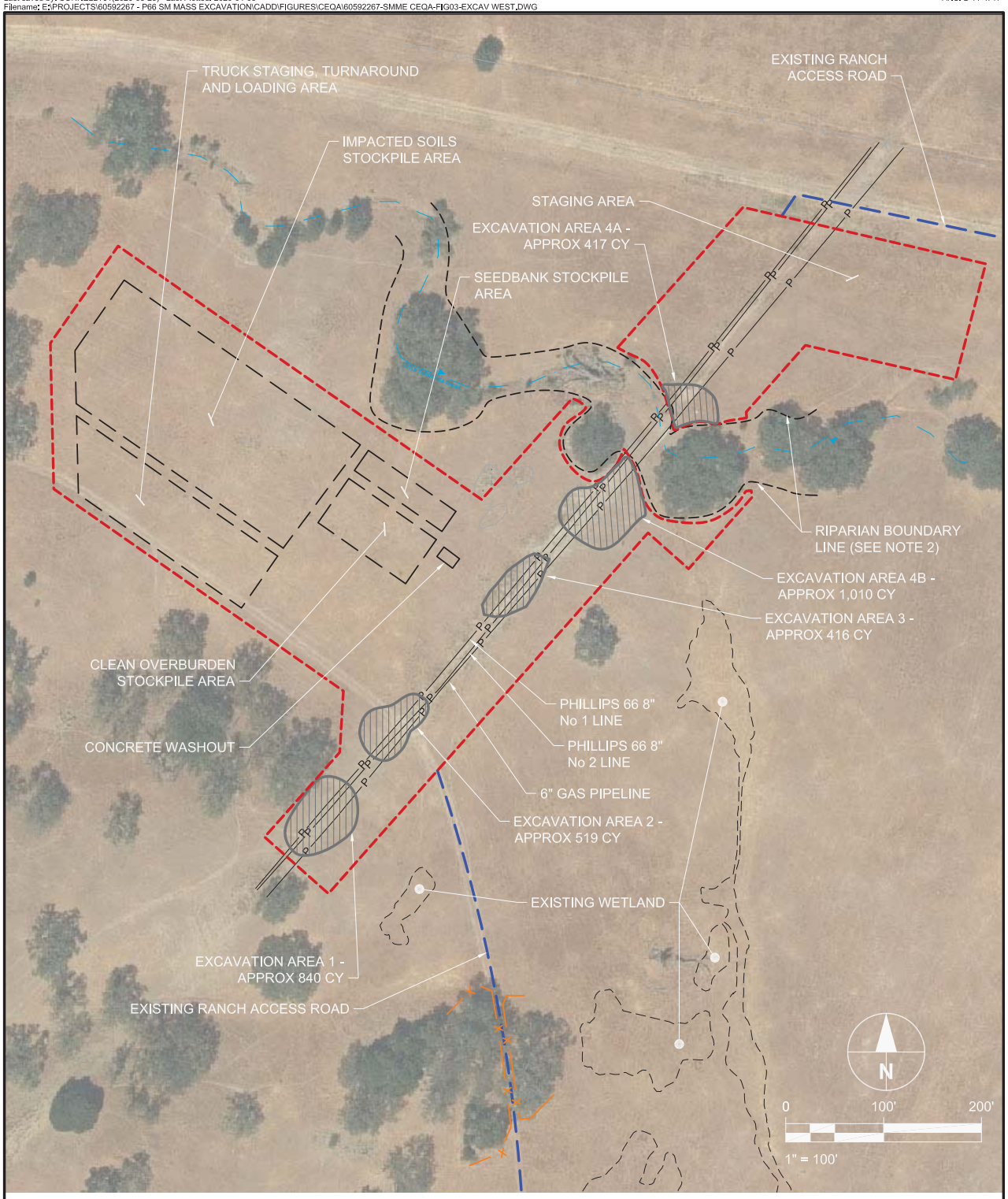
Santa Margarita
Remediation Project
Phillips 66 - 76 Broadway - Sacramento, CA 95818
Project No.: 60592267 Date: April 2020

OVERALL SITE PLAN

AECOM

Figure: 2

Last saved by: CONNELLYJ1(2020-03-26) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\CEQA\60592267-SMME CEQA-FIG03-EXCAV WEST.DWG
ANSI B 11" x 17"



LEGEND

- LIMITS OF PROJECT WORK AREA (ENCLOSED WITH ERTEC WILDLIFE EXCLUSION FENCING)
- LIMITS OF SOIL REMEDIATION AREA
- CONSTRUCTION SAFETY FENCING (VEGETATION BARRIER)
- EXISTING RANCH ACCESS ROAD
- RIVER/STREAM
- PIPELINE

NOTES

1. TOTAL VOLUME IS EXCAVATION VOLUME PLUS 2.5%.
2. ERTEC WILDLIFE EXCLUSION FENCE WILL HAVE A 5-FOOT OFFSET FROM TOP OF BANK/RIPARIAN BOUNDARY LINE.
3. THE AERIAL PHOTOS IN THESE DRAWINGS ARE PLACED FOR DIAGRAMMATIC PURPOSES ONLY AND ARE NOT INTENDED OR INFERRED TO AS BEING AN ACTUAL REPRESENTATION OF THE TRUE POSITIONS OF THE FEATURES THAT ARE SHOWN HEREIN. ANY DESIGN OR REFERENCE TO THE FEATURES AS SHOWN ON THESE DRAWINGS MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION OR DESIGN.

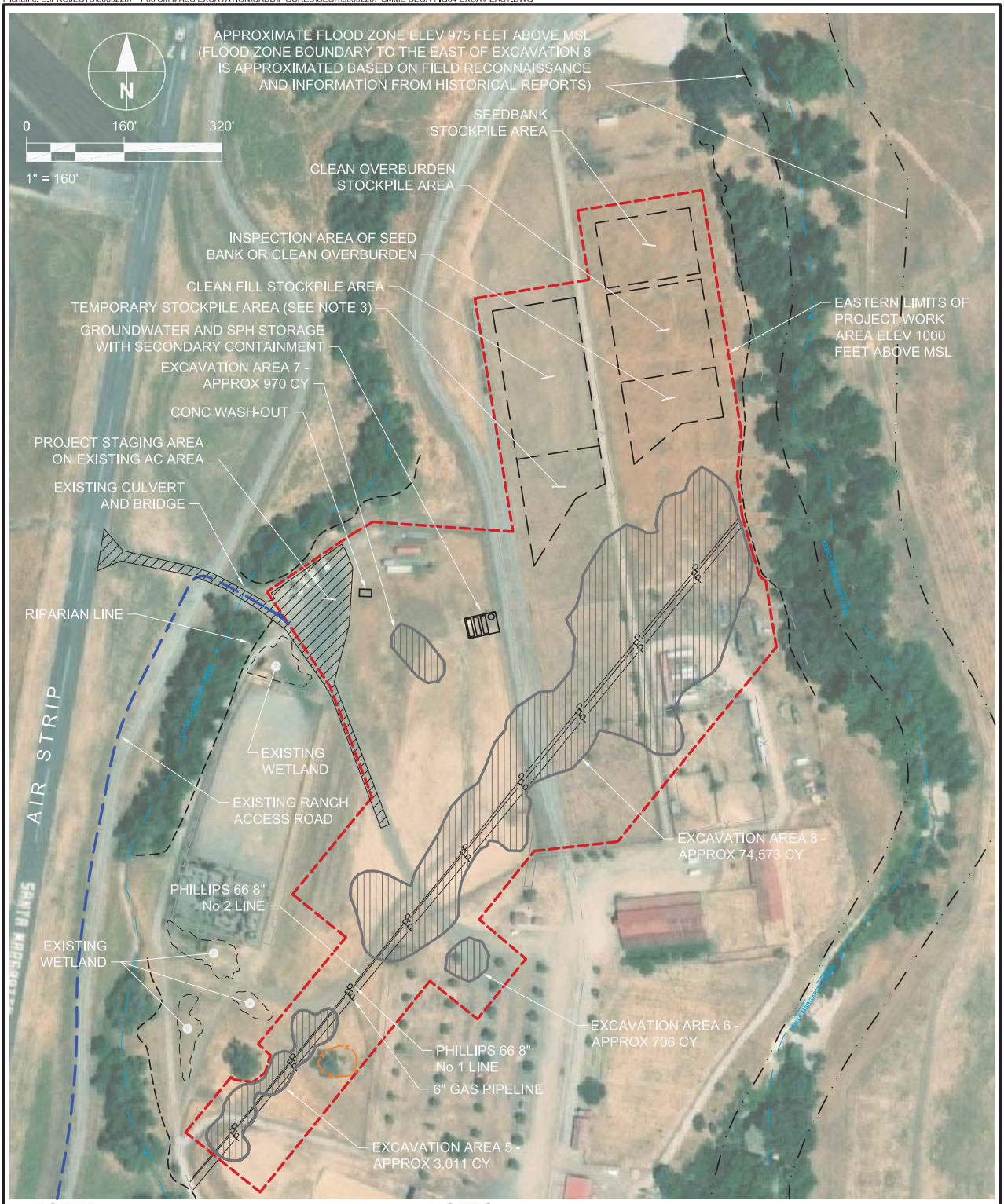
Santa Margarita Remediation Project
Phillips 66 - 76 Broadway - Sacramento, CA 95818
Project No.: 60592267 Date: April 2020

CONCEPTUAL REMEDIAL EXCAVATIONS
WESTERN EXCAVATION AREA

AECOM

Figure: 3

Last saved by: CONNELLYJ1(2020-04-06) Last Plotted: 2020-04-06
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\CEQA\60592267-SMME CEQA-FIG04-EXCAV EAST.DWG
ANSI B 11" x 17"



LEGEND

- LIMITS OF PROJECT WORK AREA (ENCLOSED WITH ERTEC WILDLIFE EXCLUSION FENCING)
- LIMITS OF SOIL REMEDIATION AREA
- CONSTRUCTION SAFETY FENCING (VEGETATION BARRIER)
- EXISTING RANCH ACCESS ROAD
- RIVER/STREAM
- PIPELINE

NOTES

1. TOTAL VOLUME IS EXCAVATION VOLUME PLUS 2.5%.
2. ERTEC WILDLIFE EXCLUSION FENCE WILL HAVE A 5-FOOT OFFSET FROM TOP OF BANK/RIPARIAN BOUNDARY LINE.
3. THE TEMPORARY STOCKPILE AREA WILL BE USED TO MANAGE SOILS (AS NEEDED) PRIOR TO TRANSFERRING TO RESPECTIVE STOCKPILES. ALL IMPACTED SOIL WILL BE STOCKPILED IN THE WESTERN REMEDIATION AREA AND TRANSFERRED ROUTINELY.
4. THE AERIAL PHOTOS IN THESE DRAWINGS ARE PLACED FOR DIAGRAMMATIC PURPOSES ONLY AND ARE NOT INTENDED OR INFERRED TO AS BEING AN ACTUAL REPRESENTATION OF THE TRUE POSITIONS OF THE FEATURES THAT ARE SHOWN HEREIN. ANY DESIGN OR REFERENCE TO THE FEATURES AS SHOWN ON THESE DRAWINGS MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION OR DESIGN.

Santa Margarita Remediation Project
Phillips 66 - 76 Broadway - Sacramento, CA 95818
Project No.: 60592267 Date: April 2020

CONCEPTUAL REMEDIAL EXCAVATIONS
EASTERN EXCAVATION AREA

AECOM

Figure: 4

It is not anticipated that groundwater will be encountered for excavations ranging between 6 and 10 feet below ground surface since the depth to groundwater in the excavation areas ranges from 11 – 25 feet below ground surface.

The proposed excavation depth for two small areas of excavation (Excavation 5 and most of Excavation 8) is 15 feet below ground surface. It is anticipated that moist or lightly saturated soils may be encountered in these areas, but it is not anticipated that groundwater will accumulate, and dewatering efforts are not expected to be required since the remediation project will be implemented in the dry season when groundwater elevation is at the lower range and most likely greater than 15 feet below ground surface.

The excavation depth of the most eastern end of Excavation 8 is proposed to extend 20 feet below ground surface if shallow bedrock is not encountered. Heavily saturated soils and groundwater may be encountered in this portion of Excavation 8 and dewatering efforts may be required to facilitate removal of impacted soils to the proposed excavation depth. Measures to minimize the accumulation of groundwater will be implemented to the extent possible. However, in the event that dewatering efforts are required, submersible pumps, hoses, and fittings, or vacuum trucks will be used for dewatering. All dewatered groundwater will be stored in temporary, portable steel tanks with secondary containment and activated carbon canisters for emissions control. The recovered groundwater from dewatering will be sampled for characterization prior to transport to an approved off-site disposal facility. Excavated impacted soil that is heavily saturated will be segregated and blended with other dry impacted soils to facilitate drying prior to being transported for off-site disposal facility.

Separate Phase Hydrocarbon ("SPH") Recovery

SPH is not anticipated to be encountered during the excavation process as recoverable free product. However, it is anticipated that hydrocarbon-saturated soils may be encountered in the excavations proposed to a depth of 15 feet below ground surface or greater. If SPH free product is encountered, it is anticipated to be very limited in volume or as a layer on top of groundwater. In the event that SPH free product is encountered, it will be recovered from the excavation using appropriate technologies depending on the thickness and depth to groundwater. Recovery methods may include absorbent materials, recovery during dewatering efforts, or via use of a vacuum truck. The recovery effort will seek to maximize removal of SPH while minimizing groundwater recovery. The recovered SPH will be placed into portable steel tanks within secondary containment and activated carbon canisters for emission control. It is not anticipated that separate storage tanks will be required for SPH and dewatered groundwater.

Excavation Confirmation Soil Sampling

Once the limits of excavations have been achieved, confirmation soil samples would be collected from the sidewalls and bottom to document removal of hydrocarbon-impacted soil to the established cleanup goals in the CAP and to characterize remaining soils left in-place. Soil samples collected from the excavations will be analyzed for the following constituents:

- Total petroleum hydrocarbon (TPH) as gasoline range (TPHg), diesel range (TPHd), and oil range (TPHo); and
- Benzene, toluene, ethylbenzene and total xylenes (BTEX) and naphthalene.

Additional over-excavation may be required based on the results of the confirmation soil samples. For planning purposes, the total volume of impacted soils to be trucked off-site for disposal includes a 2.5% contingency. Confirmation sampling details including frequency, quality control, and total number of confirmation samples anticipated are provided in the CAP.

Off-site Waste Disposal

Impacted soil is proposed to be transported under hazardous waste manifest by licensed haulers to an approved and permitted recycling/disposal facility. The disposal facility will be selected prior to commencement of remediation project activities. The preferred destination for impacted soil is Waste Management Inc. in Kettleman City, located in western Kings County, approximately 70 miles from the project site. Other potential locations include the Clean

Harbors Buttonwillow facility or the McKittrick facility in western Kern County; these facilities are located approximately 100 miles from the remediation project. For evaluation of the air emissions, the Clean Harbors Buttonwillow Facility was assumed to account for the longest distance to a disposal facility.

All trucks for off-site hauling of impacted soils or other waste streams will access the remediation project via Highway 101 to Highway 58 to Stagecoach Road during non-peak hours only. Loaded trucks will travel west on Highway 58 from Stagecoach Road to Highway 101 north, to State Route 46 (Highway 46) east in Paso Robles, to State Route 41 (Highway 41) north at the James Dean Memorial Junction, to Waste Management in Kettleman City near the intersection of Highway 41 and U.S. Interstate 5 in King County.

Backfilling

The excavations are proposed to be backfilled using a combination of cement slurry, clean fill, segregated clean overburden and seedbank materials.

Backfilling outside of the pipeline easement will consist of a combination of clean fill, clean overburden, and re-spreading of the seedbank stockpile to finished grade. Clean overburden that has been inspected for sensitive cultural artifacts will be used to backfill 4 – 5 feet below top of grade. Clean fill will then be applied over the clean overburden to 6-inches below top of grade. Seedbank material will be used to backfill the top 6-inches to finished grade. Finished grade be will restore the original topography to the greatest extent possible.

Proposed Hauling Schedule

The implementation of the tasks discussed above are interdependent, the timing of which can be dependent on multiple factors. As such, the proposed trucking and hauling schedule is subject to change based on equipment availability, weather conditions, personnel shifting, etc. In order to accommodate the dynamic nature of the project and provide a hauling schedule for the required environmental impact analysis, three off-site trucking timeframes have been considered (Scenarios A, B and C) and have been adopted as part of the proposed project.

These three scenarios were evaluated in the air quality analysis and traffic assessment prepared for this project to ensure that air quality and traffic impacts remain below established thresholds to ensure that any of the potential hauling scenarios could be used in as individual schedules or in combination as needed during project implementation. The proposed scenarios are discussed below.

Scenario A.

It is anticipated that off-site hauling will be completed during daytime non-peak hours only as shown below. Under Scenario A, it is estimated that 35 – 37 trucks will depart the Project Area Monday through Thursday and 15 – 18 on Friday with an average of 8 trucks per hour.

Table 2-1. Scenario A Proposed Hauling Schedule

Dates	Days	Period	Time
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
	Friday	Daytime	9:00 AM to 12:00 PM

Scenario B.

If off-site trucking delays are encountered either due to truck availability or reallocation of personnel or equipment from loading trucks to other project activities, off-site trucking will continue into the evening non-peak hours as shown below. Under this scenario, the estimated number of trucks departing the Project Area will remain unchanged at 35 – 37 trucks per day Monday through Thursday and 15 – 18 trucks on Friday. However, by increasing the duration of daily trucking by adding the evening shift, the average trucks per hour is reduced to 4 - 5 trucks. It should be noted, that in order to maintain compliance with air quality standards the number of trucks per

day cannot be increased. Additionally, evening off-site trucking is limited to one hour past sunset at which time all trucking activities are required to cease.

Table 2-2. Scenario B Proposed Hauling Schedule

Dates	Days	Period	Time
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
		Evening	6:00 PM to 1 hour after sunset
	Friday	Daytime	9:00 AM to 12:00 PM

Scenario C.

If long term trucking delays are encountered either due to truck availability, weather conditions, or reallocation of personnel or equipment from loading trucks to other more critical project activities, it is probable that off-site trucking will cease or be reduced during the 2021 project period and would not be completed prior to the onset of the rainy season. Impacted soils that are not trucked off-site prior to the rainy season will be stockpiled and secured during the rainy months and trucking will resume in the early part of 2022.

Table 2-3. Scenario C Proposed Hauling Schedule

Dates	Days	Period	Time
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
		Evening	6:00 PM to 1 hour after sunset
	Friday	Daytime	9:00 AM to 12:00 PM
March to May 2022[1]	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
	Friday	Daytime	9:00 AM to 12:00 PM

[1] The off-site trucking that would resume in 2022 is estimated to occur between March and May. However, weather permitting, it is possible that off-site trucking begins earlier in the year.

Site Demobilization and Restoration

In undeveloped locations, backfilled areas will be graded to match the surrounding grade and lightly scarified. Salvaged seedbank material will be redistributed over the top 6-inches to the extent possible. An appropriate seed mixture and soil amendments, if needed, will be applied to promote revegetation of the disturbed areas and appropriate erosion controls will be installed.

In developed areas, ground surface will be graded to match the surrounding material (i.e., asphalt, road base etc.). Pre-existing roads, narrow-gauge rail, fences or other improvements removed during remediation project activities will be replaced in-kind. Removed vegetation will be restored/replaced in accordance with a restoration plan. All construction equipment and temporary facilities will be removed from the work areas upon completion of remediation project activities.

2.5. Project Objectives

The objective for the proposed remediation project excavations at the proposed development areas is to pursue case closure from the Regional Board by:

- Removing contaminated soil exceeding the proposed cleanup goals identified below to a maximum depth of 10 feet bgs at Sites 2/4B and up to 15 or 20 feet bgs or encountered bedrock at Sites 9/11, respectively, subject to any limitations imposed in the excavation project entitlements or permits.

- Recovering measurable SPH on groundwater within open excavations to the extent practicable and within a designated timeframe prior to backfilling. The definitions of SPH, measurability and recoverability to meet the project remedial action objectives are as follows:
  - SPH is defined as measurable separate phase liquid petroleum product, separate from water and floating on top of groundwater.
  - "Measurable" means SPH greater than one-fourth (1/4) inch in thickness.
  - "To the extent practicable" means that SPH will be removed until it is no longer present in Measurable quantities after having twenty- four (24) hours to recharge, provided, however, that the excavation will not be left open more than one week, unless a shorter time is required by applicable permits.
- Restoring the disturbed areas and removed surface structures/improvements to pre-existing conditions to the extent practicable, promoting revegetation and drainage of storm water, and minimizing erosion.
- Completing all site restoration activities without health and safety incidents including property damage and personal injury.
- Preparing a soil and groundwater management plan to address affected soil remaining in place on-site post-remediation.

The following cleanup goals include using modified ESLs that will apply to impacted soil removed from the ground surface to 6 feet bgs at both the Sites 2/4B and Sites 9/11 remedial excavation areas.

Table 2-4. Cleanup Goals based on Modified ESLs for both Remediation Areas (0-6 feet bgs)

Chemical	Cleanup Goal
TPHg+TPHd+TPHo	100 mg/kg
Benzene	0.044 mg/kg
Naphthalene	0.033 mg/kg

At Sites 2/4B, at depths between 6 and 10 feet bgs, ESLs for commercial/industrial land use are used as the closest approximation to potential future uses (it is important to note that no future land uses have been proposed). The ESL for TPHo utilizes the Gross Contamination Level metric rather than the commercial/industrial ESL as required by the Regional Board.

Table 2-5. Cleanup Goals based on ESLs for Commercial/Industrial Land Use (0-6 feet bgs)

Chemical	ESL
TPHg	2,000 mg/kg
TPHd	1,100 mg/kg
TPHo	5,100 mg/kg (Gross Contamination ESL)
Benzene	1.0 mg/kg
Naphthalene	14 mg/kg

At Sites 9/11, at depths between 6 and 15 feet bgs, ESLs for residential land use are used as the closest approximation to potential future uses, except that the cleanup goal for TPHo has been reduced from the published residential land use ESL to 1,000 mg/kg, as shown below, by agreement of the property owner, Union Oil and Phillips 66. No future uses have been proposed.

Table 2-6. Cleanup Goals based on Modified ESLs for Residential Land Use (6-15 feet bgs)

Chemical	ESL
TPHg	430 mg/kg
TPHd	230 mg/kg
TPHo (modified)	1,000 mg/kg
Benzene	0.23 mg/kg
Naphthalene	3.3 mg/kg

No specified vertical cleanup goal is proposed to be utilized for excavations deeper than 15 feet bgs at Sites 9/11. Under the approved CAP and CAP Addendum, the cleanup approach to be utilized for excavations from 15 feet bgs to the shallower of bedrock or 20 feet bgs at Sites 9/11 is, to the extent practicable, to remove SPH where it has been identified, either prior to the commencement of remediation activities pursuant to this CAP or during the performance of remediation activities pursuant to this CAP down to 15 feet bgs.

2.6. Other Required Permits

A Major Grading Permit application package, including completed forms, grading plans, and required fees will be submitted to the San Luis Obispo County Department of Planning and Building (SLOPB) for review. At a minimum, the grading plan will include vicinity and site maps, project-specific notes, proposed excavation limits, erosion control measures, staging/temporary facility areas, stockpile locations, haul routes, and backfill/restoration details.

Other permits required for the project may include, but are not limited to:

- Permit to Operate - San Luis Obispo County Air Pollution Control District.
- Monitoring well destruction permits - San Luis Obispo County Environmental Health Services.
- Encroachment permit - San Luis Obispo County Public Works Department.
- National Pollution Discharge Elimination System General Storm Water Permit for Construction Activities and associated Storm Water Pollution Prevention Plan – California State Water Resources Control Board.

3.0 Environmental Setting

This section describes the current environmental conditions in and around the Santa Margarita area. More detailed setting information is included within the impact analysis for each issue area.

3.1 Regional Overview

The proposed project is located within the Santa Margarita Ranch, in the community of Santa Margarita located in San Luis Obispo County, approximately 10 miles north of the City of San Luis Obispo. San Luis Obispo County is located in the central coast region of California. The County covers approximately 3,300 square miles and contains approximately 283,111 residents. The County is topographically diverse, with mountains, agricultural valleys, and distinct urban areas, all within close proximity of the Pacific Ocean. The Mediterranean climate of the region produces moderate temperatures year-round, with rainfall concentrated in the winter months. The region is subject to various natural hazards, including earthquakes, landslides, and wildfires.

3.2 Physical Setting

Natural Resource Setting

Habitats on the Santa Margarita Ranch and project site vicinity are composed of grasslands, coastal scrub, chaparral, oak woodlands, riparian, and emergent wetlands/seasonal pools that occur in a mosaic pattern across the landscape. Perennial and intermittent streams, which support important riparian habitat for resident and migratory wildlife species, occur throughout the region. Vineyards comprise a significant portion of the agricultural landscape within the southern portion of the Ranch property, while dry-farmed grains are found in the northern portion of the Ranch property. Cattle ranching occurs over all the on-site habitats with the exception of dry-farmed and vineyard areas.

General Physical Character

As discussed in the CAP, the subject site encompasses approximately 899 acres in Santa Margarita, San Luis Obispo County (please refer to Figure 1). Phillips 66 Pipeline Company LLC (P66 Pipeline) currently operates two parallel 8-inch diameter petroleum pipelines that traverse a portion of the site from the eastern side of U.S. Highway 101 to the P66 Pipeline Santa Margarita Pump Station located on the east side of El Camino Real. A 6-inch diameter natural gas pipeline also occupies a portion of the pipeline easement.

The pipelines extend across the site for a distance of approximately 1.8 miles, crossing Santa Margarita Creek, Yerba Buena Creek, an unnamed tributary, and smaller drainage features. Santa Margarita Creek, a seasonal tributary to the Salinas River, flows across the southern portion of the site in an easterly direction. The creek then turns generally northerly, flowing through the remainder of the site.

Average surface elevations along the pipeline corridor from north to south range from approximately 975 feet above mean sea level (msl) in the floodplain areas near Yerba Buena and Santa Margarita Creeks, rising to approximately 1,000 feet msl in the terrace area that contains the historic ranch headquarters structures, and achieving an elevation of 1,090 feet msl in the hilly areas near Highway 101.

The site is located adjacent to the community of Santa Margarita, with residential neighborhoods to the south of the subject property. To the north of the site is the residential community of Garden Farms. To the east of the site is El Camino Real and the active P66 Santa Margarita Pump Station. U.S. Highway 101 passes along the western boundary of the site with rural or undeveloped properties across the highway from the site.

Topographic and Geologic Setting

The site is located in the southern portion of the Coast Ranges geomorphic province of California. The Coast Ranges are characterized by northwest-southeast trending mountain ranges and intervening valleys which are generally bounded by faults. The site is further located in the northwest-trending Santa Margarita Valley that is formed between the Rinconada fault zone to the east and the Nacimiento fault zone to the west. The Santa Margarita Valley is bounded by the granitic La Panza Range to the northeast and the Santa Lucia Range of coastal mountains to the southwest.

Several geologic units are exposed or present at shallow depth beneath the pipeline alignment crossing the project site. These geologic units, from youngest to oldest, include recent alluvium, older alluvium, Santa Margarita formation, Atascadero formation, and the Franciscan formation assemblage. These units are described briefly below.

The younger alluvium, primarily of Holocene age, consists of stream channel and floodplain deposits along Santa Margarita Creek, Yerba Buena Creek and their tributaries. The younger alluvium is characterized by layers of sand, silt and clay which typically overlie the older alluvium. The older alluvium, likely of Pleistocene age, consists of weakly consolidated gravel, sand, silt, and clay in lenticular and interfingering beds. At the subject site, older alluvium is exposed on the elevated terrace west of Santa Margarita Creek, in the area of the historic Asistencia and Ranch headquarters buildings (please refer to the project site plans under Attachment E for a map of on-site structures).

Stratigraphically underlying the alluvium is the Tertiary aged Santa Margarita formation composed predominantly of weakly consolidated, marine sandstone. Sandstone of the Santa Margarita formation typically occurs in thick beds, is whitish to grey in outcrop, and locally contains shell beds and shallow marine fossils. The light-colored Santa Margarita formation is exposed in the steep western bank of Santa Margarita Creek near the historic Asistencia and underlies the alluvium beneath the northern portion of the pipeline corridor at the site.

Along the southern portion of the pipeline corridor at the site, sandstone of the Atascadero formation is exposed in outcrop and occurs at shallow depth beneath the thin cover of alluvium. The Atascadero formation is commonly identified by outcrops of thickly bedded coarse sandstone that is well cemented and hard.

West of the Rinconada fault zone, the basement rocks consist of the Franciscan formation. Dominant rock types within the Franciscan Formation include serpentinite, metavolcanic rocks, chert, and greywacke sandstone. In the site vicinity, a thin fault-bounded sliver of the Franciscan formation is exposed in a drainage located south of the Ranch headquarters area.

Climate

The project site topography and its proximity to the Pacific Ocean strongly influences the local climate. San Luis Obispo County enjoys a Mediterranean climate, with mild winters, hot summers, and moderate rainfall. Weather systems are dominated by the Pacific High, a pressure zone centered off the coast of California that diverts storm tracks northward during the summer. The area is characterized by a wet season from October to early April and a dry summer season. In general, the most rainfall is in the range of hills and mountains nearest the coast with a decreasing amount farther inland.

With a Mediterranean-type climate, the Santa Margarita Ranch is characterized by warm, dry summers and cool winters with occasional rainy periods. Maximum summer temperatures in the County average about 70 degrees Fahrenheit near the coast, while inland valleys are often in the high 90’s. Average minimum winter temperatures range from the low 30’s along the coast to the low 20’s inland.

Hydrogeologic Setting

As discussed in the project Biological Resource Assessment (please refer to Attachment G), the Santa Margarita Ranch is located in the Salinas River watershed which empties into the Pacific Ocean at Monterey Bay. Drainages within or adjacent to the project area generally flow from south-to-north via two main drainages: Santa Margarita

Creek which runs along the eastern boundary of the Eastern Remediation Area, and a significantly smaller, unnamed intermittent creek (locally known as "Little Tassajara Creek," that briefly runs west-to-east immediately north of the Western Remediation Area before flowing south-to-north before eventually draining into Santa Margarita Creek to the north of the project area. Santa Margarita Creek, the primary on-site tributary, drains to the Salinas River approximately three miles north of the property.

The CAP specifies that the northern portion of the pipeline corridor lies within a narrow alluvial basin that is a southern extension of the Atascadero Ground Water Basin. Groundwater beneath the site occurs primarily within the younger and older alluvium and to a lesser amount within the upper portion of the Santa Margarita sandstone. Water supply wells in the Santa Margarita area typically produce primarily from the coarse-grained lower alluvium overlying the Santa Margarita formation. On the northern portion of the site, the alluvium reportedly attains a maximum depth of approximately 60 feet below ground surface. The southern portion of the pipeline corridor crossing the site does not lie within a recognized groundwater basin and is dominantly underlain by Atascadero formation sandstone at shallow depths which does not yield significant water supply.

Five water supply wells and two irrigation supply wells are located at the site. One of the irrigation supply wells, located between Yerba Buena and Santa Margarita Creeks at the site, produces from the alluvium and is screened from 30 to 55 feet bgs. Prior to the aquifer test conducted in 2009, static groundwater was measured in the well at approximately one foot bgs (Terra Pacific, 2010). During a step-drawdown test, the well was pumped at a maximum flow rate of 279 gallons per minute (gpm), however a sustained flow rate of 180 gpm was maintained during the five-day constant rate pump test.

Groundwater monitoring wells installed along the pipeline corridor during various phases of site assessment are gauged and sampled on an annual frequency. Based on water levels measured in November/December 2017, depth to groundwater ranged from 11 -- 25 feet bgs within excavation areas. Groundwater flow direction was locally variable but generally trended northerly.

Cultural and Tribal Cultural Resource Setting

Archaeological evidence indicates that coastal San Luis Obispo County was occupied by humans as early as 10,000 years ago. The project area is within the traditional territorial ranges of the Chumash and Salinan tribes (Hester 1978; Jones et al. 2007). The prehistoric boundary between these groups was likely close to the modern San Luis Obispo and Monterey County line. Traditional tribal boundaries and relationships were altered by European colonization with movement of indigenous peoples through forced mission labor or fleeing European influence. Mission records show interrelationships between the Chumash, Salinan and the Valley Yokuts.

The Northern Chumash occupied land along the Pacific coast from the Santa Maria River north to approximately Point Estero and east to the edge of the San Joaquin Valley. The Chumash people lived in large villages along the Santa Barbara Channel coast, with less dense populations in the interior regions, on the Northern Channel Islands, and in coastal areas north of Point Conception.

The Salinans are separated into northern and southern groups. Northern Salinans, or Antoniaños, were associated with the populations around Mission San Antonio de Padua. The southern group, or Migueleños, were associated with the populations around Mission San Miguel Archángel. The territories of both Salinan groups extended east into the interior of the Coast Range.

3.3 Cumulative Project Setting

The State CEQA Guidelines require the analysis of the cumulative effects of a project in combination with other foreseeable development in the area. CEQA defines "cumulative impacts" as two or more individual events that, when considered together, are considerable or will compound other environmental impacts. Cumulative impacts are the changes in the environment that result from the incremental impact of development of the proposed project and other nearby projects. For example, traffic impacts of two projects may be insignificant when analyzed separately but could have a significant impact when analyzed together.

By its nature, the proposed remediation project consists of the temporary activities associated with the cleanup of the identified hydrocarbon-contaminated soils within the project site. Project activities are limited to the short-term construction associated with implementation of the proposed remediation. No development is proposed for the project site upon completion of the remediation activities. As such, the project does not have the potential to result in a long-term cumulatively considerable effect on the environment. Cumulative impacts are discussed further under Section 6.0, Other CEQA Considerations.

4.0 Environmental Impact Analysis

This section discusses the possible environmental effects of the proposed project for the specific issue areas that were identified through the Initial Study process as having the potential to experience significant impacts.

"Significant effect" is defined by State CEQA Guidelines §15382 as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment but may be considered in determining whether the physical change is significant."

The environmental impact analysis under this EIR is provided in two sections. The impact analysis is documented under Section 4.1, Cultural and Tribal Resources, with the bulk of the environmental analysis for issue area effects determined to be either "less than significant" or "significant but mitigable" contained in Attachment A, Initial Study Checklist.

The assessment of each issue area begins with a setting and is followed by an impact analysis. Within the impact analysis, the first subsection identifies the methodologies used and the "significance thresholds," which are those criteria adopted by the County, other agencies, universally recognized, or developed specifically for this analysis to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, level of significance, mitigation measures for significant impacts, and the level of significance after mitigation. In those cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed as a residual effect. The significance determination for environmental impacts is as follows:

> Class I - Significant and Unavoidable: An impact that cannot be reduced to below the significance threshold level with implementation of reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per §15093 of the State CEQA Guidelines.
>
> Class II - Significant but Mitigable: An impact that can be reduced to below the significance threshold level with implementation of reasonably available and feasible mitigation measures. Such an impact requires findings to be made under §15091 of the State CEQA Guidelines.
>
> Class III – Less Than Significant: An impact that may be adverse but does not exceed the significance threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
>
> Class IV - No Impact or Beneficial: No impact would occur, or the project would have a beneficial effect.

Please refer to the Executive Summary for this EIR, for a summary of all impacts and mitigation measures that apply to the proposed project.

4.1 Cultural and Tribal Cultural Resources

This section of the project EIR analyzes the proposed Phillips 66 Santa Margarita Remediation Project potential impacts with respect to cultural and tribal resources and identifies mitigation measures to reduce impacts to the extent feasible. The following discussion and impact analysis are based on the cultural resource studies prepared for the project, including consultation with tribal representatives as an integral part of the assessment of tribal cultural resource impacts.

The studies prepared to support the project analysis include the following: Cultural Resource Study for the Santa Margarita Ranch Remediation Project, Santa Margarita, San Luis Obispo County, California (Applied EarthWorks, Inc., June 2019); Archaeological Testing (Phase 2) for the Santa Margarita Ranch Remediation Project, Santa Margarita, San Luis Obispo County, California (Applied EarthWorks, Inc., September 2019); and Archaeological Work Plan for CA-SLO-1430 Santa Margarita Ranch Remediation Project, Santa Margarita, San Luis Obispo County, California (Applied EarthWorks, Inc., February 2020).

4.1.1 Setting

The purpose of this section is to provide a setting for the project site and regional vicinity with respect to cultural and tribal resources and historically significant structures. The cultural resource studies mentioned above included background research, review of previous investigations, records search, surface and subsurface studies, and outreach to local Native American tribal representatives. Results from these efforts found that the Santa Margarita Ranch, the location of the proposed project, is eligible to be considered as a "Rural Historic District" (district), a California Register of Historical Resources (CRHR)-eligible district that contains a range of charter-defining features. Of these features, several archaeological sites, tribally significant resources and historic buildings and structures are within the eastern portion of the remediation area in the core of the Santa Margarita Ranch Headquarters. This area is a critical element of the district and contains resources that are important to the property owners, local community, and Native American tribes. The studies find that an archaeological site, CA-SLO-1430, is directly within the footprint of the eastern portion of the proposed remediation activities. All other cultural resources will be avoided.

a. Pre-Historic Setting

Archaeological evidence demonstrates that Native American groups have occupied the Central Coast for at least 10,000 years, and that Native American use of the central coast region may have begun during the late Pleistocene, as early as 9,000 B.C., demonstrating that historical resources began their accumulation on the central coast during the prehistoric era.

As discussed in the project cultural resource study (June 2019), early attempts at regional cultural chronology divided prehistory into three periods. Since then, subsequent archaeological studies and development of more precise dating methods have allowed many refinements to the San Luis Obispo County cultural sequences. Currently, the most common chronological system divides Central Coast prehistory into six periods based on the Calibrated Years Before Present (or BP). This includes Paleo-Indian (pre 10,000 BP), Early Archaic (10,000 to 5,500 BP), Early (5,500 to 2,600 BP), Middle Period (2,600 to 950 BP), Middle/Late Transition (950 to 750 BP), and Late Period (700 BP to Historic).

Paleo-Indian Period: The Paleo-Indian Period represents the earliest human occupations in the region, which began prior to 10,000 years ago. Paleo-Indian sites throughout North America are known by the representative fluted projectile points, crescents, large bifaces used as tools and a distinctive assemblage of small flake tools. Only three fluted points have been reported from Santa Barbara and San Luis Obispo counties, and all are isolated occurrences

unassociated with larger assemblages of tools or debris (Erlandson et al. 1987; Gibson 1995; Mills et al. 2005). One of these examples comes from the project vicinity.

Early Archaic Period: Additional evidence of human occupation has been found at sites dating to the Early Archaic. A growing number of Early Archaic components have been identified, most located in coastal or near-coastal settings. The most common artifacts in these assemblages are the milling slabs and handstones used to grind hard seeds and process other foodstuffs. Population density likely remained low, although settlements may have been semi-permanent. Subsistence activities appeared to be aimed broadly at a diverse range of terrestrial and marine resources.

Early Period: This period is marked by adaptive technological changes marking the transition into the Early Period. This includes an abundance of large projectile points (Jones et al. 2007:138). Mortars and pestles were introduced and gradually replaced manos and milling slabs as the primary plant processing tools, indicating expansion of the subsistence base to include acorns (Glassow and Wilcoxon 1988). Shell beads and obsidian materials indicate that trade between regions expanded (Jones et al. 1994). Site occupants appear more settled with more limited mobility, and an increase in the use of sites for activities such as hunting, fishing, and plant material processing (Jones et al. 1994:62; Jones and Waugh 1995:132).

Middle Period: The Middle Period is defined by continued specialization in resource exploitation and increased technological complexity. The use of mortars and pestles also increased. Additionally, expansion of trade is evident in the increased quantity of obsidian, beads, and sea otter bones (Farquhar et al. 2011:15). Circular shell fishhooks, which facilitated an increase in fishing and utilization of marine resources, appeared for the first time (Glassow and Wilcoxon 1988). The appearance of small leaf-shaped projectile points toward the end of the period is evidence for the arrival of bow and arrow technology (Jones et al. 2007:139).

Middle-Late Transition Period: The Middle-Late Transitional Period represents a change in artifacts as large numbers of arrow points appeared (Jones et al. 2007:139). At the same time, some evidence points to population decline. A slow-down in trade is evidenced by the lack of obsidian in sites dating to this period (Jones et al. 1994). Settlement shifted away from the coast and people relocated to more interior settings (Jones 1995:215). Use of marine resources appears to have been reduced and diets relied more on terrestrial resources such as small mammals and acorns (Farquhar et al. 2011:16).

Late Period: Populations on the Central Coast expanded in the Late Period (Farquhar et al. 2011:17; Glassow 1996). More sites were occupied during this period than ever before (Jones et al. 2007:143). Archaeological investigations at Late Period coastal sites along the Central Coast show evidence of intensification of marine resource (Codding et al. 2013; Joslin 2010; Moratto et al. 2009). Analysis shows that some human populations responded to climate shifts with an increased use of the marine subsistence base. Artifacts from the Late Period within San Luis Obispo County contain an abundance of arrow points, small bead drills, bedrock mortars, hopper mortars, and a variety of bead types (Price 2005). More shell and stone beads appeared in the Late Period and became a more standardized and common form of exchange (Jones et al. 2007:140, 145).

b. Ethnographic and Tribal Setting

As discussed in the project cultural resource studies, the proposed remediation project area is within the traditional territorial ranges of the Chumash and Salinan tribes. The prehistoric boundary between these groups was likely close to the modern San Luis Obispo and Monterey County line. Modern descendants of both groups have connections to territory in northern San Luis Obispo County. Traditional tribal boundaries and relationships were altered by European colonization with movement of indigenous peoples through forced mission labor or fleeing European influence. Mission records show interrelationships between the Chumash, Salinan and the Valley Yokuts.

The Northern Chumash occupied land along the Pacific coast from the Santa Maria River north to approximately Point Estero and east to the edge of the San Joaquin Valley. The Chumash people lived in large villages along the

Santa Barbara Channel coast, with less dense populations in the interior regions, on the Northern Channel Islands, and in coastal areas north of Point Conception.

The Salinans are separated into northern and southern groups. Northern Salinans, or Antoniaños, were associated with the populations around Mission San Antonio de Padua. The southern group, or Migueleños, were associated with the populations around Mission San Miguel Archángel. The territories of both Salinan groups extended east into the interior of the Coast Range.

Both Salinan and Northern Chumash subsistence was focused on fishing, hunting, and gathering native plants, particularly acorns, although many animals and many plants were used for food (Hester 1978:501). Marine shellfish was an important resource, and both men and women shared in the task of gathering. Vegetal foods, especially acorns, provided the bulk of the diet. Acorns were stored in large willow-twig granaries until needed, then ground with a stone mortar and pestle. Other important plant foods included wild grass and sage seeds, berries, mescal, and wild fruits and berries. Animals and birds were captured with snares, traps, spears, and the bow and arrow.

Stone, bone, wood, and shell provided materials for the production of tools (Hester 1978:501). Stone tools were manufactured from locally available chert as well as imported obsidian, and debris from their manufacture and maintenance are most likely to be seen in an archaeological context. Pecked and ground stone objects include bowl mortars, pestles, metates, basket mortars, stone bowls, notched pebble net sinkers, and steatite arrow shaft straighteners. Ornaments are made of steatite and serpentine. Bone and shell tools were also manufactured, especially bone awls and C-shaped fishhooks. Shell beads of olive snail, mussel, abalone, and other species were the basis of the native currency, with value being assigned based on the color of the shell and other factors (Hester 1978:502).

According to the project cultural resource studies, Salinan and Chumash people had relationships and extensive trade with the Yokuts to the east, especially those residing on the shore of Tulare Lake. Coastal groups would regularly travel inland to fish and hunt fowl, and the Yokuts, in kind, would venture westward to obtain coastal resources.

c. Regional History

The proposed remediation project cultural resource studies also include an assessment of regional history. As discussed, one of the first documented European incursions into San Luis Obispo County occurred in 1587, when Pedro de Unamuno, landed near the mouth of Chorro Creek, near the present site of Morro Bay. In 1602, Sebastian Vizcaino sailed up the California coast from Mexico looking for a good harbor along the “Manila Galleon” sea route and anchored at San Luis Bay.

Over 150 years passed before the next major European expedition reached San Luis Obispo County. In 1769, Gaspar de Portola and Fray Crespi departed the newly established San Diego settlement and marched northward toward Monterey, passing through present-day San Luis Obispo County that same year (Krieger 1988). Father Serra founded the Mission San Luis Obispo de Tolosa three years later in 1772. Mission San Miguel Archángel was founded in northern San Luis Obispo County in 1797.

The Santa Margarita de Cortona Asistencia, located on the Santa Margarita Ranch near the project site, was founded in the 1780s, on the northernmost lands of Mission San Luis Obispo de Tolosa. Asistencias were established to produce food for the missions, but they were also intended to become a fully functioning mission in the future (Honig 2006). The main stone structure of the Santa Margarita Asistencia was constructed in 1817, and included a chapel, store rooms for the various harvested grains, and apartments for the itinerant priest, mayor-domo, servants, and travelers (Beedle and Price 2008; Robinson 1846:53; Webb 1952:93). The walls of this structure were cracked by the earthquake of 1830. In the 1820s, control of the Santa Margarita Valley gradually shifted from Mission San Luis Obispo to Mission San Miguel. As part of this process, Salinans from the north gradually replaced the Chumash as workers on the Asistencia (Beedle and Price 2008; Webb 1952:93).

Spanish rule in Alta California came to an end in 1821 with Mexican Independence, and the mission lands were secularized in the 1830s. During Mexican rule, the Missions declined in influence and large cattle ranches (called ranchos) became preeminent. In 1841, Joaquin Estrada filed a petition to take ownership of the then vacant Santa Margarita lands. As part of his request, Estrada stated that he would not use the main stone structure or prevent the resident Natives from continuing to cultivate the surrounding fields (Loftus 2006).

During the Bear Flag Revolt, Governor Pio Pico and General José Castro held a meeting at Rancho Santa Margarita to hash out a strategy to prevent the attempted American takeover of California (Beedle and Price 2008). While nothing came of this meeting, Colonel John Fremont later had Joaquin Estrada arrested for his complicity in this meeting, but Estrada was later released.

In the 1860s California experienced a severe drought and like many of the large Mexican-era ranchos, the Santa Margarita Ranch struggled to maintain its productivity. By 1875, the Santa Margarita Ranch had prospered and included property from three Mexican-era land grant ranchos; Santa Margarita, Atascadero, and Asuncion (Sullivan 1974). Patrick Murphy continued the rancho hospitality of Estrada, hosting rodeos at the ranch (Loftus 2006). He was also elected to state assembly and senate and was appointed Brigadier General of the Second Brigade of the National Guard of California (Angel 1994:208–209).

In 1889, the founding of the town of Santa Margarita was the first non-ranch related development on ranch lands. The town was established near a stop along the Southern Pacific Railroad line that was built between San Francisco and Los Angeles. At this location, the railroad built a depot, roundhouse, warehouse, spur lines, and wells. The town grew quickly in its early years as many railroad construction workers took up residence. During the 1880s and 1890s, agriculture remained the main industry in the Santa Margarita Valley. The oil industry began explorations of the county near the turn of the century, with an unsuccessful rig being placed one mile north of the town (Los Angeles Times 1899:12). Also around this time, Murphy sold the ranch to the Reis family (Loftus 2006).

The Reis family founded the Santa Margarita Land and Cattle Company and continued ranching. In 1903, the main Asistencia stone building was converted into a hay barn, with the interior walls being removed, a concrete floor poured, and a superstructure of corrugated metal built around the stone walls. In 1929, when the ranch encompassed 22,000 acres, the Reis family raised cattle and sheep, and had constructed a sheep barn.

By the early 1960s the Reis family started to sell off portions of the ranch to various other entities. Jacob Reis died in 1969 and willed the ranch to Stanford University. The Robertson family purchased the ranch from Stanford University in 1979 and continued leasing the land for agricultural and cattle ranching. The current owners bought the property in 1999. Cattle ranching continues today along with agricultural activities focused on vineyards (Beedle and Price 2008).

d. Pipeline History

The pipeline that traverses the Santa Margarita Ranch is part of a larger crude oil and semi-refined petroleum transmission system that extends from the Avila Beach Terminal to the Junction Pump Station in the San Joaquin Valley. A portion of this pipeline crosses the Santa Margarita Ranch and terminates at the Santa Margarita Pump Station on the east side of the El Camino Real. The pipeline easement covers a 35 to 40-foot-wide corridor that contains two, 8-inch diameter petroleum pipelines and one 6-inch natural gas pipeline. The pipeline corridor crosses through the Santa Margarita Ranch Headquarters area, passing close to the Santa Margarita de Cortona Asistencia.

The pipelines were first installed in 1914 and consisted of steel “collard” lines connected by threaded couplings (collars). In 1949 the original lines were replaced with butt-welded steel lines using a tar warp cover with a cathodic protection system. Proactive maintenance checks in the late 1980s noted the need for pipeline replacement on the Santa Margarita Ranch. Replacement work began in 1994. During this replacement effort, petroleum was noted in the soils underlying the 1949 pipeline. Since this discovery, various studies have been conducted, including extensive boring, to map the extent of the spill and to assist in planning of remediation activities.

4.1.2 Previous Cultural Resource Investigations

As part of the background research prepared for the project cultural resource studies, the records search identified at least 13 previous cultural resource investigations within or near the proposed remediation project area. Records search results demonstrate that there are two recorded archaeological sites, CA-SLO-127 and -1430, within the project area and six sites in the 0.25-mile records search buffer.

The following discussion provides a summary of the main studies that have occurred along the project pipeline within the Santa Margarita Ranch property. While the scope of some of those investigations is outside of the current project area, this summary is used to provide context and a wider view of the cultural materials present on the Santa Margarita Ranch.

In 1990, Dills conducted a pedestrian survey that included the current pipeline route for Unocal's pipeline replacement project (Dills 1990). Dills' survey recorded three prehistoric sites (CA-SLO-1429, -1430, and -1431) within the entire pipeline alignment that crosses Santa Margarita Ranch.

In 1992, Gibson re-surveyed the full pipeline route. Gibson's study area consisted of a 40-foot-wide corridor along the entire pipeline on the Santa Margarita Ranch, and he identified three previously recorded prehistoric sites (CA-SLO-1429, -1430, and -1431). Similar to Dills, Gibson recommended monitoring at these cultural resources as the proposed work was to take place exclusively in previously disturbed soils.

Gibson documents pipeline monitoring from September 23 to December 7, 1994 (Gibson 1995). At CA-SLO-1429 (outside the current project area), he identified one Franciscan chert core fragment. At CA-SLO-1430 (inside the proposed project Eastern Remediation area) cultural resources were identified including: a globular sandstone mortar, a large battered chopper, one chert biface, one sandstone pitted stone, marine shell fragments, chert debitage, and human remains were encountered during monitoring. Monitoring also noted additional artifacts, including one basalt projectile point, one chert biface, one chert biface preform, and one chert flake knife. Two of the clam shell fragments (*Tresus nuttallii*) were submitted for radiocarbon dating and came back with dates placing the site towards the end of the Middle Period (Gibson 1995).

In 1995 Gibson participated in additional archaeological monitoring of soil testing and boring to track the extent of impacted soils (Gibson 1996). Prior to drilling at CA-SLO-1429, an isolated Franciscan chert biface with medial flake scars, or fluting, was discovered. Fluted bifaces or projectile points are usually indicative of Paleo-Indian occupation, dating from 11,000 to 8500 years B.P. As a result of the rarity of such finds, no bore holes were placed near this location. Two test excavation units were proposed to further investigate this find.

In 2005, additional work along the pipeline included 25 soil borings and 20 groundwater monitoring wells excavated between the Santa Margarita Ranch Headquarters and the Phillips 66 Pump Station (Gibson 2005). Within CA-SLO-1429 no cultural materials were identified within the backdirt from the augers. A preliminary survey around the bore locations within CA-SLO-1430 identified one chert stem projectile point/knife base fragment, one chert scraper, one chert knife fragment, and chert secondary flakes.

In 2013, a paleontological and archaeological survey was performed along the pipeline route that passes through Santa Margarita Ranch (Saint Onge 2013). The cultural resources identified included two small rock outcrops with cupules or manufactured indentations used for grinding and seven cobble anomalies. The seven cobble features were not within the project area). They were not recorded during the original site recording, but Gibson did note the presence of fire-altered rock that may be the remains of hearths or ovens (Gibson 1992).

McKenna (1993) completed a cultural resources study and site inventory covering 10,888 acres of Santa Margarita Ranch. This study included a record search for previous research reports and previously recorded cultural resources at the California Archaeological Inventory housed in the Archaeological Information Center at the University of California, Santa Barbara. There had been seven previous archaeological studies and 17 previously recorded archaeological sites within Santa Margarita Ranch.

Flint et al. (2000) conducted a cultural resource survey of 21 discontinuous parcels covering approximately 4,000 acres for proposed development of vineyards and rural housing on Santa Margarita Ranch in 1999 and 2000. The survey recorded two isolates, P-40-038143 and P-40-038144, which are within the current project area. These two isolates were tested with shovel probes or mechanical augers, and no buried deposits were located near these isolates.

In 2008, Applied Earthworks, Inc. prepared a Cultural Landscape Report (CLR) that focused on the impacts of development on the historical integrity of the Ranch (CLR; Beedle and Price 2008). The CLR defined the Santa Margarita Ranch Rural Historic District (district) and recommended that the district be considered eligible for listing on the CRHR; but did not formally evaluate it for the National Register of Historic Places (NRHP) at that time.

Linder et al. 2008 conducted a cultural resource survey of the 15.4-mile Atascadero-San Luis Obispo 70 kV power line that passes west of the current proposed remediation project area. One of these segments, the "Rossi Santa Margarita Ranch Access Road" is a 2,800-foot-long linear route that follows an existing two-track road within the central portion of the Santa Margarita Ranch property. No cultural resources were observed during the survey.

In summary, background research found that several previous cultural resource studies have covered most of the proposed remediation areas, mostly during pipeline monitoring activities. While systematic archaeological testing and data recovery has not occurred, Gibson (1995, 2005) was able to document important artifacts and deposits along the pipeline through Santa Margarita Ranch Headquarters. Record searches found that two previously recorded cultural resources, CA-SLO-127 and -1430, are within or immediately adjacent to the proposed project Eastern Remediation area. No resources have been identified in the Western Remediation area.

4.1.3 Project Site Cultural and Tribal Cultural Resources

Background research prepared for the proposed project cultural resource studies found that the project area lies within the Santa Margarita Ranch and is eligible for consideration as a Rural Historic District (district) through the CRHR. Within the district, two recorded archaeological sites, CA-SLO-127 and -1430, are mapped within or immediately adjacent to the Eastern Remediation area. Along with the recorded archaeological sites, the Eastern Remediation area is within the core of the historic Santa Margarita Ranch Headquarters. This portion of Santa Margarita Ranch contains the Santa Margarita de Cortona Asistencia building (also recorded as CA-SLO-127) along with several historical buildings and structures and other archaeological sites.

The following discussion provides a summary of the District and its CRHR eligibility, a discussion of archaeological sites and tribal resources within the project area and a description of the buildings and structures found within the Santa Margarita Ranch Headquarters area.

a. Buildings and Structures

As mentioned previously, Applied Earthworks, Inc. completed a comprehensive Cultural Landscape Report (Beedle and Price 2008) that documents the historic context for the Santa Margarita Ranch district, provides information regarding the elements of the district, and its eligibility for the CRHR. In that document, Beedle and Price provide an in-depth description of the Santa Margarita de Cortona Asistencia and the Santa Margarita Ranch Headquarters area. Those sections are summarized below.

Santa Margarita de Cortona Asistencia: The first known permanent structure on the ranch lands was the Asistencia building, which combined the chapel, residences, and store rooms. In addition to this building, various reports and graphic representations indicate that several other structures were present during mission times. However, period descriptions usually mention only "a few" adobes; possibly some of the structures were the more traditional native tule huts.

The main building of the Santa Margarita de Cortona Asistencia, also frequently referred to as the Asistencia, was constructed of local stone with adobe mortar and tile infill; it had a tile roof. Approximately 50 feet wide and 140

feet long, the building contained a chapel on the west end and several other rooms used mainly for grain storage. One room served as a small residence for the visiting priest. After secularization the building was no longer used as a granary and was not kept in good repair. The inner walls were removed in the early 1900s prior to its rebirth as a barn. Now only the north and south walls, and part of the east wall, remain standing. The walls are approximately 3 feet thick and constructed of local sandstone. The north wall has four openings set at the eastern end; the western end would have been the back wall of the chapel, where the altar would have been situated.

At the west end of the south wall is the main entrance, which led into the chapel. The doorway is constructed with an arched opening of stones. A niche in the interior wall to the right of the door was the location of the font; windows flank the door. Three more windows are located on the south wall, then one door, two windows, and a final door. The south wall has a random rubble pattern, with large boulders, and a high proportion of infill of flat tiles. It is possible that the walls were constructed at different times, or under different stonemasons. One final consideration is that the builders used the large boulders from an outcropping almost in place; as they needed more stone, stones from a distance were faced and shaped before moving, this would have made them easier to move, and kept construction and stone-cutting in separate work areas.

According to a letter written by Father Luis Martinez, the Asistencia was being constructed during 1817. No specific dates of the beginning or end of the construction are known.

A drawing of this structure by Edward Vischer and painting by Henry Chapman Ford provide the earliest graphic representations of the Asistencia. The date on the Vischer drawing is circa 1864. It shows the roofless stone building, with a smaller structure at right angles to one of the corners. This small structure still has its roof, which appears to be wood shakes. The text written on the drawing is the description of the Asistencia from Robinson's visit in 1829.

Henry Chapman Ford painted the Asistencia before 1883. His view is of the north wall of the main building and possibly one smaller structure to the east. This is similar to the one in the Vischer drawing, a gabled structure with a wood roof and one entrance. Thus, it appears there were smaller structures at the southwest and northeast corners of the main building.

Under the ownership of Patrick Murphy, the Asistencia was left relatively untouched. During his tenure the building was not used for any function. The next owner, Jacob Reis, purchased the Santa Margarita Ranch and utilized the structure for a hay barn beginning in 1904. The hay barn was a monitor roof barn, using the stone walls of the main building as the long walls. The interior floor was lowered at least 1 foot and covered with concrete. There were two sheds on the outside; the one on the south was used as a tack room, which remains its current use. Reis donated some of the old roof tiles to the San Luis Obispo County Historical Museum. Because of structural instability, the current owner of the ranch has reinforced the barn and replaced the original corrugated metal cladding with vertical wood siding.

Santa Margarita Ranch Headquarters: The ranch headquarters is situated on the terrace west of Santa Margarita Creek south of the main building of the Asistencia. It currently contains 15 buildings, structures, and other features—the main ranch house, tank house, garage, Wells Fargo building, and numerous sheds, outbuildings, and other features—that reflect the residential, agricultural, and commercial uses of the headquarters.

Buildings, structures, and other features currently standing at the headquarters are described below.

The main wing of the ranch house is constructed of adobe and sided with wood, melding Spanish, Mexican, and American architectural traditions typical until the late nineteenth century. In the Spanish tradition, it is set on an east-west axis perpendicular to the creek.

Two 1-room adobes originally were set in a north-south alignment at the southwest corner of the main residence. Joaquin Estrada built the northern adobe for his overseer (Nicholson 2002:67). The second adobe also likely dates from the Estrada era, and was also used as a residence.

Murphy joined the two adobes with wood, creating a room between that served as the original kitchen (no longer in use), and connected them with the main residence to create an "L" configuration. The northern adobe section is now referred to as the "morgue room," while the southern was used as a bedroom. The adobe interiors are covered with lath and plaster, and both have six-over-six light, double-hung windows with deep-angled reveals. It is likely that Murphy connected the adobes and covered the entire structure with wood siding during that era. The exterior of the ranch house now looks much the same as a photo from the 1930s.

Two structures are associated directly with the house: the tank house and a small building to the southeast of the ranch house. The tank house is located directly south of the ranch house. It was likely erected by Murphy in the 1880s. It has a square floor plan and shiplap siding, with a hipped roof clad with composition shingles. A shed roof delineates the tower and the tank.

A small one-story structure stands behind the ranch house. It is clad with shiplap siding and has a gabled roof covered with composition shingles. The front door faces north. A small shed roof covers the door on the south.

The Wells Fargo building is a one and one-half story, two-room adobe structure and is currently clad with shiplap siding and supports a gabled roof with composition shingles. Each room has a separate entrance on the east side. A porch with a separate shed roof surrounds the building. On the east side of the building the porch is supported by poured concrete; concrete piers support the porch on the west.

Over the years several outbuildings have been erected in the headquarters area to support the ranching operation. The Reis family built a sheep barn east of the main Asistencia building some time prior to 1941. It is a long, low, wood-framed structure clad with corrugated metal, as is the gabled roof. Doors are on the gable ends.

A line of three small buildings on the east side of the ranch headquarters area also was built prior to 1941. The northernmost of these currently serves as the machine shop. This wood-framed structure is sided with corrugated metal and rests on a concrete foundation. South of the machine shop is a small shed-roofed structure with corrugated metal walls and six-light fixed windows. Directly south of this is a gable-roofed structure sided with vertical wood boards. Farther to the south, another small shed built prior to 1941 has vertical wood siding and a gabled roof clad with corrugated metal. Fixed six-light windows are on the west and south elevations.

Sometime after 1941 a pole barn with a roof but no walls went up on a concrete foundation for use as a hay shed. Another small shed not depicted on the 1941 aerial photograph is located west of the main Asistencia building. It has vertical wood walls and a gabled roof clad with corrugated metal. A two-car garage is located on the east side of the driveway across from the ranch house. It is wood-framed, shed-roofed, clad with corrugated metal, and open to the west.

The current ranch owners introduced a narrow-gauge railroad track into the headquarters landscape in recent years to display a collection of historical railroad rolling stock. A scale house is located west of the rail line in the center of the headquarters area. The scale house is a small wood-framed building, approximately 6 by 10 feet, with a shed roof. The age and association of these features are unknown, but they are not depicted on the 1941 aerial photograph.

In summary, the proposed remediation project falls within the boundaries of the Santa Margarita Ranch rural historic district. As a whole, the district is eligible for the CRHR due to its shared history and combination of character-defining features that include Native American archaeological sites and historical built environment.

The Eastern Remediation area is in the historic core of the district within the Santa Margarita Ranch Headquarters area. Along with several historical buildings, several prehistoric archaeological sites are present. While CA-SLO-127 is immediately adjacent to the Eastern Remediation area, the proposed project will not extend into the site's boundary. Only CA-SLO-1430 is within the remediation footprint.

b. Santa Margarita Ranch Rural Historic District

The Santa Margarita Ranch contains a range of cultural resources that span human occupation periods over the last approximately 10,000 years. The cultural landscape left behind reflects Native American land use, Mission Period colonization practices, and European-American historic ranching and agricultural uses up to the present day. Beedle and Price (2008) make the case for Santa Margarita Ranch to be viewed within the context of a larger cultural district that conveys the importance of the range of human activities that have occurred on the ranch over the centuries.

Under the CRHR, a historic district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development (see California Public Resources Code [PRC]5020.1[h]; National Park Service 1997:5). Santa Margarita Ranch possesses a concentration of buildings, structures, and sites that have been connected through their shared history and by the continuation of historical traditions into modern times. Due to its shared history and combination of charter-defining elements, the district is recommended as eligible for listing in the CRHR.

c. Archaeological Sites

As discussed above, several archaeological sites are mapped within or near the proposed remediation project area. The records search revealed two previously recorded cultural resources, CA-SLO-127 and -1430, mapped within or near the Eastern Remediation area. An additional six cultural resources are mapped within the 0.25-mile buffer but will not be impacted by the proposed project. The following is a brief summary of the archaeological sites within or near the proposed Eastern Remediation area.

CA-SLO-127: This site includes the Asistencia as well as the associated archaeological deposit recorded in 1953 by A.R. Pilling and includes the stone masonry Mission Period chapel of the Santa Margarita de Cortona Asistencia and the associated Mexican Colonial Period midden. A large, tin barn had been constructed to cover the remains of the stone structure. Pilling noted fragments of ceramic roof tiles and flat bricks on the surface surrounding the building and recorded several adobe foundations in the vicinity.

Beedle and Price (2008) found the Santa Margarita de Cortona Asistencia (CA-SLO-127) individually eligible for the CRHR based on its defining criteria. It is eligible under Criterion 1 because of its association with the development of the mission system of colonization of California. It is eligible under Criterion 3 because of its distinctive construction techniques and as an early example of stone construction in California. Criterion 4 eligibility reflects CA-SLO-127 archaeological potential to provide important new information on history and prehistory unavailable from the documentary record.

The current fieldwork effort included surveys around the structure and observations of Native American and historic materials within the recorded boundary. The project archaeological survey also noted a dispersed scatter of at least 20 Monterey chert tertiary flakes. These materials had not been previously recorded, resulting in an expansion of the existing site boundary. Overall, the project archaeological staff noted that the area surrounding CA-SLO-127 has been heavily impacted by historic and modern construction, thereby altering the surface expression of this archaeological site. CA-SLO-127 does not extended into the remediation footprint.

CA-SLO-1430: This site consists of a lithic scatter originally recorded by Charles Dills in 1990. Monitoring for the pipeline replacement in 1994 uncovered a variety of cultural materials at CA-SLO-1430, including a globular sandstone mortar, a large battered chopper, one basalt projectile point, two chert bifaces, one chert biface preform, one chert flake knife, one sandstone pitted stone, marine shell fragments, chert debitage, and human remains (Gibson 1995). Human remains were discovered within the fill soil and had likely been previously unearthed during the original construction of the pipeline or during its first replacement in the 1940s.

Two clam shell fragments (*Tresus nuttallii*) from CA-SLO-1430 were submitted for radiocarbon dating and came back with dates of 1530 ± 50 B.P. and 1580 ± 50 B.P., placing the site towards the end of the Middle Period. In 2005, 25 soil borings and 20 groundwater monitoring wells were excavated between Santa Margarita Ranch Headquarters

and the Conoco Phillips pump station. A preliminary survey around the proposed bore holes within CA-SLO-1430 identified one chert stem projectile point/knife base fragment, one chert scraper, one chert knife fragment, and chert secondary flakes (Gibson 2005).

The survey completed for the proposed remediation project covered archeological site CA-SLO-1430, which is centered along the pipeline and covers a relatively undeveloped area consisting of corrals, pastures, and a storage area. Ground disturbance appears to be minimal; however, historic photographs show a large earthwork feature that extends into and north of CA-SLO-1430. Survey of the area north of CA-SLO-1430 noted that the landform in this area does appear to be modified. Prehistoric cultural materials were observed on the surface at CA-SLO-1430 including lithic debitage, possible fire-affected rock, and faunal bone. CA-SLO-1430 falls within the Eastern Remediation area footprint.

The current surface survey also identified two prehistoric lithic isolates within the Eastern Remediation area. AE-3994-ISO-1 is a late stage, Franciscan chert biface medial fragment and a Franciscan chert secondary flake. AE-3994-ISO-2 is a single basalt primary flake, one Franciscan chert tertiary flake, and one Monterey chert tertiary flake. While these materials are within the Eastern Remediation area, they lie outside of the actual remediation footprint.

Across from the western entrance of the Asistencia, a modern "sundial" feature is present. According the owner, this feature was created by local Native America tribal members roughly 10 years ago, on the axis of the Asistencia. This feature does not meet the normal thresholds for recording of archaeological or historical resources; however, it may represent an important feature for modern Native Americans and the property owner requested that it be recorded and replaced once remediation work is complete.

Given the diversity and density of cultural materials observed at CA-SLO-1430, the site contains significant data important to the understanding of California prehistory and history. Additionally, while the pipeline has unearthed deposits along the pipeline alignment, the site extends beyond the boundaries of the alignment. Testing for the currently proposed remediation project by has found intact deposits at CA-SLO-1430. Therefore, CA-SLO-1430 is recommended eligible for the CRHR under Criterion 4 due to the site's ability to provide information on prehistoric cultural practices, technology and subsistence patterns. CA-SLO-1430's proximity to the Mission Period occupation area indicates that archaeological deposits from this period in California history may be present.

d. Subsurface Archaeological Testing

As part of the subsurface Archaeological Testing (Phase II) report for the proposed remediation project, Applied Earthworks, Inc. conducted an archaeological testing program at both the Eastern and Western Remediation areas to gain a better understanding of the nature of the deposit at CA-SLO-1430 and to assess if cultural materials are present within both remediation areas.

Testing included excavation of 49 shovel test pits in the Eastern Remediation area and 10 shovel test pits in the Western Remediation area to look for and collect subsurface cultural materials. Testing also included 7 backhoe trenches for a geo-archaeological study of a portion of the Eastern Remediation area.

Test excavations took place from April 29 to June 5, 2019. Representatives from several local tribal groups were present during all ground disturbance. Fred Collins and Violet Walker represented the Northern Chumash Tribal Council; Lisa Lathrop and Lorrie Laguna from the *yak tityu tityu yak tilhini* (YTT) Northern Chumash Tribe; and Robert Piatti from the Salinan Tribe of Monterey and San Luis Obispo Counties, all monitored at various times during the testing effort.

Testing found that the Eastern Remediation area contains intact prehistoric cultural deposits associated with CA-SLO-1430. No cultural materials were found within the Western Remediation area.

A goal of this testing effort was to define the chronological sequence at CA-SLO-1430. Artifact types such as projectile points, shell beads, and radiocarbon data were analyzed to determine periods of use at CA-SLO-1430.

Results of this effort found two occupational periods: one at 2000 and 1500 B.P. (Middle Period) and a second at 1000 and 500 B.P (Middle-Late Transition/Late Period).

The testing effort found that CA-SLO-1430 contains intact deposits within portions of the Eastern Remediation area. No cultural materials were found within the Western Remediation area. Data recovered from CA-SLO-1430 indicates that the site represents a prehistoric habitation area that has two main phases of occupation, one at the end of the Middle Period and the other at the transition into the Late Period.

Along with archeological testing in the Eastern and Western Remediation areas, the project archaeological team completed a geo-archaeological study within the Eastern Remediation area. The goal of this study was to document the soils and sediments that underlie the Eastern Remediation area under the geomorphology of the landform associated with CA-SLO-1430 and determine if there is a potential for deeply buried cultural materials that might be impacted by the proposed remediation activities.

Seven backhoe trenches were excavated within CA-SLO-1430 from June 3 to 5, 2019. Trenches were excavated with shallow lifts (less 5 centimeters) in the upper 1.5 meters of soil, with deeper lifts (20-centimeter levels) below the known cultural material bearing soil horizons.

Backhoe trenching efforts show no deeply buried cultural-bearing soils present within the Eastern Remediation area. Cultural materials are not expected to be present below 1 meter, unless transported by burrowing organisms, natural soil mixing processes, or other disturbances. Careful inspection of the excavated materials by hand, as well as screening samples of the excavated soils from various horizons, confirmed the absence of cultural materials at depths below approximately 1 meter.

4.1.4 Native American Tribal Consultation

In coordination with the County of San Luis Obispo as part of the AB52 program, Native American outreach has been an ongoing process throughout the life of the project. As part of the cultural resource investigation, the County and applicant team contacted the Native American Heritage Commission (NAHC) and local Native American groups including the Northern Chumash Tribal Council, the San Luis Obispo County Chumash Council, the Salinan Tribe of Monterey and San Luis Obispo Counties, and the yak titᵛu titᵛu yak tiłhini (YTT) Northern Chumash Tribe, and the Xolon Salinan Tribe; groups known to have knowledge of or ties to the project area. The dates, methods, and context of the various episodes of contact and formal meetings are detailed in the Phase 1 cultural resource study.

Lead Agency AB52 Program: The County of San Luis Obispo kicked off the AB52 tribal consultation program on July 24, 2019 with the distribution of the project referrals and a consultation invitation letter sent to all of the tribal representatives identified by the NAHC. As a result of this initial consultation invitation, the County received responses from all four tribal groups, including two Chumash and two Salinan tribal groups.

Upon request, the County initiated individual consultation with tribal representatives that took place on August 14, 2019 (Fred Collins, Northern Chumash Tribal Council), August 15, 2019 (Karen White and Donna Haro, Xolon Salinan Tribe), and on September 5, 2019 (Mona Tucker, YTT Northern Chumash Tribe).

This initial County AB52 response included questions, comments and concerns from tribal representatives related to impacts to sensitive cultural materials and ancestral remains, the treatment and disposition of ancestral remains, and considerations for protected areas for repatriation. This also included comments related to areas known to contain sensitive tribal resources based on past monitoring efforts, and continuation of the monitoring of all archaeological testing and proposed earth disturbance.

The County sent a new AB52 consultation invitation to all of the identified tribal representatives on April 22, 2020 in response to minor project revisions proposed by the applicant team. No new comments were received. However, as the County kicked off the CEQA process for the proposed project, additional consultation requests were submitted. This resulted in a conference call with the County and Lori Laguna and Mona Olivas Tucker (YTT) on July 14, 2020 and a conference call with Fred Collins (Northern Chumash Tribal Council) on July 21, 2020. The result of

this consultation included comments concerning avoiding the release of too much detailed information in the EIR, requests for details on proposed repatriation and efforts done to-date during subsurface testing, avoidance of intact burials, and options for remains contaminated by hydrocarbon impacted soils. Comments also included requests for details on proposed repatriation and efforts done to-date during subsurface testing, avoidance of intact burials, and additional comments regarding options for remains contaminated by hydrocarbon impacted soils.

Project Team Native American Consultation: In addition to the County's AB52 program, the project team, in coordination with the County of San Luis Obispo, contacted the California Native American Heritage Commission (NAHC) on January 14, 2019 to determine whether any sites recorded in the Commission's Sacred Lands File occurred in or near the project area.

On January 16, 2019, the NAHC responded to the information request and noted that its search of the Sacred Lands File indicated that Native American cultural sites are present and to contact the San Luis Obispo County Chumash Council and the Northern Chumash Tribal Council. The NAHC provided a contact list of local individuals and groups and suggested that the project team request more information from these contacts. Applied Earthworks, Inc. sent a notification letter on January 16, 2019, to individuals on the NAHC list informing them of the nature and intent of the proposed remediation project and soliciting comments or concerns.

Follow-up phones calls were initiated on February 12, 2019. The main concerns expressed by the various tribes included proper handling of any human remains recovered, finding a suitable location for reburial on the property, proper curation of all cultural materials and artifacts, and the need for ongoing involvement of the various Native American groups throughout the life of the project. Communication with local tribal representatives regarding the proposed project is an ongoing effort. Tribal monitors have been and will continue to be on-site during all archaeological excavations at CA-SLO-1430 and during all ground-disturbing activities.

The list provided below summarizes the tribal outreach and coordination conducted to-date by the project cultural resources team.

- Initial meetings with Native American tribes – In person meetings with Northern Chumash Tribal Council (NCTC) on January 30, 2019; San Luis Obispo County Chumash Council (SLOCCC) on January 30, 2019; YTT Tribe on February 1, 2019; and Salinan Tribe on February 20, 2019.
- Follow-up meetings with Native American tribes – NCTC on April 24, 2019, August 14, 2019, September 4, 2019, and October 22, 2019; YTT Tribe on September 25, 2019; Salinan Tribe on September 26, 2019; and telephone meeting with Xolon Salinan Tribe on September 26, 2019.
- Meetings with MLDs – YTT and Salinan Tribes on December 19, 2019; January 20, 2020; and February 21, 2020.
- Meetings with MLDs and property owner – YTT, Salinan and property owner on March 4, 2020.

Section 6 of the project Phase 1 cultural resources study documented certain comments from the tribal representatives who took active roles in the tribal outreach and coordination conducted by the project cultural resources team. These comments are summarized as follows:

Northern Chumash Tribal Council (NCTC)

The meeting with the NCTC took place the morning of January 30, 2019. Tribal members present included Fred Collins and Violet Walker. Mr. Collins and Ms. Walker asked several questions regarding the remediation process and how construction would work. The project team provided information on the process including the use of slot-trenches, leap frogging different sections, and removal of hydrocarbon-impacted soil. It was also communicated that safety is an important element of this project and all workers on site will be Hazardous Waste Operations and Emergency Response (HAZWOPER) trained and adhere to AECOM and Applied EarthWorks safety protocols. Mr. Collins and Ms. Walker requested to continue to be involved in the outreach process. Later calls in July 2020 include

requests for details on proposed repatriation and efforts done to-date during subsurface testing, avoidance of intact burials, and options for remains contaminated by hydrocarbon impacted soils.

San Luis Obispo County Chumash Council

The San Luis Obispo County Chumash Council is comprised of members of the Vigil Family. In attendance during the January 30, 2019 afternoon meeting was Mark Vigil Sr., Dwayne Vigil, Mark Vigil Jr., Mike Vigil, and Michelle Vigil. Along with Phillips 66, AECOM and Applied EarthWorks, Raul Briones from Terra Pacific Group attended the meeting. Similar to the previous meeting, the history of the project, the remediation process, and safety issues were discussed. Mark Vigil Sr. was present during monitoring episodes in the late 1990s and early 2000s during the pipeline replacement effort and testing for hydrocarbon-impacted soil. He noted that several human remains were found during these efforts, which he reinterred on-site. Concern was expressed regarding the use of detection dogs to search for areas with human remains. In addition, concern was stated regarding DNA testing as it is considered too invasive and damages bone. It was suggested that Applied EarthWorks reach out to Robert Gibson, the archaeologist who was on site with Mr. Vigil during monitoring. It was also recommended that Applied EarthWorks reach out to local historical societies and the San Luis Obispo County Archaeological Society to gain more information on the history of the Ranch. Overall, project understanding was communicated, as well as the need to continue outreach and communication with the San Luis Obispo County Chumash Council.

yak titᵛu titᵛu yak tiłhini Northern Chumash Tribe (YTT)

Members of the YTT participated in a meeting on February 11, 2019. Members present were Lori Laguna and Lisa Lathrop. As with the other outreach meetings, a history of the project, levels of hydrocarbon-impacted soil, and remediation and safety requirements were discussed. Both Ms. Laguna and Ms. Lathrop are already HAZWOPER trained. They also mentioned that their families have connections with the Santa Margarita area and additional information about the area. They asked that as the project moves forward to make sure to properly document cultural materials and artifacts found, especially any burial items that may need to be reburied with human remains. Concern was expressed regarding the handling ancestor remains and wanted to make sure that if human remains are found, that the proper process is followed, and an MLD is assigned by the NAHC. As they are already HAZWOPER trained, they indicated that they are able and interested in providing monitoring support. Later calls in July 2020 include comments concerning avoiding the release of too much detailed information in the EIR, requests for details on proposed repatriation and efforts done to-date during subsurface testing, avoidance of intact burials, and options for remains contaminated by hydrocarbon impacted soils.

Salinan Tribe of Monterey and San Luis Obispo Counties

Fred Segobia and Robert Piatti attended the meeting on February 20, 2019, on behalf of the Salinan Tribe of Monterey and San Luis Obispo Counties. As with the other meetings, a description of the project, history of the release, and the remediation process was discussed. The Salinan Tribe has connections with the Ranch as they perform solstice ceremonies on the property and have stories of their ancestors working on the Ranch during the Mission and Modern periods. The Tribe expressed interest in the housing of artifacts found during excavation. They are working with local museums to update collections and display and are currently working on updating their archival system. They asked to continue to be involved in the project and would like to provide monitors. Overall, an understanding of the nature of the proposed remediation project was communicated and it was asked that all the appropriate archaeological studies are conducted along with construction monitoring.

Most Likely Descendants (MLDs) and Repatriation

During recent archaeological fieldwork, fragmented human remains and evidence of multiple human burials have been found throughout portions of the Eastern Remediation Area. Once human remains were identified and confirmed, per California Health and Safety Code 7050.5 and San Luis Obispo County Land Use Ordinance Section 23.05.140(b), Applied EarthWorks, Inc. notified the San Luis Obispo County Coroner immediately to report the discovery. At the request of the coroner, Applied EarthWorks, Inc. notified the NAHC who then assigned two MLDs.

Mona Tucker of the YTT Tribe and Fredrick Segobia of the Salinan Tribe of Monterey and San Luis Obispo Counties have been designated as co-MLDs for this project. Once the MLDs were in place Applied EarthWorks, Phillips 66 and AECOM worked with the MLDs and the landowner to store the remains in an appropriate manner and work towards identification of a suitable location for future reburial. The MLDs will remain in place during the life of the project. They are in place to help the project proponent properly handle remains as well as intact burials. It is always preferred that intact burial be left in place and avoided, if at all feasible. If an assigned MLD resigns or is unavailable to fulfill the duties, Applied EarthWorks, AECOM, and Phillips 66 will coordinate with the NAHC, who assigns MLDs, to identify a replacement co-MLD.

It should be noted that tribal coordination for this project is an ongoing effort on behalf of the County and the project cultural resources team and will likely play a large role in the proposed remediation project throughout the life of project activities.

4.1.5 Regulatory Framework

a. California Environmental Quality Act (CEQA)

CEQA (PRC Section 21000 et seq.) requires lead agencies to determine if a project would have a significant effect on the environment, including significant effects on historical or archaeological resources. Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. CEQA Guidelines (14 California Code of Regulations [CCR] 15064.5) recognize that historical resources include:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in the CRHR;
2. A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k), or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and
3. Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the State CEQA Guidelines apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired) in the significance of a historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (14 CCR 15064.5(b)(1), 15064.5(b)(4)).

If an archaeological site does not meet the historical resource criteria contained in the State CEQA Guidelines, the site may be treated as a unique archaeological resource in accordance with the provisions of Section 21083. As defined in Section 21083.2 of CEQA, a unique archaeological resource is an archaeological artifact, object, or site for which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets the following criteria:

a. Contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information;
b. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
c. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource, then it is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place. If preservation in place is not feasible, mitigation measures shall be required.

b. California Register of Historical Resources

The California Register of Historical Resources (CRHR) is "an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State's historical resources and indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Properties listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks (Nos. 770 and higher), are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program that are identified as significant in historic resources surveys or designated by local landmarks programs may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the significance criteria.

Criteria for Section 15064.5(a)(3) of the State CEQA Guidelines states that a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1, Title 14 CCR Section 4852). A site meets the criteria of eligibility for the CRHR if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. is associated with the lives of persons important in our past;
3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. has yielded, or may be likely to yield, information important in prehistory or history.

c. Native American Heritage Commission

Duties of the NAHC (PRC Section 5097.91) include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. Section 5097.98 of the PRC specifies the protocol to be followed when the NAHC receives notification of the discovery of Native American human remains from a county coroner.

d. Assembly Bill 52 (AB52)

As of July 1, 2015, California Assembly Bill 52 (AB52) was enacted and expands CEQA by establishing a formal consultation process for California tribes within the CEQA process. The bill specifies that any project that may affect or cause a substantial adverse change in the significance of a tribal cultural resource would require a lead agency to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." According to the legislative intent for AB52, "tribes may have knowledge about land and cultural resources that should be included in the environmental analysis for projects that may have a significant impact on those resources." PRC Section 21074 also defines a new category of resources under CEQA called "tribal cultural resources." Tribal cultural resources are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is either listed on or eligible for the CRHR or a local historic register, or if the lead agency chooses to treat the resource as a tribal cultural resource.

e. California Public Records Act

Sections 6254 and 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another State agency, or a local agency, including records that the agency obtains through a consultation process between a Native American tribe and a State or local agency." As such, the cultural resource studies prepared in support of the proposed project have been summarized under this Section but are not part of the published attachments to this EIR due to their confidential nature and detailed description of sensitive tribal cultural resources.

f. Health and Safety Code, Section 7050.5 and 7052

Health and Safety Code Section 7050.5 declares that in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

g. San Luis Obispo County Standards

The County has a vital interest in preserving its many older buildings, and prehistoric and historic sites, which not only represent the heritage of San Luis Obispo County, but also help define the character of the region today. This is reflected in the County's General Plan, Conservation and Open Space Element. Specifically, the following policies are provided for the preservation and protection of cultural and tribal resources: Policy CR 4.1, Non-development Activities; Policy CR 4.2, Protection of Native American Cultural Sites; Policy 4.3, Cultural Resources and Open Space; Policy CR 4.4, Development Activities and Archaeological Sites; Policy CR 4.5, Paleontological Resources; and Policy CR 4.6, Resources-Based Sensitivity.

In addition, in the event archaeological resources are unearthed or discovered during any construction activities, the following County standards apply:

- Construction activities shall cease, and the County Environmental Coordinator shall be notified so that the extent and location of discovered materials may be recorded by a qualified archaeologist, and disposition of artifacts may be accomplished in accordance with state and federal law.
- In the event archaeological resources are found to include human remains, or in any other case when human remains are discovered during construction, the County Coroner is to be notified in addition to the Environmental Coordinator so proper disposition may be accomplished. If the remains are determined to be Native American, then the County Coroner must notify the Native American Heritage Commission within 24 hours.

4.1.6 Impact Analysis

a. Methodology and Significance Thresholds

Cultural Resources: Section 15064.5 of the CEQA Guidelines pertains to the determination of the significance of impacts to archaeological and historic resources. CEQA provides guidelines for addressing archaeological resources that may be adversely affected by development in Section 15126.4(b).

Under CEQA, an impact on a historical resource is considered significant if the impact lessens the integrity of the qualities of the property that qualify it for the California Register. If the proposed project may cause damage to a significant historical resource, the project may have a significant effect on the environment. Section 15064.5 of the

CEQA Guidelines pertains to the determination of the significance of impacts to archaeological and historic resources. Direct impacts may occur by:

1. *Physically damaging, destroying, or altering all or part of the resource;*
2. *Altering characteristics of the surrounding environment that contribute to the resource's significance;*
3. *Neglecting the resource to the extent that it deteriorates or is destroyed. Indirect impacts primarily result from the effects of project-induced population growth. Such growth can result in increased construction as well as increased recreational activities that can disturb or destroy cultural resources; or*
4. *The incidental discovery of cultural resources without proper notification.*

Indirect impacts result primarily from the effects of project-induced population growth. Such growth can result in increased construction as well as increased recreational activities that can disturb or destroy cultural resources.

CEQA provides guidelines for mitigating impacts to historical or archaeological resources in Section 15126.4. Preservation in place is the preferred manner of mitigating impacts (14 CCR 15126.4(b)(3)). Preservation in place may be accomplished by planning construction to avoid the resource, incorporating sites within parks or open space, covering sites with chemically stable and culturally sterile fill, or deeding the site into a permanent conservation easement. For buildings and structures, maintenance, repair, restoration, preservation, conservation, or reconstruction consistent with the *Secretary of Interior's Standards and Guidelines for the Treatment of Historic Properties* is considered mitigation of impacts to a less than significant level (14 CCR 15126.4(b)(1)). Documentation of an historical resource, however, will not mitigate the effects of demolition to a less than significant level (14 CCR 15126.4(b)(2)). When data recovery excavation of an archaeological site is the only feasible mitigation, a detailed data recovery plan must be prepared and adopted prior to any excavation.

Appendix G of the State CEQA Guidelines states that a project would result in a potentially significant impact to Cultural Resources if it would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5;

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5; or

c) Disturb any human remains, including those interred outside of formal cemeteries.

Tribal Cultural Resources: Section 21074 of the CEQA Guidelines defines Tribal Cultural Resources as either of the following:

a) Tribal cultural resources are either of the following:

   1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

      a) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

      b) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

   2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1

b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resources if it conforms with the criteria of subdivision (a).

Appendix G of the State CEQA Guidelines states that a project would result in a potentially significant impact to Tribal Cultural Resources if it would cause a substantial adverse change in the significance of a tribal cultural

resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

b. Project Impacts

Impact CTR-1
Implementation of the proposed Phillips 66 Santa Margarita Remediation Project could cause a substantial adverse change in the significance of a historical resource which is either listed or eligible for listing on the National Register of Historic Places, the California Register of Historic Resources, or a local register of historic resources. This impact is considered to be Class III, less than significant.

The cultural landscape that defines the Santa Margarita Ranch reflects the evolution of Native American land use, ranching and agriculture under the mission system, and continued ranching, agriculture, mining, and other uses under private ownership until the present day. The Ranch possesses a continuity of sites, buildings, structures, and objects united by shared history and by the continuation of historical traditions into modern times. As discussed above, the Ranch is considered to be a significant historic resource and has been determined to qualify as a Rural Historic District under the CRHR criteria (see California Public Resources Code 5020.1[h]; National Park Service 1997:5).

As evaluated in the project cultural resource studies, proposed remediation activities will occur within a portion of the Ranch identified as the Santa Margarita Ranch Headquarters. This area contains several historic buildings dating from the Mission Period into the twentieth century. The oldest structure is the Santa Margarita de Cortona Asistencia built as a satellite facility to Mission San Luis Obispo de Tolosa. Additionally, Rancho Period and early American Period built environment structures are still present within the Headquarters area. Santa Margarita Ranch Headquarters contains 15 buildings, structures, and other features including the main ranch house, tank house, garage, Wells Fargo Building, and numerous sheds outbuilding and other features that reflect the residential agricultural and commercial uses of the Headquarters area. These built environment historical features contribute to the importance of the district.

The Santa Margarita Ranch district is eligible for the CRHR under Criterion A because of its important association with broad patterns of California history, such as the establishment of missions as a means of colonizing California and the subsequent development of secular ranchos.

The Ranch district is determined to be eligible under CRHR Criterion B because it is associated with persons important to our past, in this case General Patrick W. Murphy, rancher, businessman, and state senator, whose family owned the ranch between 1860 and 1900. Under Criterion B its period of significance begins in 1860 and continues to 1900.

The district is eligible under Criterion C because of the distinctive local methods and techniques of construction used in the stone and adobe buildings erected at the Asistencia during the Mission and Rancho periods; for the unique melding of Hispanic and American construction methods during the American Period; and for the distinctive characteristics and physical qualities of its spatial organization and land-use patterns, which illustrate traditional

practices associated with self-contained rural ranch life. Under Criterion C the period of significance begins circa 1780 and continues to 1950.

The district is eligible under Criterion D for its potential to yield important information in history and prehistory unavailable from the documentary record, notably about mission and ranch construction methods; about land use related to agriculture, ranching, mining, and other practices; and about the lives of Native Americans who lived on the land before and after the arrival of the Spanish.

While the Eastern Remediation area covers portions of Santa Margarita Ranch Headquarters area, proposed project remediation activity footprint will avoid direct impacts to these historical buildings. In addition, it is important to note that the proposed project is limited to temporary remediation activities and implementation of the proposed project would result in the return of the site to its natural contour and topography. Because the proposed remediation project will avoid all of the historic resources associated with the Santa Margarita Ranch Headquarters, direct impacts to historic resources are considered less than significant.

Additionally, no indirect impacts are anticipated as remediation work will return the landscape to its original contour and elevation. Indirect impacts from construction traffic will also be avoided as the project access road route to and from the Eastern Remediation area will come from the west following existing ranch roads from Highway 58 and to the air strip. Vehicles will not be travelling near any of the headquarters' structures, and therefore indirect impacts on historical buildings from construction work or traffic are anticipated to be less than significant.

Mitigation Measures.

Impacts to historic resources are considered less than significant and no mitigation measures are required.

Significance After Mitigation.

Impacts are considered less than signification and no mitigation measures are required. Impacts would remain less than significant.

Impact CTR-2
Implementation of the proposed Phillips 66 Santa Margarita Remediation Project could cause a substantial adverse change in the significance of known and potentially undiscovered tribal and archaeological resources that are either listed or eligible for listing on the National Register of Historic Places, the California Register of Historic Resources, or a local register of historic resources. This impact is considered to be Class I, significant and unavoidable.

As discussed in the project Cultural Resource Study, several archaeological sites and associated tribal resources are mapped within or near the proposed remediation project area. The records search revealed two previously recorded cultural resources, CA-SLO-127 and -1430, mapped within or near the Eastern Remediation area. An additional six cultural resources are mapped within the 0.25-mile buffer but will not be impacted by the proposed project. All of these resources contribute to the significance and cultural landscape of the Santa Margarita Ranch district and are eligible for the California Register of Historic Resources under multiple criteria.

Site CA-SLO-127: This site includes the Asistencia as well as the associated archaeological deposit recorded in 1953 by A.R. Pilling and includes the stone masonry Mission Period chapel of the Santa Margarita de Cortona Asistencia and the associated Mexican Colonial Period midden.

Beedle and Price (2008) found the Santa Margarita de Cortona Asistencia (CA-SLO-127) individually eligible for the CRHR based on its defining criteria. It is eligible under Criterion 1 because of its association with the development of the mission system of colonization of California. It is eligible under Criterion 3 because of its distinctive construction techniques and as an early example of stone construction in California. Criterion 4 eligibility reflects CA-SLO-127

archaeological potential to provide important new information on history and prehistory unavailable from the documentary record.

The current fieldwork effort included surveys around the structure and observations of Native American and historic materials within the recorded boundary. The project archaeological survey also noted a dispersed scatter of at least 20 Monterey chert tertiary flakes. These materials had not been previously recorded, resulting in an expansion of the existing site boundary. Overall, the project archaeological staff noted that the area surrounding CA-SLO-127 has been heavily impacted by historic and modern construction, thereby altering the surface expression of this archaeological site. CA-SLO-127 does not extended into the remediation footprint.

Due to the temporary nature of the proposed project remediation activities, the proposed return of the site to its natural contours and topography, and because the proposed remediation activities will avoid the boundaries of site CA-SLO-127, impacts to this site are considered less than significant.

Site CA-SLO-1430: This site consists of a lithic scatter originally recorded by Charles Dills in 1990. Monitoring for the pipeline replacement in 1994 uncovered a variety of cultural materials at CA-SLO-1430, including a globular sandstone mortar, a large battered chopper, one basalt projectile point, two chert bifaces, one chert biface preform, one chert flake knife, one sandstone pitted stone, marine shell fragments, chert debitage, and human remains (Gibson 1995). Human remains were discovered within the fill soil and had likely been previously unearthed during the original construction of the pipeline or during its first replacement in the 1940s.

As such, CA-SLO-1430 is considered to contain intact deposits within most of the Eastern Remediation area. No cultural materials were found within the Western Remediation area.

As described in the project Phase I Cultural Resource Study, CA-SLO-1430 is a contributing element to the CRHR-eligible Santa Margarita Ranch Rural Historic district. The Santa Margarita Ranch possesses such a concentration of buildings, structures, and sites that have been connected through their shared history and by the continuation of historical traditions into modern times. Due to its shared history and combination of charter-defining elements, and ability to retain elements of integrity, the district is recommended as eligible for listing on the CRHR under all four criteria (Beedle and Price 2008).

Given the diversity and density of cultural materials observed at CA-SLO-1430, the site contains data important to the understanding of California prehistory and history. Gibson's (1995) work along with the project cultural resources team current testing effort has demonstrated that important and intact deposits are present at this site. Therefore, CA-SLO-1430 is recommended eligible for listing on the CRHR under Criterion 4 due to the site's ability to provide information on prehistoric cultural practices, technology, and subsistence patterns (Enright and Patterson 2019).

In addition to the impacts to known archaeological and tribal resources, there is a potential for encountering and impacting previously unknown resources. If these resources contain intact and significant data making them eligible for the CRHR, then impacts related would be considered significant and unavoidable. However, impacts can be lessened to the extent feasible upon implementation of the following mitigation measures.

Proposed remediation activities would result in the disturbance of the CRHR-eligible archaeological site, CA-SLO-1430, and has the potential to impact previously unknown resources as well. This site contains a wide range of cultural material dating to the Middle and Late periods. CA-SLO-1430 is part of the larger CRHR-eligible district, and also is individually eligible for listing on the CRHR due to its ability to provide scientific information regarding Native American cultural behaviors and adaption practices during prehistory. The site also holds the potential to provide information on early California history through archaeological deposits dated to the Mission Period. Additionally, human remains and burial items from CA-SLO-1430 are likely to be impacted by proposed remediation activities.

Although CA-SLO-1430 will be impacted by the proposed project, data recovery excavations, analysis and interpretations of materials collected from CA-SLO-1430 will help provide archaeological information. The data

gathered during this effort will be used to guide the placement of data recovery units to recover a large enough sample to preserve the important information found at CA-SLO-1430.

Because the proposed project will impact known and may impact potentially undiscovered cultural and tribal cultural resources, the applicant team has worked with the RWQCB to avoid site disturbance where possible. Due to the location of the contamination in relation to the project site cultural and tribal cultural resources, and the limits on construction technology that allow for excavation below the cultural resources, full avoidance of the resources that overlay the contaminated soil is not possible.

Given the unique and significant nature of this site, the importance that this site plays in the cultural identity of Native American tribes, its location within the footprint of the Eastern Remediation area and the nature of the proposed project activities necessary to remediate this area in accordance with the CAP and CAP Addendum as approved by the RWQCB, impacts are considered to be Class I, significant and unavoidable.

Mitigation Measures.

The following mitigation measures are consistent with the recommendations provided in the project cultural resource studies and measures discussed with tribal representatives as part of the AB52 Native American consultation and project cultural resource team tribal outreach and would reduce impacts on archaeological resources to the extent feasible.

CTR-2(a): **Avoidance Plan.** Prior to permit issuance the applicant shall submit an Avoidance Plan to the County Planning and Building Department that identifies areas where the avoidance of proposed excavation and earth disturbance is possible. Avoidance areas shall be identified based on the potential for significant impacts to known and undiscovered cultural and tribal cultural resources. The Avoidance Plan shall include an assessment of the nature of the hydrocarbon contamination in areas proposed for avoidance in relation to the potential for leaving contamination in place. The Avoidance Plan shall also include methodology and criteria for any discovery of human remains and the feasibility of select avoidance and shall include the factors considered for avoidance, the technical feasibility for avoidance and shall include a demonstration for achieving RWQCB remediation criteria for avoidance areas. The County shall submit the Avoidance Plan to the identified tribal group MLDs as designated by the State NAHC for review.

The Avoidance Plan shall also specify that the boundaries of all avoidance areas shall be defined and an exclusion zone shall be placed around each avoidance area and labeled as “Environmentally Sensitive Area” in all documents. An exclusion zone is a fenced area where construction equipment and personnel are not permitted. The exclusion zone fencing shall be installed (and later removed) under the direction of a qualified archaeologist. If avoidance cannot be achieved for any unexpected discovery, other forms of mitigation, such as data recovery, will lessen the impacts but will not mitigate the loss of integrity to a less than significant level.

Requirements and Timing. The proposed Avoidance Plan shall be submitted to the County for review prior to the issuance of grading permits. Prior to grading permit issuance, the County shall submit the Avoidance Plan to the identified tribal group MLDs as listed by the State NAHC for review. Avoidance areas shall be included on plans and shall be labeled as “Environmentally Sensitive Area”. Planning and Building shall review these plans prior to issuance of grading permits. **Monitoring.** Planning and Building shall be responsible for ensuring that project activities avoid identified areas. Planning and Building staff shall inspect the project site during construction to ensure exclusion zones remain in place.

CTR-2(b): **Deed Restriction.** Prior to completion of remediation activities, the applicant shall submit a recorded deed restriction to the County of San Luis Obispo Planning and Building Department that protects all areas of known and potentially undiscovered cultural and tribal cultural resources within the project site from future disturbance related to construction or development.

Requirements and Timing. Prior to completion of remediation activities, the recorded deed restriction shall be submitted to the County Planning and Building Department for review. **Monitoring.** County Planning and Building Department shall be responsible for ensuring recordation of the deed restriction prior to completion of remediation activities.

CTR-2(c): **Archaeological Data Recovery:** Prior to issuance of grading permits, an Archaeological Data Recovery Plan shall be submitted to the County of San Luis Obispo Planning and Building Department for review and approval. The Archaeological Data Recovery Plan shall include a program for recovering archaeological data and scientific samples from CA-SLO-1430. The approach to data recovery excavations, laboratory sorting, artifact analysis, reporting, and curation shall be driven by the Archaeological Data Recovery Plan to be prepared by a Registered Professional Archaeologist (RPA) who is familiar with both prehistoric and historic period cultural resources. The Archaeological Data Recovery Plan shall include the following:

- a review of historic maps and aerial images to identify possible locations of historic period features and to document modern landscape modifications;
- a prehistoric and historic period context;
- a research design outlining important prehistoric and historic period themes and research questions applicable to CA-SLO-1430;
- data requirements and appropriate field and laboratory methods and procedures to mitigate the effects of the project on CA-SLO-1430;
- provide for a final technical report on the findings of data recovery at CA-SLO-1430;
- agreement for curation and final disposition of cultural items recovered;
- procedures for handling of human remains if found during data recovery;
- outline involvement of the local Native American communities and their recommendations for data recovery; and
- a public outreach program to inform both the scientific and local communities on the findings of data recovery.

Data recovery shall be completed prior to the start of remediation activities. However, if appropriate, a staged data recovery approach may be implemented where the first stage of data recovery occurs prior to construction work and the second stage will occur in tandem with construction. The purpose of this approach is to collect a viable sample prior to construction and then use the construction process to open up and observe larger exposures. If features, artifact concentrations or human remains are encountered during the second stage, construction work will be diverted while controlled excavations target newly discovered deposits.

In advance of this mitigation requirement, the applicant has prepared an "Archaeological Work Plan for CA-SLO-1430" (Applied Earthworks, Inc., February 2020). The goal of the effort described in this Work Plan is to collect and analyze data from CA-SLO-1430 in order to preserve important information that will be lost during remediation activities.

The Work Plan provides a framework for the planned excavations at CA-SLO-1430 including fieldwork approach, handling of human remains, laboratory methods, and analysis and reporting for CA-SLO-1430. The project cultural resources team will use a mixed approach to archaeological excavations at CA-SLO-1430, employing a combination of methods to address depth and subsurface integrity of midden deposits, recover data from intact features, and use controlled backhoe excavations to identify and record intact features. The goal for fieldwork is to target areas that appear to contain intact

archaeological deposits, recover sensitive cultural materials that will be highly impacted (i.e., destroyed during remediation), and try to locate any features or human remains prior to construction.

The applicant's Work Plan shall be reviewed by the County Planning and Building Department against the requirements listed above under Mitigation Measure CTR-2(c). Additionally, the Work Plan shall be submitted to the tribal representatives identified through the project AB52 process for their review if requested. The Work Plan reviews and any appropriate revisions or additions shall be completed prior to initiation of remediation activities. Implementation of this mitigation measure will reduce impacts to the extent feasible.

Requirements and Timing. Prior to issuance of grading plans, the Archaeological Data Recovery Plan and Work Plan shall be submitted to the County Planning and Building Department for review and approval. The County shall submit the Work Plan to the tribal representatives for review prior to final approval. **Monitoring.** The County Planning and Building Department shall review and approve the required Plans prior to issuance of a grading permit.

CTR-2(d): **Construction Monitoring:** Prior to issuance of grading permits, the applicant shall submit a Monitoring Plan, prepared by a subsurface-qualified archaeologist, for the review and approval by the County of San Luis Obispo Planning and Building Department. The monitoring plan shall include at a minimum:

a) List of personnel involved in the monitoring activities;

b) Description of how the monitoring shall occur;

c) Description of frequency of monitoring (e.g. full-time, part time, spot checking);

d) Description of what resources are expected to be encountered;

e) Description of circumstances that would result in the halting of work at the project site (e.g. what is considered "significant" archaeological resources) and description of required steps in the event human remains are discovered;

f) Description of procedures for halting work on the site and notification procedures; and

g) Description of monitoring reporting procedures.

During all ground disturbing construction activities, the applicant shall retain a qualified archaeologist (approved by the County Planning and Building Department) and Native American tribal representatives to monitor all earth disturbing activities, per the approved monitoring plan. If any significant archaeological resources or human remains are found during monitoring, work shall stop within the immediate vicinity (precise area to be determined by the archaeologist in the field) of the resource until such time as the resource can be evaluated by an archaeologist and any other appropriate individuals. The applicant shall implement the mitigation as required by the County of San Luis Obispo.

In the event that human remains are discovered, the monitoring plan shall stipulate that all earth disturbances within 100 feet of the discovery shall cease immediately and the area shall be delineated with clearly visible lath, flagging tape, or other marking. All activity within the delineated area shall cease and the project proponent shall comply with Section 15064.5 (e) (1) of the CEQA Guidelines and the procedures described in Section 7050.5 of the California Health and Safety Code. A RPA shall inspect the remains and confirm that they are human, and if so shall immediately notify the County of San Luis Obispo and contact the County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner determines the remains are Native American, the coroner shall contact the Native American Heritage Commission (NAHC). As provided in PRC Section 5097.98, the NAHC shall identify the person or persons believed to be the MLD from the deceased Native American. The MLD

makes recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.

Upon completion of all monitoring/mitigation activities, the consulting archaeologist shall submit a report to the County of San Luis Obispo Planning and Building Department summarizing all monitoring/mitigation activities.

Requirements and Timing. The Monitoring Plan shall be submitted to the County Planning and Building Department prior to issuance of grading permits for review and approval. **Monitoring:** Planning and Building shall review the Monitoring Plan prior to issuance of grading permits. The results of the monitoring activities shall be submitted to the County upon completion of remediation activities.

CRT-2(e): **Cultural Awareness Training.** Prior to the start of ground disturbance, a qualified archaeologist shall prepare and provide a cultural resources awareness training to all field crew and supervisors. This training will include a description of the types of resources that may be found in the project area, an introduction to the Native American monitoring team(s) and their responsibilities, the protocols to be used in the event of an unanticipated discovery, the importance of cultural resources to the Native American community, and the laws protecting significant archaeological and historical sites.

Requirements and Timing. This condition shall be in required prior to construction activities. **Monitoring:** County Planning and Building shall review and approve a plan for cultural awareness training prior to approval of grading permits.

Significance After Mitigation.

Although impacts would be reduced through the above mitigation measures, no mitigation is available to avoid significantly impacting identified and previously unidentified cultural and tribal resources. Impacts would remain significant and unavoidable.

Impact CTR-3
Implementation of the proposed Phillips 66 Santa Margarita Remediation Project could disturb previously unidentified human remains. This is considered a Class I, significant and unavoidable impact.

During the project AB52 and tribal outreach process, a primary concern expressed by the various tribes included concerns related to tribal resources and the proper handling of any human remains recovered, finding a suitable location for reburial on the property, proper curation of all cultural materials and artifacts, and the need for ongoing involvement of the various Native American groups throughout the life of the proposed remediation project.

Previous monitoring during pipeline work encountered human remains at CA-SLO-1430. Human remains were also encountered more recently, as part of the subsurface testing associated with the proposed project. As such, it is likely that additional human remains may be found during data recovery and remediation work. Impacts related to the discovery of human remains are considered significant and unavoidable.

Mitigation Measures.

The following mitigation measures are consistent with the recommendations provided in the project cultural resource studies and measures discussed with tribal representatives as part of the AB52 Native American consultation and project cultural resource team tribal outreach and would reduce impacts related to the discovery of unidentified human remains to the extent feasible.

Implementation of Mitigation Measures CTR-2(a, b), Avoidance and Deed Restrictions: In order to reduce impacts related to the discovery of human remains, implementation of Mitigation Measures CTR-2(a, b) shall be pulled

forward and implemented as feasible in order to provide additional protections to areas containing human remains and sensitive tribal resources. Implementation of this measure will reduce impacts to the extent feasible.

Implementation of Mitigation Measure CTR-2(c), Data Recovery: In order to reduce impacts related to the discovery of unidentified human remains, implementation of Mitigation Measure CTR-2(c) shall be pulled forward and required. Implementation of this measure will reduce impacts to the extent feasible.

Implementation of Mitigation Measure CTR-2(d), Construction Monitoring: In order to reduce impacts related to the discovery of unidentified human remains, implementation of Mitigation Measure CTR-2(d) shall be pulled forward and required. In the event that archaeological remains are encountered during construction, all work in the vicinity of the find shall be halted until such time as the find is evaluated by a qualified archaeologist and all recommendations are implemented. Implementation of this measure will reduce impacts to the extent feasible.

CTR-3(a): **Discovery of Human Remains.** In order to address the potential for human remains that may be encountered during remediation work, the provisions for halting earth disturbance activities, site delineation and inspection, communication protocols and notification of Native American Most Likely Descendants as required under Mitigation Measure CTR-2(d) shall be implemented. Please refer to Mitigation Measure CTR-2(d) for additional details regarding the required Monitoring Plan.

Requirements and Timing. This condition shall be in required throughout the life of the project. **Monitoring:** Planning and Building shall review and approve and ensure plans for addressing the discovery of human remains as part of the Work Plan, to be reviewed by tribal representatives upon request, prior to approval of grading permits.

Significance After Mitigation.

Although impacts would be reduced through the above mitigation measures, no mitigation is available to avoid significant impacts related to the discovery of previously unidentified human remains. Impacts would remain significant and unavoidable.

5.0 Other CEQA Considerations

a. Significant Irreversible Environmental Effects

CEQA Guidelines Section 15126.2, Consideration and Discussion of Significant Environmental Impacts, indicates that the following evaluations of a proposed project's environmental impacts are to be included in an EIR:

- The significant environmental effects of the proposed project.
- Significant environmental effects which cannot be avoided if the proposed project is implemented.
- Significant irreversible environmental changes which would be caused by the proposed project should it be implemented.
- Growth-inducing impact of the proposed project.

The significant environmental effects of the proposed remediation project, as well as the significant environmental effects of the project that cannot be reduced to a less than significant level, are described in Section 4.0 and in Attachment A, Initial Study Checklist, of this EIR. This section of the EIR provides a discussion of the potential for the proposed remediation project to result in significant irreversible environmental effects.

b. Growth Inducing Impacts

Section 15126.2(d) of the *CEQA Guidelines* requires that EIRs discuss the potential for projects to induce population or economic growth, either directly or indirectly. CEQA also requires a discussion of ways in which a project may remove obstacles to growth, as well as ways in which a project may set a precedent for future growth. This section of the EIR describes the potential for the proposed Phillips 66 Santa Margarita Remediation Project to result in growth inducing impacts.

c. Cumulative Impacts

Section 15355 of the CEQA Guidelines defines cumulative impacts as:

> *"…two or more individual effects which when considered together, are considerable or which compound or increase other environmental impacts."*

Section 15355 further describes potential cumulative impacts as:

> *"(a) The individual effects may be changes resulting from a single project or a number of separate projects.*
>
> *(b) The cumulative impacts from several projects are the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."*

This section of the EIR describes the potential for the proposed remediation project to result in cumulatively considerable impacts. Cumulative impacts refer to two or more individual impacts which, when considered together, are considerable or which compound or increase other impacts. The individual effects may be changes resulting from a single project or from a number of projects. A cumulative impact refers to the degree of change in the environment resulting from a particular project, plus the incremental impacts created by other closely related past, present and reasonably foreseeable future projects. Cumulative impacts may reveal that relatively minor impacts associated with a particular project may contribute to more significant impacts when considered collectively with other projects taking place over a period of time.

5.1 Significant Irreversible Environmental Effects

CEQA Guidelines §15126.2(c) requires a description of the significant irreversible environmental effects that would be caused by the proposed project should it be implemented. As described by this section of the CEQA Guidelines, examples of significant irreversible environmental effects may include the following:

- The use of non-renewable resources during the initial and continued phases of the project which may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely.
- Primary impacts and, particularly secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses.
- Irreversible damage which may result from environmental accidents associated with the project.

CEQA also requires decision makers to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve a project. This section addresses the commitment of future generations to the proposed uses, the use of non-renewable resources, and irreversible impacts associated with the proposed project.

The proposed project does not include any irreversible commitments that would affect the future use of the site for development. The site is currently designated for agricultural use. The majority of the impact issue areas analyzed in this EIR consist of "less than significant" or "significant but mitigable" impacts. These environmental impacts are analyzed in detail under Attachment A of this EIR. Implementation of the mitigation measures discussed in this analysis would reduce project impacts to less than significant levels (including air quality, biological resources, geology and soils, greenhouse gas emissions hazards and hazardous materials, hydrology and water quality, transportation impacts).

As discussed under Section 4.1, Cultural and Tribal Resources, the following impacts are considered significant and unavoidable.

- Substantial adverse change in the significance of tribal and archaeological resources listed or eligible for listing on the National Register of Historic Places, the California Register of Historic Resources or a local register of historic resources;
- Disturbance of previously unidentified buried archaeological deposits and tribal resources; and
- Disturbance of previously unidentified human remains.

The analysis for these impacts includes the identification of mitigation measures to reduce impacts to the extent feasible; however, no feasible mitigation is available to reduce the impacts listed above to less than significant levels.

The earth moving and excavation activities associated with the proposed project would involve the use of materials and energy, some of which are non-renewable resources. Consumption of these resources would occur with any project in the region and is not unique to the Phillips 66 Santa Margarita Remediation Project. No development would occur that would have the potential to irreversibly increase local demand for non-renewable energy resources such as petroleum and natural gas and the temporary nature of the project further reduces the potential for resource consumption. Additionally, increasingly efficient construction/earthmoving equipment and automobile engines are expected to offset the demand to some degree. Project implementation would not significantly affect local or regional energy suppliers.

The project is considered temporary and would not require an irreversible commitment of law enforcement, fire protection, water supply, wastewater treatment, and solid waste disposal services. Excavated soil would be removed from the site and transported to a disposal/recycling facility as discussed under Section 2.0, Project Description.

The additional vehicle trips associated with the project would increase regional air pollutant emissions, which would incrementally contribute to the degradation of air quality. As discussed in Section III, Air Quality, of the Initial Study Checklist provided in Attachment A of the EIR, the temporary air pollutant emissions associated with the project are

significant unless mitigated (although below APCD thresholds). Mitigation measures recommended by the APCD have been included as requirements to further reduce project emission.

By implementing the proposed project, impacts related to biological resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, and transportation impacts would be significant. As discussed in the analysis under the Initial Study Checklist included as Attachment A of this EIR, these impacts are considered mitigable and mitigation measures have been included to reduce impacts to less than significant levels. Impacts to aesthetics, agriculture and forestry resources, energy, land use and planning, mineral resources, noise, population and housing, public services, recreation, utilities and service systems, and wildfire are considered to be less than significant, and no mitigation is required.

5.2 Growth Inducing Impacts

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate:

> *"the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth."*

This Section of the CEQA Guidelines also indicates:

> *"It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment."*

The proposed project consists of the remediation of hydrocarbon-contaminated soils within the Santa Margarita Ranch. No development is contemplated, nor would the project entitle any potential development on the site. The site is currently designated as Agriculture, and no land use designation changes are contemplated as a result of the project. Therefore, the proposed project would not directly result in population or economic growth.

As indicated by CEQA Guidelines Section 15126.2(d), a project may be considered growth inducing if it would remove an obstacle to population growth. Examples of actions that may remove an obstacle to growth include providing access to an otherwise inaccessible area, or providing public utilities in or near areas where those services are currently not available. The proposed project does not include any land use changes and would not facilitate a change in the current Agricultural (AG) land use designation. The proposed project does not include the addition or extension of any new infrastructure (i.e., water, sewer, stormwater facilities), nor would the project contribute to the improvement of any public roadways or circulation systems that could facilitate population growth.

However, by implementing the CAP and CAP Addendum, the project may be viewed as removing an obstacle to the potential future development of the site, since site hazards would be remediated. Nevertheless, several other actions, including further site remediation, revisions to and establishment of a revised or new CAP and removal of required deed restrictions, would need to occur prior to the consideration of future development. The nature of such development, if any, would be speculative.

In conclusion, the proposed remediation project would facilitate the orderly growth of the County and would not remove an obstacle to future unanticipated growth. Based on these considerations, the proposed project would not result in a significant growth inducing impact.

5.3 Cumulative Impacts

Section 15130(b)(1) of the CEQA Guidelines provides two options for considering potentially significant cumulative adverse impacts. This analysis can be based on either:

> *"(A) A list of past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or*

(B) A summary of projections contained in an adopted General Plan or related planning document, or in a prior environmental document which has been adopted and certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency."

The cumulative impacts analysis requires consideration of other projects in an area, in conjunction with the proposed project, to assess the potential for significant adverse cumulative impacts. For this EIR, the potential environmental effects of the proposed project were considered in conjunction with the potential environmental effects of buildout anticipated for the project area, which is defined as within a two-mile radius of the project site. Five development projects were identified by the County of San Luis Obispo as either having been approved or on-hold pending further information requests within the project area. Please refer to Table 5-1, below, for a listing of these projects. The list indicates that there are six projects that should be considered in addressing cumulative impacts. The projects include a single family dwelling, construction of a cannabis facility and associated new office and warehouse building, construction of covered crush pads and loading dock for a winery, expansion of a quarry, and co-location of two wireless antennas to replace an existing antenna with equipment behind a fence.

Table 5-1. Cumulative Project List

Plan Number	Status	Parcel Number	Description
D010261P	Approved	059-241-030	Single family dwelling.
PMTC2018-00339	Approved	069-062-002	Cannabis facility.
D900311S	Approved	069-062-002	Construct new office and warehouse building
DRC2019-00123	Information Hold	070-091-045	99,300 square feet (interior) + 17,900 square feet (covered crush pads and loading dock).
DRC2011-00098	Approved	070-131-003	Expansion of an existing quarry.
DRC2008-00039	Approved	070-093-019	Co-location of two wireless antennas to replace previously approved alpine antennas with equipment below tower behind fence.

It is also important to note that the cumulative project setting also includes the development of the Santa Margarita Ranch Agricultural Residential Cluster Subdivision project, approved by the County in 2008. The project consists of 111 residential parcels (1.0 to 2.5 acres in size), 1 dwelling unit at the Ranch Headquarters, and permanent agricultural conservation easements (approximately 3,633 acres). The subdivision also includes a 2,417-acre remainder lot that is not proposed for development. The remainder parcel is located north of the proposed Agricultural Residential Cluster Subdivision lots, south of the community of Santa Margarita. Development of the Agricultural Residential Cluster Subdivision would occur in three phases, each including an agricultural conservation easement (ACE) area. The cumulative project setting also includes the development of the bridge providing access to the project site under a separate permit. Both the subdivision and bridge projects are located on the Santa Margarita Ranch and are under the same ownership as the proposed remediation project.

5.3.1. Cumulative Impact Analysis

Significant but Mitigable Impacts

As discussed above, the majority of the impact issue areas analyzed in this EIR consist of “less than significant” or “significant but mitigable impacts”. These environmental impacts are analyzed in detail under Attachment A, Initial Study Checklist, of this EIR. Implementation of the mitigation measures discussed in this analysis would reduce project impacts to less than significant levels (including air quality, biological resources, geology and soils, greenhouse gas emissions hazards and hazardous materials, hydrology and water quality, transportation impacts).

The proposed remediation project consists of the implementation of hydrocarbon-contaminated soils on a portion of the Santa Margarita Ranch in accordance with the approved CAP and CAP Addendum. The remediation activities under the proposed project are short-term and limited to temporary construction activities (excavation of impacted

soils, backfilling, and hauling of material off-site). Once completed, the result will be the return of the site to its natural contours and topography.

The proposed project does not include an operation phase and does not include any development of the site. As such, the primary consideration for the potential for cumulative impacts would be the effects of the proposed project construction traffic in combination with the construction traffic generated by the cumulative projects discussed above. The remediation project access route will be via Stagecoach Road (a private agricultural road on the Ranch) from Highway 58 near the 101 interchange, minimizing traffic through the residential portion of the community. In addition, all proposed hauling would be limited to non-commuter hours and half-days on Fridays. Furthermore, it is our understanding that development of the parcels under the Santa Margarita Ranch subdivision project is on-hold and is not expected to conflict with the proposed project construction schedule. The project site is also considered to be relatively isolated from the Community of Santa Margarita based on its location within the large Ranch, shielded and screened by distance and topography from the surrounding developed areas, further reducing the potential for impacts.

The remaining significant but mitigable project impacts are not expected to trigger cumulatively significant impacts upon implementation of required mitigation measures due to the temporary nature of the proposed project activities and lack of an operational phase.

Based on these factors, the project is not expected to result in individual effects which when considered with the cumulative projects discussed above, are considerable or which compound or increase other environmental impacts as specified under CEQA Section 15126.2.

Significant Unavoidable Impacts

As discussed in Section 4.1, Cultural and Tribal Cultural Resources, the proposed remediation project would result in significant and unavoidable impacts to cultural resources and tribal cultural resources with the proposed excavation located in the Eastern Remediation area and the known occurrence of sensitive archaeological and tribal resources. This includes significant and unavoidable impacts related to the substantial adverse change in the significance of tribal and archaeological resources, disturbance of previously unidentified buried archaeological deposits and tribal resources, and disturbance of previously unidentified human remains.

The project-specific impact would only contribute to a cumulative impact if the other cumulative projects impact significant cultural resources. Due to the fact that the Santa Margarita Ranch subdivision project includes identified significant impacts related to cultural and historic resources, it is anticipated that the cumulative effect of both projects in relation to cultural resources would remain significant and unavoidable. Because of the unknown nature of the cultural and tribal resources underlying the other cumulative projects and because of the nature of the proposed project's known impacts, it is expected that the cumulative impacts related to archaeological resources, unidentified buried archaeological resources, and unidentified human remains will continue to be considered significant and unavoidable.

5.4 Water Supply Assessment per SB610

Senate Bill No. 610 (Costa), which became effective January 1, 2002, requires a city or county which determines that a "project" (as defined in Water Code §10912) is subject to the California Environmental Quality Act (CEQA) to identify any public water system that may supply water for the project and to request those public water systems to prepare a specified water supply assessment (WSA). The assessment is required to include an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts.

Water Code Section 10910(a) states that projects, as defined in Section 10912, are subject to the requirement to prepare a water supply assessment. A “project" under Section 10912 includes “a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 unit dwelling project."

The proposed remediation project is considered to be a short-term temporary construction effort and is not a development project with the potential to increase water use since residential development is not proposed and growth inducement would not result. As such, the project would not meet the definition of a “project” under Section 10912 of the Water Code. Therefore, the requirements of SB 610 would not apply to the proposed remediation project and a WSA would not be required.

6.0 Alternatives

Section 15126.6(a) of the CEQA Guidelines states that:

> *"an EIR shall describe a range of reasonable alternatives to the project or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives."*

As stated above, an EIR is required to consider a "range of reasonable" alternatives to foster informed decision-making and public participation. During the evaluation of possible remedial actions to address the hydrocarbon impacted soil on-site, the following were taken into consideration:

1. Remedial requirements from the Central Coast Regional Water Quality Control Board ("Regional Board") including the following:
    a) exposure of constituents of concern ("COCs") to human health;
    b) cleanup goals with respect to Environmental Screening Levels ("ESLs") and potential future land use; and
    c) direct impacts to groundwater.
2. Impacts of the remedial actions to Ranch operations and events including the exposure of Ranch staff and visitors to COCs;
3. Impacts to cultural and tribal cultural resources; and
4. Impacts to biological resources.

The nature of the proposed project consists of the prescribed requirements for site clean-up and remediation under the CAP and CAP Addendum, which will be implemented under the jurisdiction of the Regional Board. This includes (but is not limited to) the methods for remediation, extent of the remediation and the boundaries for excavation, testing and treatment methods, remediation goals and objectives, disposition of impacted soils, technologies utilized, criteria for successful clean-up, etc. As such, the proposed remediation project represents a multi-jurisdictional effort to establish an approved project design to ensure a successful remediation effort that meets the requirements of all applicable agencies. Therefore, the County of San Luis Obispo is limited with respect to the ability to prescribe project alternatives.

CEQA requires the EIR to identify feasible alternatives to the proposed project that will avoid, or at least lessen, significant impacts associated with the project, while still meeting most of the objectives. CEQA defines "feasible" as follows:

> *"'Feasible' means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors."*

As described in Section 2.5 of this EIR, the objectives for the proposed remediation project excavations at the proposed development areas is to pursue case closure from the Regional Board by:

- Removing impacted soil exceeding the proposed cleanup goals identified below to a maximum depth of 10 feet bgs at Sites 2/4B and up to 15 or 20 feet bgs or encountered bedrock at Sites 9/11, respectively, subject to any limitations imposed in the excavation project entitlements or permits.
- Recovering measurable SPH on groundwater within open excavations to the extent practicable and within a designated timeframe prior to backfilling. The definitions of SPH, measurability and recoverability to meet the project remedial action objectives are as follows:

  - SPH is defined as measurable separate phase liquid petroleum product, separate from water and floating on top of groundwater.
  - "Measurable" means SPH greater than one-fourth (1/4) inch in thickness.
  - "To the extent practicable" means that SPH will be removed until it is no longer present in Measurable quantities after having twenty- four (24) hours to recharge, provided, however, that the excavation will not be left open more than one week, unless a shorter time is required by applicable permits.
- Restoring the disturbed areas and removed surface structures/improvements to pre-existing conditions to the extent practicable, promoting revegetation and drainage of storm water, and minimizing erosion.
- Completing all site restoration activities without health and safety incidents including property damage and personal injury.
- Preparing a soil and groundwater management plan to address affected soil remaining in place on-site post-remediation.

Please refer to Section 2.5, Project Objectives, for additional details regarding the site cleanup goals.

Two alternatives to the proposed remediation project have been evaluated in this EIR. This Section also includes a discussion of the "environmentally superior alternative" among those studied. The alternatives analyzed include the following:

No Project Alternative: This alternative evaluates environmental conditions that would result if the proposed remediation project were not implemented.

Mitigated Project Alternative: This alternative evaluates environmental conditions that would result upon implementation of the proposed remediation project with all of the required mitigation measures identified in this EIR adopted into the project description.

6.1 Alternatives Considered but Ultimately Rejected

As part of the development of the proposed remediation project, the Phillips 66 (applicant) team prepared a CAP and CAP Addendum that implements the requirements of the Regional Board with the objective of addressing human exposure to COCs, achieving cleanup goals that meet Environmental Screening ESLs, and addressing impacts to groundwater. In addition to the remediation objectives, the project was designed to address the potential for impacts to the Santa Margarita Ranch operations, their employees, and visitors.

However, in addition to the goals for site remediation, the proposed project design and construction methodology included consideration of the avoidance and/or minimization of environmental impacts with a focus on biological and cultural and tribal cultural resources.

As discussed below, several project technology and/or methodology alternatives were studied for the purpose of avoiding or minimizing environmental impacts. This included exploring the avoidance of remediation activities where appropriate and alternative methods and technologies for excavation to minimize impacts. Ultimately, the mitigative properties of these alternatives have been incorporated into the proposed project to the extent feasible. As such, the project alternatives discussed below have not been developed further.

a. Reduced Project Alternative

The project team initially evaluated options to avoid or reduce site excavation and determine if remedial actions were required to address all of the hydrocarbon-impacted areas at the project site. Based on this evaluation, the project team worked with the Regional Board to exclude some areas from being remediated, where the risk of exposure to COCs by sensitive receptors was low, resulting in an agreement whereby the land use of these areas of

was restricted (deed restricted), ultimately minimizing environmental impacts while focusing on remediation in areas where excavation cannot be avoided.

Specifically, two areas were identified that exhibit habitat for sensitive biological resources, primarily associated with the on-site creeks and riparian corridors. Through the focused subsurface testing discussed under Section 2.0, Project Description, it was determined that the excavation in these areas could be avoided and were therefore excluded from the proposed remediation project as approved by the Regional Board under the project CAP and CAP Addendum. As a result, the proposed project design avoids impacts to existing creeks.

b. Revised Remediation Technology and Methods Alternative

The areas proposed to be remediated were further evaluated to determine if impacts to cultural and tribal cultural resources could be avoided or reduced by implementing alternative remedial treatment technologies. The three treatment technologies that were determined to be most applicable; a) pump and treat, b) vapor extraction, and c) in- situ chemical enhancement, are described below.

Pump and Treat: This system consists of a network of extraction wells to extract impacted groundwater and/or Separate Phase Hydrocarbons (SPH). The extracted groundwater and SPH are pumped from the extraction wells to a temporary aboveground treatment system where the SPH is skimmed and recovered for disposal. The impacted groundwater is pumped and treated through a series of large activated carbon drums. The treated groundwater is then analyzed to ensure compliance with cleanup requirement before being discharged to municipal sewer line or surface soil application of the treated water.

A pump and treat system was determined to be only applicable for a small portion of the Eastern Remediation area where the SPH and groundwater are present. This treatment approach is not applicable to the remainder of the the site because the hydrocarbon-contaminated soil is present above the groundwater table or in the subsurface soil horizon exhibiting contamination. Additionally, a municipal sewer line is not available at the Ranch which will require surface soil application of the treated water. The treated water would most likely have to be discharged to areas near creeks that serve as habitats to sensitive biological resources; therefore, it was determined that this approach would not be permitted by the Regional Board. This method is ineffective for the bulk removal of the hydrocarbon impacts and does not address soil impacts.

Vapor Extraction: This system consists of a network of vapor extraction wells to extract hydrocarbon constituents from the soil overlying the zone at which the groundwater is at atmospheric pressure and conveys the extracted vapors by vacuum to a treatment system. The extracted vapors are treated through large vapor-phase activated carbon vessels and/or thermal oxidizer before being vented to atmosphere. This treatment system is commonly used to extract light-end hydrocarbon impacts resulting from a gasoline or diesel release, where the hydrocarbon constituents are more volatile.

A vapor extraction system was determined to be ineffective because these systems are designed and most effective when removing light-end hydrocarbon constituents resulting from a gasoline or diesel release. The hydrocarbon impacts at the project site primarily consist of heavier-end hydrocarbon constituents such as crude or gas-oil and contain limited light-end hydrocarbon constituents. Removal of the hydrocarbon impacts would be limited and yield poor removal rates for heavier-end hydrocarbon constituents.

Consideration was given to implementation of combining the pump and treat and vapor extraction systems to address impacted groundwater, SPH and shallow hydrocarbon-impacted soil. These treatment systems require long-term placement of aboveground equipment including power source, influent and effluent tanks, activated carbon drums, air compressors, pumps, and instrumentation. Additionally, the equipment may be present for an extended duration, in excess of 20 years in some cases. The combined systems would also be ineffective and not achieve the remedial goals based on the reasons discussed above.

Installation of the individual methods discussed above or a combination of pump and treat and vapor extraction treatment technologies would also require an extensive network of extraction wells to be effective. The installation of these systems would also require subsurface equipment such as power source, conveyance pipeline, and instrumentation from the treatment system to the well-heads that would require extensive trenching and excavating. The inefficiencies and requirement for increased site disturbance needed for the added infrastructure would result in an increase in environmental impacts.

In-Situ Chemical Enhancement: This consists of the application of chemical reagents to treat the contamination by reacting with the hydrocarbon constituents yielding a less-toxic byproduct; or, by increasing the oxygen or nutrient content in the soil to accelerate biodegradation or natural attenuation of hydrocarbon constituents in soil. Chemical enhancement typically requires multiple applications of the reagents through injection wells or soil tilling. Because the radius of influence of most injection wells is limited in highly compacted soil types similar to the soil types at the Ranch, a high density of injection wells is required with an estimated spacing of less than 10 feet.

As such, this treatment technology would require placement of equipment or soil tilling across the full extent of the hydrocarbon-impacted areas in a "grid-like" pattern. Due to the presence of the three active pipelines within a 30- to 35-foot wide easement, implementation of in-situ chemical enhancement technologies would be ineffective since the pipeline would extensively hinder where equipment could be placed or installed. In addition, because equipment is prohibited within the pipeline easement, the hydrocarbon-impacted soil beneath the pipeline would not be treated.

Alternative Excavation Methods and Equipment: Based on the considerations discussed above, it was concluded that excavation of hydrocarbon-impacted soil (in areas where avoidance is not allowable) was the most suitable remediation approach. While soil excavation may be considered more disruptive with respects to environmental impacts when compared to the treatment technologies described above, excavation techniques can be implemented to minimize impacts, especially to cultural and tribal resources, more effectively. The techniques evaluated and ultimately adopted into the proposed project include controlled excavations and equipment selection. These are described as follows:

- Controlled Excavations. Excavation of soil containing cultural and tribal cultural resources will be achieved in a controlled manner. Removal of seedbank and overburden soil will be completed in 6 – 8-inch layers and placed in the stockpile area for inspection. Removal of cultural and tribal material in layers allows monitors to visually inspect the excavated area before excavating a subsequent layer and thus minimizing the potential to damage cultural and tribal deposits. Additionally, excavating in layers allows for a more thorough visual inspection of the excavated soil by minimizing the size of stockpiles or windrows.
- Equipment Selection. In areas where the top layer of soil contains a high density of cultural or tribal cultural resources, excavation equipment will be selected that can remove soil in a more controlled manner and be less damaging to the cleared soil layer. Use of a scraper allows for pre-settings to control the excavation depth to 6 – 8 inches; uses rubber tires (as opposed to steel tracks) that are offset from the scraped area which minimizes the potential to damage cultural or tribal materials; allows for a larger area to be exposed which will allow for safer inspection of the underlying cleared area by monitors; and, minimizes mixing of the scraped soil allowing the excavated soil needing inspection to be more representative of the areas scraped.

The alternative remediation technologies and methods discussed above were developed for the purpose of revising the project to avoid or minimize environmental impacts at the early phase of project planning. Because these project components and their potential for reducing environmental impacts were considered during project development and have already been incorporated into the proposed remediation project to the extent feasible, the Reduced and Revised Remediation Technologies and Methods Alternatives were ultimately rejected.

6.2 No Project Alternative

The No Project Alternative compares the environmental impacts of the proposed remediation project to the impacts that would result if the project were not approved. This would mean that the soil remediation action that is required by the Regional Board would not be completed. Thus, there would be no excavation of hydrocarbon-contaminated soils, no remediation of a portion of these soils, no backfilling and no removal of the impacted soils to an off-site location. Instead, the site would be left in its current condition. Because no site disturbance would occur, this alternative would rely on natural attenuation to remediate contamination that may be present within on-site soils.

The No Project Alternative will not result in any ground disturbance, nor would any traffic associated with earth movement be generated. Therefore, there would be no new impacts related to land use, biological resources, cultural/tribal resources, traffic, air quality, noise, geologic resources, greenhouse gas emissions and public services. However, the continued presence of hydrocarbons in soil and groundwater would continue to impact water quality and could migrate to other areas creating additional adverse effects on groundwater quality. It is also possible that should migration be extensive, other environmental resources such as biological resources could also be adversely affected under this alternative.

It is also important to note that the No Project Alternative would prohibit the applicant from compliance with the Regional Board's requirement to remove the separate phase hydrocarbons in the groundwater consistent with the approved CAP and CAP Addendum.

Overall, this alternative would be superior to the proposed project with respect to many issues involving ground disturbance, but would not realize the potential long-term benefits associated with removal of a contamination source, particularly those related to water quality and human health. It fails to meet any of the project objectives. The alternative is inferior to the proposed project from this perspective.

6.3 Mitigated Project Alternative

The Mitigated Project Alternative includes redesign of key project elements intended to further reduce environmental impacts identified in the EIR. Specifically, this would consist of the adoption of the mitigation measures identified in this EIR into the design of the proposed remediation project as revised project elements intended to reduce environmental impacts to the extent feasible.

The following is a list summarizing the mitigation measures required as part of this EIR, to be incorporated into the Mitigated Project Alternative (please refer to Section 4.1 and Attachment A of the EIR for the full text of the required mitigation measures summarized below):

- AQ-1. Construction Permit Requirements: Portable equipment, 50 horsepower (hp) or greater, used during construction activities may require California statewide portable equipment registration (issued by the California Air Resources Board) or an APCD permit. For a detailed listing, refer to the Technical Appendices, page 4-4, in the CEQA Air Quality Handbook (April 2012);
- AQ-2 Fugitive Dust Mitigation: To mitigate fugitive dust emissions related to project construction activities, the full list of dust mitigation shall be implemented;
- AQ-3 Measures for Reducing Emissions: Includes the required mitigation measures for reducing nitrogen oxides, reactive organic gases and diesel particulate matter emissions form construction equipment;
- AQ-4 Construction Phase Mitigation: As stipulated by the APCD, in order to manage fugitive dust emissions, the Air Quality notes in the Grading Plan (drawing number G-01 and sheet number 2 of 28) submitted by the applicant as part of the land use permit application shall be required to be implemented as mandated mitigation measures for this project;

- AQ-5 Off-road Construction Equipment Emissions: As stipulated by the APCD, prior to the start of the project, the applicant shall provide proof to the County of San Luis Obispo that the final schedule and the final equipment list proposed for construction are consistent with the assumptions in the air quality modeling prepared for this project;
- AQ-6 APCD Permitting of Hydrocarbon Contaminated Soil Processes: This remediation project shall require an APCD permit to address proper management of the hydrocarbon contaminated soil prior to the start of any earthwork;
- BIO-1 Special Status Plants: Prior to any equipment staging, remediation work activities, or other activities occurring within the gum plant patch locations, gum plant seeds will be collected at the appropriate time from the plants located in these areas and properly stored for future seeding in the project area after the remediation work activities are completed;
- BIO-2 Western Pond Turtle: A qualified biologist shall conduct a preconstruction survey of the enclosed Eastern and Western Remediation Areas within 24 hours of any activities being conducted in those areas. If a western pond turtle is identified within the enclosed Remediation Areas, the turtle shall be captured and immediately relocated to suitable habitat in Santa Margarita Creek;
- BIO-3 Special Status Bats: In order to avoid impacts to roosting special-status bats, a tree survey shall be conducted no more than 15 days prior to commencement of remediation work activities. Tree cavities and exfoliated bark that could provide roosting or maternity habitat shall be examined for evidence of use by bats;
- BIO-4 American Badger: A qualified biologist shall conduct a preconstruction den survey no more than 21 days prior to site grading. If a potential den is located, infrared camera stations will be set up and maintained for three (3) consecutive nights at the potential den openings prior to initiation of grading/work activities to determine the status of the potential dens;
- BIO-5 Nesting Birds: Nesting surveys shall be conducted no more than 30 days and again no more than 15 days prior to commencing with project activities if this work would commence between February 1 and August 31;
- BIO-6 Applicant-Proposed Measures: During the course of the biological investigations prepared in support of this project, including the review of biological reports by the County's biologist and subsequent review by CDFW and USFWS, several mitigating factors and recommendations have been incorporated into the project description by the applicant in order to reduce impacts to biological resources. These measures shall be considered required elements of the project implementation;
- CTR-2(a) Avoidance: This mitigation measure consists of the potential avoidance of portions of the Eastern Remediation area in order to reduce impacts to the site archaeological and tribal resources;
- CTR-2(b) Deed Restriction: This mitigation measure includes the placement of the project remediation sites and identified archaeological sites into deed restriction where possible;
- CTR-2(c) Archaeological Data Recovery: Prior to the start of remediation activities, an archaeological data recovery program shall be implemented to recover archaeological data and scientific samples from CA-SLO-1430;
- CTR-2(d) Construction Monitoring: All ground disturbance within or near CA-SLO-1430 shall be monitored by a qualified archaeologist and a Native American monitor;
- CTR-3(a) Cultural Awareness Training: Prior to the start of ground disturbance, a qualified archaeologist shall prepare and provide a cultural resources awareness training to all field crew and supervisors;

- CTR-4(a) Discovery of Human Remains: If potential human remains are encountered during remediation work, all earth disturbances within 100 feet of the discovery shall cease immediately and the area shall be delineated with clearly visible lath, flagging tape, or other marking. All activity within the delineated area shall cease and the project proponent shall comply with Section 15064.5 (e) (1) of the CEQA Guidelines and the procedures described in Section 7050.5 of the California Health and Safety Code;
- GEO-1 Excavation Slopes: The maximum allowed mass excavation slope shall be 1H:1V. For any localized short term, temporary cuts steeper than 1H:1V, with no occupancy within the excavation, materials and equipment shall be set back from the top of the excavation beyond where a 1H:1V cut slope would daylight;
- GEO-2 Groundwater: Groundwater conditions shall be maintained a minimum of 2 feet below the excavation depths at all times along with the prevention of active seepage conditions from the excavation slopes and bottom;
- GEO-3 Backfill Construction: The applicant shall implement the requirements for the remediation mass excavation backfill with soil materials as provided in the project geotechnical report;
- T-1 Truck Turning Plan: The applicant shall implement the truck turning plan included in the traffic assessment prepared for the proposed project; and
- T-2 Traffic Control Measures: The applicant shall develop and implement a project-specific traffic and monitoring control plan consistent with the size and scope of the project activity designed to minimize potential impacts to traffic flow.

These mitigation measures shall be incorporated into the proposed remediation project as part of the Mitigated Project Alternative. The following is a summary of the environmental impacts that would likely result upon implementation of the Mitigated Project Alternative as compared to the proposed project. Included with the impact analysis summary, each issue area includes an assessment of the net change of impact significance between the proposed version of the project and the Mitigated Project Alternative.

Aesthetics: As with the proposed project, and based on the nature of the temporary construction activities, the absence of any proposed development, and the implementation of the County's LUO, LUE and General Plan, impacts to aesthetic resources and impacts related to glare and nighttime lighting are expected to be less than significant. ***Net Change = Impacts Stay the Same.***

Agriculture and Forestry Resources: No "Prime Farmland", "Unique Farmland", or "Farmland of Statewide Importance", as mapped by the State Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, will be affected by the proposed temporary remediation project. As with the proposed project, the temporary nature of the proposed remediation activities are not ultimately expected to result in permanent impacts related to agricultural resources. Impacts are determined to be less than significant. ***Net Change = Impacts Stay the Same.***

Air Quality: As with the proposed project, construction emissions associated with the proposed remediation activities would be short term in nature and limited to temporary emission sources of ROG, NOX, and PM (exhaust and fugitive dust). ROG, NOX, and exhaust PM emissions are associated primarily with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive PM dust emissions are associated with site preparation, earthmoving and travel on roads and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles. Earthmoving and material handling operations are the primary sources of fugitive PM dust emissions from construction activities.

Construction activities can generate fugitive dust, which could be a nuisance to local residents and businesses in close proximity to the proposed construction site. The proposed project has the potential to generate construction

emissions in excess of the thresholds established by the APCD. With the implementation of the air quality mitigation measures listed above under this Alternative, the impact is considered less than significant.

Construction activities would not be anticipated to expose sensitive receptors (residences and event attendees) to substantial TAC concentrations. With the implementation of required mitigation measures for construction phase air quality emissions as part of this Alternative, impacts to sensitive receptors are considered less than significant. ***Net Change = Impacts are Reduced.***

Biological Resources: As with the proposed project, the Mitigated Project Alternative will avoid any tree removal and associated impacts to special status plant communities. Impacts to each of the special status plant communities and wildlife habitats are considered less than significant. With respect to special status plants, the Alternative would result in less than significant impacts with the incorporation of the biological mitigation measures listed above. In addition to special status plants, the proposed project has the potential to result in impacts to special status wildlife. With the implementation of the Mitigated Project Alternative, this impact is considered less than significant.

With respect to on-site wildlife corridors, Little Tassajara Creek, a tributary to Santa Margarita Creek, occurs immediately north of the Western Remediation Area and provides a local wildlife corridor for common mammals that hunt up and down tributaries, obtain drinking water from such tributaries, and move from one area of their home range to another. As with the proposed remediation project, this Alternative will avoid this drainage and its associated riparian vegetation and impacts are considered less than significant. ***Net Change = Impacts are Reduced.***

Cultural Resources: Because the project site includes a significant cultural resource and based on the identified impacts to archaeological and tribal resources, the proposed remediation project has the potential to result in significant unavoidable impacts. Similarly, the Mitigated Project Alternative would also result in the potential to cause significant unavoidable impacts. The EIR analysis includes an assessment of impacts to known and as-yet undiscovered archaeological resources and mitigation measures to reduce impacts to the greatest extent feasible. Incorporation of these measures into the Mitigated Project Alternative would reduce impacts to the extent feasible, and to a greater extent than the proposed project; however, impacts related to the disturbance of known and unidentified archaeological resources and unidentified human remains will remain significant and unavoidable. Impact to historic resources would remain less than significant. ***Net Change = Impacts are Reduced.***

Energy: As described in Section III, Air Quality, of the Initial Study Checklist, the proposed remediation project will incorporate several measures to reduce emissions during short-term construction activities. In turn, these measures will result in fuel efficiencies. In addition, the proposed remediation project will incorporate several measures to reduce emissions during short-term construction activities. In turn, these measures will result in fuel efficiencies. This would remain the same under the Mitigated Project Alternative and impacts related to energy use remain less than significant. ***Net Change = Impacts Stay the Same.***

Geology and Soils: As with the proposed project, the Grading Permit issued by the County for this Mitigated Project Alternative will meet the Land Use Ordinance such that grading will not result in adverse effects or hazards to life or property. Impacts related to faulting or ground rupture are considered less than significant. In addition, impacts related to unstable soil conditions during proposed excavation and impacts related to slope failure within excavations are considered significant but mitigable under this Alternative. With the implementation of the mitigation measures listed above, the Mitigated Project Alternative would result in less than significant impacts with respect to soil stability and slope failure. With respect to ground failure, landslides and liquefaction, the proposed remediation project as well as this Alternative entails excavation of impacted soil and backfilling with cement slurry or clean fill. As with the proposed project, this Alternative would result in less than significant impacts related to ground failure.

The Grading Permit issued by the County under the proposed project and for this Mitigated Project Alternative will meet the Land Use Ordinance, as applicable, such that grading will not result in accelerated erosion, stream

sedimentation, or significantly reduced groundwater recharge. This impact would remain less than significant under this Alternative.

As a result of subsurface testing, some groundwater levels have been measured a few feet above the deepest planned excavation depths. These levels likely vary seasonally and as a function of rainfall magnitude. With the implementation of the mitigation measures listed above, groundwater impacts under this Mitigated Project Alternative would be reduced to less than significant levels.

As with the proposed project, this Mitigated Project Alternative does not include any demand for wastewater service. No impacts are expected with respect to development of septic services. Similarly, the excavation proposed under the project as well as this Alternative would not impact bedrock, and impacts to paleontological resources would be less than significant. ***Net Change = Impacts are Reduced.***

Greenhouse Gas Emissions: The APCD considers the proposed remediation project, and by extension this Mitigated Project Alternative, to be limited to "construction" and as such, a numerical GHG threshold does not apply to this short-term construction-only project. Neither the proposed project nor the Mitigated Project Alternative would conflict with any stated policies related to Greenhouse Gases in the SLO County APCD CEQA Air Quality Handbook. The Mitigated Project Alternative impacts related to GHG emissions are considered less than significant with the implementation of the mitigation measures listed under Section III, Air Quality. ***Net Change = Impacts are Reduced.***

Hazards and Hazardous Materials: The purpose of the proposed remediation project and the Mitigated Project Alternative is to remove petroleum hydrocarbon-impacted soil from one or more releases within the Eastern and Western Remediation areas, as presented in the CAP and CAP Addendum approved by the Regional Board. Based on the details discussed under Section IX, Hazards and Hazardous Materials, in the project Initial Study Checklist, related to public and environmental hazards, accidental upset, location of previously documented hazardous materials sites, airport safety, fire safety and adoption of emergency response plans, in addition to the fact that the project and this Mitigated Project Alternative consists of the cleanup and remediation of hazardous materials and given the temporary nature of project activities, impacts related to hazardous materials would remain less than significant under this Mitigated Project Alternative. ***Net Change = Impacts Stay the Same.***

Hydrology and Water Quality: The proposed remediation project as well as the Mitigated Project Alternative excavation operations will be short-term (six-month construction period). Encountering extensive groundwater is not anticipated due to the shallow depths of the excavation footprints. If groundwater is encountered during excavation activities, it will be collected and disposed off-site at an approved facility. Any surface stormwater run-on to the Project Area will be tested and handled in accordance with criteria of the Central Coast Basin Plan (Regional Board, 2019b) and the Project-specific SWPPP. In the event that groundwater is encountered during the excavation process, it may be necessary to dewater the excavations to allow for the removal of impacted material to the proposed excavation limits. To minimize groundwater removal, the open excavation sections will be limited in size and will be backfilled with clean fill material in a timely manner following confirmation sampling, to minimize dewatering during the project. Short-term excavation, stockpiling and backfill activities will not occur within the mapped 100-year flood zone adjacent to Santa Margarita Creek or tributaries to this creek. Excavation and hauling activities would occur during the dry season and would not entail placement of permanent structures within the flood zone. As with the proposed project, impacts related to water quality standards, waste discharge and groundwater supplies under this Mitigated Project Alternative are considered less than significant with the implementation of the project CAP, SWPPP, and the mitigation measures discussed under Section VIII, Geology and Soils. ***Net Change = Impacts Stay the Same.***

Land Use Planning: The proposed remediation activities and those under this Mitigated Project Alternative are short-term and impacts related to development with the potential to divide the community are considered less than significant. The project site is not located within the Coastal Zone. Consistency with the Clean Air Plan adopted by the APCD is addressed in Section III, Air Quality, of the Initial Study Checklist. As described throughout this analysis,

the proposed remediation project includes various design features and mitigation measures. Implementation of these design features and mitigation measures, including consistency with the County's General Plan and Land Use Ordinance will ensure that the project is consistent with the governing land use authority documents. Land use impacts under this Mitigated Project Alternative would not change and will remain less than significant. ***Net Change = Impacts Stay the Same.***

Mineral Resources: The proposed project as well as the Mitigated Project Alternative are limited to the excavation of hydrocarbon-impacted soil and replacement with clean soil within an established easement on the Santa Margarita Ranch. The project is considered to be temporary in nature and no physical development is proposed that would impact future mineral extraction. This impact is considered to be less than significant. ***Net Change = Impacts Stay the Same.***

Noise: The proposed project is temporary in nature and is limited to construction activity associated with the extraction of hydrocarbon impacted soils and backfilling. Short-term construction activities would be limited in nature and duration per County LUO standards. No long-term operational noise or ground vibration would occur as a result of the project. San Luis Obispo County Ordinance 23.06.042(d) exempts short-term project excavations provided such activities do not take place before 7:00 AM or after 9:00 PM any day except Saturday or Sunday, or before 8:00 0 PM on Saturday or Sunday. The proposed remediation project activities will all occur within the time limitations of this Ordinance. As such, noise impacts under the proposed project as well as this Mitigated Project Alternative are considered less than significant. ***Net Change = Impacts Stay the Same.***

Population and Housing: Project-related personnel for this short-term construction project will be primarily sourced from the project region such that commuting to the project, with periodic hoteling, is a feasible alternative to requiring temporary or new permanent housing. This would remain the same under the Mitigated Project Alternative. Workers will access the project area for excavation operations on a frequent basis during the project construction period. However, no additional roads or new infrastructure will be constructed for the proposed project. Excavation adjacent to the existing pipelines will not induce further planned housing development. Therefore, impacts related to population and housing would remain less than significant under this Mitigated Project Alternative. ***Net Change = Impacts Stay the Same.***

Public Services: As it relates to the police and fire protection, there is no housing or permanent population existing or projected within the project area under the proposed remediation project or under the Mitigated Project Alternative. The Santa Margarita Ranch is gated and maintains private security which is anticipated to be adequate to address security issues during short-term excavation operations. This would remain unchanged under this Alternative. Similarly, because neither the proposed project nor this Mitigated Project Alternative would include any housing development or permanent population, no additional demand for school facilities will result from project implementation and the project is not expected to increase demand on local parks or other public facilities. As such, impacts to public services are expected to remain less than significant. ***Net Change = Impacts Stay the Same.***

Recreation: The proposed project is limited to the temporary remediation/excavation activities discussed throughout this document, and does not include any development. The County's Parks and Recreation Element does not identify any public trails, parks, or recreational facilities in the project vicinity. Although the Ranch hosts private events, no off-site trucking is proposed during events or on holidays, weekends or Friday afternoons. Please refer to Section XV, Public Services, for a discussion of impacts related to parks. Recreation impacts are considered less than significant. ***Net Change = Impacts Stay the Same.***

Transportation: The transportation impact discussion under the project Initial Study Checklist provides a brief summary of the trip generation potential and resulting roadway Level of Service (LOS) analysis results for each project exporting timeframe (Scenario A to C). LOS is an indicator of operating conditions on a roadway or at an intersection and is defined in categories ranging from A to F, with "A" representing the best traffic flow conditions and "F" representing poor conditions. Overall and based on the LOS analysis results all proposed project timeframes (Scenarios A, B and C) are viable options and are not anticipated to create new significant traffic impacts. This remains unchanged with implementation of the Mitigated Project Alternative. During the project construction

period, the project traffic report indicated that the study roadway segment will not be significantly impacted by the project. This would also remain unchanged with implementation of this Mitigated Project Alternative. However, as with the proposed project, the study roadway segment will experience minor short-term increases in traffic during the peak construction period. The study roadway segment volume will return to pre-project operating conditions upon completion of project construction activities. Because the study roadway segment is anticipated to experience minor short-term increases in traffic, and with the implementation of the mitigation measures listed above, impacts related to temporary traffic increase during project implementation under the Mitigated Project Alternative would be reduced to less than significant levels. ***Net Change = Impacts are Reduced.***

Tribal Cultural Resources: Project remediation activities would result in the disturbance of CRHR-eligible archaeological site, CA-SLO- 1430, within the Eastern Remediation Area which is part of the larger CRHR-eligible Santa Margarita Ranch district, and also is individually eligible for listing on the CRHR due to its ability to provide scientific information regarding Native American cultural behaviors and adaption practices during prehistory. The site also holds the potential to provide information on early California history through archaeological deposits dated to the Mission Period. Additionally, tribal cultural resources that include (but are not limited to) human remains and burial items from CA-SLO-1430 are likely to be impacted by remediation activities under the proposed project and under the Mitigated Project Alternative as well.

As such, both the project and this Mitigated Project Alternative will result in potentially significant impacts to CA-SLO-1430. However, potential impacts can be lessened to the extent feasible with the incorporation of Mitigation Measures listed under Section 4.1, Cultural Resources, of this EIR.

Project activities under the proposed project and this Alternative will occur within the boundaries of the district, which contains a wide range of prehistoric and historic period cultural resources. While several archaeological sites have already been identified within or near the project area, there is a potential for encountering and impacting previously unknown resources. If these resources contain resources determined to be significant to a Native American tribe, remediation activities may result in potentially significant and unavoidable impacts. However, potential impacts can be considered lessened to the extent feasible with the incorporation of Mitigation Measures listed under Section 4.1, Cultural Resources, of this EIR. ***Net Change = Impacts Stay the Same.***

Utilities and Service Systems: As it relates to both the proposed remediation project and Mitigated Project Alternative, there is no housing or permanent population existing or projected within the project area. As such, there is no additional demand for permanent public utilities or services. The short-term use of water for dust control and other project water needs is not anticipated to have any long-term impacts on water availability or to affect the aquifer system. With respect to the generation of solid waste, following waste acceptance profiling, the impacted soil will be transported under waste manifest by licensed haulers to an approved and permitted recycling/disposal facility. The preferred destination for transported material is the Waste Management Inc. facility in Kettleman City in western Kings County, approximately 70 miles from the project area. Other potential locations include the Clean Harbors Buttonwillow facility or the McKittrick facility in western Kern County; these facilities are located approximately 100 miles from the project area. No impacted soil will be transported to the facility until acceptance documentation has been received. This remains unchanged with the Mitigated Project Alternative and impacts are considered less than significant. ***Net Change = Impacts Stay the Same.***

Wildfire: There are no existing structures, or population, in proposed remediation areas that could be potentially impacted following a wildfire. The proposed project and the Mitigated Project Alternative include implementation of a SWPPP with BMPs to avoid off-site sedimentation. There will be no substantive change in long-term drainage patterns. Upon completion of construction activities, final grade contours will be replaced to pre-project conditions using suitable fill soil with similar absorption rates and will not result in a change in the direction of surface runoff. Impacts related to wildfires would remain unchanged and are considered less than significant. ***Net Change = Impacts Stay the Same.***

6.4 Discussion of Alternative Sites

The evaluation of alternative sites is subject to special consideration under CEQA. The California Supreme Court, in *Citizens of Goleta Valley v. Board of Supervisors* (1990), indicates that a discussion of alternative sites is needed if the project "may be feasibly accomplished in a successful manner considering the economic, environmental, social, and technological factors involved" at another site.

As suggested in *Goleta*, several criteria form the basis of whether alternative sites need to be considered in detail. These criteria take the form of the following questions:

1. *Could the size and other characteristics of another site physically accommodate the project?*
2. *Is another site reasonably available for acquisition?*
3. *Is the timing of carrying out development on an alternative site reasonable for the applicant?*
4. *Is the project economically feasible on another site?*
5. *What are the land use designation(s) of alternative sites?*
6. *Does the lead agency have jurisdiction over alternative sites? and*
7. *Are there any social, technological, or other factors that may make the consideration of alternative sites infeasible?*

The project CAP and CAP Addendum, as approved by the Regional Board, were specifically intended to address cleanup of contamination existing on this particular site with site-specific abatement requirements. The nature of the proposed project therefore precludes the consideration of alternative sites. Consequently, alternative sites are not discussed further in this EIR.

6.5 Environmentally Superior Alternative

As required by CEQA, this section identifies the environmentally superior alternative. As shown above under Section 6.3, Mitigated Project Alternative, each of the impact issue areas were evaluated for the change in impact significance as a result of implementation of this Alternative. The net change of impact significance is noted at the end of each impact assessment.

The Mitigated Project Alternative includes redesign of key project elements intended to further reduce environmental impacts identified in the EIR. Specifically, this would consist of the adoption of the mitigation measures identified in this EIR into the design of the proposed remediation project as revised project elements intended to reduce environmental impacts to the extent feasible.

Otherwise, the Mitigated Project Alternative details would remain the same as the proposed project. As a result of the incorporation of the identified mitigation measures into this Mitigated Project Alternative, implementation would result in reduced impacts related to air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, transportation and tribal cultural resources. This Mitigated Project Alternative would also make it possible for the applicant to fully implement the requirements of the Regional Board. Overall, this is considered the environmentally superior alternative.

The No Project Alternative would not disturb the site at all, so there would be no impacts to natural and cultural and tribal cultural resources. There would also be no traffic, air quality, or noise generated. However, it would not fulfill the basic objectives of the Regional Board requirements, as there would be remaining impacts with respect to soil and water quality and hazards that could affect future use of the site. Further, the No Project alternative would not preclude on-site contaminants from further polluting soil and ground water sources in the vicinity.

7.0 References and Preparers

7.1 References

AECOM. 2019a. *Corrective Action Plan (CEMC Site No.* 351313) Addendum 01. Phillips 66 Company San Margarita Ranch Pipeline Site, Santa Margarita, California. July 26.

AECOM. 2019b. Storm Water Pollution Protection Plan for the Santa Margarita Ranch Remediation Project. Prepared for Phillips 66. June 26.

AECOM. 2019c. Geotechnical Memorandum – 01, Geotechnical Input for Remediation Design, Phillips 66 Santa Margarita Ranch Remediation Project**.** June 19.

AECOM. 2020a. Air Quality and Greenhouse Gas Study for Santa Margarita Ranch Remediation Project**.** March.

AECOM. 2020b. Traffic Assessment for Santa Margarita Ranch Remediation Project**.** March 24.

AECOM. 2020c. Well Destruction Work Plan, Phillips 66 Company, Santa Margarita Remediation Project, 9000 Yerba Buena Avenue, Santa Margarita, California. March 25.

APCD. 2012. *CEQA Air Quality Handbook.* April. Available online at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20Map2019%29_Linkedwit hMemo.pdf

APCD. 2017. *Clarification Memorandum for the San Luis Obispo County Air Pollution Control District's 2012 CEQA Air Quality Handbook.* November 2017. Available online at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/FINAL_Clarification%20Memorandum%2020172.pdf

Applied EarthWorks. 2019a. Cultural Resource Study (Phase 1) for the Santa Margarita Ranch Remediation Project, Santa Margarita, San Luis Obispo County, California. May.

Applied EarthWorks. 2019b. Archaeological Testing (Phase 2) for the Santa Margarita Ranch Remediation Project, Santa Margarita, San Luis Obispo County, California. September.

Applied EarthWorks. 2020. Archaeological Work Plan for CA-SLO-1430, Santa Margarita Ranch Remediation Project, Santa Margarita, San Luis Obispo County, California. February.

Bureau of Land Management. Clear Creek Resources Management Area Draft Resource Management Plan & Environmental Impact Statement, November 2009.

Bureau of Land Management. Clear Creek Resources Management Area Draft Resource Management Plan & Environmental Impact Statement, November 2009.

Cal-Adapt. 2012. Temperature Change. Available: http://cal-adapt.org/tools/factsheet/?units=imperial&model=all&scenario=a2&lat=35.3125&lng=-120.6875&zoomLevel=9&gridID=9q60vsqn1rje&tool=temperature. Accessed September 12, 2012.

California Air Pollution Control Officers Association. 2009. Model *Policies for Greenhouse Gases in General Plans*. Available: http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-ModelPolicies-6-12-09-915am.pdf. Accessed September 12, 2012.

California Air Resources Board 2012c. Advanced Clean Cars. Available: http://www.arb.ca.gov/msprog/consumer_info/advanced_clean_cars/consumer_acc.htm. Accessed September 11, 2012.

California Air Resources Board, 2008 Almanac Emission Projected Data: Estimated Annual Average Emissions—San Luis Obispo County, http://www.arb.ca.gov/ei/emissiondata.htm. Published in 2009.

California Air Resources Board, 2010a. Ambient Air Quality Standards.

California Air Resources Board, 2010b. Area Designations.

California Air Resources Board, AB 2588 Air Toxics "Hot Spots" Program, http://www.arb.ca.gov/ab2588/ab2588.htm, 2011b.

California Air Resources Board, Air Quality Data Statistics, http://www.arb.ca.gov/adam/topfour/topfour1.php, site accessed August 17, 2012b.

California Air Resources Board, Area Designation Maps—State and National, http://www.arb.ca.gov/desig/adm/adm.htm, 2011a.

California Air Resources Board, Naturally Occurring Asbestos, http://www.arb.ca.gov/toxics/asbestos/asbestos.htm, site accessed August 8, 202a.

California Air Resources Board, www.arb.ca.gov/research/aaqs/aaqs2.pdf, site accessed August 8, 2012a.

California Air Resources Board. 2007 (November*). California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit*. Available: http://www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf Accessed September 12, 2012.

California Air Resources Board. 2011a. *Status of Scoping Plan Recommended Measures*. Available: http:// www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf. Accessed September 11, 2012.

California Air Resources Board. 2011b. *Greenhouse Gas Emissions Inventory Summary for Years 2000-2009*. Available: <http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-09_2011-10-26.pdf>. Last updated October 26, 2011. Accessed September 12, 2012.

California Air Resources Board. 2011c. *Greenhouse Gas Inventory - 2020 Emissions Forecast*. Available: http://www.arb.ca.gov/cc/inventory/data/forecast.htm. Accessed September 12, 2012.

California Air Resources Board. 2012a. Cap and Trade. Available: http://www.arb.ca.gov/cc/capandtrade/ capandtrade.htm. Accessed September 11, 2012.

California Air Resources Board. 2012b. *Approved Regional Greenhouse Gas Reduction Targets.* Available: http://www.arb.ca.gov/cc/sb375/final_targets.pdf. Accessed September 11, 2012.

California Air Resources Board. Air Quality and Land Use Handbook: A Community Health Perspective, March 2005.

California Air Resources Board. Air Quality and Land Use Handbook, A Community Health Perspective. Sacramento, CA. 2005.

California Department of Conservation, Division of Mines and Geology. Open File Report 94-02, 03, Landslide

California Department of Conservation, Division of Mines and Geology. A General Location Guide for Ultra Mafic Rocks in California – Areas Likely To Contain Naturally Occurring Asbestos, Open File Report 2000-19, August 2000.

California Department of Conservation, Office of Mine Reclamation, Abandoned Mine Lands Unit, California's Abandoned Mines, A Report On The Magnitude And Scope Of The Issue In The State, Volume I& II, June, 2000.

California Department of Conservation, Office of Mine Reclamation, California's Abandoned Mines Land Program Fact Sheet, The Abandoned Mine Lands Unit, April 2010.

California Department of Conservation. 2019. *The Alquist-Priolo Earthquake Fault Zoning Act.* Available online at: https://www.conservation.ca.gov/cgs/alquist-priolo

California Department of Conservation. California Geologic Survey, Special Publication 42, Fault Rupture Hazard Zones in California, Interim Revision 2007.

California Department of Mines and Geology. Jennings C.W., Strand R.G., Rogers T.H., Geologic Map of California, Scale 1:750,000, 1977 (Fourth printing 1991).

California Department of Transportation (Caltrans). 2019. *Caltrans Manual of Uniform Traffic Control Devices 2014 Edition, Revision 4.* March. Available online at: http://www.dot.ca.gov/trafficops/camutcd/camutcd2014rev4.html

California Department of Water Resources June 2010a. Implementing California Flood Legislation into Local Land Use Planning: A Handbook for Local Communities (Public Review Draft). 2010.

California Department of Water Resources June 2010a. Implementing California Flood Legislation into Local Land Use Planning: A Handbook for Local Communities (Public Review Draft). 2010.

California Environmental Protection Agency. 2020. *Information Required From the State Water Resources Control Board (SWRCB) Under Government Code Section 65962.5(c)*. Linked resources accessed online on 3/27/20 at https://calepa.ca.gov/sitecleanup/corteselist/section-65962-5c/.

California Geological Survey, Seismic Shaking Hazard in California,

California Natural Resources Agency. 2009. *California Climate Adaptation Strategy*. Available: http://resources.ca.gov/climate_adaptation/docs/Statewide_Adaptation_Strategy.pdf. Accessed September 12, 2012.

California Public Utilities Commission. 2012. *California Solar Initiative Annual Program Assessment*. Available: http://www.cpuc.ca.gov/NR/rdonlyres/0C43123F-5924-4DBE-9AD2-8F07710E3850/0/CASolarInitiativeCSI AnnualProgAssessmtJune2012FINAL.pdf. Accessed September 11, 2012.

Council on Environmental Quality. 2011. Climate Change Adaptation Task Force. Available: http://www. whitehouse.gov/administration/eop/ceq/initiatives/adaptation. Accessed September 12, 2012.

DTSC. 2019. *ENVIROSTOR database*. Accessed online on 1/24/19 at: https://www.envirostor.dtsc.ca.gov/public/

Environmental Protection Agency. Latest Findings on National Air Quality. Status and Trends through2006. Contract No. EP-D-05-004. Work Assignment 3-4. Research Triangle Park, NC. EPA-454-R07-007.2008.

Federal Emergency Management Agency. Flood Insurance Rate Program (FIRM). Community Panel 060-310-0005-C. July 1981.

Food and Agriculture Code, Article 2, Section 821.]

http://redirect.conservation.ca.gov/cgs/rghm/pshamap/pshamain.htm.

Monk and Associates. 2020. Response to CDFWs Comments on the Phillips 66 Santa Margarita Ranch (Rossi) Major Grading Permit Early Consultation. August 3.

Monk and Associates. 2020a. Response to Comment letter Santa Margarita Ranch Remediation Project. March.

Monk and Associates. 2020b. Biological Resources Analysis Santa Margarita Ranch Remediation Project. March.

Regional Water Quality Control Board Geotracker. http://www.geotracker.waterboards.ca.gov/.

Rincon Consultants, Inc. 2008. Santa Margarita Ranch Agricultural Residential Cluster Subdivision Project and Future Development Program EIR. State Clearinghouse No. 2004111112. 2008.

RWQCB. 2019a. Letter to Mr. Ed Ralston, Phillips 66 Company providing conditional concurrence with the scope of work outlined in the CAP and CAP Addendum 01. September 5.

RWQCB. 2019b. *Water Quality Control Plan for the Central Coastal Basin.* June. Available online at: https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/docs/2019_basi n_plan_r3_complete.pdf

Saint Onge, Sr. 2013. Santa Margarita Ranch Oil Line Cultural and Paleontologic Resources Consultant Report. April.

San Luis Obispo Council of Governments. Community 2050 Blueprint. April 2009.

San Luis Obispo Council of Governments. Regional Transportation Plan – Preliminary Sustainable Community Strategy. December 2010.

San Luis Obispo County Air Pollution Control District, Clean Air Plan, December 2001.

San Luis Obispo County Hazardous Materials Emergency Response Plan - August 2001 (Administrative Revision Feb. 2003)

San Luis Obispo County. 1992. *County of San Luis Obispo General Plan Noise Element*. May. Available online at: https://www.slocounty.ca.gov/getattachment/16c8da3e-c51b-4134-8cff-0ed21a577d2e/Noise- Element.aspx

San Luis Obispo County. 2006. *County of San Luis Obispo General Plan Parks and Recreation Element*. December. Available online at: https://www.slocounty.ca.gov/getattachment/685896c6-bdbe-47ff-ae54- 2ee55fdfc4ac/Parks-and-Recreation-Element.aspx

San Luis Obispo County. 2010. *County of San Luis Obispo General Plan Conservation and Open Space Element*. May. Available online at: https://www.slocounty.ca.gov/getattachment/ba01754b-50ac-4c13-ba16-1a9eb9d56a01/Conservation-and-Open-Space-Element.aspx.

San Luis Obispo County. 2015. *Framework for Planning, Inland Area, General Plan*. Revised April, 2015. Available online at: https://www.slocounty.ca.gov/getattachment/00ca89fa-e35e-4c0f-bac7-ccd9b6c4954e/Framework-for- Planning-Inland.aspx

San Luis Obispo County. 2016. *Guidelines for Biological Resource Assessments – Guidelines for Biological Consultants*. Available online at: https://www.slocounty.ca.gov/Departments/Planning-Building/Planning-(Current- and-Environmental)/Forms-Documents-(Current-Environmental)/Environmental-Review/Information- Resources-for-Environmental-Consulta/Biological.aspx

San Luis Obispo County. 2019. *Land Use Ordinance, Title 22 of the County Code.* Revised March 2019. Available online at: https://www.slocounty.ca.gov/Departments/Planning-Building/Forms-Documents/Ordinances.aspx

San Luis Obispo, County of, General Plan, Revised October 2009.

San Luis Obispo, County of. Conservation and Open Space Element. May 2010.

San Luis Obispo, County of. General Plan: Parks and Recreation Element. 2006.

San Luis Obispo, County of. Planning and Building. *Dalidio Ranch Zoning District*. Print. http://www.slocounty.ca.gov/Assets/PL/Land Use Ordinances/Title 22 - Land Use Ordinance/Article 9.5.pdf.

San Luis Obispo, County of. San Luis Obispo Area Plan, Amended November 2006.

Sawyer, J.O.; Keeler-Wolf, T., Evens, J.M. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society Press.

Schultze, R. F., 1994. CWHR Agricultural Habitats. California Department of Fish and Game, Sacramento, CA.

Stantec. 2019. Draft Corrective Action Plan, CEMC Site No. 351313, Santa Margarita Ranch Pipeline Site, Santa Margarita, California. March.

State of California Resources Agency California Department of Fish and Game, Natural Diversity Database. 2008c. Special Vascular Plants, Bryophytes, and Lichens List.

State of California Resources Agency Department of Fish and Game. California Aquatic Invasive Species Management Plan. 2008a.

The Land Conservancy of San Luis Obispo County, San Luis Obispo Creek Watershed Enhancement Plan. January 2002.

United States Department of Agriculture, National Resources Conservation Service, Web Soil Survey, http://websoilsurvey.nrcs.usda.gov/app/.

United States Department of Agriculture. 2007 Census of Agriculture. February 2009 (updated December 2009).

United States Department of Agriculture. Soil Survey of San Luis Obispo County, California, Coastal Part, 1977.

United States Department of Agriculture. Soil Survey of San Luis Obispo County, Coastal Part: Soil Conservation Service. 1984.

7.2 List of Preparers

This EIR was prepared by Oliveira Environmental Consulting LLC under the direction of Jeff Oliveira, Principal Environmental Planner. The EIR was prepared under contract to the County of San Luis Obispo. Cindy Chambers, Planner III, Steve McMasters, Principal Environmental Specialist, and Lacey Minnick, Supervising Planner, are the project managers for the County of San Luis Obispo Planning and Building Department.

Attachment A

Initial Study Checklist

Phillips 66 Santa Margarita Remediation Project

PMTG2019-00065/ED19-204

Initial Study Checklist

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: The proposed project could have a "Potentially Significant Impact" for environmental factors checked below. The purpose of the following discussion is to provide a supplement to the project Environmental Impact Report (EIR) that provides the required impact analysis for the remaining issue areas under CEQA Appendix G.

☐ Aesthetics	☒ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture & Forestry Resources	☒ Hazards & Hazardous Materials	☐ Recreation
☒ Air Quality	☒ Hydrology & Water Quality	☒ Transportation
☒ Biological Resources	☐ Land Use & Planning	☒ Tribal Cultural Resources
☒ Cultural Resources	☐ Mineral Resources	☐ Utilities & Service Systems
☐ Energy	☐ Noise	☐ Wildfire
☒ Geology & Soils	☐ Population & Housing	☒ Mandatory Findings of Significance

A. Project

DESCRIPTION: Request by Phillips 66 for a major grading permit (PMTG2019-00065) for the excavation of hydrocarbon-contaminated soils at varying depths and widths within two areas along an existing pipeline alignment on the subject parcel as detailed in the project Corrective Action Plan (CAP and CAP Addendum), including the backfilling of the excavations and restoration of the sites to current grade The project will result in the disturbance of approximately 20 acres, including approximately 87,046 cubic yards of cut and 96,023 cubic yards of fill material on the 899-acre parcel. The proposed project is within the Agriculture land use category and is located at 9000 Yerba Buena Avenue in the community of Santa Margarita. The site is in the Salinas River Sub Area of the North County Planning Area. Please refer Section 2.0, Project Description, of this EIR for a detailed discussion of the proposed project elements, including graphics showing the project location and site plans.

ASSESSOR PARCEL NUMBER(S): 070-091-036

Latitude: 35 º 23 ' 39.4908 " N **Longitude:** 120 º 36 ' 58.2264 " W **SUPERVISORIAL DISTRICT #** 5

Other Public Agencies Whose Approval is Required

Permit Type/Action	Agency
Corrective Action Plan	Central Coast Regional Water Quality Control Board
Encroachment Permit	CalTrans District 5
Authority to Construct	San Luis Obispo County Air Pollution Control District
National Pollutant Discharge Elimination System General Storm Water Permit for Construction Activities and Storm Water Pollution Prevention Plan	State Water Resources Control Board
Monitoring Well Destruction Permits	County Environmental Health Services

B. Existing Setting

Plan Area: North County **Sub:** Salinas River **Comm:** Santa Margarita

Land Use Category: Agriculture

Combining Designation: Flood Hazard Historic

Parcel Size: 900 acres

Topography: Nearly level to gently sloping

Vegetation: Grasses Scattered Oaks Riparian

Existing Uses: Agricultural uses

Surrounding Land Use Categories and Uses:

North: Agriculture; ***East:*** Agriculture;

South: Agriculture; ***West:*** Agriculture;

C. Environmental Analysis

The Draft EIR for the proposed project provides a focused analysis of the primary impact area affected by the proposed remediation activities discussed under Section 2.0, Project Description, which is the Cultural Resources/Tribal Cultural Resources.

The purpose of the following discussion is to supplement the Draft EIR with an attachment that contains the required impact analysis for the remaining issue areas as stipulated under CEQA Appendix G.

Initial Study Checklist

I. AESTHETICS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:					
(a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
(b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
(c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
(d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Setting

The proposed project is located within the Santa Margarita Ranch, in the Community of Santa Margarita, California (please refer to Section 2.0, Project Description, of the EIR for a detailed depiction of the project location). The visual character of Santa Margarita Ranch area is primarily rural, with minimal development throughout the almost 14,000-acre property. Existing views of the Santa Margarita Ranch, looking east from Highway 101 and south of the Highway 58 interchange with Stagecoach Road, are composed primarily of the Santa Lucia Mountains and associated foothills. North of the Highway 58 interchange, views of the Ranch become more expansive as the topography changes from mountainous to a relatively flat, rolling hill landscape. Existing views from this vantage include grazing land in the foreground; the existing Ranch headquarters, including an equestrian center, barn and home site, in the middle ground; with vacant hillside grasslands and oak woodlands in the background. The Ranch retains a rural character due to the absence of substantial urban development.

The Ranch is flanked by the Salinas River to the east. Gently rolling grasslands, vineyards, row crops, grazing land, riparian corridors, and dense oak woodland characterize the interior portions of the property. In addition to its rural character, the Ranch is located within an area dominated by mountain and hill terrain which contributes to its visual characteristics.

Extending to the south of the Ranch, the visual character of the surrounding area is dominated by agricultural uses, with open space south of the property in the Los Padres National Forest. Some low-density rural residential development and agricultural uses are located east and west of the Santa Margarita Ranch property. North of the Ranch, density increases as neighborhoods transition into residential-suburban homes, the community of

Margarita Farms, and commercial retail uses in the City of Atascadero. The Ranch surrounds the urban and suburban uses in the community of Santa Margarita. A sand and gravel quarry is located just outside of the Ranch property, approximately two miles northeast of Santa Margarita.

The visual elements of the proposed remediation project will include temporary excavation activities, including transport trucks and equipment, equipment staging and soil stockpiling, construction fencing, and other related construction activities. Work would occur over one construction period between April and October to avoid work during the rainy season. After the construction period, all equipment and fencing will be removed except for final project restoration Best Management Practices (BMPs).

Regulatory Setting

CEQA establishes that it is the policy of the state to take all action necessary to provide people of the state "with… enjoyment of aesthetic, natural, scenic and historic environmental qualities" (Public Resources Code Section 21001(b)).

A scenic vista is generally defined as a high-quality view displaying good aesthetic and compositional values that can be seen from public viewpoints. A substantial adverse effect on a scenic vista would occur if the project would significantly degrade the scenic landscape as viewed from public roads or other public areas.

The County of San Luis Obispo Inland Land Use Ordinance (LUO) establishes regulations for exterior lighting (LUO 22.10.060), height limitations for each land use category (LUO 22.10.090), scenic highway corridor standards (LUO 22.10.095), and other visual resource protection policies.

The Land Use Element (LUE) Framework for Planning (Inland) contains policy statements that serve as a framework for evaluating proposed projects for their aesthetic merit in areas designated as Sensitive Resource Areas (SRAs). The SRA combining designation occurs along the southwestern edge of the Santa Margarita Ranch property.

The County General Plan Open Space Element contains policies for development in scenic corridor areas. The Open Space Element states that no officially designated scenic highways are located in the vicinity of Santa Margarita Ranch. However, Open Space Element Policy #24 specifies a number of County roads to be studied to determine if and where scenic corridors should be designated, including two in the project vicinity: Highway 58 from the Santa Margarita urban reserve line to the Kern County line and West Pozo Road between Hi Mountain Road and Highway 58.

Impact Discussion

The proposed project is limited to the temporary construction activities associated with the subsurface remediation of the documented hydrocarbon pollution, performed in accordance with the CAP and CAP Addendum approved by the Central Coast Regional Water Quality Control Board (Regional Board), discussed in detail under Section 2.0 of this EIR, and does not include any physical or structural development. As such, the project would not result in permanent visual impacts. With respect to the proposed remediation activities, project excavation will be performed within the boundaries of the Santa Margarita Ranch and will not be visible to surrounding public areas.

According to the County's Conservation and Open Space Element, no officially designated state scenic highways are located in the vicinity of Santa Margarita Ranch (SLO County, 2010).

Regarding visual impact to scenic resources, it is important to note that, according to County Ordinance 22.05.030(d)(3), a grading permit may be issued only where the Building Official first finds, where applicable, that: "The proposed grading will not create substantial adverse long-term visual effect visible from off-site."

Based on the nature of the temporary construction activities, the absence of any proposed development, and the implementation of the County's LUO, LUE and General Plan, impacts to aesthetic resources and impacts related to glare and nighttime lighting are expected to be less than significant.

Mitigation Measures

Impacts are considered less than significant. No mitigation measures are required.

II. AGRICULTURE AND FORESTRY RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
(a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
(b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
(c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☒	☐
(d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
(e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

Setting

California is the leading state in agricultural production in the United States and San Luis Obispo County consistently ranks within the top 20 counties of the State in overall agricultural productivity.

The County of San Luis Obispo supports a unique, diverse, and valuable agricultural industry that can be attributed to its Mediterranean climate, fertile soils, and sufficient water supply. In addition, the County functions as an important center for agricultural commerce, both locally and beyond.

Agriculture makes a substantial contribution to the county economy annually. According to the Annual Crop Report for San Luis Obispo County (2018), San Luis Obispo County agricultural production totaled $1,035,499,000. The top five crops, by value in San Luis Obispo County in 2018 included: wine grapes ($276,002,000), strawberries ($268,356,000), broccoli ($48,348,000), avocados ($46,145,000), and cattle and calves ($43,761,000).

The Santa Margarita Ranch has been historically utilized for grazing and crop production since the late 1700s. Crops such as wine grapes and olives were cultivated in the Ranch Headquarters area (north of the community of Santa Margarita) and herds of horses, cattle and sheep were grazed on the surrounding rangelands.

The project area is designated "Grazing Land", "Farmland of Local Importance", and "Farmland of Local Potential", by the State Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program and does not contain "Prime Farmland", "Unique Farmland", or "Farmland of Statewide Importance.

Existing agriculture infrastructure includes ranch wells and water storage reservoirs. An existing vineyard (the Cuesta Ridge Vineyard) is located in the southern portion of the Ranch. The Ranch also includes the historic Asistencia barn, which is used for events and not considered part of the working agricultural infrastructure. The remainder of the 14,000-acre Ranch is used primarily for cattle grazing.

Regulatory Setting

The Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agriculture or related open space use. A contract may be entered into for property with agricultural, recreational and/or open space uses in return for decreased property taxes. The County Agricultural Preserve Rules of Procedure require certain minimum parcel sizes and land use restrictions applicable to agricultural preserve lands under their respective contracts.

The County of San Luis Obispo Agriculture Element includes policies, goals, objectives, and other requirements that apply to lands designated in the Agriculture land use category.

Impact Discussion

No "Prime Farmland", "Unique Farmland", or "Farmland of Statewide Importance", as mapped by the State Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, will be affected by the proposed temporary remediation project.

Additionally, due to its temporary nature, the proposed remediation project would not directly or indirectly affect the existing cattle grazing immediately surrounding the project area.. The agricultural operations associated with the Ranch would remain available during and after project implementation.

The temporary nature of proposed project-related work in the Eastern and Western Remediation Areas would not directly or indirectly affect the existing cattle grazing immediately surrounding the project area, which is designated "Agriculture", by the County General Plan [Framework for Planning (Inland)].

No "forest land", "timberland", or "timberland zoned Timberland Production", as defined, is affected by the project. Therefore, this issue does not apply to the Project.

The temporary nature of the proposed remediation activities are not ultimately expected to result in permanent impacts related to agricultural resources. Impacts are determined to be less than significant.

Mitigation Measures

Impacts are considered less than significant. No mitigation measures are required.

III. AIR QUALITY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:					
(a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
(b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
(c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
(d)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Setting

Air quality is defined by the concentration of pollutants in relation to their impact on human health. Concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, and sunlight. Therefore, ambient air quality conditions within the local air basin are influenced by natural factors such as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

The project site, located within the Santa Margarita Ranch, is part of the South Central Coast Air Basin (SCCAB) which includes all of San Luis Obispo, Santa Barbara, and Ventura counties. The climate of San Luis Obispo County and all of the SCCAB is strongly influenced by its proximity to the Pacific Ocean and the location of the semi-permanent high-pressure cell in the northeastern Pacific. With a Mediterranean-type climate, the project area is characterized by warm, dry summers and cool winters with occasional rainy periods. Maximum summer temperatures in the County average about 70 degrees Fahrenheit near the coast, while inland valleys are often in the high 90's. Average minimum winter temperatures range from the low 30's along the coast to the low 20's inland.

Airflow around the County plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high-pressure system and other

global patterns, topographical factors, and circulation patterns resulting from temperature differences between the land and the sea. The region is also subject to seasonal "Santa Ana" winds. These are typically hot, dry northerly winds which blow offshore at 15-20 mph, but can reach speeds over 60 mph. Two types of temperature inversions (warmer air on top of cooler air) are created in the area: subsidence and radiational. The subsidence inversion generally forms at about 1,000 to 2,000 feet and can occur throughout the year, but it is most evident during the summer months. Surface inversions are formed by the more rapid cooling of air near the ground during the night, especially during winter. Both types of inversions limit the dispersal of air pollutants within the regional airshed due to low winds and stable temperatures.

Regulatory Setting

Federal Clean Air Act and California Clean Air Act: Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Through the Federal Clean Air Act (CAA) and California Clean Air Act (CCAA), six air pollutants have been identified by the United States Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) as being of concern both on a nationwide and statewide level: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). The CAA and CCAA established Ambient Air Quality Standards (AAQS) and emergency episode criteria for those pollutants to provide a sufficient margin of safety to protect public health and welfare. Because the AAQS for these are regulated using human health and environmentally based criteria, they are commonly referred to as "criteria air pollutants."

Areas are classified as attainment, non-attainment, or maintenance (previously non- attainment and currently attainment) for each criteria pollutant based on whether the federal and state AAQS have been achieved. Table 1 shows the attainment status of San Luis Obispo County for State and federal AAQS. "Attainment" means those areas where air pollution levels meet the AAQS for that pollutant, while "nonattainment" applies to areas that violate these standards. Areas can also be "unclassified" if the area cannot be classified on the basis of available information.

Table 1. San Luis Obispo County Pollutant Attainment Status

Pollutant	Averaging Time	California Standards		Federal Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	1 Hour	0.09 ppm (180 µg/m^3)	Non-Attainment	-	Non-Attainment Eastern SLO County - Attainment Western SLO County[b]
	8 Hour	0.07 ppm (137µg/m^3)	Non-Attainment	0.07 ppm (137 µg/m^3)[a]	
PM_{10}	24 Hour	50 µg/m^3	Non-Attainment	150 µg/m^3	Unclassified[c]/Attainment
	Annual Arithmetic Mean	20 µg/m^3		--	
$PM_{2.5}$	24 Hour	No State Standard	Attainment	35 µg/m^3	Unclassified[c]/Attainment

	Annual Arithmetic Mean	12 µg/m^3		12.0 µg/m^3 [d]	
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m^3)	Attainment	9.0 ppm (10 mg/m^3)	Unclassified[c]
	1 Hour	20 ppm (23mg/m^3)		9.0 ppm (10 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.03 ppm (57µg/m^3)	Attainment	0.053 ppm (100 µg/m^3)	Unclassified[c]
	1 Hour	0.18 ppm (330µg/m^3)		100 ppb (196 mg/m^3)	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	--	Attainment	0.03 ppm (80 µg/m^3)	Unclassified[c]
	24 Hour	0.04 ppm (105µg/m^3)		0.14 ppm (365µg/m^3)	
	3 Hour	--		0.05 ppm (1300µg/m^3)[e]	
	1 Hour	0.25 ppm (655µg/m^3)		75 ppb (196mg/m^3)	
Lead	30 Day Average	1.5µg/m^3	Attainment	--	No Attainment Information
	Calendar Quarter	--		1.5 µg/m^3	
	Rolling 3-Month Average*	--		0.15 µg/m^3	

a. The 2008 NAAQS for 8 hr ozone is 0.075 ppm. The 2015 NAAQS for 8 hr ozone is 0.070 ppm. The attainment status shown in this table relates to the 2008 and 2015 NAAQS. SLO County has been designated non-attainment of the 2015 NAAQS. NAAQS is National Ambient Air Quality Standards

b. San Luis Obispo County has been designated non-attainment east of the -120.4 deg Longitude line, in areas of SLO County that are south of latitude 35.45 degrees, and east of the -120.3 degree Longitude line, in areas of SLO County that are north of latitude 35.45 degrees. Map of non-attainment area is available upon request from the APCD.

c. Unclassified (EPA/Federal definition): Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for that pollutant.

d. Federal PM2.5 Secondary Standard is 15 µg/m3

e. Secondary Standard.

Source: APCD 2019; revised January 29, 2019

As shown above in Table 1, with respect to the California AAQS, the County is designated as an attainment area for all criteria pollutants, except ozone and PM_{10}. With respect to the federal AAQS, the County is in attainment or

unclassified for all pollutants except ozone. Specifically, the eastern part of the County is designated as a nonattainment area for ozone.

Local Air Quality Regulations: The San Luis Obispo Air Pollution Control District (APCD) adopted the 2001 Clean Air Plan in 2002, which sets forth strategies for achieving and maintaining the state ozone standard. The Clean Air Plan outlines the APCD's strategies to reduce ozone precursor emissions (reactive organic gases [ROG] and nitrogen oxides [NO_X]) from a wide variety of stationary and mobile sources. In January 2020, the County also prepared an Ozone Emergency Episode Plan which provides the basis for taking actions when ambient ozone concentrations reach a level that could endanger public health in the County. In 2003, the California Legislature enacted Senate Bill (SB) 656 to reduce public exposure to PM. SB 656 required CARB in consultation with local air pollution control districts, to develop and adopt a list of PM reduction strategies. APCD adopted the PM Report and associated control measures in July 2005.

In April 2012, APCD developed and updated the CEQA Air Quality Handbook to ensure that environmental impacts from new development are addressed and adequately mitigated. The CEQA Handbook provides information on significance thresholds for determining potential air quality and Greenhouse Gas (GHG) emissions impacts from proposed development and provides recommendations on the level of mitigation necessary to reduce those impacts. APCD released a Clarification Memorandum in 2017 as an update and supplement to the CEQA Air Quality Handbook. Table 2 below lists the emissions thresholds from the CEQA Air Quality Handbook.

Table 2. San Luis Obispo County Thresholds of Significance for Construction Emissions

Pollutant	Threshold[1]		
	Daily	Quarterly Tier 1	Quarterly Tier 2
ROG + NO_x (combined)	137 lbs.	2.5 tons	6.3 tons
Diesel Particulate Matter (DPM)	7 lbs.	0.13 tons	0.32 tons
Fugitive Particulate Matter (PM_{10}), Dust	--	2.5 tons	--
Greenhouse Gas Emissions	Estimated for informational purposes		

1. Daily and quarterly emission thresholds are based on the California Health and Safety Code and the ARB Carl Moyer Guidelines.

Source: APCD 2012 CEQA Air Quality Handbook, Table 2-1, and 2017 Clarification Memo.

In addition to the thresholds discussed above, the County of San Luis Obispo APCD adopted the Clean Air Plan in January 1992; the Plan was updated in 1998, and again in 2001. The Clean Air Plan is a comprehensive planning document designed to reduce emissions from traditional industrial and commercial sources, as well as from motor vehicle use. The purpose of the County's Clean Air Plan is to address the attainment and maintenance of state and federal ambient air quality standards by following a comprehensive set of emission control measures within the Plan.

In addition, an air quality plan assists in bringing an area that does not attain federal and state AAQS standards into attainment of those standards. The Clean Air Plan and PM Report present comprehensive strategies to reduce emissions from stationary, area, mobile, and indirect sources. Such strategies include transportation and land use strategies to reduce emissions from motor vehicles and methods for controlling ROG and NOX from stationary sources.

Consistency with the Clean Air Plan is based on whether the project would exceed the estimated emissions in that plan, which are based on assumptions of equipment use, projections of population and vehicle miles traveled, and whether the project incorporates transportation and land use strategies consistent with the Clean Air Plan.

Impact Discussion

The proposed project activities have the potential to result in an increase in vehicular traffic associated with, and limited to, construction activity, which would result in the potential degradation of the air quality of the air basin. Project implementation may also increase air pollution due to construction activities and energy generation for equipment used. Modeling has been conducted to estimate increases in criteria air pollutants and precursors (e.g., respirable particulate matter [PM_{10}], fine particulate matter [$PM_{2.5}$], reactive organic gases [ROG], and oxides of nitrogen [NO_X]) as a result of the proposed project activities.

In order to provide a quantitative analysis of the air quality impacts resulting from the proposed project, an Air Quality and GHG Study was prepared by AECOM (2020) in accordance with the applicable APCD guidelines. In order to inform the air quality analysis and to get agency input on the study methodology, the applicant met with APCD staff in April 2019 and again in early 2020 to review project details and confirm the applicable methods and thresholds for CEQA review, taking into consideration that the Project entails only short-term construction activity with no operational emissions. In a subsequent email communication, APCD staff clarified that the daily diesel particulate emissions should be addressed, regardless of whether or not Project construction is over 90 days (email correspondence between A. Mutziger, and T. Murphy, AECOM, May 6, 2019).

The resulting final modeling and study methodology has been reviewed and accepted, with required mitigation, by the APCD as part of the project inter-agency coordination process.

As discussed previously, the purpose of the proposed project is to implement remediation actions at the Western and Eastern Remediation Areas in accordance with the CAP and CAP Addendum that was approved by the Regional Board. The proposed remediation project would involve the temporary use of off-road equipment, worker trips, and haul trucks to implement the remediation actions, and activities would cease upon completion.

The proposed remediation project would be limited to temporary construction activities and would not result in operational activities, population, or vehicle trips beyond those considered in the Clean Air Plan. In addition, consistent with statewide regulations such as the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, project contractors are required limit idling time and reduce associated emissions and the project would be subject to fugitive dust control practices to further reduce fugitive dust emissions consistent with APCD Rule 401, Visible Emissions, Rule 402, Nuisance, and Rule 403, Particulate Matter Emission Standards. As such, impacts related to the potential for conflicting with or obstructing implementation of the Clean Air Plan are considered less than significant.

Construction Impacts: As discussed in the project air quality impact analysis report, construction emissions associated with the proposed remediation activities would be short term in nature and limited to temporary emission sources of ROG, NO_X, and PM (exhaust and fugitive dust). ROG, NO_X, and exhaust PM emissions are associated primarily with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive PM dust emissions are associated with site preparation, earthmoving and travel on roads and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles. Earthmoving and material handling operations are the primary sources of fugitive PM dust emissions from construction activities.

The emission modeling prepared for the project (using CalEEMod software, version 2016.3.2) was reviewed and accepted by the APCD as a part of the project air quality report and is included in the EIR under Attachment F. The emissions modeling calculated emissions during construction due to fugitive dust from grading activities and off-road and on-road equipment exhaust emissions. As provided in the emissions model, work is planned to occur

over one construction period in 2021 between mid- April and the end of October of 2021. In the event that off-site hauling of impacted soil is not completed in 2021, hauling is estimated to occur between March and May 2022. However, it is possible that off-site trucking would commence earlier in the year, weather permitting. If trucking commences earlier in the year, the air quality and GHG analysis performed for the project would remain accurate as the total and daily number of trucks would remain unchanged.

For planning and project implementation purposes, three distinct off-site trucking timeframes (Scenarios A - C) have been considered, and the tables below summarize daily and quarterly emissions under each trucking scenario. Please refer to Section 2.0, Project Description, of this EIR for a detailed discussion of the project hauling scenarios, their purpose, trucking schedule, and qualifiers for identifying the preferred scenario.

The daily and quarterly emissions presented below include remediation project activities plus off-site trucking activities for each scenario under the Project Description. Detailed assumptions, calculations, as well as CalEEMod model run outputs, are provided in the EIR under Attachment F.

Table 3 presents the estimated maximum daily emissions associated with remediation activities under each scenario for comparison to the APCD daily thresholds of significance.

Table 3. Maximum Daily Emissions Summary

Project Scenario	Pollutant		
	ROG + NO_x	**Diesel Particulate Matter (lbs/day)[1]**	**Fugitive Dust (lbs/day)[2]**
Project Activities + Trucking Scenario A	108.48	1.98	16.24
Project Activities + Trucking Scenario B	114.0	2.22	18.50
Project Activities + Trucking Scenario C	94.49	1.91	15.65
APCD Daily Threshold	137.0	7.0	NA
Threshold Exceeded?	***No***	***No***	***NA***

Notes: See Attachment F for additional calculation details. ROG = reactive organic gases; NOX = nitrogen oxides; lbs/day = pounds per day; APCD = San Luis Obispo County Air Pollution Control District

1. Diesel particulate matter (DPM) emissions are equal to exhaust PM_{10} (particulate matter less than 10 micrometers in diameter [µm]). This is a conservative approach as more than 90% of diesel particulate matter is less than 1 µm in diameter. (CARB 2020)
2. Fugitive dust is equal to fugitive dust PM_{10}. Emission estimates do not include reductions associated with fugitive dust APCD Rules and Regulations.

Table 4, below, presents the estimated maximum quarterly emissions associated with remediation activities under each scenario for comparison to the APCD quarterly thresholds of significance.

Table 4. Maximum Quarterly Emissions Summary

Project Scenario	Pollutant		
	ROG + NO_x (tons/quarter)	Diesel Particulate Matter (tons/quarter)[1]	Fugitive Dust (tons/quarter)[2]
Project Activities + Trucking Scenario A	2.12	0.11	0.58
Project Activities + Trucking Scenario B	2.29	0.12	0.70
Project Activities + Trucking Scenario C	1.71	0.11	0.53
APCD Tier 1 Threshold (tons/quarter)	2.5	0.13	2.5
Threshold Exceeded?	***No***	***No***	***No***

Notes: See Attachment F for additional calculation details. ROG = reactive organic gases; NOX = nitrogen oxides; lbs/day = pounds per day; APCD = San Luis Obispo County Air Pollution Control District

1. Diesel particulate matter (DPM) emissions are equal to exhaust PM_{10} (particulate matter less than 10 micrometers in diameter [µm]). This is a conservative approach as more than 90% of diesel particulate matter is less than 1 µm in diameter. (CARB 2020)
2. Fugitive dust is equal to fugitive dust PM_{10}. Emission estimates do not include reductions associated with fugitive dust APCD Rules and Regulations.

As shown above in Tables 3 and 4, the estimated emissions resulting from the proposed remediation project would not exceed the applicable daily or quarterly thresholds for combined ROG and NO_X, diesel particulate matter, or fugitive dust under any of the scenarios proposed. As such, any trucking scenario may be used individually or in combination so long as the total and daily maximum number of truck trips do not change.

Pursuant to the APCD guidelines and Rule 401, Visible Emissions, and Rule 402, Nuisance, the proposed remediation project would be required to include measures to reduce emissions of fugitive dust control during construction activities. Per APCD guidelines, projects with grading areas that are greater than 4 acres or are within 1,000 feet of any sensitive receptor will implement mitigation measures to manage fugitive dust emissions such that they do not exceed the APCD's 20 percent (20%) opacity limit at any given time.

However, temporary impacts from the project, including but not limited to excavation and construction activities, vehicle emissions from heavy duty equipment and naturally occurring asbestos, have the potential to create dust and emissions that exceed air quality standards for temporary and intermediate periods.

Construction activities can generate fugitive dust, which could be a nuisance to local residents and businesses in close proximity to the proposed construction site. Although emissions modeling shows that the threshold is not exceeded, under direction from the APCD the proposed project has been determined to have the potential to generate construction emissions in excess of the thresholds established by the APCD. As such, impacts related to construction emissions are considered significant but mitigable.

With respect to the potential exposure of sensitive receptor to substantial pollutant concentrations, some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. Sensitive receptors locations for air pollution are generally considered to be schools, parks and playgrounds, daycare centers, residences, and hospitals.

As shown in Tables 3 and 4, construction activities would result in emissions of criteria air pollutants, but at levels that would not exceed the APCD thresholds of significance. In addition to criteria air pollutants, the EPA and ARB regulate toxic air contaminants (TACs). The greatest potential for TAC emissions during construction would be

related to diesel PM emissions associated with heavy-duty equipment operations. As shown in Tables 3 and 4, proposed project emissions would not exceed the APCD thresholds for diesel PM, a known TAC.

The nearest sensitive receptors to the project area are single family residences located in the town of Santa Margarita. Several residences are located approximately 2,500 to 3,000 feet south of the excavation areas, and a single residence is located approximately 1,800 feet north of the Eastern Remediation Area. Excavation will be conducted within the central portion of the Santa Margarita Ranch property. The property has no permanent population, but the Ranch occasionally hosts weekend (including Friday afternoon and evening) events in a central location that is near the Eastern Remediation Area during the Project construction period.

In the case of events during the project construction period, Project construction activities will cease except for possible off-site trucking for partial days on Fridays since construction activities are only planned during Monday through Thursday. In addition, loading of haul trucks and off-site trucking would occur in the Western Remediation Area, located approximately 3,000 feet southwest from the Ranch central event area; thus, construction emissions would be generated at a substantial buffer distance from the event attendees and for a very short time period.

As such, construction activities would not be anticipated to expose sensitive receptors (residences and event attendees) to substantial TAC concentrations. In addition, with the implementation of required mitigation measures for construction phase air quality emissions, including the proposed construction schedule and overall distance to the nearest residences, impacts to sensitive receptors are considered less than significant.

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed, and direction; and the presence of sensitive receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose individuals to objectionable odors are deemed to have a significant impact. Typical facilities that generate odors include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities.

With respect to the potential for impacts related to odors, construction activities associated with the proposed remediation project could result in short-term odor emissions from diesel exhaust associated with construction equipment and disturbance and movement of hydrocarbon-impacted soil. However, the project would utilize typical construction techniques, and odors would be typical of most construction projects and temporary in nature. Additionally, the source of the hydrocarbon-contaminated soil was from a pipeline release that occurred over 20 years ago, and the nature of the hydrocarbon-contaminated soil is weathered and contains limited volatile organic compounds that could contribute to odors. Hydrocarbon-contaminated soil would be hauled in covered loads from the Western Remediation Area under Hazardous Waste Manifests. Therefore, the potential for odorous emissions would be minimal.

In addition, potential odors would be temporary and localized to the project area and the nearest receptors are located over 1,800 feet away. Therefore, the proposed remediation project would result in less than significant impacts related to emissions (such as those leading to odors).

Operational Impacts: The proposed project is limited to the temporary construction activities associated with the soil remediation activities and would not result in operational impacts. Air quality impacts are expected to be limited to construction-related emissions.

Mitigation Measures

As recommended by the APCD through their review of the proposed project (APCD, April 27, 2020), the project applicant team evaluated the construction impacts of this project using the most recent CalEEMod computer model. The modeling results indicate the maximum quarterly emissions will be less than the APCD's significance

threshold values identified in Table 2-1 of the *CEQA Air Quality Handbook* (April 2012). The APCD concurred that the methodology used to calculate the peak quarterly emissions is appropriate for this project. Based on project input from the APCD, the following mitigation measures shall be implemented to ensure impacts related to project emissions are less than significant.

AQ-1 Construction Permit Requirements: Portable equipment, 50 horsepower (hp) or greater, used during construction activities may require California statewide portable equipment registration (issued by the California Air Resources Board) or an APCD permit. The following list is provided as a guide to equipment and operations that may have permitting requirements but should not be viewed as exclusive. For a more detailed listing, refer to the Technical Appendices, page 4-4, in the CEQA Air Quality Handbook (April 2012).

- Power screens, conveyors, diesel engines, and/or crushers;
- Portable generators and equipment with engines that are 50 hp or greater;
- Electrical generation plants or the use of standby generators;
- Internal combustion engines;
- Rock and pavement crushing;
- Tub grinders; and
- Trommel screens.

AQ-2 Fugitive Dust Mitigation: To mitigate fugitive dust emissions related to project construction activities, the following shall be implemented:

a) Reduce the amount of the disturbed area where possible;

b) Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible;

c) All dirt stock pile areas should be sprayed daily as needed;

d) Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities;

e) Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established;

f) All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD;

g) All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used;

h) Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;

i) All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114;

j) Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site;

k) Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible;

l) All of these fugitive dust mitigation measures shall be shown on grading and building plans; and

m) The contractor or builder shall designate a person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the APCD Compliance Division prior to the start of any grading, earthwork or demolition.

AQ-3 Measures for Reducing Emissions: The required mitigation measures for reducing nitrogen oxides (NO_x), reactive organic gases (ROG), and diesel particulate matter (DPM) emissions from construction equipment are listed below:

- Maintain all construction equipment in proper tune according to manufacturer's specifications;
- Fuel all off-road and portable diesel powered equipment with CARB certified motor vehicle
- diesel fuel (non-taxed version suitable for use off-road);
- Use diesel construction equipment meeting CARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State off-Road Regulation;
- Use on-road heavy-duty trucks that meet the CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
- Construction or trucking companies with fleets that that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance;
- All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit;
- Diesel idling within 1,000 feet of sensitive receptors is not permitted;
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
- Electrify equipment when feasible;
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and,
- Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

AQ-4 Construction Phase Mitigation: As stipulated by the APCD, in order to manage fugitive dust emissions, the Air Quality notes in the Grading Plan (drawing number G-01 and sheet number 2 of 28. AECOM, April 2020) submitted by the applicant as part of the Major Grading Permit application shall be required

to be implemented as mandated mitigation measures for this project. Please refer to the attached Grading Plan for details on the required measures.

AQ-5 Off-road Construction Equipment Emissions: As stipulated by the APCD, prior to the start of the project, the applicant shall provide proof to the County of San Luis Obispo that the final schedule and the final equipment list proposed for construction are consistent with the assumptions in the air quality modeling prepared for this project. The results of the consistency review shall be provided to the APCD.

If review demonstrates there will be a significant difference in the final configuration of the project fleet and equipment list, the applicant shall recalculate the emissions, compare emissions to APCD construction thresholds, and, if necessary, work with the Lead Agency and APCD to update mitigation measures. Key information to provide includes the following specifics about the final equipment:

- Off road equipment: Make, type, model number, CARB EIN, horsepower (hp), engine model year, engine Tier, and DOORS "compliance snapshot" for any fleet used on the project; and
- Schedule: Start and end dates of both remediation and off-site hauling work.

AQ-6 APCD Permitting of Hydrocarbon Contaminated Soil Processes: This remediation project shall require an APCD Authority to Construct permit to address proper management of the hydrocarbon-contaminated soil prior to the start of any earthwork. This permit shall include conditions to minimize emissions from any excavation, disposal or related process. This includes, but is not necessarily limited to, the conditions outlined under Mitigation Measure AQ-3. To the extent feasible, Phillips 66 shall contact the APCD Engineering & Compliance Division within 120 days before the start of excavation to begin the permitting process.

Implementation of the Mitigation Measures listed above will reduce impacts related to air quality to less than significant levels.

IV. BIOLOGICAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
(b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☒	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
(d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
(e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
(f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Setting

As discussed in the biological resource assessment prepared for the proposed remediation project by Monk & Associates, Inc. ("M&A") and revised based on the review of the report by the County's biologist (March, 2020, please refer to Attachment G), the proposed project will be implemented in two different areas of the Santa Margarita Ranch called the Western Remediation Area and the Eastern Remediation Area. The purpose of the biological resources assessment is to provide a description of existing biological resources within the project area and to identify significant or potentially significant adverse impacts as defined in CEQA that could occur to sensitive biological resources from the proposed project.

Biological resources include common plant and animal species, and special-status plants and animals as designated by the US Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society (CNPS). Biological resources also include waters of the United States and State, as regulated by the US Army Corps of Engineers (ACOE), Regional Water Quality Control Board (Regional Board), and CDFW.

The following is a brief discussion of the project site environmental setting from the project biological resource assessment.

The project area is located on a portion of the Santa Margarita Ranch in the unincorporated community of Santa Margarita, San Luis Obispo County, California (please refer to Figures 1 and 2). As discussed in this EIR under Section 2.0, Project Description, hydrocarbon-contaminated soils have been identified within the pipeline alignment at two locations on the Santa Margarita Ranch. This proposed project includes the excavation of

impacted soils at two distinct segments of the pipeline alignment, the Eastern and Western Remediation Areas that form the project site.

The subject pipeline alignment extends across the Santa Margarita Ranch for a distance of approximately 1.8 miles. Average surface elevations along the pipeline corridor from north to south range from approximately 975 feet above sea level in the floodplain areas near Santa Margarita Creek, rising to approximately 1,000 feet in elevation in the terrace area that contains the historic ranch headquarters structures, culminating in an elevation of 1,090 feet in the hilly areas near Highway 101.

The Western Remediation Area is an approximately 750-foot segment of the pipeline alignment located on undeveloped pasture land in the southwestern portion of the Ranch (please refer to the project biological resources assessment under Attachment G for additional detail on both remediation areas). This remediation area is located approximately 500 feet east of Highway 101 at its closest point and approximately 2,800 feet northwest of State Route 58 (Highway 58). The width of the disturbed area, including excavation areas, stockpile, and staging areas, varies from approximately 250 feet at the northeastern end to 600 feet at the middle section. Little Tassajara Creek, an intermittent tributary to Santa Margarita Creek flows in a west-east direction through the Western Remediation Area. This creek and its associated riparian trees will be avoided by the proposed remediation project. The disturbance area for remedial activities in the Western Remediation Area is approximately 2 acres, including excavation and staging.

The Eastern Remediation Area is an approximately 1,400-foot segment of the pipeline alignment located in the central portion of the Ranch. The alignment traverses a corral and is in proximity to existing ranch structures. The eastern end of the segment is located near the top of the western bank of Santa Margarita Creek, approximately 25-30 feet above the creek. Excavation activity will avoid this creek and its associated riparian vegetation. The width of the disturbed area, including excavation areas, stockpile areas, and staging, varies from approximately 800 feet at the eastern end to approximately 650 feet in the middle section. The disturbance area for remedial activities in the Eastern Remediation Area is approximately 14.5 acres, including excavation, stockpile, and staging areas. Limited tree pruning or removal may be required in the developed areas of the Ranch central event area where an olive tree orchard is present.

Plant Communities and Wildlife Habitats

As described in the project biological resources assessment, there are a total of six plant communities within the Western and Eastern Remediation Areas. These plant communities most readily fit into the Holland (1986) or Holland and Keil (1995) plant community classification systems, but where appropriate, the project biologists have also included the *Manual of California Vegetation* (Sawyer et al. 2009) "alliance" name under each plant community discussion where relevant.

Ruderal Herbaceous Community: Ruderal (weedy) herbaceous communities are assemblages of plants that thrive in abandoned areas, roadsides and other sites that have been disturbed by human activity. Typically, hardpacked soils of roadsides, parking lots, industrial areas and construction sites support communities of ruderal species. Ruderal vegetation is adapted to high levels of disturbance and persists almost indefinitely in areas with continuous disturbance. In the project area, ruderal herbaceous habitat is the dominant plant community in the Eastern Remediation area (please refer to Attachment G for more information). This habitat in the Eastern Remediation Area is either regularly disked, mowed, or disturbed by vehicles and supports common, weedy annual plant species such as the non-native foxtail barley (*Hordeum murinum* ssp. *leporinum*), cheeseweed (*Malva parviflora*), filarees (*Erodium botrys, E. moschatum, E. cicutarium*), mustard (*Sisymbrium altissimum*, *Hirschfelda incana*), green dock (*Rumex conglomeratus*), common groundsel (*Senecio vulgare*), and bur clover (*Medicago polymorpha*), among others.

Ruderal habitats typically provide suitable environments for common animals that are adapted to living in association with humans. Common wildlife species associated with ruderal communities include raccoon (*Procyon lotor*), Botta's pocket gopher (*Thomomys bottae*), black- tailed jackrabbit (*Lepus californicus*), western fence lizard (*Sceloporus occidentalis*), American crow (*Corvus brachyrhynchos*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and house finch (*Haemorhous mexicanus*).

Non-Native Annual Grassland: Prior to the settlement of Europeans in California, the California landscape was dominated by native, perennial bunchgrasses. When the Europeans settled in California, a variety of Mediterranean grass and forb (broad-leaved plant) species were brought to California for use as crops or ornamentals, or inadvertently in the fur and digestive systems of livestock. The majority of the project area is composed of non-native annual grassland. The project area has been an actively maintained ranch with cattle grazing since the mid-1700s.

Surveys in the project area in April, May, and July 2019 provided an opportunity to identify a few of the flowering grass species, but many were still not in flower or had been grazed too short to determine the genus and species. Cattle actively graze the project area, and wild pigs (*Sus scrofa*) root in the soil, making species identification, and in many cases, growth of the plants themselves, difficult. Grasses and forbs (broad-leaved plants) identified in the project area are non-native foxtail barley, foxtail chess (*Bromus madritensis rubens*), rip-gut brome (*Bromus diandrus*), Italian rye grass (*Festuca perennis*), wild oats (*Avena barbata*), six weeks fescue (*Festuca bromoides*), mustards (*Brassica nigra*, *Hirschfeldia incana, Sisymbrium altissimum)*, and thistles (*Cirsium vulgare, Carduus pycnocephala, Centaurea solstitalis*). Native species also occur in this plant community; however, their total percent cover is much lower than the non-native species.

The project area's grassland community provides foraging, denning, nesting, and migration habitat for a wide variety of common wildlife species. Representative wildlife species observed in the grassland community during M&A's Winter and early Spring 2019 site visits included savannah sparrow (*Passerculus sandwichensis*), golden-crowned sparrow (*Zonotrichia atricapilla*), white-crowned sparrow (*Zonotrichia leucophrys*), western bluebird (*Sialia mexicana*), western meadowlark (*Sturnella neglecta*), American pipit (*Anthus rubescens*), greater roadrunner (*Geococcyx californianus*), western fence lizard, gopher snake (*Pituophis melanoleucus*), Virginia opossum (*Didelphis virginiana*), Columbian black-tailed deer (*Odocoileus hemionus* ssp. *columbianus*), black-tailed jackrabbit, Botta's pocket gopher, California meadow vole (*Microtus californicus*), and American badger, a California "species of special concern." The American badger is discussed in the "Special-Status Species" setting below.

California Sycamore Woodland: California sycamore woodland is found on-site along Santa Margarita Creek immediately east of the Eastern Remediation Area (please refer to Attachment G for a detailed depiction). CDFW has given this riparian woodland community a State Ranking of S3 – Vulnerable. This means this community is vulnerable in the State due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation in California. This plant community occurs outside the remediation project area and will be avoided upon project implementation.

Vegetation occurring with the sycamores in this creek are willows (*Salix laevigata* and *S. lasiolepis*), valley oaks (*Quercus lobata*), and coast live oak trees (*Quercus agrifolia*). There are also some Fremont cottonwoods (*Populus fremontii*). The shrub layer is well-developed and consists of blue elderberry (*Sambucus nigra caerulea*), coffeeberry (*Frangula californica*), poison oak (*Toxicodendron diversilobum*), snowberry (*Symphoricarpos albus var. laevigatus*), mule fat (*Baccharis salicifolia ssp. salicifolia*), rose (*Rosa californica*), and the non-native, sub-shrub Himalayan blackberry (*Rubus armeniacus*). California mugwort (*Artemisia douglasiana*) and herbaceous species common in the nearby grassland community comprise the understory. Vines growing on and over the shrubs include western clematis (*Clematis ligusticifolia*) and wild cucumber (*Marah fabacea*).

Wildlife associated with California sycamore woodland includes amphibians such as Sierran treefrog (*Pseudacris sierra*). Reptiles expected to occur within this riparian community include western terrestrial garter snake and California kingsnake (*Lampropeltis californiae*). Rodents include deer mouse (*Peromyscus maniculatus*), Botta's pocket gopher, and gray squirrel (*Sciurus griseus*). Common representative birds observed in the riparian woodlands adjacent to the proposed remediation project area include yellow-billed magpie (*Pica nuttalli*), hairy woodpecker (*Picoides villosus*), belted kingfisher (*Megaceryle alcyon*), bushtit (*Psaltriparus minimus*), yellow-rumped warbler (*Setophaga coronata*), and sharp-shinned hawk (*Accipiter striatus*). Some common mammals observed (directly or via indirect sign) in the riparian woodland include bobcat (*Lynx rufus*), raccoon, Columbian black-tailed deer, and wild pig. Wild pigs occur in large numbers and are extensively damaging the riparian woodland consuming any wildlife they can catch, invertebrates they root from the soil and from under debris, and consuming or damaging many native herbaceous plants. Two fresh litters of wild pigs living in Santa Margarita Creek were observed during on-site surveys.

Valley Oak Woodland: Valley oak woodland (*Quercus lobata* Woodland Alliance) vegetation type is recognized as rare by the Natural Communities List (CDFW 2018), California Code 71.040.05, and has a California state ranking of S3 (vulnerable). This plant community will be avoided by the proposed remediation project as it occurs outside the remediation areas (please refer to Attachment G for a detailed depiction).

Trees in the valley oak woodland plant community provide foraging, roosting and nesting habitat for a large variety of wildlife species, including raptors such as the great horned owl (*Bubo virginianus*), red shouldered hawk (*Buteo lineatus*), and red-tailed hawk (*Buteo jamaicensis*). Common birds identified in the oak woodlands include acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttallii*), northern flicker (*Colaptes auratus*), oak titmouse (*Baeolophus inornatus*), and California scrub jay (*Aphelocoma californica*). Mammals observed in the oak woodland in the project area included Columbian black-tailed deer and wild pig.

Valley oak woodland in the project area is limited to the southwestern and northern edges of the Western Remediation Area. In the southwestern edge of the Western Remediation Area, valley oak trees grow in groupings or singly along the north-northeastern-facing hillslope and in clumps around rocky outcroppings. On the slope, the valley oak woodland has an herbaceous understory with no shrub layer, and the herbaceous species are similar to the suite of herbaceous species found in the adjacent non-native, annual grassland community.

Within and adjacent to the Western Remediation Area, there are rock outcroppings mostly associated with the valley oak woodland. Within these rock outcrop areas there is a shrubby understory composed of poison oak, snowberry, coffeeberry, and blue elderberry. Also, there are several native herbaceous species growing at the rock outcrops such as hoary bowlesia (*Bowlesia incana*), goldenback fern (*Pentagramma triangularis*), woodland threadstem (*Pterostegia drymarioides*), and California figwort (*Scrophularia californica*). Non-native thistles (*Carduus pycnocephalus* ssp. *pycnocephalus*, *Silybum marianum*) and nettles (*Urtica urens*) are also growing among the rock outcrops.

Along the northern edge of the Western Remediation Area the valley oak woodland grows along Little Tassajara Creek, an intermittent tributary to Santa Margarita Creek. There is a riparian tree canopy over some areas of this tributary that is open and comprised of mature valley oak trees, mature red willow, and sapling valley oaks. A few scattered California coffeeberry bushes also grow in the understory.

Other wildlife associated with the valley oak woodland along Little Tassajara Creek in the Western Remediation Area includes amphibians such as California toad (*Anaxyrus boreas halophilus*) and Sierran treefrog. Reptiles observed along this drainage included western fence lizard and gopher snake. Other reptiles that are expected within this community include western terrestrial garter snake (*Thamnophis elegans*) and northern alligator lizard (*Elgaria coerulea*). Representative common birds observed in this woodland include red-tailed hawk, northern flicker, Nuttall's woodpecker, California scrub jay, oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus*

minimus), and California towhee (*Pipilo crissalis*). Some common mammals that could be observed in the woodland include bobcat and raccoon.

Red Willow-Black Walnut Mixed Riparian Woodland: Red willow and black walnut (*Juglans hindsii*) trees grow along Little Tassajara Creek just outside the western boundary of the Eastern Remediation Area (please refer to Appendix G for a detailed depiction).

Red willow thickets (*Salix laevigata* Woodland Alliance) are recognized by the Natural Communities List (CDFW 2018), California Code 61.205.01, and this community has a state ranking of S3. Black walnut stands are recognized by California Code 61.810.02, and this community has a state ranking of S1 (critically imperiled).

This riparian community in the project area has an understory comprised of Himalayan blackberry and poison hemlock (*Conium maculatum*), and an herbaceous layer consisting primarily of green dock. The Little Tassajara Creek tributary supports no aquatic and little aquatic emergent vegetation. A small patch of spike rush (*Eleocharis macrostachya*) was the only aquatic emergent vegetation observed along this reach of channel during the special-status plant surveys conducted in 2019.

The red willow-black walnut riparian woodland provides foraging opportunities for a myriad of song birds that will seek out the insects that thrive on the willow leaves and sap. While Little Tassajara Creek dries in the early summer months, there was a steady flow of water in this drainage during the month of April 2019. During amphibian surveys conducted from March 12-14, 2019, juvenile American bullfrogs (*Lithobates catesbeiana*) were observed in this tributary.

The red willow-black walnut mixed riparian woodland is just outside the project area boundaries. All driplines will be buffered/fenced off from project activities. As such, project activities will avoid this woodland area.

Seasonal Wetlands: Seasonal wetlands are habitats that may appear dry in the summer and fall months, but by the first winter rains become inundated and hold water for a period of several weeks to months at a time. Seasonal wetlands are able to hold water for long-duration typically due to the presence of impervious soils and/or confining topography such as topographic low areas. Hydric soils are soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic (absence of free oxygen) conditions within the upper part of the soil profile. Such areas eventually are dominated by seasonal wetland plants and otherwise persist as seasonal wetlands. Please refer to Attachment G for a detailed depiction of seasonal wetlands in the project area.

Seasonal wetlands provide wildlife with a seasonal water source that allows animals to drink and forage in the water during the winter and spring months. Amphibians such as the Sierran tree frog and the California toad lay their eggs in deeper pools (that can be as deep as 6 to 8 inches deep in the Western Remediation Area) within seasonal wetland habitats and complete their life cycle in such wetlands. Invertebrates such as mayflies (*Ephemeroptera*), damselflies (*Odonata*), and predaceous diving beetles (*Dytiscidae*) are commonly associated with inundated seasonal wetland habitats and complete their life cycle in the wetlands. Wildlife observed in these wetlands during site surveys included killdeer (*Charadrius vociferus*) and Say's phoebe (*Sayornis saya*).

Immediately adjacent to and outside of the Eastern Remediation Area there are small seasonal wetlands adjacent to a corral where rainfall coalesces in a swale depression. In these areas the compacted soils support popcorn flower (*Plagiobothrys bracteatus*) and toad rush (*Juncus bufonius*). Within the Eastern Remediation Area, in the ruderal herbaceous community outside the dig area, the seasonal wetlands are dominated by brown-headed rush (*Juncus phaeocephalus*), Italian rye grass, popcorn flower (*Plagiobothrys stipitatus micranthus*), and lesser amounts of meadow foam (*Limnanthes douglasii* ssp. *nivea*), timwort (*Cicendia quadrangularis*), and hyssop loose strife (*Lythrum hyssopifolia*). Remediation activities under the proposed project will avoid these areas.

Immediately adjacent to the Western Remediation Area there are also seasonal wetlands that are scattered through the non-native annual grassland. The proposed project will avoid these wetlands. These herbaceous wetlands are dominated by brown-headed rush, toad rush, variegated clover (*Trifolium variegatum* var. *major*), Mediterranean barley, Italian rye grass, and creeping wild rye grass (*Elymus triticoides*).

Gum Plant Patches: The CDFW has recognized *Grindelia camporum* gum plant patches (Provisional Herbaceous Alliance) vegetation type as a California Sensitive Natural Community (CDFW 2018), and has given this community a California State ranking of S2 (imperiled). *Grindelia camporum* patches occur in the Western Remediation Area in upland, non-native annual grassland in association with filarees, clovers, and non-native annual grasses. Since CDFW has recognized *Grindelia camporum* gum plant patches as a sensitive natural community, impacts to this community should be analyzed pursuant to CEQA.

Wildlife Corridors

Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development. In California regionally important wildlife corridors are usually recognized by CDFW and typically include known migration corridors used seasonally by named deer herds, elk, or other gregarious mammalian species. Local wildlife corridors also provide access routes to food, cover, and water resources but are typically used by local, common resident species.

Little Tassajara Creek, a tributary to Santa Margarita Creek occurs immediately north of the Western Remediation Area and provides a local wildlife corridor for common mammals that hunt up and down tributaries, obtain drinking water from such tributaries, and move from one area of their home range to another. The proposed remediation project will avoid this drainage and its associated riparian vegetation. The Western Remediation Area will be set back from both the north and south top-of-bank of Little Tassajara Creek or outside of its associated riparian vegetation, whichever provides the greatest creek buffer.

Special-Status Plant Species

The project biological resources assessment provides a graphic illustration of the closest known records for special-status plant species within five miles of the project area. In addition to the five-mile search of the California Natural Diversity Database (CNDDB), the biological resources assessment includes a nine quadrangle database search.

According to the CNDDB, no special-status plants have been mapped on or adjacent to the project area. However, a total of 44 special-status plant species are known to occur within a nine quadrangle search (please refer to Attachment G for a detailed discussion of all special status plant species). Most of these plants occur in specialized habitats or substrates such as ultramafic soils (serpentinite), decomposed granite, or decomposed carbonate, or in plant communities not present in the project area such as coniferous forest, coastal scrub, and chaparral. As such, of the 44 special-status plant species mapped within the nine quadrangle search of the project area, only 11 have the potential to occur in the project area based on habitat conditions present on-site.

Please refer to Table 3, "Special-Status Plants Know to Occur Within a 9-Quad Search of the Santa Margarita Remediation Project Area", from the attached project biological resources assessment for a detailed list of special-status plants with the potential to occur on-site. This includes an assessment of the potential for each species to occur within the project site.

In order to determine the presence of these species on-site, special-status plant surveys were conducted by Monk & Associates botanists (Ms. Owens and Ms. Lynch on the following dates: March 12, 13, and 14, April 22 and 23, May 13 and 14, and July 18 and 19, 2019). No special-status plant species were found within the proposed remediation project site during the appropriately-timed surveys.

Special-Status Wildlife Species

The project biological resources assessment provides a graphic illustration of the closest known records for special-status wildlife species within five miles of the project area. A total of 29 special-status animal species are known to occur within a nine-quadrangle search (approximately 22 by 25 square miles) of the project area.

Please refer to Table 4, "Special-Status Animals Know to Occur Within a 9-Quad Search of the Santa Margarita Remediation Project Area", from the attached project biological resources assessment for a detailed list of special-status wildlife with the potential to occur on-site. This includes an assessment of the potential for each species to occur within the project site.

Of the species listed in the biological resources assessment as having the potential to occur on-site, the American badger, a CDFW-designated "species of special concern," has been observed by biologists in the project area. Three other special-status wildlife species are recorded in the CNDDB on the Santa Margarita Ranch (outside the project area boundaries). These species are the western pond turtle (CNDDB Occurrence No. 1136), grasshopper sparrow (*Ammodramus savannarum*) (CNDDB Occurrence No. 11), and Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) (CNDDB Occurrence No.119).

According to the project biological resources assessment, there are seven other regionally-known special-status species that have not been recorded on the Santa Margarita Ranch but that are recorded within five miles of the project area. These include: Coast Range newt (*Taricha torosa torosa*), western spadefoot toad, California red-legged frog, foothill yellow-legged frog, Northern California legless lizard (*Anniella pulchra*), white-tailed kite (*Elanus leucurus*), and pallid bat (*Antrozous pallidus*). All special-status animal species that are known to occur on or within five miles of the project area are discussed below; this includes the bald eagle and the golden eagle as they both have been observed during project biological surveys.

Coast Range Newt: The Coast Range newt is a California designated "species of special concern." It has no special federal status. California Coast Range newts can be found in coastal areas and coastal range mountains in oak forests, woodlands, or rolling grasslands. In the terrestrial phase they live in moist to dry habitats under woody or leafy debris, in rock crevices, or in animal burrows. In the aquatic phase they are found in ponds, reservoirs, lakes, and slow-moving streams (Stebbins 2003). California newts migrate to water during the first fall rains, breeding from December to May.

The nearest CNDDB record for this species is located three miles south of the project area (Occurrence No. 9). This 2003 record is from an unnamed tributary to Santa Margarita Creek. The project area's rolling grassland and woodland provides suitable habitat for this species while in its terrestrial phase. Santa Margarita Creek provides suitable habitat for this newt in its aquatic phase. In additional to terrestrial surveys of the project area, project biologists conducted diurnal and nocturnal surveys of the project area's creeks in February and March 2019, at a time when, if this newt was present, it would have been easily identified. There are no persistent, open water, seasonal wetlands anywhere in the project area that would provide suitable breeding habitat for this species and no individuals were observed during on-site surveys.

California Tiger Salamander: The project site is located outside of but in proximity to the known range of the Central California "Distinct Population Segment" (DPS) of the California tiger salamander. The Central California DPS of the California tiger salamander is located in portions of southern Santa Cruz, Monterey, northern San Luis Obispo and portions of western San Benito, Fresno and Kern Counties. The Central California DPS is federally and state listed as threatened. California tiger salamanders occur in grasslands and open oak woodlands that provide suitable over-summering and/or breeding habitats. California tiger salamanders spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. Adult California tiger salamanders have been observed up to 2,092

meters (1.3 miles) from breeding ponds. Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by the California tiger salamander.

The closest known occurrence of the California tiger salamander to the project site is 26.2 miles to the northeast. However, project biologists did conduct several diurnal surveys of the project site's creeks and wetlands looking for amphibian larvae. California tiger salamander larvae were not observed during these surveys and there have been no occurrences of this species near the project site. As such, project activities are not expected to impact this species.

Western Spadefoot Toad: The western spadefoot toad is a California designated "species of special concern." While the state designation "species of special concern" does not provide any legally mandated protection, "species of special concern" must be considered in any project undergoing review pursuant to the CEQA. It has no federal status.

This toad is found primarily in grassland habitats but may occur in valley and foothill woodlands. It is almost completely terrestrial, entering water only to breed (Jennings & Hayes 1994). For breeding and egg laying it requires persistent vernal pools, persistent seasonal wetlands, or stock ponds. Sometimes eggs are laid in pools within slow moving ephemeral streams.

The nearest CNDDB record for this species is located 0.7-miles northeast of the project area (Occurrence No. 260). This 2003 record is from a seasonal wetland along El Camino Real. While suitable upland habitat consisting of valley and foothill grassland and woodland is present in the proposed remediation project area, aquatic habitat such as stock ponds and seasonal wetlands with open water habitat that persists past mid-April is not present. In additional to terrestrial surveys of the project area, project biologists conducted diurnal and nocturnal surveys of the project area's creeks and wetlands in February and March 2019. None were observed. In addition, no western spadefoots were observed during the course of the wetland delineation prepared for the proposed project. There are no persistent, open water, seasonal wetlands anywhere near the project area that would provide suitable breeding habitat for this species.

California Red-Legged Frog: The California red-legged frog was federally listed as threatened in 1996 and is protected pursuant to the FESA. In 2010, the USFWS issued the final designation for California red-legged frog Critical Habitat. The project area does not fall within mapped critical habitat (please refer to Attachment G). The California red-legged frog is also a California designated "species of special concern."

The California red-legged frog is typically found in ponds and slow-flowing portions of perennial and intermittent streams that maintain water in the summer months. This frog is also found in hillside seeps that maintain pool environments or saturated soils throughout the summer months. Riparian vegetation such as willows and emergent vegetation such as cattails are preferred red- legged frog habitats, though not necessary for this species to be present.

Santa Margarita Creek and Little Tassajara Creek are the only tributaries in or adjacent to the project area and are considered intermittent creeks that are dry typically by June. Examining the Google Earth aerial photograph record back to 1994, both creeks are consistently dry over most of the summer and fall months. In 2017, a year punctuated with late and significant rainfall in the spring months, the Google Earth images indicate that Santa Margarita Creek still had water in it in June but was dry in July. Both Santa Margarita Creek and Little Tassajara Creek are cobbly, typically shallow, clear water streams that support very little aquatic or emergent wetland vegetation. Accordingly, project biologists determined that site conditions are not consistent with typical saturated or inundated areas that support California red-legged frogs.

Because the creeks in the project area run shallow and lack cover, amphibians residing in these creeks are highly susceptible to predation by raccoons and on the Santa Margarita Ranch in particular, by wild pigs.

California red-legged frog breeding pools must hold water until August to allow time for larvae to successfully metamorphose, these creeks do not constitute suitable breeding habitat for this frog species.

The nearest CNDDB record for this species is located 0.80-mile southeast of the project area (Occurrence No. 494). This 2002 record is from Yerba Buena Creek east of central Santa Margarita. Yerba Buena Creek eventually connects with Santa Margarita Creek approximately two miles to the north of the project. Project biologists visited the record location as mapped by the CNDDB and did not find a pond. No follow up occurrences are noted in the CNDDB at this record location.

CNDDB record No. 741 is a 2003 record that is also in Yerba Buena Creek; it is located approximately 0.50-mile south and east of the town of Santa Margarita. This sighting is over a mile from the project area. This record noted that larvae were found in a fast-drying pond (indicating they likely perished). No follow up occurrences are noted. Another CNDDB record (Record No. 395) is located in a spring box approximately 3 miles southwest of the project area, over two major ridge systems from the project area.

On November 4, 2019, the County's reviewing biologist, Ms. Brooke Langle, provided the project biologists with an undocumented California red-legged frog sighting from 2011, which is not in the CNDDB. This undocumented record is attributed to a Garcia & Associates' 2011 California red-legged frog sighting; one California red-legged frog was identified on the Santa Margarita Ranch property by Garcia & Associates in September 2011. The location of this sighting was approximately 1,904 feet south of the closest part of the Western Remediation Area and approximately 650 feet from the primary hauling route; this is the closest known sighting of the frog to either of the remediation areas.

The record location is associated with a seasonally wet meadow with an adjacent drainage that has perennially wet areas. Below these perennially wet areas the drainage is intermittent and likely flows in wet winters to Santa Margarita Creek. In many years it may not flow at all outside of the perennially wet areas, which are well upstream (greater than 700 feet as the crow flies) of Santa Margarita Creek as observed by project biologists in November 2019.

The project biological resources assessment concludes that the project would avoid CRLF.

Furthermore, M&A project biologists did conduct formal surveys for the California red-legged frog in the project area and within 0.50-mile of the project area that included two nocturnal and three diurnal surveys conducted over a 3-month period. These surveys were conducted in the months of January, February, and March 2019, which are good months for detecting active, vocal, breeding frogs. No California red-legged frogs, their eggs, or larvae were identified in the project area, or in Little Tassajara Creek or Santa Margarita Creek adjacent to the project area during any of these surveys. Additionally, project biologists did not find California red-legged frogs at the undocumented 2011 location in February and March 2019, or in November 2019 or January 2020, when permitted biologists resurveyed the undocumented 2011 California red-legged frog location. While water was detected along much of this unnamed drainage and in the adjacent wetlands at the time of the November 2019 and January 2020 survey, no California red-legged frogs were observed.

It should be noted that the project applicant has included the installation of wildlife exclusion fencing (ERTEC) around the project site prior to any earth disturbance. This fencing will be incorporated into the biological mitigation measures with the intent to prevent small terrestrial species including reptiles, amphibians, and small mammals that may be migrating in creek corridors from leaving these creek corridors to enter project areas where harm could occur to wildlife species.

Foothill Yellow-Legged Frog: On December 11, 2019, the California Fish and Game Commission approved California Endangered Species Act (CESA) protections for five of six populations of the foothill yellow-legged frog; the project area is within the range of the endangered Central Coast population. The foothill yellow-legged frog has no federal status. The foothill yellow-legged frog is typically found in or near perennial, rocky streams in a

variety of habitats, including valley-foothill woodlands and riparian habitats, mixed conifer, coastal scrub, mixed chaparral, and wet meadows.

The nearest CNDDB record for foothill yellow-legged frog is located approximately 0.50-mile southeast of the project area (Occurrence No. 825). This 1917 record is from what is now a residential community in central Santa Margarita. Expert opinion concludes that this species was likely extirpated from the area between 1975 and 1978 (see "Ecological Comments" section of CNDDB Occurrence No. 825). In addition, this 1917 record was not detected by independent research crews during surveys between 1981-1993, 1988-1991, or 2011-2014. M&A conducted three diurnal surveys and two nocturnal survey for the foothill yellow-legged frog in the project area in the months of January, February, and March 2019. During these surveys, which were conducted at a suitable time of year to detect foothill yellow-legged frog, only Sierran treefrog, California toad, and American bullfrog were identified in or associated with the Santa Margarita Creek and Little Tassajara Creek.

Project biologists indicate that the foothill yellow-legged frog is not present at the project site and will be not be impacted by the proposed remediation project.

Western Pond Turtle: The western pond turtle is a California designated "species of special concern." Until the western pond turtle is formally listed by the USFWS, it is not afforded the protections of FESA.

Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. This turtle is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter. Recent field work has demonstrated that western pond turtles may overwinter on land or in water or may remain active in water during the winter season. The pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 52 feet to 1,219 feet from watercourses (Jennings and Hayes 1994).

The closest CNDDB record for western pond turtle is a 2002 record located 0.20-mile south and east of the project area in Santa Margarita Creek (CNDDB Occurrence No. 1136) (please refer to Figure 6B in the attached project biological resources assessment). Because of the ephemeral nature of both Santa Margarita Creek and Little Tassajara Creek, the western pond turtle is unlikely to be found in these creeks after these creeks dry, typically in May or June. The CNDDB record indicates that up to 10 of these turtles were in a single bedrock pool in Santa Margarita Creek. Project biologists surveyed this pool on four different dates and found no turtles. This accumulation of turtles most likely occurred when the creek was drying down in the spring, which has the effect of pushing western pond turtles up/downstream in search of long-term inundated habitats. Because Santa Margarita Creek dries in May or June in most years, the 10 western pond turtles recorded in a single pool is likely because this pool was the only deeper water pool remaining in this creek on the Santa Margarita Ranch during the time the record was recorded.

The western pond turtle was not observed in the project area during six upland and aquatic surveys conducted by project biologists in 2019. However, due to the proximity of the known record to the project area, and the suitable habitat conditions of both Santa Margarita Creek and its immediate upland habitat where this turtle could nest, this species is considered to have the potential to be found on-site.

Northern California Legless Lizard: The Northern California legless lizard is a California designated "species of special concern." It has no federal status. Legless lizards are fossorial animals that construct burrows in loose soil with a high sand content (Miller 1944).

The legless lizard occurs in moist, warm, loose soil with plant cover. Moisture is essential. The species occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat. The Northern California legless lizard

occurs from the southern edge of the San Joaquin River in northern Contra Costa County south to Ventura County, from sea level to around nearly 6,000 feet in elevation.

The closest and most recent record for Northern California legless lizard occurs 0.3-mile west of the project area (CNDDB Occurrence No. 163). This 1960 record was mapped non-specifically approximately seven miles south of Atascadero along what is now Highway 101. The project area does not support deep leaf litter or uncompacted loose soils, or any other habitat component that could be considered habitat that would support the Northern California legless lizard. While some soils in the Western Remediation Area have sandy inclusions, these soils are dry most of year, do not support a thick organic layer or a leaf litter that could provide conditions suitable for this lizard. Project biologists included this species in their surveys and did not find them. The proposed remediation project would not impact this species.

Bald Eagle: The bald eagle is found only on the North American continent. This eagle was designated as federally threatened in the conterminous (lower 48) states of the United States on March 11, 1967 (Federal Register 32:4001). On July 9, 2007, the USFWS delisted the bald eagle effective as of August 8, 2007 because reclassification goals for recovery of this species have been met and exceeded (Federal Register 72: 37345 37372). It continues to be federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Critical habitat has not been designated for the bald eagle. This species is listed as endangered by CDFW.

Bald eagles in winter may be found throughout most of California at lakes, reservoirs, rivers, and some rangelands and coastal wetlands. The State's breeding habitats are mainly in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers. Most breeding territories are in northern California, but the eagles also nest in scattered locations in the central and southern Sierra Nevada Mountains and foothills, in several locations from the central coast range to inland southern California, and on Santa Catalina Island.

There are no CNDDB records for this species within five miles of the project area (please refer to Figure 6B in the attached biological resources assessment). However, an immature bald eagle (estimated 2 years old) was observed by project biologists flying over the project area toward the northwest both in February and in early March 2019, and an adult was observed in March 2019. An adult bald eagle was also observed flying over the project area towards the east in November 2019. No bald eagles were found nesting on or near the project area in successive surveys conducted in late-March, April, and May 2019. During these surveys, conversations with construction crews on-site indicated a report of an active bald eagle nest off-site, approximately 2.12 miles northeast-east of the Eastern Remediation Area. The bald eagle that was observed in March 2019 could have been flying over the Santa Margarita Ranch to the approximate record location during a time when eagles would normally be nesting.

The project area's grassland, Santa Margarita Creek, and a large pond located approximately 0.50-mile northwest of the project area provide suitable hunting habitat for bald eagles.

Project biologists indicate that the proposed remediation project would avoid this species upon confirmation that no nests are observed within or near the project site prior to start of construction activities.

Golden Eagle: The golden eagle is designated as a California "species of special concern" and is fully protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act. Additionally, its nest, eggs, and young are protected from direct "take" under the California Fish and Game Code (Sections 3503, 3503.5, and 3800).

Golden eagles are found breeding throughout western North America in remote open habitats. Typical habitats in North America include savannah woodland habitats, grasslands, aspen parkland, high and low deserts, and in taiga and zone habitats. Golden eagles feed on fresh carrion or take live prey ranging in size from small rodents to as large as new born fawns. Golden eagles build nests in large trees, often in eucalyptus, oaks, or conifers, or frequently nest on large vertical cliffs.

There are no CNDDB records for this species within three miles of the project area; however, multiple individuals have been observed flying over the project area during the spring 2019 on-site surveys. Two raptor nesting surveys were conducted in March 2019 that included concerted efforts to locate nesting eagles. No eagles (bald or golden eagles) were found nesting in the project area or within 0.5-mile and more distant of the project area.

The project area's open grassland community provides suitable hunting grounds for golden eagles and the trees along Santa Margarita Creek and along an unnamed, intermittent tributary to Santa Margarita Creek provide potentially suitable nesting habitat. However, Project biologists indicate that the proposed remediation project would avoid this species upon confirmation that no nests are observed within or near the project site prior to start of construction activities.

White-Tailed Kite: The white-tailed kite is a "Fully Protected" species under the California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time. It is also protected under the Federal Migratory Bird Treaty Act (50 CFR 10.13).

The white-tailed kite is typically found foraging in grassland, marsh, or cultivated fields where there are dense-topped trees or shrubs for nesting and perching. They nest in a wide variety of trees of moderate height and sometimes in tall bushes and native trees. Although the surrounding terrain may be semiarid, kites often reside near water sources, where prey is more abundant.

The nearest CNDDB record for this species is located 1.4 miles southeast of the project area (Occurrence No. 73) and dates to 2003. A pair of white-tailed kites was observed by project biologists on multiple occasions in February and March in the Eastern Remediation Site (please refer to Figure 3 from the attached project biological resources assessment). They were not observed again during focused raptor nesting surveys in March and April, and were determined not to be nesting within 0.5-mile of the project area. The project area's open grassland community provides suitable hunting grounds for white-tailed kites, and the trees along Santa Margarita Creek and along an unnamed, intermittent tributary to Santa Margarita Creek provide potentially suitable nesting habitat. As such, this species has the potential to be found on the project site.

Grasshopper Sparrow: The grasshopper sparrow is a California designated "species of special concern." The CDFW is primarily concerned with protecting this species nesting habitat. It is also protected under the Federal Migratory Bird Treaty Act (50 CFR 10.13) and California Fish and Game Code Sections 3503 and 3800 that protect nesting birds, their eggs and young.

Grasshopper sparrows occur in grasslands, prairies, hayfields, and open pastures with little to no scrub cover and often with some bare ground. They nest on the ground, often at the base of a clump of grass within an extensive patch of tall grasses or sedges and eat grasshoppers in summer, though they will take other prey.

Project biologists did not detect grasshopper sparrow in the project area. The nearest CNDDB record for this species is located 0.1-mile north of the project area (Occurrence No. 11) but dates from 2003. At this occurrence, a singing male was heard within an agricultural field adjacent to Santa Margarita Ranch Headquarters, in open grassland with riparian corridor nearby. The valley and foothill grasslands in the project area provide suitable nesting habitat for this species. As such, this species has the potential to be found on the project site.

Townsend's Big-Eared Bat: Townsend's big-eared bat is a California designated "species of special concern." It has no federal status.

Although these bats eat a variety of beetles and other soft-bodied insects, small moths make up the principle food source for this species. This species requires caves, mines, tunnels, high buildings, or other human-made structures for roosting and for maternity sites, potentially using separate sites for day, night, hibernation, or maternity roosts.

The nearest CNDDB record for Townsend's big-eared bat is located 0.10-mile north of the project area (Occurrence No. 119). This 2002 record is from the historic barn located on the Santa Margarita Ranch. Potentially suitable roosting habitat is present in basal cavities and within loose bark of large valley oak trees in the project area. As such, this species has the potential to be found on the project site.

Pallid Bat: The pallid bat is a California designated "species of special concern." It has no federal status. This bat is a locally common species of low elevations in California. It occurs throughout California except for the high Sierra Nevada from Shasta to Kern counties, and the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino County. It occurs in a wide variety of habitats. It is most common in open, dry habitats with rocky areas for roosting. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Night roosts may be in more open sites such as porches and open buildings.

The nearest CNDDB record for this species is located 1.10 miles southwest of the project area (Occurrence No. 76). This 2002 record is from a night roost within a bridge along Highway 101. Potentially suitable roosting habitat is present in basal cavities and within loose bark of large valley oak trees in the project area. As such, this species has the potential to be found on the project site.

American Badger: The American badger is a California designated "species of special concern." This mammal has no federal status. It is found in a variety of habitats, especially in open habitats such as oak-savannah and grasslands where its presence is typically identified by its distinctive, large underground dens (burrows) excavated in friable (loose) soils. This nocturnal mammal is rarely observed. In the region, this animal is uncommon. When present, this animal would be expected to prey upon Botta's pocket gopher, California ground squirrel (*Otospermophilus beechyi*), and several species of mice common in the area.

An American badger was identified multiple times in the project area during 2019 surveys. It was always observed immediately north of the Western Remediation Area where it could be observed hunting and moving in-between several California ground squirrel burrows and possible den sites. Badgers have large territories and hunt in particular areas while prey is abundant and can be readily dug out of their burrows. Badgers move opportunistically to find prey or to establish maternity burrows. Badgers could potentially be present in burrows when the proposed remediation project begins.

Crotch Bumble Bee: The Crotch bumble bee (*Bombus crotchii*) is a California candidate for listing as a state endangered species. It has no special federal status. It is known in coastal California east to the sierra-cascade crest and South into Mexico. This bumble bee inhabits grassland and scrub areas, with select food plants: *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum*. It nests underground, often in abandoned rodent dens. The closest known occurrence of this bumble bee to the project site is a little over five miles northeast of the project site where a bumble bee was collected (dated 1965, exact location unknown; CNDDB records, Occurrence No. 81).

On May 6, 2020, project biologists conducted a survey of the project site for Crotch bumble bees. Crotch bumblebees are generally at their peak of activity occurring in June (Koch et. al. 20122). No bumble bees in the genus *Bombus* were observed during this survey. The bees observed during the surveys were the European honey bee (*Apis mellifera*) and many Andrenid bees digging holes in the bare soil of the existing ranch roads. House flies and blue bottle flies were also observed. Based on the lack of Crotch bumble bees observed during on-site surveys, project biologists indicate that project implementation would not impact this species.

Regulatory Setting

Regulatory authority over biological resources is shared by Federal, State, and local authorities under a variety of statutes and guidelines. Primary authority for general biological resources lies within the land use control and planning authority of local jurisdictions, in this instance, the County of San Luis Obispo and the governing elements of the County General Plan.

The CDFW is a trustee agency for biological resources throughout the state under CEQA and also has direct jurisdiction under the Fish and Game Code of California. Under the State and Federal Endangered Species Acts, the CDFW and the USFWS also have direct regulatory authority over species formally listed as Threatened or Endangered.

State laws and regulations include (but are not limited to) the following:

- California Endangered Species Act;
- Natural Community Conservation Planning Act (NCCP);
- State Fish and Game Code Section 1600-1616—Master Streambed Alteration Agreement for Streambed Modifications;
- California Fully Protected Species;
- California Environmental Quality Act; and
- California Fish and Game Code 3503 (Bird Nests).

The US Army Corps of Engineers has regulatory authority over specific biological resources, namely wetlands and waters of the United States, under Section 404 of the federal Clean Water Act. Protection for wetlands and riparian habitat is also afforded through the California Fish and Game Code, and local and regional water quality control boards. Additionally, Section 3503.5 of the Fish and Game Code of California protects birds of prey, their nests and eggs against take, possession, or destruction.

Pursuant to the Federal Endangered Species Act (FESA), a permit from USFWS is required for "take" of a Federally listed species through either the Section 7 or Section 10 consultation process. Species "take" can be authorized under Section 7 of the FESA if a Federal agency is involved in the project (e.g., ACOE Section 404 permitting and/or Federal funding) and agrees to be the lead agency requesting Section 7 consultation. This consultation process includes a Biological Assessment of the predicted impacts of a project on the species with measures to minimize and mitigate for such impacts. The result is a Biological Opinion rendered by USFWS that includes a specified allowable incidental take as well as terms and conditions to minimize and offset such take. Take may or may not be issued for operation of a project. The Section 10 consultation process is used to authorize incidental take when no Federal agency is involved.

Federal laws and regulations include (but are not limited to) the following:

- Federal Endangered Species Act;
- Federal Clean Water Act, Section 404, Discharge of Dredged of Fill Material in Waters of the U.S.;
- Federal Clean Water Act, Section 401—Water Quality Certification;
- Migratory Bird Treaty Act;
- Bald and Golden Eagle Protection Act; and
- National Environmental Policy Act.

Please refer to Attachment G of this EIR for copy of the project biological resources assessment, including a detailed assessment of all applicable local, state and federal regulations.

Impact Discussion

The proposed remediation project has the potential to result in significant but mitigable impacts related to biological resources. This includes the potential for impacts, either directly or through habitat modifications, on

any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Special-Status Plant Communities and Wildlife Habitats: The proposed remediation project will avoid any tree removal and associated impacts to special status plant communities. Impacts to each of the special status plant communities and wildlife habitats are discussed below:

- *California Sycamore Woodland:* CDFW has given this riparian woodland community a State Ranking of S3 – Vulnerable. This means this community is vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation in California (*In*: CDFW's California Sensitive Natural Communities, October 15, 2018). This plant community will be avoided by the proposed project construction activities, and impacts are considered less than significant.
- *Valley Oak Woodland:* Valley oak woodland vegetation type is recognized as rare by the Natural Communities List (CDFW 2018), California Code 71.040.05, and has a California state ranking of S3 (vulnerable). This plant community will be avoided by the proposed project construction activities, and impacts are considered less than significant.
- *Red Willow-Black Walnut Mixed Riparian Woodland:* Red willow and black walnut trees grow along Little Tassajara Creek just outside the western boundary of the Eastern Remediation Area. Red willow thickets are recognized by the Natural Communities List (CDFW 2018), California Code 61.205.01, and this community has a state ranking of S3. Black walnut stands are recognized by California Code 61.810.02, and this community has a state ranking of S1 (critically imperiled). The red willow-black walnut mixed riparian woodland is just outside the project area boundaries. A minimal extent of aerial canopy cover extends into the project area boundaries, but these trees and associated canopy will remain unaffected as no remediation is proposed near this tributary. A construction trailer will be parked in a previously compacted use area of the ranch outside of the dripline of any red willow and black walnut trees. Impacts are considered less than significant.
- *Seasonal Wetlands:* Immediately adjacent to and outside of the Eastern Remediation Area there are small seasonal wetlands adjacent to a corral where cattle loading activities have compacted soils and where rainfall collects in a swale depression. Immediately adjacent to Western Remediation Area there are also seasonal wetlands that are scattered through the non-native annual grassland. Please refer to Attachment G for a detailed depiction of seasonal wetlands in the project area.

  With implementation of best management practices under Mitigation Measure AQ-4 and the required Stormwater Pollution Prevention Program (SWPPP) which will be installed where necessary to protect seasonal wetlands, impacts to seasonal wetlands are considered less than significant.

Special-Status Plants: With respect to special status plant species, the CDFW has recognized *Grindelia camporum* gum plant patches (Provisional Herbaceous Alliance) vegetation type as a California Sensitive Natural Community (CDFW 2018), and has given this community a California State ranking of S2 (imperiled). Equipment staging and temporary topsoil storage in the Western Remediation Area will result in a significant impact to several small colonies of *Grindelia camporum*. This is considered a significant but mitigable impact.

Special-Status Wildlife: In addition to special status plants, the proposed project has the potential to result in impacts to special status wildlife. This includes the following species:

- *Western Pond Turtle:* The closest CNDDB record for western pond turtle is located 0.20-mile south and east of the project area (CNDDB Occurrence No. 1136). This 2002 record is from Santa Margarita Creek adjacent and upstream of the project area (Figure 6B from the attached biological resources assessment). The CNDDB record indicates that up to 10 of these turtles were in a single bedrock pool in Santa Margarita Creek. Project

biologists examined/surveyed this pool on four different dates and found no turtles. This accumulation of turtles most likely occurred when the creek was drying down in the spring, and this was the only deeper water pool remaining in this creek on the Santa Margarita Ranch. The western pond turtle has not been observed in the project area during six surveys (upland and aquatic surveys) conducted by project biologists in January, February, March, April, May and July 2019. However, due to the proximity of the known record to the project area and the suitable migratory habitat provided by Santa Margarita Creek and the suitable upland nesting habitat surrounding this creek within the project area, impacts to western pond turtle are considered significant but mitigable.

- *Special-Status Bats:* The Townsend's big-eared bat and pallid bat are both California "species of special concern." The large valley oak trees in the project area provide potential maternity and roosting habitat for these species. Noise and grading disturbance adjacent to potential maternity and roosting habitat could impact bats. Impacts to Townsend's big-eared bat and pallid bat are considered significant but mitigable.
- *American Badger:* An American badger was identified multiple times in the Western Remediation Area north of Little Tassajara Creek during 2019 surveys. Because badgers are known to be present on the Santa Margarita Ranch, badgers potentially could be present in burrows when the Remediation Project commences. Grading could entrap badgers in their burrows if they were present when excavation commences. Impacts are considered significant but mitigable.
- *Nesting Birds:* Red-tailed hawk, sharp-shinned hawk, Cooper's hawk (*Accipiter cooperii*), white-tailed kite, red-shouldered hawk, bald eagle, and golden eagle are all known from the area and potentially nest on or within a zone of influence of the project area. Common song birds (passerine birds) could also nest in the project area. All of these birds including their eggs and young are protected under the Migratory Bird Treaty Act (50 CFR 10.13). Similarly, birds and their eggs and young are also protected pursuant to California Fish and Game Code Sections 3503, 3503.5. Bald eagle and golden eagle are also fully protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). Any project-related impacts to these species, their eggs or young would be considered a significant adverse impact. Potential impacts to these species from the Remediation Project include "take" (to kill) or disturbance to nesting birds that results in inattentiveness or abandonment of nests, either that can cause egg failure or the death of nestlings. In the absence of surveys conducted the year that the proposed project would commence, impacts to nesting raptors and song birds from the project are considered as significant but mitigable.
- *California Red-Legged Frog:* The California red-legged frog was federally listed as threatened on May 23, 1996 (Federal Register 61: 25813-25833) and as such is protected pursuant to the FESA. On March 16, 2010, the USFWS issued the final designation for California red-legged frog Critical Habitat (USFWS 2010). The California red-legged frog is also a California designated "species of special concern." However, the project will not fall within mapped critical habitat.

  The project area is a seasonally dry habitat with no perennial water on or close to the Remediation work areas. Santa Margarita Creek and Little Tassajara Creek, the only tributaries in or adjacent to the project area, are both intermittent creeks that are dry typically by June. In 2017, a year punctuated with late and significant rainfall in the spring months, the Google Earth images indicate that Santa Margarita Creek still had water in it in June, but was dry in July. Both Santa Margarita Creek and Little Tassajara Creek are cobbly, typically shallow, clear water streams that support very little aquatic or emergent wetland vegetation. Project biologists determined that site conditions are not consistent with typical saturated or inundated areas that support California red-legged frogs. Project biologists noted that Santa Margarita Creek and Little Tassajara Creek are flashy, flowing vigorously after very large storm events, but both exhibit dramatic subsidence shortly after these storm events. No perennial pools occur in these creeks. Also, and most importantly, the creeks offer no escape cover for frogs.

Because the creeks in the project area run shallow and lack cover, amphibians residing in these creeks are highly susceptible to predation by raccoons and on the Santa Margarita Ranch in particular, by wild pigs. This could be one of the main reasons why project biologists found almost no amphibian life on Santa Margarita Ranch in or near these two creeks.

As both creeks in the Remediation Project Area are typically dry in May or June, and as California red-legged frog breeding pools must hold water until August to allow time for larvae to successfully metamorphose, these creeks do not constitute suitable breeding habitat for this frog species.

Additionally, frogs are not expected to migrate to the project area from the 2011 record location, especially in regard of the fact that the excavation portion of the proposed project will be implemented in the dry months of the year when data indicate that red-legged frogs do not move or only move very short distances from perennial water. Accordingly, there is no expectation that California red-legged frogs would migrate across a very dry landscape to the remediation project area. However, the potential exists that migrating frogs could be impacted by traffic on project access roads.

In conclusion, due to the distance of the record from the Remediation Areas, the absence of perennial water near or within the Remediation Areas, the times of year in which the Remediation Project work activities will take place, and the fact that project biologists did not observe any California red-legged frogs within the remediation project areas' creeks during the nocturnal and diurnal surveys conducted in the winter of 2018-2019, M&A concludes that this red-legged frog(s), should it still be present at the 2011 record location, would be avoided by the proposed project. Because project access roads are located closer to potential CRLF habitat, migrating frogs have the potential to be impacted by project traffic.

As such, impacts are considered significant but mitigable.

Wildlife Corridors: Little Tassajara Creek, a tributary to Santa Margarita Creek, occurs immediately north of the Western Remediation Area and provides a local wildlife corridor for common mammals that hunt up and down tributaries, obtain drinking water from such tributaries, and move from one area of their home range to another. The proposed remediation project will avoid this drainage and its associated riparian vegetation.

Additionally, since the excavation portion of the remediation work would take place during the dry season, there will not be an impact on downstream receiving waters. The Western Remediation Area will be set back from both the north and south top-of-bank of Little Tassajara Creek or outside of its associated riparian vegetation, whichever provides the greatest creek buffer. The proposed project will not block or otherwise impact the drainage during or after the project is completed.

Santa Margarita Creek runs south-to-north along the eastern boundary of the Eastern Remediation Area; this intermittent drainage provides a local wildlife corridor. The proposed remediation project will avoid this drainage, its wildlife corridor, and its associated riparian vegetation. Similarly, all remediation work near Little Tassajara Creek will occur above the top-of-banks and outside of this creek's associated riparian vegetation. However, without implementation of the proposed ERTEC wildlife exclusion fencing, implementation of Mitigation Measure AQ-4, and the development of the required SWPPP, impacts would be considered significant but mitigable.

Mitigation Measures

The following mitigation measures shall be implemented in order to reduce project impacts to less than significant levels.

BIO-1 Special-Status Plants: Prior to any equipment staging, remediation work activities, or other activities occurring within the gum plant patch locations (please refer to Attachment G of this EIR), gum plant seeds will be collected at the appropriate time from the plants located in these areas and properly stored for future seeding in the project area after the remediation work activities are completed.

Additionally, after gumplant seeds are collected the top 6 inches of the soil profile where the plants occur, the "seed bank," shall be salvaged and moved to a designated seed bank stockpile location. The salvaged soil stockpile shall be staked with orange spray-painted lath or other suitable staking, and labeled so that it is apparent the scalped soils are required to be preserved until original site contours are restored at the end of the proposed remediation project. After completion of the remediation work the seed bank shall then be spread back over the area where they were originally collected and finally, this area will be seeded with any collected gum plant seeds. Plantings shall be monitored by a qualified biologist ensure survivorship for a minimum of 3 years, or until such time that all project success criteria are met.

BIO-2 Western Pond Turtle: A qualified biologist shall conduct a preconstruction survey of the enclosed Eastern and Western Remediation Areas within 24 hours of any activities being conducted in those areas. If a western pond turtle is identified within the enclosed Remediation Areas, or up against the fencing on the outside of the Remediation Areas, the turtle shall be captured and immediately relocated to suitable habitat in Santa Margarita Creek. Thereafter, the designated biological monitor and/or trained field manager shall survey the enclosed areas for turtles prior to work each day.

During the spring and/or summer months, preconstruction surveys for turtle nest sites in uplands adjacent to suitable aquatic habitat shall be conducted within the 30-day period prior to beginning any work activities. If no nests are found, no further consideration for western pond turtle nests shall be required. If nest sites are located during preconstruction surveys within or adjacent to the proposed work areas, the nest site plus a 50-foot buffer around the nest site shall be fenced with orange construction fence until eggs hatch and young turtles disperse to the adjacent creeks. In addition, if nest(s) are located during surveys, moth balls (naphthalene) shall be sprinkled around the vicinity of the nest (no closer than 5 feet) to mask human scent and discourage predators. Remediation grading within the 50-foot buffer area shall be delayed until the young leave the nest or as otherwise advised and directed by the CDFW, the agency responsible for overseeing the protection of the pond turtle. If the CDFW allows translocation on any nestling pond turtles, it shall be completed by a qualified biologist under direction of CDFW.

BIO-3 Special-Status Bats: In order to avoid impacts to roosting special-status bats, a tree survey shall be conducted no more than 15 days prior to commencement of remediation work activities by a biologist with known experience surveying for bats. Tree cavities and exfoliated bark that could provide roosting or maternity habitat shall be examined for evidence of use by bats. If roosts are found, a determination should be made whether there are young. If a maternity site is found, impacts to that tree will be avoided by establishment of a 50-foot non-disturbance buffer until the young have reached independence. If roost sites are found it is likely that no action is warranted. Eviction is unnecessary as valley oak trees will not be directly impacted by the proposed remediation project.

BIO-4 American Badger: A qualified biologist shall conduct a preconstruction den survey no more than 21 days prior to site grading. If a potential den is located, infrared camera stations will be set up and maintained for three (3) consecutive nights at the potential den openings prior to initiation of grading/work activities to determine the status of the potential dens. If American badger is not found to be using the den, the burrow shall be filled, and site grading may proceed in the vicinity of this burrow(s) unhindered. However, if American badger is found using a den site within the area of proposed grading, the Applicant's biologist shall prepare a passive eviction plan. The plan will include details about evictions, provided it is not a natal den, the badger will be passively and humanely evicted from its den under guidance from CDFW if it could be impacted by grading or other remediation work activities. If a natal den is found, then an eviction plan will be prepared and submitted to CDFW for discussion and approval. Evictions shall not occur until CDFW approves the passive eviction plan.

BIO-5 Nesting Birds: Nesting surveys shall be conducted no more than 30 days and again no more than 15 days prior to commencing with project activities if this work would commence between February 1 and August 31. The nesting survey shall include an examination of all trees within the project site and within 500 feet of the project area (i.e., within a zone of influence of nesting birds).

The Bald and Golden Eagle Protection Act has special provisions for nesting eagles. As these eagles start nest construction or reconstruction in December/January, a survey for nesting bald and golden eagles shall be completed in February, and again in March. The survey area (i.e., zone of influence) should be extended to 1 mile from project area boundaries to the extent that this is practical or possible (private properties may preclude surveys on these properties).

The USFWS's 2017 *Recommended Buffer Zones for Ground-based Human Activities around Nesting Sites of Golden Eagles in California and Nevada* recommends a 660-foot non-disturbance buffer from active bald eagle nests for projects of similar magnitude to the proposed project.

If any eagle nest is discovered within one mile of the proposed project, a qualified raptor biologist with known experience working with eagles shall recommend a buffer of appropriate dimensions that are based upon the geographic position of the nest site in relation to the project. For example, hills create geographic barriers when between an eagle's nest and the job site, a barrier that would shield nesting eagles from disturbance that could otherwise occur in straight lines to the eagle nest. The buffer would be no smaller than 660 feet from any active eagle nest. This buffer shall be maintained until eaglets fledge the nest and are independent of the nest, or until the nesting attempt is otherwise completed.

If other bird species are identified nesting on or within the zone of influence of the proposed remediation project, a qualified biologist with extensive experience establishing effective nesting buffers shall prescribe a temporary protective nest buffer around the active nest(s). The nest buffer shall be staked with highly visible fencing such as t-posts and two strands of yellow rope where the buffer(s) extend into the project area.

Adequate nesting buffers shall be maintained 75 feet from the nest site or nest tree dripline for small birds (passerines) and 300 to 500 feet for sensitive nesting birds that include several raptor species known the region of the project area.

Following completion of nesting surveys, if nesting birds are identified on or within a zone of influence of the remediation areas, a qualified ornithologist/biologist that frequently works with nesting birds shall prescribe adequate nesting buffers to protect the nesting birds from harm while the proposed project is constructed. The applicant shall have the option for reducing setbacks, if warranted, upon approval by monitoring biologist. No remediation or earth-moving activity shall occur within any established nest protection buffer prior to September 1 unless it is determined by the qualified ornithologist/biologist that the young have fledged and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed. At the end of the nesting cycle, when fledging young are independent of the nest as determined by a qualified biologist, the temporary nesting buffers may be removed, and construction may commence in the nesting buffers without further regard for the nest site.

BIO-6 Applicant-Proposed Measures: During the course of the biological investigations prepared in support of this project, including the review of biological reports by the County's biologist and subsequent review by CDFW and USFWS, several mitigating factors and recommendations have been incorporated into the project description by the applicant in order to reduce impacts to biological resources. The following project elements are considered to be mitigating factors that shall become required mitigation measures:

- *Wildlife Exclusion Fencing:* The applicant shall install "ERTEC" wildlife exclusion fencing that completely surrounds each project remediation area in order to ensure that wildlife moving along Little Tassajara Creek and Santa Margarita Creek or elsewhere on the ranch property will be kept out of the project areas and not be impacted by the remediation work. A one-foot high sediment control panel (high density polyethylene sheet) incorporated by ERTEC into the bottom of the wildlife exclusion fence will ensure that silt and sediments are contained within the project area. The ERTEC shall be installed per the manufacturer's installation instructions. Escape funnels shall be installed to allow any wildlife inadvertently trapped inside the work area during installation a means to escape. Further, any openings or gates to allow access will be tightly secured at the end of each work to ensure no gaps occur.

  To be certain that animals cannot successfully climb this fencing, the ERTEC fence shall be recurved along the top edge outwards away from the Remediation areas so that in the event an animal does climb the fence, it will not be able to get over the top of the fence and into the work area.

  The one-foot high sediment control panel, that functions like silt fence, is a best management practice that is used to control threats of downstream degradation of receiving waters. However, since remediation work would take place during the dry season, downstream waters will not likely be impacted. Additionally, since remediation work will take place inside fenced enclosures, no impacts to wildlife are expected

  All wildlife exclusion fencing shall be maintained in good condition through completion of all earth-moving activities. A biologist shall inspect this fence every other week from installation through completion of all earth-moving on the proposed remediation project area and the day after any significant precipitation events (.25-inch or greater in a 24 hour period). The biologist shall also train the field manager how to perform the fence inspections so that on days the biologist is not present, the foreman can complete his/her own fence inspections. The wildlife exclusion fencing shall be removed upon completion of all remediation work activities.

- *Project Schedule and Work Sequence:* Work is planned to occur over one consecutive construction season between April 19 and October 31, 2021 to avoid excavation activity during the rainy season. Trucking of exported material and other minor activities may continue past the end of October, weather dependent, in order to ensure that all impacted soil stockpiled at the project area during the preceding dry season excavation is removed. Any work that is completed outside of the ERTEC enclosed project areas (for example, truck hauling) shall have the following restrictions:

  - Project work activities and/or off-site trucking shall begin after sunrise and shall cease no later than one hour after sunset.
  - If for any reason off-site trucking occurs before or after these conditions, then all trucks shall be escorted by a qualified biologist that clears any wildlife encountered from the traveled path ahead of the trucks.
  - Off-site trucking and all project equipment shall travel at a reduced speed limit of no greater than 15 miles per hours (MPH) between the project area and egress point.
  - No work shall occur during projected rain events of 0.25-inch or greater with work planned to be delayed when the National Oceanic and Atmospheric Administration (NOAA) forecast calls for a 70% chance or greater of this type of precipitation event.

In the event of significant project delays, off-site trucking of impacted soils may cease prior to completion of excavation activities at the end of October 2021. In this event, impacted soils shall be stockpiled and secured via implementation of an erosion control plan. Off-site trucking of the soils would resume in spring of 2022, weather permitting.

- *Fuel Storage:* Fuel storage is not anticipated for the proposed remediation project. In the event that fuel storage is required within the project area, the fuel storage shall be in accordance with San Luis Obispo County and San Luis Obispo County Air Pollution Control District regulations, including preparation of a Hazardous Material Storage Plan and Hazardous Materials Business Plan. Fueling areas shall occur at least 100-feet from wetlands and/or waterbodies unless fueling is within the proposed excavation area and there is no opportunity for petroleum products to enter creeks or wetlands.

Implementation of the mitigation measures listed above will reduce impacts to special status plant communities and wildlife habitat, wildlife corridors and special status plants and wildlife to less than significant levels.

V. CULTURAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☒	☐	☐	☐
(b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☒	☐	☐	☐
(c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	☒	☐	☐	☐

Setting

San Luis Obispo County possesses a rich and diverse cultural heritage and therefore has a wealth of historic and prehistoric resources, including sites and buildings associated with Native American inhabitation, Spanish missionaries, and immigrant settlers.

In order to assess the cultural resource landscape of the project site, Applied EarthWorks, Inc. (Æ) completed several cultural resource studies in coordination with the County in support of the proposed Project (Applied EarthWorks 2019a and 2019b).

Tribal Coordination and AB52

Under the requirements of AB52, Native American outreach has been an ongoing process throughout the life of the project. Native American tribal consultation was initiated by the County under the requirements of AB52, which is discussed in detail under Section 4.1, Cultural and Tribal Cultural Resources. The tribal coordination process was also initiated by the applicant team, in coordination with the County. This included contacting the

Native American Heritage Commission and local Native American groups including the Northern Chumash Tribal Council, the San Luis Obispo County Chumash Council, the Salinan Tribe of Monterey and San Luis Obispo Counties, and the yak titʸu titʸu yak tiłhini Northern Chumash Tribe, and the Xolon Salinan Tribe; groups known to have knowledge of or ties to the project area. Please refer to Section 4.1, Cultural and Tribal Cultural Resources, of this EIR for a detailed discussion of the tribal coordination process.

Impact Discussion

Because the project site includes a significant cultural resource and based on the identified impacts to archaeological and tribal resources, the proposed remediation project has the potential to result in significant unavoidable impacts. As such, the analysis of cultural resource impacts is considered to be the primary effort under the proposed EIR, which will includes a detailed summary of the archaeological investigations and testing prepared to-date, a summary of Native American tribal coordination under AB52, an assessment of impacts to known and as-yet undiscovered archaeological resources and mitigation measures to reduce impacts to the greatest extent feasible.

VI. ENERGY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
(b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Setting

The proposed remediation project entails short-term construction activities related to soil remediation near the rural community of Santa Margarita and associated hauling of material to and from the work site. The project does not include any development and does not include an operational phase that would have the potential to consume energy resources in the long run.

Standard diesel-fueled construction equipment is proposed for use. In accordance with applicable air quality regulations, the construction equipment will be equipped with fuel-efficient engines and properly maintained. At the completion of remediation, energy consumption will be limited to occasional vehicle trips and equipment used for site restoration.

Impact Discussion

As described above in Section III, Air Quality, the proposed remediation project will incorporate several measures to reduce emissions during short-term construction activities. In turn, these measures will result in fuel efficiencies. For example, heavy equipment will be outfitted to meet current emissions standards and haul trucks will meet the CARB's emissions standards for fuel-efficient engines.

In addition, the proposed remediation project will incorporate several measures to reduce emissions during short-term construction activities. In turn, these measures will result in fuel efficiencies.

Impacts related to energy use are considered less than significant.

Mitigation Measures

Impacts are considered less than significant with the required incorporation of mitigation measures listed above under Section III, Air Quality, and incorporation of emissions standards for fuel-efficient engines under CARB. No additional mitigation is required.

VII. GEOLOGY AND SOILS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
	(ii) Strong seismic ground shaking?	☐	☐	☒	☐
	(iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	(iv) Landslides?	☐	☐	☒	☐
(b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
(c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☒	☐	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
(e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☒	☐
(f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Setting

In order to provide a detailed assessment of the project site geologic setting and geologic impact analysis, the applicant team has prepared a geotechnical report (AECOM, 2019c). Please refer to Attachment H of this EIR for a copy of the project geotechnical report.

Regional Geologic Conditions

As discussed in the project geotechnical report, the project site is located in the southern portion of the Coast Ranges geomorphic province of California. The Coast Ranges are characterized by northwest-southeast trending mountain ranges and intervening valleys which are generally bounded by faults. The site is between the Rinconada fault zone to the east and the Nacimiento fault zone to the west. The Santa Margarita Valley is bounded by the granitic La Panza Range to the northeast and the Santa Lucia Range of coastal mountains to the southwest. In addition to being stratigraphically complex, the rock formations present in the Santa Margarita area have been extensively faulted and folded as a result of two or more periods of major deformation.

Thirty-four active and potentially active earthquake-producing faults lie within 100 miles of the center of the Santa Margarita Ranch property. Individual earthquakes as large as Magnitude 7.9 have occurred within this distance. Fault rupture of the ground surface is possible on any of these faults with a large enough earthquake and secondary effects such as ground settlement, liquefaction and landsliding can occur.

The Santa Margarita Ranch property consists of varied terrain with the mountainous area on the west side of the Ranch containing the Santa Lucia Mountain ridge and slopes of 50 percent and greater. The predominant interior valleys of the Ranch are sloped at 1 to 9 percent while the Santa Margarita Creek lowlands typically contain slopes less than 5 percent. Elevations across the site range from a high of 1,276 feet along the Santa Lucia ridgeline to 1,020 feet at the north end of the property.

Seismic Hazards

The U.S. Geological Survey (USGS) defines active faults as those that have had surface displacement within Holocene time (about the last 11,000 years). Surface displacement can be recognized by the existence of cliffs in alluvium, terraces, offset stream courses, fault troughs and saddles, the alignment of depressions, sag ponds, and the existence of steep mountain fronts. Potentially active faults are faults that have had surface displacement

during the last 1.6 million years. Inactive faults have not had surface displacement within the last 1.6 million years. Several faults are located in the vicinity of the Santa Margarita Ranch.

Nacimiento Fault Zone: Trending northwest to southeast, the Nacimiento Fault is located in the center of the Ranch property, bisecting the community of Santa Margarita and is considered potentially active.

Rinconada Fault Zone: Trending northwest to southeast, the Rinconada Fault is located on the eastern edge of the Ranch property, following West Pozo Road south of SR 58. The Rinconada Fault is zoned as potentially active under the California Alquist-Priolo Earthquake Fault Zoning Act. The fault is estimated to be capable of generating a maximum credible earthquake (MCE) of approximately 7.5 and is considered active.

San Andreas Fault: The San Andreas Fault, which is the most likely source of a major earthquake in California, is located 29 miles east of the Santa Margarita Ranch, along the eastern border of San Luis Obispo County. The San Andreas Fault is the primary surface boundary between the Pacific and the North American plates. There have been numerous historic earthquakes along the San Andreas Fault, and it generally poses the greatest earthquake risk to California.

West Huasna/Oceanic Fault Zone: The West Huasna/Oceanic Fault Zone trends north-northwest for approximately 100 kilometers along coastal central California. The fault extends from approximately the Santa Maria River on the south to San Simeon on the north. Seismologists have agreed that this fault zone was the source of the earthquake that shook the area on December 22, 2003.

Los Osos Fault: The Los Osos Fault is located approximately 10 miles southwest of the Ranch property. The Los Osos Fault is generally northwest trending and exhibits a complex history of both strike-slip and reverse displacement.

Hosgri Fault: The Hosgri Fault extends from San Simeon to an ocean shelf two miles west of Point Buchon, and then trends toward the Point Sal area. The Hosgri Fault is located approximately 22 miles southwest of the Ranch property. The fault is active.

Ground Shaking and Surface Rupture

Faults generally produce damage in two ways: ground shaking and surface rupture. Seismically induced ground shaking covers a wide area and is greatly influenced by the distance of the site to the seismic source, soil conditions, and depth to groundwater. Surface rupture is limited to very near the fault. The Rinconada Fault and the southern extension of the Nacimiento Fault are located on the Ranch property. Other hazards associated with seismically induced ground shaking include earthquake-triggered landslides and tsunamis. Tsunamis and seiches are associated with ocean surges and inland water bodies, respectively. Neither of these hazards would affect the project site.

Expansive Soils

During periods of water saturation, expansive soils tend to expand. During dry periods, the soils tend to shrink. These volume changes with moisture content can cause cracking of structures built on expansive soils. Areas characterized by high shrink-swell potential would be a geologic hazard on the Ranch property. However, the proposed remediation project does not include any structural development and expansive soil hazards will be avoided.

Erosive Soils

Soil erosion is the removal of soil by water and wind. The rate of erosion is estimated from four soil properties: texture, organic matter content, soil structure, and permeability. Other factors that influence erosion potential include the amount of rainfall and wind, the length and steepness of the slope, and the amount and type of vegetative cover.

Subsidence and Settlement

Subsidence involves deep-seated settlement due to the withdrawal of fluid (oil, natural gas, or water). Settlement is the downward movement of the land surface resulting from the compression of void space in underlying soils. Seismically induced settlement occurs in loose to medium dense unconsolidated soil above groundwater. These soils compress (settle) when subject to seismic shaking. The settlement can be exacerbated by increased loading, such as from the construction of buildings. Settlement can also result solely from human activities including improperly placed artificial fill, and structures built on soils or bedrock materials with differential settlement rates.

Slope Stability and Landslides.

Implementation of the proposed remediation project would result in excavation ranging from 6 feet to 20 feet below ground surface (bgs) in the Eastern Excavation Area and from 6 feet to 10 feet bgs in the Western Remediation Area. A slot trenching method has been proposed for excavating the impacted soils beneath the pipelines incrementally, minimizing exposure of pipelines to limited segments at a given time to ensure pipeline stability during excavation.

Landslides result when the driving forces that act on a slope (i.e., the weight of the slope material, and the weight of objects placed on it) are greater than the slope's natural resisting forces (i.e., the shear strength of the slope material). Slope instability may result from natural processes, such as the erosion of the toe of a slope by a stream, or by ground shaking caused by an earthquake. Slopes can also be modified artificially by grading, or by the addition of water or structures to a slope. Development that occurs on a slope can substantially increase the frequency and extent of potential slope stability hazards.

Areas susceptible to landslides are typically characterized by steep, unstable slopes in weak soil/bedrock units which have a record of previous slope failure. There are numerous factors that affect the stability of the slope, including: slope height and steepness, type of materials, material strength, structural geologic relationships, ground water level, and level of seismic shaking. According to the San Luis Obispo County Safety Element, landslide risk ranges from low to high throughout the Santa Margarita Ranch. The proposed remediation project does not include any structural development or permanent earthwork features (such as graded slopes).

Proposed Project Slope Stability

For the proposed removal of contaminated materials, consisting of temporary unsupported slopes, it is desired to establish safe slopes for the excavation and operations. One source of input to this is Occupational Safety and Health Administration (OSHA) requirements and limitations.

For unsupported slopes and benched excavations, OSHA maximum allowable slopes are established based on defined soil type and groundwater seepage conditions, as follows:

- Type A soils are cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (tsf) or greater. Examples of Type A cohesive soils are often clay, silty clay, sandy clay, clay loam, and, in some cases, silty clay loam and sandy clay loam. No soil is Type A if it is fissured, is subject to vibration of any type, has previously been disturbed, is part of a sloped, layered system where the layers dip into the excavation on a slope of 4 horizontal to 1 vertical (4H:1V) or greater, with seeping water.
- Type B soils are cohesive soils with an unconfined compressive strength greater than 0.5 tsf but less than 1.5 tsf. Examples of other Type B soils are angular gravel, silt, silt loam, previously disturbed soils unless classified as Type C, soils that meet the unconfined compressive strength or cementation requirements of Type A soils but are fissured or subject to vibration, dry unstable rock, and layered systems sloping into the trench at a slope less than 4H:1V (only if the material would be classified as a Type B soil).

- Type C soils are cohesive soils with an unconfined compressive strength of 0.5 tsf or less. Other Type C soils include granular soils such as gravel, sand and loamy sand, submerged soils, soils from which water is freely seeping, and submerged rock that is not stable. Also included in this classification is material in a sloped, layered system where the layers dip into the excavation or have a slope of 4H:1V or greater.

The OSHA maximum allowable slopes for excavations less than 20 feet deep are as follows:

- Type A soil - 0.75H:1V
- Type B soil - 1H:1V
- Type C soil - 1.5H:1V

The maximum anticipated excavation depth for the removal of contaminated materials under the proposed project is 20 feet bgs, with most areas 15 feet bgs and less. Based on the geotechnical site conditions assessed from the field investigation and geotechnical laboratory testing, the materials within the planned excavation depths are judged to be predominantly Type A to Type B soils per the above OSHA definition. This is predicated on no groundwater conditions within excavation depths or adequate groundwater control to prevent seeping conditions.

Liquefaction

Liquefaction is defined as the sudden loss of soil strength due to a rapid increase in soil pore water pressure resulting from seismic ground shaking. Liquefaction potential is dependent on such factors as soil type, depth to ground water, degree of seismic shaking, and the relative density of the soil. When liquefaction of the soil occurs, buildings and other objects on the ground surface may tilt or sink, and lightweight buried structures (such as pipelines) may float toward the ground surface. Liquefied soil may be unable to support its own weight or that of structures, which could result in loss of foundation bearing or differential settlement. The proposed project is limited to the remediation and excavation of contaminated soil and does not include any development that would be considered susceptible to the effects of liquefaction.

Geologic Study Area

Portions of the Ranch property are designated as a Geologic Study Area (GSA) under the County's Salinas River Area Plan. The GSA combining designation is applied to areas where geologic and soil conditions could present new developments and their users with potential hazards to life and property (San Luis Obispo County Code, Section 22.14.070). However, the proposed project does not include any development with the potential for hazards to life or property.

Paleontological Resources

Paleontological resources are organic remains or their traces, usually older than 11,000 years, which are naturally preserved and imbedded in rocks or rock-like material such as amber. Organisms that possess hard parts (e.g., bone or shell) are most typically preserved, but fossils can represent soft parts, hard parts, tracks, trails, molds, casts, and trace indications such as burrows. Fossils occur primarily in sedimentary rocks, but some fossils have been excavated from other rock types, especially volcanic rocks. There is a temporal threshold for an entity to become a fossil. If the organic material is 5,000 years old, it is not considered a fossil by most paleontologists. If it is 10,000 years old, it may be deemed a fossil. If it dates to 100,000 B.P., there is no question about its classification as a fossil if the organic material is found in-situ in rocks preserved by natural processes.

The published record identifies numerous invertebrate fossil localities in the Santa Margarita region, especially in marine rocks. These fossils are usually well preserved in the rock, and are commonplace throughout the area, although some areas are more productive than others. Invertebrate fossils generally are regarded as less significant than other types of paleontological remains. Elevated areas within the Santa Margarita Valley have

extensive exposures of the Late Cretaceous Atascadero and Late Miocene Santa Margarita and Monterey formations.

Proposed Remediation Site Geologic Conditions

The project area was analyzed and documented in a geotechnical report provided with the grading permit application package (please refer to Attachment H of this EIR). Based on soil borings drilled in the work excavation areas, visual observations, and subsequent laboratory testing, the soils can generally be described as follows:

- Ranging from sandy clay/sandy silt to clayey to silty sand;
- Bordering between a fine-grained and sand material classification with fines content ranging between 30 and 60 percent; and
- Material with higher sand content encountered at greater depth.

Laboratory testing indicates that the sandier materials have an actual higher fines content.

The results of the geotechnical index and engineering properties testing of samples retrieved from the field investigation borings are summarized as follows:

- Moisture content generally ranging from 14 to 23 percent, lower in the sandier materials and higher in the more fine-grained materials, based on 12 tests;
- Atterberg limits testing and visual observations indicating materials exhibiting low to moderate plasticity;
- Consolidated drained direct shear strength of the clayey sand to sandy clay materials encountered in Boring B-1 at depths of 6 and 11 feet bgs with cohesion ranging from 400 to 1,100 pounds per square foot (psf) and friction angle ranging from 35 to 19 degrees, respectively, based on two tests; and
- Compaction testing of bulk samples of material from the upper 5 feet yielding results of 12 percent optimum moisture content and 126 pounds per cubic foot (pcf) to 122 pcf maximum dry density (ASTM D1557), respectively.

Several geologic units are exposed or present at shallow depth beneath the pipeline alignment crossing the site. These geologic units, from youngest to oldest, include recent alluvium, older alluvium, Santa Margarita formation, Atascadero formation, and the Franciscan formation assemblage.

The younger alluvium, primarily of Holocene age, consists of stream channel and floodplain deposits along Santa Margarita Creek, Yerba Buena Creek and their tributaries. The younger alluvium is characterized by laterally discontinuous and interbedded layers of sand, silt and clay which typically overlie the older alluvium. The older alluvium, likely of Pleistocene age, consists of weakly consolidated gravel, sand, silt, and clay in lenticular and interfingering beds. At the Ranch, older alluvium is exposed on the elevated terrace west of Santa Margarita Creek, in the area of the historic Asistencia and Ranch headquarters buildings.

Underlying the alluvium is the Tertiary aged Santa Margarita formation composed predominantly of weakly consolidated, marine sandstone. Sandstone of the Santa Margarita formation typically occurs in thick beds, is whitish to grey in outcrop, and locally contains shell beds and shallow marine fossils. The light-colored Santa Margarita formation is exposed in the steep western bank of Santa Margarita Creek near the historic Asistencia and underlies the alluvium beneath the northern portion of the pipeline corridor at the Ranch.

Along the southern portion of the pipeline corridor at the Ranch, sandstone of the Upper Cretaceous aged Atascadero formation is exposed in outcrops and occurs at shallow depth beneath the thin cover of alluvium. The Atascadero formation is commonly identified by outcrops of thickly bedded coarse sandstone that is well cemented and hard.

Impact Discussion

Several fault zones are located in the vicinity of the Remediation Project Area, including the Nacimiento Fault Zone and the Rinconada Fault Zone. The Rinconada Fault is zoned as potentially active under the California Alquist-Priolo Earthquake Fault Zoning Act (California Department of Conservation, 2019). However, no permanent structures will be constructed as a result of this short-term remediation project. The Grading Permit issued by the County will meet the Land Use Ordinance such that grading will not result in adverse effects or hazards to life or property. Impacts related to faulting or ground rupture are considered less than significant.

The proposed remediation project entails excavation of impacted soil and backfilling with cement slurry or clean fill. Appropriate clean backfill soils and compaction methods will be used to ensure long-term stability of the excavated areas in accordance with County grading requirements. The hazards related to ground stability have been analyzed in the project geotechnical report, indicating that impacts related to unstable soil conditions during proposed excavation and impacts related to slope failure within excavations are considered significant but mitigable.

With respect to ground failure, landslides and liquefaction, the proposed remediation project entails excavation of impacted soil and backfilling with cement slurry or clean fill. The proposed project is limited to the temporary excavation of contaminated soils and backfilling and does not include any structural development with the potential for being impacted by landslides or liquefaction. Impacts are considered less than significant.

The Grading Plan submitted for the proposed project will also conform to Section 22.52.100(C) of the County's Land Use Ordinance. This ordinance requires the preparation of an Engineered Grading Plan, which shall include the "Engineer's opinions and recommendations concerning adequacy for the intended use of site to be developed by the proposed grading as affected by soils engineering factors, including the stability of slopes, foundation recommendation, soil design criteria, liquefaction, expansive soil, lose or soft soils, areas of unknown problems, undocumented fill, cut/fill, unusual loading, shallow ground water or springs, and landslides." The Grading Permit issued by the County will meet the Land Use Ordinance, as applicable, such that grading will not result in accelerated erosion, stream sedimentation, significantly reduced groundwater recharge or other adverse effects or hazards to life or property. BMP implementation discussed above under Section III, Air Quality, will further reduce impacts related to erosion and sedimentation. Impacts related to erosion, sedimentation and groundwater recharge are considered less than significant.

However, it is important to note that during subsurface testing, some groundwater levels have been measured a few feet above the deepest planned excavation depths, locally. These levels likely vary seasonally and as a function of rainfall magnitude. Because groundwater was noted at relatively shallow levels in some areas, impacts related to groundwater conditions are considered significant but mitigable.

The proposed project does not include any demand for wastewater service. No impacts are expected with respect to development of septic services.

With respect to paleontological resources, these resources have been identified within certain geologic formations within the Santa Margarita Ranch. Such resources have not been found within the proposed project disturbance area and are generally found within bedrock (Rincon Consultants, Inc. 2008). The proposed remediation project and excavations are limited to soil and will not excavate into bedrock. Therefore, the probability of encountering paleontological resources is considered low and impacts are considered less than significant.

Mitigation Measures

As part of the project geotechnical investigation, recommendations for addressing safe excavation slopes, groundwater and dewatering, and backfill construction were included to address associated impacts. The following measures shall be incorporated as required mitigation.

GEO-1 Excavation Slopes: Based on the project geotechnical report, the maximum allowed mass excavation slope shall be 1H:1V. For any localized short term, temporary cuts steeper than 1H:1V, with no occupancy within the excavation, materials and equipment shall be set back from the top of the excavation beyond where a 1H:1V cut slope would daylight. The excavation contractor shall be prepared and responsible for adjusting and flattening slopes to maintain stability and safety given actual field conditions encountered.

GEO-2 Groundwater: In order to allow the excavation slopes discussed in the previous section and to be consistent with the associated OSHA soil type definition for allowance of such slope excavation geometry, groundwater conditions shall be maintained a minimum of 2 feet below the excavation depths at all times along with the prevention of active seepage conditions from the excavation slopes and bottom.

Groundwater level monitoring shall be implemented during remedial excavation to confirm requirements are being maintained. The excavation contractor shall establish an approved groundwater control and monitoring plan, consistent with the groundwater monitoring outlined in the project CAP, with the ability to adjust and maintain the requirements with changing conditions.

GEO-3 Backfill Construction: Based on the project geotechnical report, it is understood that the remediation site, by removal and replacement of contaminated materials, will not include any structural development. However, the project includes design grades and slopes such that future settlement or differential settlement could result in significant impacts. Considering these conditions and criteria, the following requirements for the remediation mass excavation backfill with soil materials shall be implemented as follows:

- The final clean subgrade below remediation excavation shall be scarified, brought to a moisture content within 2 percent of optimum moisture content, and compacted to a minimum of 90 percent of the laboratory maximum dry density, determined in accordance with ASTM D1557, latest edition;
- Subsequent mass excavation backfill replacement material shall be a sandy, silty, clayey material with fines content of at least 20 percent. The material shall not be highly plastic or have expansive properties, with a plasticity index no greater than 20;
- Mass excavation backfill replacement material shall not contain organics and should not contain isolated particle sizes greater than 6 inches;
- The replacement soil backfill material shall be properly moisture conditioned prior to placement into the remediation excavations to minimize final moisture adjustment prior to compaction;
- The soil backfill material shall be placed in loose horizontal lifts not exceeding 12 inches;
- Prior to compaction, the soil backfill material shall be within 2 percent of optimum moisture content; and
- The soil backfill material shall be compacted to a minimum of 90 percent of the laboratory maximum dry density, determined in accordance with ASTM D1557, latest edition.

Implementation of the above mitigation measures will reduce impacts related to geologic hazards to less than significant levels.

VIII. GREENHOUSE GAS EMISSIONS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
(b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Setting

Greenhouse gases (GHG) are any gases that absorb infrared radiation in the atmosphere, and are different from the criteria pollutants discussed in Section III, Air Quality, above. The primary GHGs that are emitted into the atmosphere as a result of human activities are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases. These are most commonly emitted through the burning of fossil fuels (oil, natural gas, and coal), agricultural practices, decay of organic waste in landfills, and a variety of other chemical reactions and industrial processes (e.g., the manufacturing of cement).

GHG emissions play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters earth's atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. Infrared radiation (i.e., thermal heat) is absorbed by GHGs; as a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of sphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO_2. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time (i.e., lifetime) that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. GHGs with lower emissions rates than CO_2 may still contribute to climate change because they are more effective at absorbing (i.e., high GWP). The concept of CO_2-equivalents (CO_2e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation.

Regulatory Setting

The Supreme Court of the United States ruled on April 2, 2007, that the EPA must regulate motor vehicle emissions, and that the EPA had the authority to regulate GHGs.

Assembly Bill 32

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in EO S-3-05, which is to reduce statewide GHG emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. AB 32 also identifies the California Air Resources Board (CARB) as the state

agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

Senate Bill 32

SB 32, signed on September 8, 2016, requires California to reduce GHG emissions to 40 percent below 1990 levels by 2030. The SB 32 2030 target represents reductions needed to ensure California can achieve its longer-term 2050 target of a reduction of greenhouse gases 80 percent below 1990 levels per Executive Order B-30-15.

Options for Addressing Climate Change in San Luis Obispo County

In 2005, the Air Pollution Control District (APCD) Board approved APCD staff's proposal to take actions locally to address climate change. Many of the air pollution programs already in place throughout the County reduce ozone forming pollutants and toxic air contaminant emissions, but also have ancillary benefits of reducing GHG emissions. The APCD's Climate Protection Program identifies particular actions that could be implemented to specifically address GHG emissions at the local level. These actions include but are not limited to: developing public education and outreach campaigns on climate change; targeting a percentage of mitigation grant funds for GHG emission reductions; encouraging and providing support for local governments to join the Cities for Climate Protection Program; and developing a partnership with California Polytechnic State University for addressing climate change.

Integrated Climate Change Adaptation Planning in San Luis Obispo County

In 2010, the County developed an Integrated Climate Change Adaptation Planning report to address climate adaptation strategies for the region. The report provides a suite of adaptation strategies that were developed by local leaders and experts during a series of workshops in 2009-2010.

The County Energy Wise Plan (EWP; 2011) identifies ways in which the community and County government can reduce greenhouse gas emissions from their various sources. In 2016 the County published the EnergyWise Plan 2016 Update, which describes the progress made toward implementing measures in the 2011 EWP, overall trends in energy use and emissions since the baseline year of the inventory (2006), and the addition of implementation measures intended to provide a greater understanding of the County's emissions status.

CEQA Air Quality Handbook

In March 2012, the APCD approved thresholds for Greenhouse Gas (GHG) emission impacts, and these thresholds have been incorporated into the CEQA Air Quality Handbook. The Bright-Line Threshold of 1,150 Metric Tons CO_2/year (MT CO_2e/yr) is the most applicable GHG threshold for most projects. Table 1-1 in the APCD CEQA Air Quality Handbook provides a list of general land uses and the estimated sizes or capacity of those uses expected to exceed the GHG Bight Line Threshold of 1,150 Metric Tons of carbon dioxide per year (MT CO_2/yr).

However, for construction phase GHG evaluations, the APCD CEQA Air Quality Handbook stipulates that short-term GHG impacts from construction shall be amortized over the life of the project (50 years for residential or residential support facilities and 25 years for commercial or industrial facilities) and added to the annual average operational emissions for comparison to the operational thresholds.

The proposed project would not have operational emissions and construction-related emissions would cease after completion of the project. During preliminary project review by APCD staff, it was confirmed that the proposed remediation project is considered to be "construction-only" and as such, a numerical GHG threshold does not apply to this short-term construction-only project, but that the GHG emissions should nonetheless be quantified and disclosed in the CEQA air quality assessment (email correspondence between A. Mutziger, APCD, and T. Murphy, AECOM, May 6, 2019).

California Air Resources Board

In October 2008, the California Air Resources Board (CARB) published its *Climate Change Proposed Scoping Plan*, which is the State's plan to achieve GHG reductions in California required by Assembly Bill (AB) 32. This initial Scoping Plan contained the main strategies to be implemented in order to achieve the target emission levels identified in AB 32.

Impact Discussion

Heavy-duty off-road equipment, materials transport, and worker commutes during the proposed remediation project construction period will result in exhaust-related GHG emissions. Construction-related GHG emissions were estimated using the methodology discussed above under Section III, Air Quality. Construction of the proposed remediation project is anticipated to occur over approximately 6 months with an anticipated start date of April 2021. The GHG emission estimates provided in the project air quality analysis (please refer to Attachment F of this EIR) were based on a haul truck trip distance of 100 miles, the distance to the farthest of three regionally-available disposal facilities. All fill material will be sourced on-site. However, the preferred facility is located in Kettleman City, approximately 70 miles from the project site; therefore, this analysis presents a worst-case analysis under each proposed hauling scenario.

Total GHG emissions under each proposed trucking scenario are summarized in Table 5 below (please refer to Section XVII, Transportation, for a discussion of proposed hauling scenarios).

Table 5. Greenhouse Gas Emissions Summary

Project Trucking Scenario	Construction-Related GHG Emissions (MT CO_2e)
Project Activities + Trucking Scenario A	1,676
Project Activities + Trucking Scenario B	1,697
Project Activities + Trucking Scenario C	1,690

Notes: See Attachment F of this EIR for additional details.

MT CO_2e = Metric tons carbon dioxide equivalents.

As shown in Table 5, remediation activities of the proposed project would generate a maximum of approximately 1,697 MT CO_2e, or 68 MT CO_2e, when amortized over 25 years. These emissions were quantified at the request of the APCD. However, the APCD considers the proposed remediation project to be limited to "construction" and as such, a numerical GHG threshold does not apply to this short-term construction-only project. Accordingly, the proposed project will not conflict with any stated policies related to Greenhouse Gases in the SLO County APCD CEQA Air Quality Handbook. Impacts related to GHG emissions are considered less than significant with the implementation of the mitigation measures listed under Section III, Air Quality.

Mitigation Measures

With the incorporation of the mitigation measures listed under Section III, Air Quality, impacts related to GHG emissions are considered less than significant. No additional measures are required.

IX. HAZARDS AND HAZARDOUS MATERIALS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
(b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
(c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
(d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
(e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
(f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
(g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Setting

Hazardous materials are defined as substances with physical and chemical properties of ignitability, corrosivity, reactivity, or toxicity which may pose a threat to human health or the environment. The potential for future releases of hazardous materials to occur during implementation of the proposed project are discussed below. It is important to note that the proposed project consists of hydrocarbon-contaminated soil remediation pursuant the

project Corrective Action Plan (CAP And CAP Addendum) as approved by the Central Coast Regional Water Quality Control Board (Regional Board) (please refer to Attachment D of this EIR for a copy of the CAP and CAP Addendum, and Section 2.0, Project Description, of the EIR for a summary of the CAP and CAP Addendum elements). As such, the project consists of and is limited to the remediation and cleanup of potential hazardous materials.

The proposed project will take place entirely within the Santa Margarita Ranch property. The purpose of the proposed remediation project is to remove hydrocarbon-contaminated soil from an area within and adjacent to the pipeline easement. The western excavation area is undeveloped open space with active cattle grazing. A private airstrip is located to the north of the work site. The eastern excavation area is located primarily within a fenced corral and adjacent to other agricultural structures related to the Santa Margarita Ranch operations. Existing pipelines are located within an established easement alignment where project excavation is proposed to take place. Excavations extending outside of the established pipeline easement will be conducted under an established access agreement with the landowner.

A Caltrans encroachment permit for temporary direct use of State Route 58 access will be acquired and egress and ingress to the project area will be facilitated in accordance with the developed traffic control plan. Impacted soil will be tested and characterized prior to departing the project area and all off-site hauling of impacted materials will transported under a Hazardous Waste Manifest in accordance with State and Federal requirements. Based on previous project investigation activities, it is anticipated that the impacted material will be characterized as non-hazardous.

Impact Discussion

The purpose of the proposed remediation project is to remove petroleum hydrocarbon-contaminated soil from one or more releases within the Eastern and Western Remediation Areas. As presented in the CAP and CAP Addendum approved by the Regional Board, the remediation action objective for excavations is to implement the following measures:

- Removing impacted soil exceeding the established cleanup goals identified below to a maximum depth of 10 feet below ground surface (bgs) at Sites 2/4B and up to 15 or 20 feet bgs or encountered bedrock at Sites 9/11, respectively, subject to any limitations imposed in the Remediation project entitlements or permits;
- Recovering measurable separate phase liquid petroleum (SPH) on groundwater within open excavations to the extent practicable and within a designated timeframe prior to backfilling;
- Restoring the disturbed areas and removed surface structures/improvements to pre-existing conditions to the extent practicable, promoting revegetation and drainage of storm water, and minimizing erosion;
- Completing all site restoration activities without health and safety incidents including property damage and personal injury; and
- Preparing a soil and groundwater management plan (SGMP) to address hydrocarbon-contaminated soil remaining in place onsite post-remediation.

With respect to the risk of exposure to hazardous materials during project implementation, the CAP and CAP Addendum 01 specifies that all work will be performed in accordance with a site-specific Health and Safety Plan (HASP) prepared under Occupational Safety and Health Administration (OSHA) requirements (29 CFR 1910.120) and California Occupational Health and Safety Administration (Cal-OSHA) guidelines (CCR Title 8, Section 5192). All personnel and subcontractors associated with site field activities will be required to be familiar and comply with all provisions of the HASP.

With respect to the transportation of hazardous materials, the CAP and CAP Addendum specifies that representative samples of subsurface hydrocarbon impacted soil will be collected from each proposed excavation area for waste classification purposes as needed. The samples will be analyzed for state and federal hazardous waste characteristics, including, but not limited to toxicity, reactivity, corrosivity, and ignitability. Soil analytical reports and waste profiling forms will be submitted to an appropriately permitted recycling/disposal facility for waste acceptance prior to transport.

In addition, as noted in below in Section XVII, Traffic and Circulation, traffic safety measures will be implemented as required by the Caltrans District 5 encroachment permit to avoid or minimize potential Project-related traffic safety impacts to the roadway network. El Camino Real is an adopted emergency response route to Highway 101. Appropriate measures would be followed to avoid conflicts with emergency response activities and other potential traffic conflicts. Such measures will include communication protocols and procedures to suspend Project-related trips during emergency situations; use of traffic control flaggers when trucks are entering or leaving the project area; and halting project traffic in the event of an emergency situation.

Regarding the potential for accidental release, prior to intrusive field work, Underground Service Alert (USA) will be contacted to assess the existence of public and third-party utilities, pipelines and other subsurface improvements and to further assess for the potential presence of subsurface obstructions within the excavation footprints.

During excavation operations, procedures will be used to avoid damaging or destabilizing the existing pipelines within the excavation footprints. This includes avoiding the use of mechanical equipment when working within 24 inches of the existing pipelines. When excavating beneath pipelines, a railing system is proposed to be installed to ensure the pipelines will be fully supported when excavating around them. Barricades are proposed to be used to prevent heavy equipment from running into pipelines. Excavation techniques designed to prevent damage to or collapse of the pipelines, will be implemented.

Excavated soil, construction equipment and other materials will be managed to avoid unsafe conditions or uncontrolled releases. Furthermore, no schools are located within one-quarter mile from the project site (Santa Margarita Elementary School is located 0.8 miles from the project site).

As such, the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment.

With respect to the listing of known hazardous materials sites, according to the "EnviroStor" database, maintained by the California Department of Toxic Substances Control (DTSC), and accessed on January 24, 2019, there are no identified Hazardous Wastes and Substances sites located on or near the proposed remediation project area (DTSC, 2019). The Ranch is also not the site of a leaking underground storage tank case administered by the Regional Board, a solid waste disposal facility from which there is a migration of hazardous waste reported by the Regional Board, or a cleanup and abatement order or cease-and-desist order from the Regional Board. Listings within the project site pursuant to Government Code § 65962.5 ("Cortese List"), are limited to the remediation efforts under the proposed project.

Fire protection and prevention services in the Santa Margarita Ranch area are provided by the San Luis Obispo County Fire Department. Fire prevention measures will include documentation in the Health and Safety Plan (e.g., access routes); conducting a kick-off meeting and safety drill at the start of work with participation from the County Fire Department; access to on-site fire water; minimization of welding (or, if welding is necessary, conducting welding under a hot work permit and use of a fire watch). Additional precautions will be taken during potentially hazardous weather conditions. In the event of a pipeline release or fire, project workers will evacuate. County Fire Department and other local emergency management services will be notified.

The Ranch property has no permanent population, and construction workers associated with the excavation operations will be made aware of occasional aircraft operations using the private airstrip located on the Ranch. Depending on the work location, work would be suspended prior to aviation landings and take-offs.

Based on the details discussed above related to public and environmental hazards, accidental upset, location of previously documented hazardous materials sites, airport safety, fire safety and adoption of emergency response plans, in addition to the fact that the project consists of the cleanup and remediation of hazardous materials and the temporary nature of project activities, impacts related to hazardous materials are considered less than significant.

Mitigation Measures

Hazardous materials impacts are considered less than significant and no mitigation measures are required.

X. HYDROLOGY AND WATER QUALITY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
(b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
(c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
	(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(iii)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
(iv)	Impede or redirect flood flows?	☐	☐	☒	☐
(d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
(e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Setting

Existing Santa Margarita Ranch water uses are supplied entirely by groundwater. The northern portion of the pipeline alignment, outside of the proposed project area, is within a narrow alluvial basin that is a southern extension of the Atascadero Ground Water Basin. The southern portion of the pipeline alignment that crosses the Ranch is not within a recognized groundwater basin and is dominantly underlain by Atascadero formation sandstone at shallow depths which does not yield significant water supply.

The proposed remediation project and excavation operations will be short-term (six month construction period). []It is not anticipated that extensive groundwater will be encountered due to the shallow depth of the excavations (11 – 25 feet below ground surface) and the project will be implemented in the dry season when groundwater elevations are lower.

If groundwater is encountered, construction measures are proposed to be implemented under the approved CAP and CAP Addendum to minimize dewatering of groundwater including limiting the size of the open excavations sections that extend below anticipated groundwater and backfilling in a timely manner to minimize dewatering at the site.

If groundwater is encountered during excavation activities, the proposed project includes provisions to ensure that it will be collected and disposed offsite at an approved facility. Any surface stormwater runoff entering the project area will be tested and handled in accordance with criteria of the Central Coast Basin Plan (Regional Board) and the project specific Storm Water Pollution Prevention Plan (SWPPP). Please refer to the discussion under Section VII, Geology and Soils, for an analysis of impacts related to groundwater, including Mitigation Measure G-2 for measures to reduce impacts related to groundwater to less than significant levels.

If impacted soil cannot be hauled offsite during the dry season due to schedule constraints, the project includes a requirement that the impacted soil stockpile would remain at the project area during the rainy season and then hauled offsite after the rainy season. If impacted soils remain stockpiled during the rainy season, additional Best Management Practices (BMPs) will be employed to prevent impacted runoff from the stockpiles.

In addition to regulation under the approved CAP and CAP Addendum, groundwater impacts are regulated under the Regional Board which protects groundwater through regulatory and planning programs. The key elements of this approach include:

- Identify and update beneficial uses and water quality objectives
- Regulate activities that can impact the beneficial uses of groundwater
- Prevent future groundwater impacts through planning, management, education, monitoring, and funding.

The regulatory environment also includes the Regional Board's Water Quality Control Plan for the Central Coast Basin (Basin Plan; 2017) which describes how the quality of surface water and groundwater in the Central Coast Region should be managed to provide the highest water quality reasonably possible.

In addition, the U.S. Army Corps of Engineers (USACE), through Section 404 of the CWA, regulates the discharge of dredged or fill material into waters of the U.S., including wetlands.

The County LUO dictates which projects are required to prepare a drainage plan, including any project that would, for example, change the runoff volume or velocity leaving any point of the site, result in an impervious surface of more than 20,000 square feet, or involve hillside development on slopes steeper than 10 percent.

Per the County's Stormwater Program, the Public Works Department is responsible for ensuring that new construction sites implement best management practices during construction, and that site plans incorporate appropriate post-construction stormwater runoff controls.

Impact Discussion

The proposed remediation project and excavation operations will be short-term (six-month construction period). Encountering extensive groundwater is not anticipated due to the shallow depths of the excavation footprints. If groundwater is encountered during excavation activities, it will be collected and disposed off-site at an approved facility. Any surface stormwater run-on to the project area with the potential to comingle with contaminated material will be tested and handled in accordance with criteria of the Central Coast Basin Plan (Regional Board, 2019b) and the Project-specific SWPPP.

Please refer to the discussion under Section VII, Geology and Soils, for an analysis of impacts related to groundwater, including Mitigation Measure G-2 for measures to reduce impacts related to groundwater to less than significant levels.

The project purpose is to implement remediation actions at the Eastern and Western Remediation Areas in accordance with the CAP and CAP Addendum 01. The excavation of hydrocarbon-contaminated soil will reduce the long-term potential for impacts to surface water and groundwater.

In the event that groundwater is encountered during the excavation process, it may be necessary to dewater the excavations to allow for the removal of impacted material to the proposed excavation limits. To minimize groundwater removal, the open excavation sections will be limited in size and will be backfilled with clean fill material in a timely manner following confirmation sampling.

If impacted soil cannot be hauled off-site during the dry season due to schedule constraints, the impacted soil stockpile would remain at the Western Remediation Area during the rainy season and then hauled off-site after the rainy season. If impacted soil remains stockpiled during the rainy season, additional BMPs (including, but not limited to, straw waddles, hay bales, erosion control fencing, berms, or a combination thereof) will be employed to prevent impacted runoff from the stockpiles.

Impacts related to water quality standards, waste discharge, and groundwater supplies are considered less than significant with the implementation of the project CAP and CAP Addendum, SWPPP, and the mitigation measure GEO-2 discussed under Section VIII, Geology and Soils, as a requirement to ensure slope stability.

Project excavation activity will result in short-term potential for off-site sedimentation/erosion. The proposed project includes implementation of a SWPPP with BMPs to avoid off-site sedimentation or erosion. Final grade contours will be replaced to pre-project conditions using clean fill and seedbank materials as part of restoration activities. Impacts related to a change in long-term drainage patterns, soil absorption, or surface runoff are considered less than significant with required SWPPP implementation.

Short-term excavation, stockpiling and backfill activities will not occur within the mapped 100-year flood zone adjacent to Santa Margarita Creek or tributaries to this creek. Excavation and hauling activities would occur during the dry season and would not entail placement of permanent structures within the flood zone. If impacted soil cannot be hauled off-site during the dry season due to schedule constraints, the soil would remain on site during the rainy season and then hauled off-site after the rainy season. If impacted soil remains stockpiled during the rainy season, then additional BMPs will be employed to prevent impacted runoff from the stockpiles. Impacts related to flood hazards and risk of release due to project inundation are considered less than significant with the implementation of the project CAP and CAP Addendum, SWPPP, and required mitigation measure GEO-2 under Section VIII, Geology and Soils, as a requirement to ensure slope stability. In addition, the project would not conflict with or obstruct a water quality control plan since the CAP and CAP Addendum has been reviewed by and approved by the Regional Board.

Mitigation Measures

Impacts related to hydrology and water quality are considered less than significant with implementation of the project CAP and CAP Addendum, SWPPP and other required mitigation measures. No additional measures are required.

XI. LAND USE AND PLANNING

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Physically divide an established community?	☐	☐	☒	☐
(b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Setting

The proposed remediation project will take place entirely within the Santa Margarita Ranch property which is under the "Agricultural" land use designation and is within the North County Planning Area in accordance with the County General Plan and Land Use Ordinance. The Western Remediation Area is undeveloped open space with

active grazing. Excavation activities extending outside of the pipeline easement will be conducted under an access agreement with the landowner.

The County's LUO was established to guide and manage the future growth in the County in accordance with the General Plan, to regulate land use in a manner that will encourage and support orderly development and beneficial use of lands, to minimize adverse effects on the public resulting from inappropriate creation, location, use or design of buildings or land uses, and to protect and enhance significant natural, historic, archeological, and scenic resources within the county.

The County Land Use Element (LUE) provides policies and standards for the management of growth and development in each unincorporated community and rural areas of the county and serves as a reference point and guide for future land use planning studies throughout the county.

The inland LUE also contains the area plans of each of the four inland planning areas: Carrizo, North County, San Luis Obispo, and South County. The area plans establish policies and programs for land use, circulation, public facilities, services, and resources that apply "areawide", in rural areas, and in unincorporated urban areas within each planning area.

Impact Discussion

The unincorporated community of Santa Margarita is located south of the project area, where the closest residences are located approximately 2,500 to 3,000 feet south of the excavation locations, with a single-family residence located approximately 1,500 feet north of the Eastern Remediation Area. The proposed remediation activities are short-term and impacts related to development with the potential to divide the community are considered less than significant.

The proposed project is not located within the Coastal Zone. Consistency with the Clean Air Plan adopted by the SLOAPCD is addressed above in Section III, Air Quality. As described throughout this analysis, the proposed remediation project includes various design features and mitigation measures. Implementation of these design features and mitigation measures, including consistency with the County's General Plan and Land Use Ordinance will ensure that the project is consistent with the governing land use authority documents. Land use impacts are considered less than significant.

Mitigation Measures

No inconsistencies with the County's General Plan or Land Use Ordinance were identified and no additional measures above what will already be required are determined necessary.

XII. MINERAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

Setting

The California Surface Mining and Reclamation Act of 1975 (SMARA) requires that the State Geologist classify land into mineral resource zones (MRZ) according to the known or inferred mineral potential of the land (Public Resources Code Sections 2710–2796).

The County LUO provides regulations for development in delineated Energy and Extractive Resource Areas (EX) and Extractive Resource Areas (EX1). The purpose of this combining designation is to protect significant resource extraction and energy production areas identified by the County LUE from encroachment by incompatible land uses that could hinder resource extraction or energy production operations, or land uses that would be adversely affected by extraction or energy production.

Impact Discussion

The proposed project is limited to the excavation of hydrocarbon-impacted soil and replacement with clean soil within an established easement on the Santa Margarita Ranch. The project is considered to be temporary in nature and no physical development is proposed that would impact future mineral extraction. This impact is considered to be less than significant.

Mitigation Measures

The project is considered to be temporary in nature and does not include any structural development and is not anticipated to effect mineral resources or future extraction in the area. No mitigation measures are required.

XIII. NOISE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:					
(a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
(b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Setting

The San Luis Obispo County Noise Element of the General Plan provides goals and a policy framework for addressing potential noise impacts in the planning process. The purpose of these goals, policies and implementation measures is to reduce the various potential effects of noise on people. The Noise Element sets maximum allowable noise exposure from both transportation and stationary sources.

The County Noise Element requires that interior noise exposure from exterior noise sources (traffic) within residential dwellings not exceed 45 dB LDN (or CNEL), regardless of exterior noise exposure. The County has established an exterior noise level criterion of less than 60 dB LDN (or CNEL) within residential uses, hotels, motels, hospitals and nursing homes and offices. These are considered to be the "Normally Acceptable" levels, and may be adjusted upward to 70 dB LDN for outdoor recreational areas.

Major sources of noise in the County identified in the General Plan Noise Element include: roadways, airports, railroads, and stationary sources such as agricultural operations, construction, and commercial and industrial facilities (County of San Luis Obispo 1992).

The existing sources of noise in the vicinity of the Santa Margarita Ranch include noise generated from vehicle traffic along area roadways, the operation of a private air strip on the property, the Union Pacific Railroad (UPRR), and adjacent agriculture and mining operations.

The property has no permanent population, the existing private air strip does not include any employees or sensitive receptors. Excavation work may occasionally overlap with events at Santa Margarita Ranch.

Impact Discussion

The proposed project is temporary in nature and is limited to construction activity associated with the extraction of hydrocarbon-contaminated soils and backfilling. Construction activities are short-term and are expected to last for 6-months with an estimated kick-off on April 21, 2021. No long-term operational noise or ground vibration would occur as a result of the project.

Nearby noise-sensitive land uses, including residential neighborhoods in the community of Santa Margarita, could be exposed to temporary noise during implementation of the proposed remediation project. The main sources of noise would be the heavy machinery excavation and truck trips to and from the site.

The operation of heavy equipment during construction activities would result in temporary increases in noise in the immediate vicinity of the site. However, this would be a temporary activity and would not impact sensitive receptors in the long term.

Excavation will be conducted within the boundaries of the Santa Margarita Ranch property, which has no permanent population. The excavation activities will be conducted in coordination with Santa Margarita Ranch events and agricultural operations in order to further reduce the potential for impacts to sensitive receptors, and a complaint response protocol will be established in the proposed project Construction Work Plan (CWP).

San Luis Obispo County Ordinance 23.06.042(d) exempts short-term project excavations provided such activities do not take place before 7:00 AM or after 9:00 PM any day except Saturday or Sunday, or before 8:00 AM or after 5:00 PM on Saturday or Sunday. The proposed remediation project activities will all occur within the time limitations of this Ordinance. As such, noise impacts are considered less than significant.

Mitigation Measures

Noise impacts are considered temporary and less than significant. No mitigation measures are required upon implementation of the project CWP and consistency with the County's Land Use Ordinance.

XIV. POPULATION AND HOUSING

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
(b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

Setting

The County of San Luis Obispo General Plan Housing Element recognizes the difficulty for residents to find suitable and affordable housing within San Luis Obispo County. The Housing Element includes an analysis of vacant and underutilized land located in urban areas that is suitable for residential development and considers zoning provisions and development standards to encourage development of these areas.

The County's Inclusionary Housing Ordinance requires the provision of new affordable housing in conjunction with both residential and nonresidential development and subdivisions.

The proposed project is limited to temporary construction activity associated with the remediation of hydrocarbon impacted soils on-site. The project does not include any physical development or potential to introduce populations to the area or displace existing housing.

Impact Discussion

Project-related personnel for this short-term construction project will be primarily sourced from the project region such that commuting to the project, with periodic hoteling, is a feasible alternative to requiring temporary or new

permanent housing. Workers will access the project area for excavation operations on a frequent basis during the project construction period. However, no additional roads or new infrastructure will be constructed for the proposed project. Excavation adjacent to the existing pipelines will not induce further planned housing development. Therefore, impacts related to population and housing are considered less than significant.

Mitigation Measures

Impacts related to population and housing are considered less than significant and no mitigation measures are required.

XV. PUBLIC SERVICES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	Fire protection?	☐	☐	☒	☐
	Police protection?	☐	☐	☒	☐
	Schools?	☐	☐	☒	☐
	Parks?	☐	☐	☒	☐
	Other public facilities?	☐	☐	☒	☐

Setting

Police services in the Santa Margarita Ranch area are provided by the San Luis Obispo County Sheriff's Department. The sheriff station that would be the first responder to the area is the North Station, located at 356 North Main Street, in the Community of Templeton, approximately 17 miles north of the Santa Margarita Ranch.

Fire protection services in unincorporated San Luis Obispo County are provided by the California Department of Forestry and Fire Protection (CAL FIRE), which has been under contract with the County of San Luis Obispo to provide full-service fire protection since 1930. The fire station that would provide first response to the Agricultural Residential Cluster Subdivision and Future Development Program is the Parkhill Fire Station (Station #40) located at 6140 Parkhill Road, approximately 3 miles north of the site.

According to the San Luis Obispo County Safety Element, the Santa Margarita Ranch property is in a zone of high to very high fire hazard. This designation is due primarily to the chaparral vegetation and steep slopes. The intermixing of native vegetation, steep slopes, and difficult access conditions have produced a Wildland Urban Interface (WUI) in the Santa Margarita area, resulting in an increased risk of wildfire-related hazards (SLO County Safety Element, 1999).

San Luis Obispo County has a total of 12 school districts that currently enroll approximately 34,000 students in over 75 schools. The Atascadero Unified School District (AUSD) provides elementary, junior high, and high school services to the Santa Margarita area. This District consists of the Santa Margarita Elementary School (grades K-6), located at 22070 H Street in the community of Santa Margarita, Atascadero Junior High School (grades 7-8), located at 6501 Lewis Avenue in Atascadero, and Atascadero High School (grades 9-12), located at One High School Hill in Atascadero,

Within the County's unincorporated areas, there are currently 23 parks, three golf courses, four trails/staging areas, and eight Special Areas that include natural areas, coastal access, and historic facilities currently operated and maintained by the County. One park currently exists in the community of Santa Margarita. Santa Margarita Community Park, a 2-acre facility, is located at the northwest corner of Estrada Road and H Street. The park includes group and individual picnicking, play equipment, restrooms, parking, and open play areas.

Other recreation opportunities in the community include Santa Margarita Elementary School, which provides sports fields and children's play equipment, equestrian facilities located at the southern end of the Ranch, and tennis facilities located at the community library site. These facilities are not official County recreational uses; however, they provide recreational opportunities to area residents. Santa Margarita Lake Regional Park, a County park facility, provides additional recreational opportunities for the community.

Public facilities fees, Quimby fees, and developer conditions are several ways the County currently funds public services. A public facility fee program (i.e., development impact fee program) has been adopted to address impacts related to public facilities (county) and schools (State Government Code 65995 et seq.).

Impact Discussion

With respect to fire protection services, fire prevention measures included as part of the project will include documentation in the Updated Site-Specific Health and Safety Plan (SSHASP) (e.g., access routes). This also includes conducting a kick-off meeting and safety drill at the start of work with participation from the County Fire Department; access to on-site fire water; minimization of welding (or, if welding is necessary, conducting welding under a hot work permit and use of a fire watch). Additional precautions will be taken during potentially hazardous weather conditions. In the event of a fire, project workers will evacuate and Fire Department and other local emergency management services will be notified.

As it relates to the police protection, there is no housing or permanent population existing or projected within the project area under the proposed remediation project. The Santa Margarita Ranch is gated and maintains private security which is anticipated to be adequate to address security issues during short-term excavation operations.

Similarly, because the project would not include any housing development or permanent population, no additional demand for school facilities will result from project implementation and the project is not expected to increase demand on local parks or other public facilities.

As such, impacts to public services are expected to be less than significant.

Mitigation Measures

Public services impacts are considered less than significant and no mitigation measures are required.

XVI. RECREATION

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
(b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Setting

The County of San Luis Obispo Parks and Recreation Element (Recreation Element) establishes goals, policies, and implementation measures for the management, renovation, and expansion of existing, and the development of new, parks and recreation facilities in order to meet existing and projected needs and to assure an equitable distribution of parks throughout the county.

The County's Parks and Recreation Element does not identify any public trails, parks, or recreational facilities in the project vicinity (SLO County, 2006). As a private venture, Santa Margarita Ranch hosts a wide range of ongoing public and private events, such as weddings, fundraisers and festivals. Santa Margarita Ranch is also a working cattle ranch. Off-site trucking will not occur during events at the Santa Margarita Ranch property or on holidays or weekends, including Friday afternoon.

Public facilities fees, Quimby fees, and developer conditions are several ways the County currently funds public parks and recreational facilities. Public facility fees are collected upon construction of new residential units and currently provide funding for new community-serving recreation facilities.

Discussion

The proposed project is limited to the temporary remediation/excavation activities discussed throughout this document, and does not include any development. The County's Parks and Recreation Element does not identify any public trails, parks, or recreational facilities in the project vicinity. Although the Ranch hosts private events, no off-site trucking is proposed during events or on holidays, weekends or Friday afternoons. Please refer to Section XV, Public Services, for a discussion of impacts related to parks. Recreation impacts are considered less than significant.

Mitigation Measures

Impacts related to recreational resources are considered less than significant. No mitigation measures are required.

XVII. TRANSPORTATION

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
(b)	Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
(c)	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
(d)	Result in inadequate emergency access?	☐	☐	☒	☐

Setting

In order to provide an assessment of project traffic generation and the effects related to project implementation, the applicant team has prepared a traffic report in accordance with local and State regulations (Traffic Assessment for Santa Margarita Remediation Project, AECOM, March 24, 2020. Please refer to Attachment I of this EIR).

As discussed in the project traffic report, regional access to the project area is provided via Highway 101 and Highway 58. Local access is also provided by El Camino Real. At present, primary access to the Santa Margarita Ranch is via Highway 58 to Yerba Buena Avenue in the community of Santa Margarita. The Remediation Project access route will be via Stagecoach Road (a private agricultural road on the Ranch) from Highway 58 near the 101 interchange, minimizing traffic through the residential portion of the community.

Project construction workers would access the site for 10-hour shifts Monday through Thursday with a small crew (3 to 5 construction workers) on Fridays for half a day for off-site hauling activities. In addition to the project workers, and truck hauling of impacted soil off-site, it is anticipated that there will be transport of project materials including cement slurry during the first four months of the project construction period during slot trenching excavation and backfilling. It is anticipated that off-site hauling of impacted soil will occur between June and October 2021.

As discussed under Section III, Air Quality, for planning and project implementation purposes, three distinct off-site trucking timeframes (Scenarios A - C) were included as part of the proposed project in order to address potential changes to the fleet composition due to unforeseen factors and to ensure that all potential scenarios are analyzed in the EIR.

Regulatory Setting

With respect to local traffic regulation, the County Department of Public Works maintains updated traffic count data for all County-maintained roadways. In addition, Traffic Circulation Studies have been conducted within

several community areas using traffic models to reasonably simulate current traffic flow patterns and forecast future travel demands and traffic flow patterns

In 2013, Senate Bill 743 was signed into law with the intent to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions". As a result, in December 2018, the California Natural Resources Agency certified and adopted updates to the State CEQA Guidelines that require analysis of vehicle miles traveled (VMT) which will take effect on July 1, 2020. Subsequently, the California Department of Transportation (CalTrans) has prepared a Draft Transportation Impacts Analysis for Projects on the State Highway System (3/1/20). This document is available at: https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743

The County's Framework for Planning (Inland), includes the Land Use and Circulation Elements of the County's General Plan. The Framework establishes goals and strategies to meet pedestrian circulation needs by providing usable and attractive sidewalks, pathways, and trails to establish maximum access and connectivity between land use designations.

With respect to traffic regulation at the State level, the Highway 58 access will require an Encroachment Permit to be issued by California Department of Transportation (Caltrans), District 5. Highway 58 is regularly used by commuting vehicles and recreation bicyclist. The segment of Highway 58 within the County of San Luis Obispo is under the jurisdictional control and review oversight of Caltrans, District 5 which maintains, and grants encroachment permits within the Highway 58 Right-of-Way.

Impact Discussion

According to the Caltrans Guide for the Preparation of Traffic Impact Studies, Caltrans does not officially advocate the use of any special software. However, consistency with the Highway Capacity Manual (HCM) is advocated in most but not all cases. For this assessment, the roadway segment traffic analysis was performed in accordance with analysis procedures outlined in the most current edition of the *Highway Capacity Manual (HCM), 6th Edition* and using the *Highway Capacity Software (HCS) Two-Lane Highways Release 7.1*.

Existing available traffic data reviewed and collected for the traffic analysis for the proposed remediation project included 7 to 9 AM, 1 to 3 Midday, and 4 to 6 PM peak hour turning movement counts conducted in 2017 (Pinnacle Traffic Engineering, 2017). Additionally, Average Daily Traffic (ADT) data from Caltrans Traffic Operations Traffic Census Program were reviewed to develop the roadway segment volumes used in the analysis (Caltrans, 2019).

To evaluate potential Project traffic impacts, the anticipated project Trip Generation was developed to describe the daily and AM and PM peak hour trips generated by specific or concurrent project activities.

During Project activities, truck exporting of excavated impacted soil will occur during a limited time window (9 AM to 4 PM) in order to avoid the adjacent street traffic 7 - 9 AM and 4 - 6 PM peak hours.

Incoming empty trucks generally originate from north US 101, then head east on SR 58 and then turn left northbound onto the Project access road (Stagecoach Road, which is an existing private agricultural road) to the Project Area using Stagecoach Road. Conversely, the exiting loaded truck traffic will turn right from the Stagecoach Road to westbound SR 58 and then head north on US 101 towards its final destination off-site.

The following discussion provides a brief summary of the trip generation potential and resulting roadway Level of Service (LOS) analysis results for each Project exporting timeframe (Scenario A to C). LOS is an indicator of operating conditions on a roadway or at an intersection and is defined in categories ranging from A to F, with "A" representing the best traffic flow conditions and "F" representing poor conditions.

Traffic Impact Analysis

The updated traffic analysis presented below, evaluates the potential traffic impact associated with the project exporting timeframes (Scenarios A to C) described in Section 2.0, Project Description of this EIR, and compares "no project baseline roadway operating conditions" with "no project baseline plus project roadway operating conditions."

Existing Roadway Operation Conditions

Available existing weekday AM, Midday, and PM peak hour traffic volume collected along SR 58 are shown in Table 6 below. This table also includes the peak hour roadway segment LOS analysis results. As shown in the table, the PM peak hour shows the highest volume among the three peak hours analyzed.

Table 6. Existing Roadway Segment Volumes and LOS

Roadway	Segment	AM Peak Hour (1)			Midday Hour (2)			PM Peak Hour (1)		
		EB	WB	LOS	EB	WB	LOS	EB	WB	Total
SR 58	East of US 101	166	432	D	206	175	D	410	221	D

Source: Las Pilitas Quarry Supplemental Traffic Analysis, Pinnacle Traffic Engineering, 2017

[1] Derived from US 101 NB Ramp and SR 58 AM/PM peak hour intersection volumes

[2] Derived from SR 58 (Estrada Ave) and SR 58 (El Camino Real) Midday intersection volumes

As shown in Table 6, the study roadway segment of SR 58 to be used as the primary access route to the project area is currently operating at acceptable LOS D during all peak analysis hours.

Project Added Trips

Tables 7, 8 and 9 below summarize the anticipated project added peak hour vehicular traffic volume and Passenger Car Equivalent (PCE) adjusted truck volume at the study roadway segment under all three Project exporting timeframes (Scenarios A to C). During AM and PM peak hours, the directional project added trips are primarily attributed to a combination of PCE adjusted truck hauling trips and worker trip commutes to and from the Project Area. These project added trips however constitute only a fraction of the worker trips who arrive during the 7 to 9 AM peak and leave during the 4 to 6 PM peak hour and the bulk of the project hauling activities occurring during the 9 AM to 4 PM nonpeak hours.

Table 7. Scenario A Project Construction (2021) Peak Added Trips

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	Total	EB	WB	Total	EB	WB	Total
SR 58	East of US 101	13	0	13	16	16	32	0	13	13

Source: AECOM, 2020.

Table 8. Scenario B Project Construction (2021) Peak Added Trips

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	Total	EB	WB	Total	EB	WB	Total
SR 58	East of US 101	13	0	13	14	14	28	0	13	13

Source: AECOM, 2020.

Table 9. Scenario C Project Construction (2021) Peak Added Trips

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	Total	EB	WB	Total	EB	WB	Total
SR 58	East of US 101	13	0	13	14	14	28	0	13	13

Source: AECOM, 2020.

Baseline (2021) No Project Conditions

For analysis purposes, and to establish Year 2021 baseline or no project conditions, it was conservatively assumed that to account for ambient traffic growth and for yet-to-be-developed cumulative development projects that could potentially occur within the Project study area, a traffic growth factor of 1.09 representing 9 percent growth was developed by AECOM and based upon review of historical traffic volume data (Caltrans Census Traffic Volume Data, 2019) and subsequently applied to existing traffic volume shown in Table 6.

Table 10 below summarizes the baseline roadway segment LOS analysis results prior to project activities.

Table 10. Baseline (2021) Roadway Segment Volumes and LOS

Roadway	Segment	AM Peak Hour (1)			Midday Hour (2)			PM Peak Hour (1)		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	181	471	D	225	191	D	447	241	D

Source: Las Pilitas Quarry Supplemental Traffic Analysis, 2017 and growth adjusted to 2021 conditions.

[1] Derived from US 101 NB Ramp and SR 58 intersection volumes

[2] Derived from SR 58 (Estrada Ave) and SR 58 (El Camino Real) intersection volumes

As shown in Table 10, the highway study segment is forecast to operate at LOS D for all peak analysis hour Scenarios.

Baseline (2021) Plus Project Conditions

Tables 11, 12 and 13 below summarize the Baseline (2021) plus project roadway segment operating conditions for Scenarios A, B and C respectively. With the addition of project added traffic, the study roadway segment is forecast to operate at LOS D during all peak analysis hours.

Scenario A – Level of Service Summary: Table 11 below presents the Baseline (2021) plus Scenario A roadway segment operating conditions. With the addition of project added traffic, the study roadway segment is forecast to operate at LOS D during all peak analysis hours.

Table 11. Baseline (2021) Plus Project Scenario A Roadway Segment LOS

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	Total
SR 58	East of US 101	194	471	D	241	207	D	447	254	D

Source: AECOM, 2020.

As shown in Table 11, the addition of "Project Scenario A" added traffic will not change the forecast LOS D under Baseline (2021) No Project Conditions resulting in less than significant traffic impacts for all three peak analysis hours.

Scenario B – Level of Service Summary: Table 12 below presents the Baseline (2021) plus "Project Scenario B" roadway segment operating conditions. With the addition of project added traffic, the study roadway segment is forecast to operate at LOS D during all peak analysis hours.

Table 12. Baseline (2021) Plus Project Scenario B Roadway Segment LOS

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	Total
SR 58	East of US 101	194	471	D	239	205	D	447	254	D

Source: AECOM, 2020.

As shown in Table 12, the addition of "Project Scenario B" added traffic will not change the forecast LOS D under Baseline (2021) No Project Conditions resulting in less than significant traffic impacts for all three peak analysis hours.

Scenario C – Level of Service Summary: Table 13 below presents the Baseline (2021) plus "Project Scenario C" roadway segment operating conditions. With the addition of project added traffic, the study roadway segment is forecast to operate at LOS D during all peak analysis hours.

Table 13. Baseline (2021) Plus Project Scenario C Roadway Segment LOS

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	Total
SR 58	East of US 101	194	471	D	239	205	D	447	254	D

Source: AECOM, 2020.

As shown in Table 13, the addition of "Project Scenario C" added traffic will not change the forecast LOS D under Baseline (2021) No Project Conditions resulting in less than significant traffic impacts for all three peak analysis hours.

Based on the LOS analysis, results all proposed project timeframes (Scenarios A, B and C) are viable options and are not anticipated to create new significant traffic impacts.

After the remediation activity is completed, the project area would not generate any new trips, except for the occasional maintenance trips. Therefore, no operational impacts are anticipated.

Project Site Access and Safety

The proposed remediation project construction-related access by project workers and transport of materials will all be via Stagecoach Road from Highway 58. This private, unpaved access point is located approximately 0.7 miles west of Yerba Buena Avenue, which is the primary access point to the Ranch and located near the center of town for the community of Santa Margarita. Thus, all project-related traffic will avoid the town center and the residential community along Yerba Buena Avenue.

Access to the project to and from Highway 58 to Stagecoach Road will require an encroachment permit from Caltrans to ensure that traffic hazards due to geometric design are avoided by project traffic.

Traffic safety measures will be implemented in support of the Caltrans encroachment permit to avoid or minimize potential project-related traffic safety impacts to the roadway network. The hauling operation will be conducted in a manner that will minimize disruption of Highway 58 traffic. The encroachment permit will include provisions for repair and maintenance in accordance with Caltrans standards, as applicable.

During the project construction period, the project traffic report indicated that the study roadway segment will not be significantly impacted by the project. However, the study roadway segment will experience minor short-term increases in traffic during the peak construction period. The study roadway segment volume will return to pre-project operating conditions upon completion of project construction activities. Because the study roadway segment is anticipated to experience minor short-term increases in traffic, impacts related to temporary traffic increase during project implementation are considered significant but mitigable.

Mitigation Measures

Based on recommendations from the project traffic assessment, the following mitigation measures are required pro-actively to address project-related traffic contribution and safety to the roadway network.

T-1 Truck Turning Plan: Truck turning analyses were conducted to develop truck turning plans to demonstrate the inbound and merging truck turns to and from the project access driveway. The turning plans were developed to disclose the anticipated footprints of incoming and outgoing trucks and to help develop any needed traffic enhancement and countermeasures to facilitate truck turning movements. The truck turning plan is provided in Appendix B of the project traffic assessment (please refer to Attachment I of this EIR). As shown in the plan, inbound trucks will execute a 90-degree turn from eastbound SR 58 to enter the project area, while exiting loaded truck traffic will safely merge into

westbound SR 58 using the existing paved shoulder as an acceleration lane. The project shall incorporate this plan as a required element.

T-2 Traffic Control Measures: The applicant shall develop and implement a project-specific traffic and monitoring control plan consistent with the size and scope of the project activity designed to minimize potential impacts to traffic flow.

As feasible, proposed measures are required to include but are not limited to the following:

- Use proper signs and traffic control measures in accordance with Caltrans and San Luis Obispo County requirements. All traffic signs, equipment, and control measures shall conform to the provisions specified in the Caltrans Manual of Uniform Traffic Control Device. Specific jurisdictional requirements will be identified during the plan review and approval process.
- Deployment of flag persons to provide temporary traffic control, facilitate vehicle egress/ingress and assignment of roadway right-of-way during Project hauling operating hours.
- Limit vehicular traffic to designated access roads, construction laydown and worker parking areas, and the Project Area.
- Provide orientation and briefing to Project workers and contractors on the desired Project access route and traffic safety measures.
- Encourage Project worker carpooling to minimize drive-alone worker trips.

The proposed Traffic Control Plan is provided in Appendix C of the traffic assessment (please refer to Attachmment I of this EIR). The Traffic Control Plan shall be incorporated into the project and shall be subject to Caltrans review prior to issuance of an Encroachment Permit.

Implementation of the measures discussed above will reduce traffic impacts to less than significant levels.

XVIII. TRIBAL CULTURAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(i)	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☒	☐	☐	☐
(ii)	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☒	☐	☐	☐

Setting

Approved in 2014, AB 52 added tribal cultural resources to the categories of resources that must be evaluated under CEQA. Tribal cultural resources are defined as either of the following:

1) Sites, features, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    a. Included or determined to be eligible for inclusion in the California Register of Historical Resources; or
    b. Included in a local register of historical resources as defined in subdivision (k) of California Public Resources Code Section 5020.1.
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of California Public Resources Code Section 5024.1. In applying these criteria for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe.

Recognizing that tribes have expertise with regard to their tribal history and practices, AB 52 requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if they have requested notice of projects proposed within that area.

As described in detail in the project EIR under Section 4.1, Cultural Resources, Applied EarthWorks, Inc. completed several cultural resource studies in support of the proposed project. As discussed throughout the project cultural resource and archaeological studies, the project area is within the traditional territorial ranges of the Chumash and Salinan tribes (Hester 1978; Jones et al. 2007). The prehistoric boundary between these groups was likely close to the modern San Luis Obispo and Monterey County line and the NAHC was consulted to determine the Most Likely Descendants (MLDs), per the requirements of AB52. Traditional tribal boundaries and relationships were altered by

European colonization with movement of indigenous peoples through forced mission labor or fleeing European influence. Mission records show interrelationships between the Chumash, Salinan and the Valley Yokuts. The Northern Chumash occupied land along the Pacific coast from the Santa Maria River north to approximately Point Estero and east to the edge of the San Joaquin Valley. The Chumash people lived in large villages along the Santa Barbara Channel coast, with less dense populations in the interior regions, on the Northern Channel Islands, and in coastal areas north of Point Conception.

The Santa Margarita Ranch contains a range of cultural resources that span human occupation periods over the last 10,000 years. The cultural landscape left behind reflects Native American land use, Mission Period colonization practices, and European-American historic ranching and agricultural uses up to the present day. Beedle and Price (2008) make the case for the Ranch to be viewed within the context of a larger cultural district under the California Register of Historic Resources (CRHR) that conveys the importance of the range of human activities that have occurred on the ranch over the centuries. The district represents important human activities over time at the Ranch that include elements from a larger cultural landscape. Elements include buildings, structures, objects, and archaeological sites, along with other physical components such as spatial organization, cultural traditions, circulation networks, land use, and responses to the natural environment (Beedle and Price 2008). These elements all contribute as character-defining features of this District.

Background research conducted as part of the project studies found that several previous cultural resource studies have covered most of the proposed remediation areas, mostly during pipeline monitoring activities. While systematic archaeological testing and data recovery has not occurred, Robert Gibson (1995, 2005) was able to document important artifacts and deposits along the pipeline through the Santa Margarita Ranch Headquarters. Record searches found that two previously recorded cultural resources, CA-SLO-127 and -1430, are within or immediately adjacent to the Eastern Remediation area. No resources have been identified in the Western Remediation area. Section 4.1, Cultural and Tribal Cultural Resources, of this EIR provides further information on the Santa Margarita Ranch Rural Historic district as well as the archaeological sites and built environment features present within or near the project.

The project falls within the boundaries of the Santa Margarita Ranch Rural Historic district. As a whole, the district is eligible for the CRHR due to its shared history and combination of character-defining features that include Native American archaeological sites and historical built environment. The Western Remediation area does not contain historic buildings or previously documented archaeological sites.

The Eastern Remediation area is in the historic core of the district within the Ranch Headquarters area. Along with several historical buildings, several prehistoric archaeological sites are present. Background research and previous studies show that two archaeological are located within the project area. Only CA-SLO-1430 is within the remediation project footprint.

Tribal Coordination

As described in detail in the project EIR under Section 4.1, Cultural and Tribal Cultural Resources, Applied EarthWorks, Inc. completed several cultural resource studies in support of the proposed project. The Phase 1 cultural resource study included background research, review of previous investigations, record search, surface survey, and outreach to local Native American representatives. The Phase 2 study included archaeological testing to assess the vertical and horizontal extent of cultural deposits within Project areas. Currently, the project archaeological team in coordination with the Native American tribal monitors are conducting archaeological investigations to locate and recover important data, cultural features and human remains prior to the start of construction.

Please refer to Section 4.1, Cultural Resources, of this EIR for a detailed discussion of the project archaeological studies, results of surface (Phase I) surveys and subsurface (Phase II) testing covering the proposed remediation

project area, including details of the required Native American monitoring and requirements for mitigating impacts to cultural resources.

The County of San Luis Obispo kicked off the AB52 tribal consultation program on July 24, 2019 with the distribution of the project referrals and a consultation invitation letter sent to all of the tribal representatives identified by the NAHC. As a result of this initial consultation invitation, the County received email responses from multiple tribal representatives, including the Xolon Salinan Tribe and Northern Chumash Tribal Council, all of which requested further meetings and consultation to discuss the project and impacts to cultural and tribal resources.

As a result, the County initiated individual consultation with tribal representatives that took place on August 14, 2019 (Fred Collins, Northern Chumash Tribal Council), August 15, 2019 (Karen White and Donna Haro, Xolon Salinan Tribe), and on September 5, 2019 (Mona Tucker, YTT Northern Chumash Tribe).

In addition to the County's AB52 program, the applicant team contacted the Native American Heritage Commission and local Native American groups including the Northern Chumash Tribal Council, the San Luis Obispo County Chumash Council, the Salinan Tribe of Monterey and San Luis Obispo Counties, and the yak tityu tityu yak tiłhini Northern Chumash Tribe, and the Xolon Salinan Tribe; groups known to have knowledge of or ties to the project area. The dates, methods, and context of the various episodes of contact and formal meetings are detailed in the Phase 1 cultural resource study.

The details of the County's AB52 tribal consultation program, and the applicant team's tribal outreach, are discussed in detail under Section 4.1, Cultural and Tribal Cultural Resources, of this EIR.

The main concerns expressed by the various tribes included proper handling of any human remains recovered, finding a suitable location for reburial on the property, proper curation of all cultural materials and artifacts, and the need for ongoing involvement of the various Native American groups throughout the life of the project. Communication with local tribal representatives regarding the proposed project is an ongoing effort. Tribal monitors have been and will continue to be on-site during all archaeological excavations at CA-SLO-1430 and during all ground-disturbing activities.

Section 6 of the project Phase 1 cultural resources study documented certain comments from the tribal representatives who took active roles in the tribal outreach and coordination conducted by the County and the project cultural resources team. These comments are summarized as follows:

Northern Chumash Tribal Council (NCTC)

The meeting with the NCTC took place the morning of January 30, 2019. Tribal members present included Fred Collins and Violet Walker. Mr. Collins and Ms. Walker asked several questions regarding the remediation process and how construction would work. The project team provided information on the process including the use of slot-trenches, leap-frogging different sections, and removal of hydrocarbon-impacted soil. It was also communicated that safety is an important element of this project and all workers on site will be Hazardous Waste Operations and Emergency Response (HAZWOPER) trained and adhere to AECOM and Applied EarthWorks safety protocols. Mr. Collins and Ms. Walker requested to continue to be involved in the outreach process.

San Luis Obispo County Chumash Council

The San Luis Obispo County Chumash Council is comprised of members of the Vigil Family. In attendance during the January 30, 2019 afternoon meeting was Mark Vigil Sr., Dwayne Vigil, Mark Vigil Jr., Mike Vigil, and Michelle Vigil. Along with Phillips 66, AECOM and Applied EarthWorks, Raul Briones from Terra Pacific Group attended the meeting. Similar to the previous meeting, the history of the project, the remediation process, and safety issues were discussed. Mark Vigil Sr. was present during monitoring episodes in the late 1990s and early 2000s during the pipeline replacement effort and testing for hydrocarbon-impacted soil. He noted that several human remains

were found during these efforts, which he reinterred on-site. Concern was expressed regarding the use of detection dogs to search for areas with human remains. In addition, concern was stated regarding DNA testing as it is considered too invasive and damages bone. It was suggested that Applied EarthWorks reach out to Robert Gibson, the archaeologist who was on site with Mr. Vigil during monitoring. It was also recommended that Applied EarthWorks reach out to local historical societies and the San Luis Obispo County Archaeological Society to gain more information on the history of the Ranch. Overall, project understanding was communicated, as well as the need to continue outreach and communication with the San Luis Obispo County Chumash Council.

yak titᵛu titᵛu yak tiłhini Northern Chumash Tribe (YTT)

Members of the YTT participated in a meeting on February 11, 2019. Members present were Lori Laguna and Lisa Lathrop. As with the other outreach meetings, a history of the project, levels of hydrocarbon-impacted soil, and remediation and safety requirements were discussed. Both Ms. Laguna and Ms. Lathrop are already HAZWOPER trained. They also mentioned that their families have connections with the Santa Margarita area and additional information about the area. They asked that as the project moves forward to make sure to properly document cultural materials and artifacts found, especially any burial items that may need to be reburied with human remains. Concern was expressed regarding the handling of ancestor remains and wanted to make sure that if human remains are found, that the proper process is followed, and an MLD is assigned by the NAHC. As they are already HAZWOPER trained, they indicated that they are able and interested in providing monitoring support.

Salinan Tribe of Monterey and San Luis Obispo Counties

Fred Segobia and Robert Piatti attended the meeting on February 20, 2019, on behalf of the Salinan Tribe of Monterey and San Luis Obispo Counties. As with the other meetings, a description of the project, history of the hydrocarbon release, and the remediation process was discussed. The Salinan Tribe has connections with the Ranch as they perform solstice ceremonies on the property and have stories of their ancestors working on the Ranch during the Mission and Modern periods. The Tribe expressed interest in the housing of artifacts found during excavation. They are working with local museums to update collections on display and are currently working on updating their archival system. They asked to continue to be involved in the project and would like to provide monitors. Overall, an understanding of the nature of the proposed remediation project was communicated and it was asked that all the appropriate archaeological studies are conducted along with construction monitoring.

Most Likely Descendants (MLDs)

During recent archaeological fieldwork, fragmented human remains and evidence of multiple human burials have been found throughout portions of the Eastern Remediation Area. Once human remains were identified and confirmed, per California Health and Safety Code 7050.5 and San Luis Obispo County Land Use Ordinance Section 23.05.140(b), Applied EarthWorks notified the San Luis Obispo County Coroner immediately to report the discovery. At the request of the coroner, Applied EarthWorks notified the NAHC who then assigned two MLDs. Mona Tucker of the YTT Tribe and Fredrick Segobia of the Salinan Tribe of Monterey and SLO Counties have been designated as co-MLDs for this Project. Once the MLDs were in place Applied EarthWorks, Phillips 66 and AECOM worked with the MLDs and the landowner to store the remains in an appropriate manner and work towards identification of a suitable location for future reburial. The MLDs will remain in place during the life of the project. They are in place to help the project proponent to properly handle remains as well as intact burials. It is always preferred that intact burials be left in place and avoided, if at all feasible. If an assigned MLD resigns or is unavailable to fulfill the duties, Applied EarthWorks, AECOM, and Phillips 66 will coordinate with the NAHC, who assigns MLDs, to identify a replacement co-MLD.

The list provided below summarizes the tribal outreach and coordination conducted to-date by the project cultural resources team.

- Initial meetings with Native American tribes – In person meetings with Northern Chumash Tribal Council (NCTC) on January 30, 2019; San Luis Obispo County Chumash Council (SLOCCC) on January 30, 2019; YTT Tribe on February 1, 2019; and Salinan Tribe on February 20, 2019.
- Follow-up meetings with Native American tribes – NCTC on April 24, 2019, August 14, 2019, September 4, 2019, and October 22, 2019; YTT Tribe on September 25, 2019; Salinan Tribe on September 26, 2019; and telephone meeting with Xolon Salinan Tribe on September 26, 2019.
- Meetings with MLDs – YTT and Salinan Tribes on December 19, 2019; January 20, 2020; and February 21, 2020.
- Meetings with MLDs and property owner – YTT, Salinan and property owner on March 4, 2020.

It should be noted that tribal coordination for this project is an ongoing effort and will likely play a large role in the proposed remediation project throughout the life of project activities.

Impact Discussion

The project site archaeological and cultural landscape has been studied and well documented as part of the project cultural resource investigations and tribal outreach. The project site contains known and potentially undiscovered cultural resources, discussed in detail in this EIR. In addition to the details below, please refer to Section 4.1, Cultural and Tribal Cultural Resources, for a detailed assessment of impacts related to tribal cultural resources.

Project remediation activities would result in the disturbance of CRHR-eligible archaeological site, CA-SLO- 1430, within the Eastern Remediation Area. This site contains a wide range of cultural material dating to the Middle and Late periods. CA-SLO-1430 is part of the larger CRHR-eligible District, and also is individually eligible for listing on the CRHR due to its ability to provide scientific information regarding Native American cultural behaviors and adaption practices during prehistory. The site also holds the potential to provide information on early California history through archaeological deposits dated to the Mission Period. Additionally, tribal cultural resources that include (but are not limited to) human remains and burial items from CA-SLO-1430 are likely to be impacted by remediation activities. Due ot the nature of the requirements for site remediation, avoidance of disturbance to this archaeological site does not appear to be feasible.

As such, the project will result in potentially significant impacts to CA-SLO-1430. However, potential impacts can be lessened to the extent feasible with the incorporation of Mitigation Measures listed under Section 4.1, Cultural and Tribal Cultural Resources, of this EIR.

Project activities will occur within the boundaries of the Ranch district, which contains a wide range of prehistoric and historic period cultural resources. While several archaeological sites have already been identified within or near the project area, there is a potential for encountering and impacting previously unknown resources. If any of these resources are determined to be significant to a Native American tribe, remediation activities may result in potentially significant and unavoidable impacts. However, potential impacts can be considered lessened to the extent feasible with the incorporation of Mitigation Measures listed under Section 4.1, Cultural Resources, of this EIR.

Mitigation Measures

Please refer to Section 4.1, Cultural and Tribal Cultural Resources, of this EIR for a detailed discussion of required mitigation measures.

XIX. UTILITIES AND SERVICE SYSTEMS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
(b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
(c)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
(d)	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
(e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Setting

The County Public Works Department provides water and wastewater services for specific County Service Areas (CSAs) that are managed through issuance of water/wastewater "will serve" letters. The Department of Public Works currently maintains a CSA for the community of Santa Margarita.

Per the County's Stormwater Program, the Public Works Department is responsible for ensuring that new construction sites implement best management practices during construction, and that site plans incorporate appropriate post-construction stormwater runoff controls. Construction sites that disturb 1.0 acre or more must obtain coverage under the SWRCB's Construction General Permit.

Pacific Gas & Electric Company (PG&E) is the primary electricity provider and both PG&E and Southern California Gas Company provide natural gas services for urban and rural communities within the County of San Luis Obispo. There are three landfills in San Luis Obispo County: Cold Canyon Landfill, located near the City of San Luis Obispo;

Chicago Grade Landfill, located near the community of Templeton; and Paso Robles Landfill, located east of the City of Paso Robles.

As it relates to the proposed remediation project, there is no housing or permanent population existing or projected within the project area. Hence, there is no additional demand for permanent public utilities or services.

The Santa Margarita Ranch is not currently served by wastewater infrastructure. Existing development on the Ranch property is served by individual on-site septic systems. The communities of Santa Margarita and Garden Farms are also served entirely by septic systems.

Existing Santa Margarita Ranch water uses are supplied entirely by groundwater. The northern portion of the pipeline easement is within a narrow alluvial basin that is a southern extension of the Paso Robles Ground Water Basin (California Department of Water Resources, 1980). Groundwater beneath the northern portion of the pipeline easement occurs primarily within the younger and older alluvium and to a lesser amount within the upper portion of the Santa Margarita sandstone. The southern portion of the pipeline easement crossing the Ranch does not lie within a recognized groundwater basin and is dominantly underlain by Atascadero formation sandstone at shallow depths which does not yield significant water supply.

Impact Discussion

As it relates to the proposed remediation project, there is no housing or permanent population existing or projected within the project area. As such, there is no additional demand for permanent public utilities or services.

Water for the Project will be obtained from the existing on-site groundwater supply wells. The proposed dust control measures would use an estimated 10,000 gallons per day during typical remediation working days over a six-month work construction period (a total of about 4 acre-feet over a sixth-month period). Small amounts of additional water will be needed for irrigation during the initial phase of revegetation in the Eastern and Western Remediation Areas. This short-term use of water for dust control and other project water needs is not anticipated to have any long-term impacts on water availability or to affect the aquifer system.

The Santa Margarita Ranch is not currently served by wastewater infrastructure. Existing development on the Ranch property is served by individual on-site septic systems. The proposed project will be temporary and will not have any connection to, or place any significant demand on any community wastewater treatment system.

With respect to the generation of solid waste, representative samples of hydrocarbon-impacted soil will be collected from each proposed excavation area for waste classification purposes. The samples will be analyzed for state and federal hazardous waste characteristics, including, but not limited to toxicity, reactivity, corrosivity, and ignitability. Soil analytical reports and waste profiling forms will be submitted to an appropriately permitted recycling/disposal facility for waste acceptance. Following waste acceptance profiling, the impacted soil will be transported under hazardous waste manifest by licensed haulers. The preferred destination for transported material is the Waste Management Inc. facility in Kettleman City in western Kings County, approximately 70 miles from the project area. Other potential locations include the Clean Harbors Buttonwillow facility or the McKittrick facility in western Kern County; these facilities are located approximately 100 miles from the project area. No impacted soil will be transported to the facility until acceptance documentation has been received.

Mitigation Measures

Impacts related to utilities and services systems are considered less than significant. No mitigation measures are required.

XX. WILDFIRE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:					
(a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
(b)	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
(c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
(d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Setting

In central California, the fire season usually extends from roughly May through October, however, recent events indicate that wildfire behavior, frequency, and duration of the fire season are changing in California. Fire Hazard Severity Zones (FHSZ) are defined by the California Department of Forestry and Fire Protection (CalFire) based on the presence of fire-prone vegetation, climate, topography, assets at risk (e.g., high population centers), and a fire protection agency's ability to provide service to the area (CAL FIRE 2007).

The County Emergency Operations Plan (EOP) addresses several overall policy and coordination functions related to emergency management. The County of San Luis Obispo Safety Element establishes goals, policies, and programs to reduce the threat to life, structures, and the environment caused by fire.

The California Fire Code provides minimum standards for many aspects of fire prevention and suppression activities. These standards include provisions for emergency vehicle access, water supply, fire protection systems, and the use of fire resistant building materials.

According to the San Luis Obispo County Safety Element, the Santa Margarita Ranch property is in a zone of high to very high fire hazard. The majority of the property, including the project area, is located in a high fire hazard severity zone (SLO County Safety Element, 1999). The southwestern portion of the Ranch property, in the Santa Lucia Mountains, is designated a very high fire hazard severity zone. This designation is due primarily to the chaparral vegetation and steep slopes in this portion of the Project Area (SLO County Safety Element, 1999).

Vegetation types throughout the remainder of the Ranch property, including oak and pine forest, oak savannah, open grasslands, chaparral and riparian areas, are also highly susceptible to generation of wildland fire. The topography of the Ranch varies, ranging from gently to moderately sloping areas to deeply incised drainage channels. The intermixing of native vegetation, steep slopes, and difficult access conditions have produced a Wildland Urban Interface in the Santa Margarita area, resulting in an increased risk of wildfire-related hazards (SLO County Safety Element, 1999).

Impact Discussion

The proposed project is limited to temporary remediation and excavation activity. The project does not include any structural development and would not introduce population that could be potentially impacted by a wildfire.

El Camino Real is an adopted emergency response route to Highway 101. Appropriate measures would be followed to avoid conflicts with emergency response activities and other potential traffic conflicts. Proposed measures include communication protocols and procedures to suspend Project-related trips during emergency situations; use of traffic control flagger when trucks are entering or leaving the project site; and halting traffic in the event of an emergency situation.

As noted in discussions above, excavation activity will result in short-term potential for off-site sedimentation/erosion. There are no existing structures, or population, in proposed remediation areas that could be potentially impacted by impacts following a wildfire. The proposed project includes implementation of a SWPPP with BMPs to avoid off-site sedimentation. There will be no substantive change in long-term drainage patterns. Upon completion of construction activities, final grade contours will be replaced to pre-project conditions using suitable fill soil in soil absorption or change in the direction of surface runoff. Impacts related to wildfires are considered less than significant.

Mitigation Measures

Impacts related to wildfires are considered less than significant. No mitigation measures are required.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(e)	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(f)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
(g)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Setting

Section 15065 of the CEQA Guidelines mandates that a lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the above conditions will or may occur.

Impact Discussion

(a) *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

Incorporation of Mitigation Measures CR-1 through CR-7, listed under Section 4.1, Cultural Resources, of this EIR will lessen cultural, historic and tribal resource impacts to the extent feasible. However, impacts are considered significant and unavoidable.

(b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Project activities would be conducted within the boundaries of a "Future Development Program" potentially proposed for the Santa Margarita Ranch Development. However, the nature and timing of the Future Development Program are not fixed, and future entitlements could only occur after extensive planning and environmental review. Excavation operations will be temporary, and no permanent uses will be established. Project activities will be performed entirely within the boundaries of the Santa Margarita Ranch and will not affect present or future development of the surrounding area. No cumulative effects are expected from the short-term project activity.

(c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

As discussed in each resource section above, the proposed project may result in significant impacts to historic, cultural and tribal resources.

Mitigation Measures

Please refer to Attachment B, Mitigation Monitoring and Reporting Program, of this EIR for a listing of all required mitigation measures.

Attachment B

Mitigation Monitoring and Reporting Program (MMRP)

1.0 Introduction

As of January 1, 1989, the California Environmental Quality Act (CEQA) requires a Mitigation Monitoring and Reporting Program (MMRP) for projects where mitigation measures are a condition of their approval and development. This MMRP has been prepared in compliance with Section 21081.6 of the California Public Resources Code and Sections 15091(d) and 15097 of the CEQA Guidelines, which require public agencies to "adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects." An MMRP is required for the proposed Phillips 66 Santa Margarita Remediation Project because the Draft EIR prepared for the project identified significant adverse environmental impacts that would result from the project's implementation, and mitigation measures have been identified to mitigate or avoid the identified impacts.

2.0 Purpose of the MMRP

This MMRP has been prepared to ensure that all mitigation measures identified by the proposed project Draft EIR are implemented. The attached Mitigation Monitoring and Reporting table will assist the responsible parties in implementing the MMRP. The table lists the environmental impacts identified by the EIR that would result from the implementation of the proposed remediation project; the mitigation measures identified by the EIR; methods to monitor the implementation of the identified mitigation measures; when the specified monitoring is to occur; and the agency/department responsible for ensuring compliance with the mitigation measures.

3.0 Roles and Responsibilities

The County of San Luis Obispo is responsible for taking all actions necessary to implement the mitigation measures listed on the attached table according to the specifications provided for each measure and for demonstrating that the mitigation measures have been successfully implemented and completed.

4.0 Implementation of the Draft EIR

The Draft EIR prepared for the proposed remediation project identified mitigation measures that would mitigate, reduce to the extent feasible, or avoid environmental impacts that would result from the implementation of the project. Those mitigation measures are identified in the attached table, along with required mitigation measure monitoring and reporting requirements.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
Impact CTR-1. Implementation of the proposed Phillips 66 Santa Margarita Remediation Project could cause a substantial adverse change in the significance of known and potentially undiscovered tribal and archaeological resources that are either listed or eligible for listing on the National Register of Historic Places, the California Register of Historic Resources, or a local register of historic resources. This impact is considered to be Class I, significant and unavoidable.	**CTR-2(a): <u>Avoidance Plan.</u>** Prior to permit issuance the applicant shall submit an Avoidance Plan to the County Planning and Building Department that identifies areas where the avoidance of proposed excavation and earth disturbance is possible. Avoidance areas shall be identified based on the potential for significant impacts to known and undiscovered cultural and tribal cultural resources. The Avoidance Plan shall include an assessment of the nature of the hydrocarbon contamination in areas proposed for avoidance in relation to the potential for leaving contamination in place. Prior to submittal to the County, the Avoidance Plan shall be reviewed and approved by the RWQCB and appropriate jurisdictional agencies. The Avoidance Plan shall also include methodology and criteria for any discovery of human remains and the feasibility of select avoidance and shall include the factors considered for avoidance, the technical feasibility for avoidance and shall include a demonstration for achieving RWQCB remediation criteria for avoidance areas. The County shall submit the Avoidance Plan to the identified tribal group MLDs as designated by the State NAHC for review. The Avoidance Plan shall also specify that the boundaries of all avoidance areas shall be defined and an exclusion zone shall be placed around each avoidance area and labeled as "Environmentally Sensitive Area" in all documents. An exclusion zone is a fenced area where construction equipment and personnel are not permitted. The exclusion zone fencing shall be installed (and later removed) under the direction of a qualified archaeologist. If avoidance cannot be achieved, other forms of mitigation, such as data recovery, will lessen the impacts but will not mitigate the loss of integrity to a less than significant level.	Avoidance Plan to be submitted to the County Planning and Building Department for review and approval. Plan to be implemented during construction.	Prior to issuance of grading permits, and during construction.	County of San Luis Obispo.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	CTR-2(b): Deed Restriction. Prior to completion of remediation activities, the applicant shall submit a recorded deed restriction to the County of San Luis Obispo Planning and Building Department that protects all areas of known and potentially undiscovered cultural and tribal cultural resources within the project site from future disturbance related to construction or development.	Recorded deed restriction shall be submitted to the County of San Luis Obispo for review and approval.	Prior to completion of remediation activities.	County of San Luis Obispo
	CTR-2(c): Archaeological Data Recovery: Prior to issuance of grading permits, an Archaeological Data Recovery Plan shall be submitted to the County of San Luis Obispo Planning and Building Department for review and approval. The Archaeological Data Recovery Plan shall include a program for recovering archaeological data and scientific samples from CA-SLO-1430. The approach to data recovery excavations, laboratory sorting, artifact analysis, reporting, and curation shall be driven by the Archaeological Data Recovery Plan to be prepared by a Registered Professional Archaeologist (RPA) who is familiar with both prehistoric and historic period cultural resources. The Archaeological Data Recovery Plan shall include the following: • a review of historic maps and aerial images to identify possible locations of historic period features and to document modern landscape modifications; • a prehistoric and historic period context; • a research design outlining important prehistoric and historic period themes and research questions applicable to CA-SLO-1430; • data requirements and appropriate field and laboratory methods and procedures to mitigate the effects of the project on CA-SLO-1430; • provide for a final technical report on the findings of data recovery at CA-SLO-1430;	Archaeological Data Recovery Plan and Work Plan shall be submitted to the County of San Luis Obispo for review and approval.	Prior to issuance of grading permits.	County of San Luis Obispo

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	• agreement for curation and final disposition of cultural items recovered; • procedures for handling of human remains if found during data recovery; • outline involvement of the local Native American communities and their recommendations for data recovery; and • a public outreach program to inform both the scientific and local communities on the findings of data recovery. Data recovery shall be completed prior to the start of remediation activities. However, if appropriate, a staged data recovery approach may be implemented where the first stage of data recovery occurs prior to construction work and the second stage will occur in tandem with construction. The purpose of this approach is to collect a viable sample prior to construction and then use the construction process to open up and observe larger exposures. If features, artifact concentrations or human remains are encountered during the second stage, construction work will be diverted while controlled excavations target newly discovered deposits. In advance of this mitigation requirement, the applicant has prepared an "Archaeological Work Plan for CA-SLO-1430" (Applied Earthworks, Inc., February 2020). The goal of the effort described in this Work Plan is to collect and analyze data from CA-SLO-1430 in order to preserve important information that will be lost during remediation activities. The Work Plan provides a framework for the planned excavations at CA-SLO-1430 including fieldwork approach, handling of human remains, laboratory methods, and analysis and reporting for CA-SLO-1430. The project cultural resources team will use a mixed approach to archaeological excavations at CA-SLO-			

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	1430, employing a combination of methods to address depth and subsurface integrity of midden deposits, recover data from intact features, and use controlled backhoe excavations to identify and record intact features. The goal for fieldwork is to target areas that appear to contain intact archaeological deposits, recover sensitive cultural materials that will be highly impacted (i.e., destroyed during remediation), and try to locate any features or human remains prior to construction. The applicant's Work Plan shall be reviewed by the County Planning and Building Department against the requirements listed above under Mitigation Measure CTR-2(c). Additionally, the Work Plan shall be submitted to the tribal representatives identified through the project AB52 process for their review if requested. The Work Plan reviews and any appropriate revisions or additions shall be completed prior to initiation of remediation activities. Implementation of this mitigation measure will reduce impacts to the extent feasible.			
	CTR-2(d): <u>Construction Monitoring:</u> Prior to issuance of grading permits, the applicant shall submit a Monitoring Plan, prepared by a subsurface-qualified archaeologist, for the review and approval by the County of San Luis Obispo Planning and Building Department. The monitoring plan shall include at a minimum: a) List of personnel involved in the monitoring activities; b) Description of how the monitoring shall occur; c) Description of frequency of monitoring (e.g. full-time, part time, spot checking); d) Description of what resources are expected to be encountered; e) Description of circumstances that would result in the halting of work at the project site (e.g. what is considered "significant"	Monitoring Plan shall be submitted to County of San Luis Obispo for review and approval. During construction, monitoring to be completed as stipulated in approved Monitoring Plan.	Monitoring Plan shall be submitted prior to issuance of grading permit. During construction monitoring frequency shall be implemented per the approved Monitoring Plan.	County of San Luis Obispo. Regular monitoring reports from applicant-provided qualified Archaeologist and Native American Monitor(s).

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR MITIGATION MONITORING and REPORTING PROGRAM				
Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	archaeological resources); f) Description of procedures for halting work on the site and notification procedures; and g) Description of monitoring reporting procedures. During all ground disturbing construction activities, the applicant shall retain a qualified archaeologist (approved by the County Planning and Building Department) and Native American tribal representatives to monitor all earth disturbing activities, per the approved monitoring plan. If any significant archaeological resources or human remains are found during monitoring, work shall stop within the immediate vicinity (precise area to be determined by the archaeologist in the field) of the resource until such time as the resource can be evaluated by an archaeologist and any other appropriate individuals. The applicant shall implement the mitigation as required by the County of San Luis Obispo. Upon completion of all monitoring/mitigation activities, the consulting archaeologist shall submit a report to the County of San Luis Obispo Planning and Building Department summarizing all monitoring/mitigation activities.			
	CRT-2(e) Cultural Awareness Training. Prior to the start of ground disturbance, a qualified archaeologist shall prepare and provide a cultural resources awareness training to all field crew and supervisors. This training will include a description of the types of resources that may be found in the project area, an introduction to the Native American monitoring team(s) and their responsibilities, the protocols to be used in the event of an unanticipated discovery, the importance of cultural resources to the Native American community, and the laws protecting significant archaeological and historical sites.	County of San Luis Obispo shall review and approve training plan and verify completion.	Prior to construction activities.	Applicant to prepare training plan and County of San Luis Obispo to verify.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
Impact CTR-3. Implementation of the proposed Phillips 66 Santa Margarita Remediation Project could disturb previously unidentified human remains. This is considered a Class I, significant and unavoidable impact.	**CTR-3(a): Discovery of Human Remains.** If potential human remains are encountered during remediation work, all earth disturbances within 100 feet of the discovery shall cease immediately and the area shall be delineated with clearly visible lath, flagging tape, or other marking. All activity within the delineated area shall cease and the project proponent shall comply with Section 15064.5 (e) (1) of the CEQA Guidelines and the procedures described in Section 7050.5 of the California Health and Safety Code. A RPA shall inspect the remains and confirm that they are human, and if so shall immediately notify the County of San Luis Obispo and contact the County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner determines the remains are Native American, the coroner shall contact the Native American Heritage Commission (NAHC). As provided in PRC Section 5097.98, the NAHC shall identify the person or persons believed to be the MLD from the deceased Native American. The MLD makes recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.	Project archaeological and Native American monitors shall provide monitoring during all ground disturbance. County of San Luis Obispo shall review monitoring reports.	Throughout the life of the project.	Project archaeological and Native American Monitors. County of San Luis Obispo to review reports.
Construction Phase Air Quality Impacts: As recommended by the APCD through their review of the proposed project (APCD, April 27, 2020), the project applicant team evaluated the construction impacts of this project using the most recent CalEEMod computer model. The modeling results indicate the maximum quarterly emissions will be less than the APCD's significance threshold values identified in Table 2-1 of the *CEQA Air Quality Handbook* (April 2012). The APCD concurred that the methodology used to calculate the peak quarterly emissions is appropriate for this project. However, Construction activities can generate fugitive dust, which could be a nuisance to local residents and businesses in close proximity to the proposed construction site. Although emissions modeling shows	**AQ-1: Construction Permit Requirements:** Portable equipment, 50 horsepower (hp) or greater, used during construction activities may require California statewide portable equipment registration (issued by the California Air Resources Board) or an APCD permit. The following list is provided as a guide to equipment and operations that may have permitting requirements but should not be viewed as exclusive. For a more detailed listing, refer to the Technical Appendices, page 4-4, in the CEQA Air Quality Handbook (April 2012). • Power screens, conveyors, diesel engines, and/or crushers; • Portable generators and equipment with engines that are	Requirements shall be printed on project plans for review by the County of San Luis Obispo.	Plans shall be approved prior to issuance of grading permits. Requirements shall be implemented throughout the life of the project.	County of San Luis Obispo.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
that the threshold is not exceeded, under direction from the APCD the proposed project has been determined to have the potential to generate construction emissions in excess of the thresholds established by the APCD. As such, impacts related to construction emissions are considered significant but mitigable.	50 hp or greater; • Electrical generation plants or the use of standby generators; • Internal combustion engines; • Rock and pavement crushing; • Tub grinders; and • Trommel screens.			
	AQ-2: **Fugitive Dust Mitigation:** To mitigate fugitive dust emissions related to project construction activities, the following shall be implemented: a) Reduce the amount of the disturbed area where possible; b) Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible; c) All dirt stock pile areas should be sprayed daily as needed; d) Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities; e) Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established; f) All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD; g) All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used; h) Vehicle speed for all construction vehicles shall not exceed 15 mph	Requirements shall be printed on project plans for review by the County of San Luis Obispo.	Plans shall be approved prior to issuance of grading permits. Requirements shall be implemented throughout the life of the project.	County of San Luis Obispo

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	on any unpaved surface at the construction site; i) All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114; j) Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site; k) Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible; l) All of these fugitive dust mitigation measures shall be shown on grading and building plans; and m) The contractor or builder shall designate a person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the APCD Compliance Division prior to the start of any grading, earthwork or demolition.			
	AQ-3: **Measures for Reducing Emissions:** The required mitigation measures for reducing nitrogen oxides (NO_x), reactive organic gases (ROG), and diesel particulate matter (DPM) emissions from construction equipment are listed below: • Maintain all construction equipment in proper tune according to manufacturer's specifications; • Fuel all off-road and portable	Requirements shall be printed on project plans for review by the County of San Luis Obispo.	Plans shall be approved prior to issuance of grading permits. Requirements shall be implemented throughout the life of the project.	County of San Luis Obispo

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	diesel powered equipment with CARB certified motor vehicle • diesel fuel (non-taxed version suitable for use off-road); • Use diesel construction equipment meeting CARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State off-Road Regulation; • Use on-road heavy-duty trucks that meet the CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation; • Construction or trucking companies with fleets that that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance; • All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit; • Diesel idling within 1,000 feet of sensitive receptors is not permitted; • Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors; • Electrify equipment when feasible; • Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and, • Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.			
	AQ-4: **Construction Phase Mitigation:** As stipulated by the APCD, in order to manage fugitive dust emissions, the Air Quality notes in the Grading Plan (drawing number	Requirements shall be printed on project plans for review by the County of San	Plans shall be approved prior to issuance of grading permits. Requirements shall	County of San Luis Obispo

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	G-01 and sheet number 2 of 28. AECOM, April 2020) submitted by the applicant as part of the Major Grading Permit application shall be required to be implemented as mandated mitigation measures for this project. Please refer to the attached Grading Plan for details on the required measures.	Luis Obispo.	be implemented throughout the life of the project.	
	AQ-5: **Off-road Construction Equipment Emissions:** As stipulated by the APCD, prior to the start of the project, the applicant shall provide proof to the County of San Luis Obispo that the final schedule and the final equipment list proposed for construction are consistent with the assumptions in the air quality modeling prepared for this project. The results of the consistency review shall be provided to the APCD. If review demonstrates there will be a significant difference in the final configuration of the project fleet and equipment list, the applicant shall recalculate the emissions, compare emissions to APCD construction thresholds, and, if necessary, work with the Lead Agency and APCD to update mitigation measures. Key information to provide includes the following specifics about the final equipment: • Off road equipment: Make, type, model number, CARB EIN, horsepower (hp), engine model year, engine Tier, and DOORS "compliance snapshot" for any fleet used on the project; and • Schedule: Start and end dates of both remediation and off-site hauling work.	Applicant to submit proof of final schedule and equipment list to County of San Luis Obispo for review and approval.	Prior to construction activities.	Applicant to provide the necessary proof to County of San Luis Obispo.
	AQ-6: **APCD Permitting of Hydrocarbon Contaminated Soil Processes**: This remediation project shall require an APCD Authority to Construct permit to address proper management of the hydrocarbon-contaminated soil prior to the start of any earthwork. This permit shall include conditions to minimize emissions from any excavation, disposal or related process. This	Applicant to provide verification of APCD permit to County of San Luis Obispo.	Prior to start of construction activities.	County of San Luis Obispo. Applicant to provide verification.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	includes, but is not necessarily limited to, the conditions outlined under Mitigation Measure AQ-3. To the extent feasible, Phillips 66 shall contact the APCD Engineering & Compliance Division within 120 days before the start of excavation to begin the permitting process.			
Special-Status Plant Impacts. With respect to special status plant species, the CDFW has recognized Grindelia camporum gum plant patches (Provisional Herbaceous Alliance) vegetation type as a California Sensitive Natural Community (CDFW 2018), and has given this community a California State ranking of S2 (imperiled). Equipment staging and temporary topsoil storage in the Western Remediation Area will result in a significant impact to several small colonies of Grindelia camporum. This is considered a significant but mitigable impact.	**BIO-1: <u>Special-Status Plants:</u>** Prior to any equipment staging, remediation work activities, or other activities occurring within the gum plant patch locations (please refer to Figure 4 from the project Biological Resources Analysis under Attachment G of this EIR), gum plant seeds will be collected at the appropriate time from the plants located in these areas and properly stored for future seeding in the project area after the remediation work activities are completed. Additionally, after gumplant seeds are collected from the top 6 inches of the soil profile where the plants occur, the "seed bank," shall be salvaged and moved to a designated seed bank stockpile location. The salvaged soil stockpile shall be staked with orange spray-painted lath or other suitable staking, and labeled so that it is apparent the scalped soils are required to be preserved until original site contours are restored at the end of the proposed remediation project. After completion of the remediation work the seed bank shall then be spread back over the area where they were originally collected and finally, this area will be seeded with any collected gum plant seeds. Plantings shall be monitored by a qualified biologist ensure survivorship for a minimum of 3 years, or until such time that all project success criteria are met.	Project applicant shall provide verification of seed collection and planting to County of San Luis Obispo.	Seed collection to be verified prior to project site activities. Planting to be confirmed by biologist and confirmation submitted to County of San Luis Obispo per required timing.	Biologist to provide verification to County of San Luis Obispo.
Special Status Wildlife Impacts: In addition to special status plants, the proposed project has the potential to result in significant but mitigable impacts to special status wildlife. This includes the following species: Western Pond Turtle;	**BIO-2: <u>Western Pond Turtle</u>***:* A qualified biologist shall conduct a preconstruction survey of the enclosed Eastern and Western Remediation Areas within 24 hours of any activities being conducted in those areas. If a western pond turtle	Project biologist to provide results of survey to County of San Luis Obispo.	Upon completion of surveys, within 24 hours of all activities conducted in identified area.	Project biologist shall provide results of monitoring to County of San Luis Obispo.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
Special Status Bats; American Badger; Nesting Birds; and California Red-Legged Frog.	is identified within the enclosed Remediation Areas, or up against the fencing on the outside of the Remediation Areas, the turtle shall be captured and immediately relocated to suitable habitat in Santa Margarita Creek. Thereafter, the designated biological monitor and/or trained field manager shall survey the enclosed areas for turtles prior to work each day. During the spring and/or summer months, preconstruction surveys for turtle nest sites in uplands adjacent to suitable aquatic habitat shall be conducted within the 30-day period prior to beginning any work activities. If no nests are found, no further consideration for western pond turtle nests shall be required. If nest sites are located during preconstruction surveys within or adjacent to the proposed work areas, the nest site plus a 50-foot buffer around the nest site shall be fenced with orange construction fence until eggs hatch and young turtles disperse to the adjacent creeks. In addition, if nest(s) are located during surveys, moth balls (naphthalene) shall be sprinkled around the vicinity of the nest (no closer than 5 feet) to mask human scent and discourage predators. Remediation grading within the 50-foot buffer area shall be delayed until the young leave the nest or as otherwise advised and directed by the CDFW, the agency responsible for overseeing the protection of the pond turtle. If the CDFW allows translocation on any nestling pond turtles, it shall be completed by a qualified biologist under direction of CDFW.			

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	BIO-3: **Special-Status Bats:** In order to avoid impacts to roosting special-status bats, a tree survey shall be conducted no more than 15 days prior to commencement of remediation work activities by a biologist with known experience surveying for bats. Tree cavities and exfoliated bark that could provide roosting or maternity habitat shall be examined for evidence of use by bats. If roosts are found, a determination should be made whether there are young. If a maternity site is found, impacts to that tree will be avoided by establishment of a 50-foot non-disturbance buffer until the young have reached independence. If roost sites are found it is likely that no action is warranted. Eviction is unnecessary as valley oak trees will not be directly impacted by the proposed remediation project.	Biologist shall provide results of survey to County of San Luis Obispo.	No more than 15 days prior to commencement of construction activities.	Project biologist shall submit results of survey to County of San Luis Obispo.
	BIO-4: **American Badger:** A qualified biologist shall conduct a preconstruction den survey no more than 21 days prior to site grading. If a potential den is located, infrared camera stations will be set up and maintained for three (3) consecutive nights at the potential den openings prior to initiation of grading/work activities to determine the status of the potential dens. If not found to be using the den, the burrow shall be filled, and site grading may proceed in the vicinity of this burrow(s) unhindered. If found using a den site within the area of proposed grading, the Applicant's biologist shall prepare a passive eviction plan. The plan will include details about evictions, provided it is not a natal den, the badger will be passively and humanely evicted from its den under guidance from CDFW if it could be impacted by grading or other remediation work activities. If a natal den is found, then an eviction plan will be prepared and submitted to CDFW for discussion and approval. Evictions shall not occur until CDFW approves the passive eviction plan.	Biologist shall provide results of survey to CDFW and County of San Luis Obispo.	No more than 21 days prior to commencement of construction activities.	Project biologist shall submit results of survey to CDFW and County of San Luis Obispo.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	BIO-5: **Nesting Birds:** Nesting surveys shall be conducted no more than 30 days and again no more than 15 days prior to commencing with project activities if this work would commence between February 1 and August 31. The nesting survey shall include an examination of all trees within the project site and within 500 feet of the project area (i.e., within a zone of influence of nesting birds). The Bald and Golden Eagle Protection Act has special provisions for nesting eagles. As these eagles start nest construction or reconstruction in December/January, a survey for nesting bald and golden eagles shall be completed in February, and again in March. The survey area (i.e., zone of influence) should be extended to 1 mile from project area boundaries to the extent that this is practical or possible (private properties may preclude surveys on these properties). The USFWS's 2017 *Recommended Buffer Zones for Ground-based Human Activities around Nesting Sites of Golden Eagles in California and Nevada* recommends a 660-foot non-disturbance buffer from active bald eagle nests for projects of similar magnitude to the proposed project. If any eagle nest is discovered within one mile of the proposed project, a qualified raptor biologist with known experience working with eagles shall recommend a buffer of appropriate dimensions that are based upon the geographic position of the nest site in relation to the project. For example, hills create geographic barriers when between an eagle's nest and the job site, a barrier that would shield nesting eagles from disturbance that could otherwise occur in straight lines to the eagle nest. The buffer would be no smaller than 660 feet from any active eagle nest. This buffer shall be maintained	Biologist shall submit results of survey to County of San Luis Obispo.	No more than 30 days and again no more than 15 days prior to start of project construction activities.	Project biologist to provide survey and submit results to County of San Luis Obispo.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	until eaglets fledge the nest and are independent of the nest, or until the nesting attempt is otherwise completed. If other bird species are identified nesting on or within the zone of influence of the proposed remediation project, a qualified biologist with extensive experience establishing effective nesting buffers shall prescribe a temporary protective nest buffer around the active nest(s). The nest buffer shall be staked with highly visible fencing such as t-posts and two strands of yellow rope where the buffer(s) extend into the project area. Adequate nesting buffers shall be maintained 75 feet from the nest site or nest tree dripline for small birds (passerines) and 300 to 500 feet for sensitive nesting birds that include several raptor species known the region of the project area. Following completion of nesting surveys, if nesting birds are identified on or within a zone of influence of the remediation areas, a qualified ornithologist/biologist that frequently works with nesting birds shall prescribe adequate nesting buffers to protect the nesting birds from harm while the proposed project is constructed. The applicant shall have the option for reducing setbacks, if warranted, upon approval by monitoring biologist. No remediation or earth-moving activity shall occur within any established nest protection buffer prior to September 1 unless it is determined by the qualified ornithologist/biologist that the young have fledged and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed. At the end of the nesting cycle, when fledging young are independent of the nest as determined by a qualified biologist, the temporary nesting buffers may be removed, and construction may commence in the nesting buffers			

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	without further regard for the nest site.			
	BIO-6 <u>Applicant-Proposed Measures:</u> During the course of the biological investigations prepared in support of this project, including the review of biological reports by the County's biologist and subsequent review by CDFW and USFWS, several mitigating factors and recommendations have been incorporated into the project description by the applicant in order to reduce impacts to biological resources. The following project elements are considered to be mitigating factors that shall become required mitigation measures: • *Wildlife Exclusion Fencing:* The applicant shall install "ERTEC" wildlife exclusion fencing that completely surrounds each project remediation area in order to ensure that wildlife moving along Little Tassajara Creek and Santa Margarita Creek or elsewhere on the ranch property will be kept out of the project areas and not be impacted by the remediation work. A one-foot high sediment control panel (high density polyethylene sheet) incorporated by ERTEC into the bottom of the wildlife exclusion fence will ensure that silt and sediments are contained within the project area. The ERTEC shall be installed per the manufacturer's installation instructions. Escape funnels shall be installed to allow any wildlife inadvertently trapped inside the work area during installation a means to escape. Further, any openings or gates to allow access will be tightly secured at the end of each work to ensure no gaps occur. To be certain that animals cannot successfully climb this fencing, the ERTEC fence shall be recurved along the top edge outwards away from the	Project biologist to provide confirmation that applicant-proposed measures are implemented.	Prior to proposed excavation activities and throughout life of the project.	Project biologist to monitor requirements and report to County of San Luis Obispo.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	Remediation areas so that in the event an animal does climb the fence, it will not be able to get over the top of the fence and into the work area. The one-foot high sediment control panel, that functions like silt fence, is a best management practice that is used to control threats of downstream degradation of receiving waters. However, since remediation work would take place during the dry season, downstream waters will not likely be impacted. Additionally, since remediation work will take place inside fenced enclosures, no impacts to wildlife are expected All wildlife exclusion fencing shall be maintained in good condition through completion of all earth-moving activities. A biologist shall inspect this fence every other week from installation through completion of all earth-moving on the proposed remediation project area and the day after any significant precipitation events (.25-inch or greater in a 24 hour period). The biologist shall also train the field manager how to perform the fence inspections so that on days the biologist is not present, the foreman can complete his/her own fence inspections. The wildlife exclusion fencing shall be removed upon completion of all remediation work activities. • *Project Schedule and Work Sequence:* Work is planned to occur over one consecutive construction season between April 19 and October 31, 2021 to avoid excavation activity during the rainy season. Trucking of exported material and other minor activities may continue past the end of October, weather dependent, in order to ensure that all impacted soil stockpiled at the project area			

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR MITIGATION MONITORING and REPORTING PROGRAM				
Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	during the preceding dry season excavation is removed. Any work that is completed outside of the ERTEC enclosed project areas (for example, truck hauling) shall have the following restrictions: ➢ Project work activities and/or off-site trucking shall begin after sunrise and shall cease no later than one hour after sunset. ➢ If for any reason off-site trucking occurs before or after these conditions, then all trucks shall be escorted by a qualified biologist that clears any wildlife encountered from the traveled path ahead of the trucks. ➢ Off-site trucking and all project equipment shall travel at a reduced speed limit of no greater than 15 miles per hours (MPH) between the project area and egress point. ➢ No work shall occur during projected rain events of 0.25-inch or greater with work planned to be delayed when the National Oceanic and Atmospheric Administration (NOAA) forecast calls for a 70% chance or greater of this type of precipitation event. In the event of significant project delays, off-site trucking of impacted soils may cease prior to completion of excavation activities at the end of October 2021. In this event, impacted soils shall be stockpiled and secured via implementation of an erosion control plan. Off-site trucking of the soils would resume in spring of 2022, weather permitting. • *Fuel Storage:* Fuel storage is not anticipated for the proposed remediation project. In the event that fuel storage is required within the project area, the fuel storage shall be in			

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	accordance with San Luis Obispo County and San Luis Obispo County Air Pollution Control District regulations, including preparation of a Hazardous Material Storage Plan and Hazardous Materials Business Plan. Fueling areas shall occur at least 100-feet from wetlands and/or waterbodies unless fueling is within the proposed excavation area and there is no opportunity for petroleum products to enter creeks or wetlands.			
Slope Failure Impacts: The proposed remediation project entails excavation of impacted soil and backfilling with cement slurry or clean fill. Appropriate clean backfill soils and compaction methods will be used to ensure long-term stability of the excavated areas in accordance with County grading requirements. The hazards related to ground stability have been analyzed in the project geotechnical report, indicating that impacts related to unstable soil conditions during proposed excavation and impacts related to slope failure within excavations are considered significant but mitigable.	**GEO-1** **Excavation Slopes:** Based on the project geotechnical report, the maximum allowed mass excavation slope shall be 1H:1V. For any localized short term, temporary cuts steeper than 1H:1V, with no occupancy within the excavation, materials and equipment shall be set back from the top of the excavation beyond where a 1H:1V cut slope would daylight. The excavation contractor shall be prepared and responsible for adjusting and flattening slopes to maintain stability and safety given actual field conditions encountered.	Construction details to be shown on project plans and verified by County of San Luis Obispo. Prior to issuance of grading permit. County of San Luis Obispo.	Prior to issuance of grading permit.	County of San Luis Obispo.
	GEO-3 **Backfill Construction:** Based on the project geotechnical report, it is understood that the remediation site, by removal and replacement of contaminated materials, will not include any structural development. However, the project includes design grades and slopes such that future settlement or differential settlement could result in significant impacts. Considering these conditions and criteria, the following requirements for the remediation mass excavation backfill with soil materials shall be implemented as follows: • The final clean subgrade below remediation excavation shall be	Construction methods shall be incorporated into project site plans.	Prior to issuance of grading permits.	County of San Luis Obispo.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	scarified, brought to a moisture content within 2 percent of optimum moisture content, and compacted to a minimum of 90 percent of the laboratory maximum dry density, determined in accordance with ASTM D1557, latest edition; • Subsequent mass excavation backfill replacement material shall be a sandy, silty, clayey material with fines content of at least 20 percent. The material shall not be highly plastic or have expansive properties, with a plasticity index no greater than 20; • Mass excavation backfill replacement material shall not contain organics and should not contain isolated particle sizes greater than 6 inches; • The replacement soil backfill material shall be properly moisture conditioned prior to placement into the remediation excavations to minimize final moisture adjustment prior to compaction; • The soil backfill material shall be placed in loose horizontal lifts not exceeding 12 inches; • Prior to compaction, the soil backfill material shall be within 2 percent of optimum moisture content; and • The soil backfill material shall be compacted to a minimum of 90 percent of the laboratory maximum dry density, determined in accordance with ASTM D1557, latest edition.			
Groundwater Impacts: During subsurface testing, some groundwater levels have been measured a few feet above the deepest planned excavation depths, locally. These levels likely vary seasonally and as a function of rainfall magnitude. Because groundwater was noted at relatively shallow levels in some areas, impacts related to groundwater conditions are considered significant but mitigable.	**GEO-2** **Groundwater:** In order to allow the excavation slopes discussed in the previous section and to be consistent with the associated OSHA soil type definition for allowance of such slope excavation geometry, groundwater conditions shall be maintained a minimum of 2 feet below the excavation depths at all times along with the prevention of active seepage conditions from the excavation slopes and bottom.	Applicant to submit monitoring plan and monitor groundwater and report results to County of San Luis Obispo.	Monitoring plan shall be submitted prior to start of excavation and monitoring to occur throughout project activities per approved plan.	Applicant shall submit plan and report monitoring results to County of San Luis Obispo.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR

MITIGATION MONITORING and REPORTING PROGRAM

Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	Groundwater level monitoring shall be implemented during remedial excavation to confirm requirements are being maintained. The excavation contractor shall establish an approved groundwater control and monitoring plan, consistent with the groundwater monitoring outlined in the project CAP,with the ability to adjust and maintain the requirements with changing conditions.			
Temporary Construction-Phase Traffic Impacts. During the project construction period, the project traffic report indicated that the study roadway segment will not be significantly impacted by the project. However, the study roadway segment will experience minor short-term increases in traffic during the peak construction period. The study roadway segment volume will return to pre-project operating conditions upon completion of project construction activities. Because the study roadway segment is anticipated to experience minor short-term increases in traffic, impacts related to temporary traffic increase during project implementation are considered significant but mitigable.	**T-1** **Truck Turning Plan:** Truck turning analyses were conducted to develop truck turning plans to demonstrate the inbound and merging truck turns to and from the project access driveway. The turning plans were developed to disclose the anticipated footprints of incoming and outgoing trucks and to help develop any needed traffic enhancement and countermeasures to facilitate truck turning movements. The truck turning plan is provided in Appendix B of the project traffic assessment (please refer to Attachment I of this EIR). As shown in the plan, inbound trucks will execute a 90-degree turn from eastbound SR 58 to enter the project area, while exiting loaded truck traffic will safely merge into westbound SR 58 using the existing paved shoulder as an acceleration lane. The project shall incorporate this plan as a required element.	Applicant shall submit Plan to County of San Luis Obispo for review and approval.	Prior to issuance of grading permit.	Applicant shall submit Plan to County of San Luis Obispo.
	T-2 **Traffic Control Measures:** The applicant shall develop and implement a project-specific traffic and monitoring control plan consistent with the size and scope of the project activity designed to minimize potential impacts to traffic flow. As feasible, proposed measures are required to include but are not limited to the following: • Use proper signs and traffic control measures in accordance with Caltrans and San Luis Obispo County requirements. All traffic signs, equipment, and control measures shall conform	Applicant shall submit Plan to County of San Luis Obispo for review and approval.	Prior to issuance of grading permit.	Applicant shall submit Plan to County of San Luis Obispo.

PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT EIR MITIGATION MONITORING and REPORTING PROGRAM				
Project Environmental Impact	Mitigation Measures	Monitoring Methods	Timing of Monitoring	Responsibility for Monitoring
	to the provisions specified in the Caltrans Manual of Uniform Traffic Control Device. Specific jurisdictional requirements will be identified during the plan review and approval process. • Deployment of flag persons to provide temporary traffic control, facilitate vehicle egress/ingress and assignment of roadway right-of-way during Project hauling operating hours. • Limit vehicular traffic to designated access roads, construction laydown and worker parking areas, and the Project Area. • Provide orientation and briefing to Project workers and contractors on the desired Project access route and traffic safety measures. • Encourage Project worker carpooling to minimize drive-alone worker trips. The proposed Traffic Control Plan is provided in Appendix C of the traffic assessment (please refer to Attachment I of this EIR). The Traffic Control Plan shall be incorporated into the project and shall be subject to Caltrans review prior to issuance of an Encroachment Permit.			

Attachment C

NOP with Comments and Responses

NOTICE OF PREPARATION
Draft Environmental Impact Report

SAN LUIS OBISPO COUNTY DEPARTMENT OF PLANNING AND BUILDING
976 OSOS STREET | ROOM 200 | SAN LUIS OBISPO | CALIFORNIA 93408 | (805) 781-5600
Promoting the Wise Use of Land | ***Helping to Build Great Communities***

DATE: **June 18, 2020**

TO: Responsible Agencies, Trustee Agencies, and Interested Persons

FROM: **Cindy Chambers, Planner III**
Department of Planning and Building
976 Osos St., Room 300
San Luis Obispo, CA 93408-2040
Email: cchambers@co.slo.ca.us

PROJECT TITLE: Phillips 66 Santa Margarita Remediation Project Major Grading Permit PMTG2019-00065 (ED19-204)

PROJECT APPLICANT: Rob Rossi (Property Owner); Olegario Acosta (AECOM, Consultant); Edward Ralston (Phillips 66 Company, Applicant)

RESPONSES DUE BY: 5:00 pm on Wednesday, July 22, 2020

PURPOSE OF NOTICE
The County of San Luis Obispo will be the Lead Agency and will prepare an Environmental Impact Report (EIR) for the above-referenced project. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

Due to the time limits mandated by State law, please provide us the following information at the earliest possible date, **but not later than 5:00 pm on Wednesday, July 22, 2020.**

1. NAME OF CONTACT PERSON. (Please include address, e-mail and telephone number)

2. PERMIT(S) or APPROVAL(S) AUTHORITY. Please provide a summary description of these and send a copy of the relevant sections of legislation, regulatory guidance, etc.

3. ENVIRONMENTAL INFORMATION. What environmental information must be addressed in the Environmental Impact Report to enable your agency to use this documentation as a basis for your permit issuance or approval?

4. PERMIT STIPULATIONS/CONDITIONS. Please provide a list and description of standard stipulations (conditions) that your agency will apply to features of this project. Are there other conditions that have a high likelihood of application to a permit or approval for this project? If so, please list and describe.

5. ALTERNATIVES. What alternatives does your agency recommend be analyzed in the EIR?

6. REASONABLY FORESEEABLE PROJECTS, PROGRAMS or PLANS. Please name any future project, programs or plans that you think may have an overlapping influence with the project as proposed.

7. RELEVANT INFORMATION. Please provide references for any available, appropriate documentation you believe may be useful to the county in preparing the EIR. Reference to and/or inclusion of such documents in an electronic format would be appreciated.

8. FURTHER COMMENTS. Please provide any further comments or information that will help the county to scope the document and determine the appropriate level of environmental assessment.

PROJECT DESCRIPTION

Request by Phillips 66 for a major grading permit (PMTG2019-00065) from the County of San Luis Obispo for the excavation of hydrocarbon-impacted soils at varying depths and widths within two affected areas along an existing pipeline alignment on APN 070-091-036. Proposed work will be consistent with the project Corrective Action Plan (CAP), including backfilling the excavations and restoration of the site to current grade. Please refer to Exhibit A, *Detailed Project Description for Environmental Analysis* for a detailed discussion of the proposed project elements and activities. The remediation project will result in the disturbance of approximately 20 acres, including approximately 87,046 cubic yards of cut and 96,023 cubic yards of onsite fill material. The proposed project is within the Agriculture land use category and in the Salinas River Sub Area of the North County Planning Area.

PROJECT LOCATION

The project site is located, on a portion of an approximately 900 acre property known as the Santa Margarita Ranch (addressed as at 9295 Yerba Buena Avenue), located north of the community of Santa Margarita between US Highway 101 and El Camino Real. See the attached project description and location map exhibits for details.

POTENTIAL ENVIRONMENTAL IMPACTS

It is anticipated that the proposed project would result in potentially significant environmental impacts relating to, but not limited to Cultural and Tribal Resources. This issue, together with the remaining impact issue area analysis mandated by the CEQA Guidelines (Appendix G), including other CEQA-mandated analyses including Alternatives, Cumulative Effects, and Growth Inducement will be addressed in the EIR. There are no Cortese listings or GeoTracker sites located on-site, outside of the regulatory actions reported on the GeoTracker database associated with the proposed remediation project.

This NOP and the Preliminary Initial Study for the proposed project are available for review at the County's Department of Planning & Building website https://www.slocounty.ca.gov/Departments/Planning-Building.aspx (under *Active Major Projects*) starting June 18, 2020. Please send your response to **Cindy Chambers** at the address or email shown above. As requested above, we will need the name for a contact person in your agency.

Signature Cynthia Chambers Digitally signed by Cynthia Chambers DN: E=cc, E=cchambers@co.slo.ca.us, O=County of San Luis Obispo, OU=Planning & Building, CN=Cynthia Chambers Date: 2020.06.11 17:23:19-07'00'

Cindy Chambers, Project Manager
Telephone: (805) 781-5608*

*Due to County-imposed Shelter-in-Place, staff is working from home; telephone messages will be returned via private number.

Section 1 *Reference: California Administrative Code, Title 14, Section 15082*
Exhibit A *Detailed Project Description for Environmental Analysis*
Exhibit B *Project Figures: Figure 1, Project Location Map; Figure 2, Overall Site Plan; Figure 3, Western Excavation Area; and Figure 4, Eastern Excavation Area*
Exhibit C *Preliminary Initial Study/Environmental Checklist Summary*

Notice of Preparation
Draft Environmental Impact Report: Exhibit A

SAN LUIS OBISPO COUNTY DEPARTMENT OF PLANNING AND BUILDING
976 OSOS STREET | ROOM 200 | SAN LUIS OBISPO | CALIFORNIA 93408 | (805) 781-5600
Promoting the Wise Use of Land | ***Helping to Build Great Communities***

DETAILED PROJECT DESCRIPTION FOR ENVIRONMENTAL ANALYSIS

PROJECT TITLE: Phillips 66 Santa Margarita Remediation Project Development Plan/Conditional Use Permit PMTG2019-00065 (ED19-204)

PROJECT APPLICANT: Rob Rossi (Property Owner); Olegario Acosta (AECOM, Consultant); Edward Ralston (Phillips 66 Pipeline Company, Applicant)

PROJECT LOCATION and SETTING: The proposed project is located on a portion of the Santa Margarita Ranch (APN 070-091-036) (Ranch) in the unincorporated community of Santa Margarita, San Luis Obispo County, California. The entire parcel is approximately 900 acres located on the east side of Highway 101, within the Agriculture land use category. Phillips 66 Pipeline Company LLC (Phillips 66) currently operates two parallel 8-inch diameter petroleum pipelines which traverse a portion of the site from the eastern side of Highway 101 to the Phillips 66 Pipeline Santa Margarita Pump Station located on the east side of El Camino Real. A 6-inch diameter natural gas pipeline owned and operated by Phillips 66 is also present within the pipeline easement. Please refer to Exhibit B, Figure 1, Project Location Map, for additional details.

The pipeline alignment extends across the site for a distance of approximately 1.8 miles. Average surface elevations along the pipeline corridor from north to south range between approximately 975 feet above mean sea level (msl) in the floodplain areas near Yerba Buena and Santa Margarita Creeks, to approximately 1,000 feet msl in the terrace area that contains the historic ranch headquarters structures, and finally to an elevation of 1,090 feet msl in the hilly areas near Highway 101. Santa Margarita Creek, a seasonal tributary to the Salinas River, flows across the site in an easterly direction where it crosses onto the southern portion of the site. The creek then turns generally northerly, flowing through the remainder of the site.

Hydrocarbon-impacted soils have been identified within the pipeline alignment at two locations on the Santa Margarita Ranch. The proposed project entails excavation of impacted soils at two distinct segments of the pipeline alignment within the property. These segments are referred to as the Western Remediation Area and the Eastern Remediation Area. Work activities will occur on approximately 20 acres of the Ranch, including use of existing ranch access roads to the Western and Eastern Remediation Areas. Of this area, excavation will occur over a combined area of approximately 4.3 acres at the two segments, and the remaining project work areas will be used for staging and access.

Western Remediation Area
The Western Remediation Area is an approximately 750-foot segment of the pipeline alignment located on undeveloped pasture land in the southwestern portion of the property. The site is located approximately 1,000 feet east of Highway 101, and approximately 2,700 feet northwest of Highway 58 (El Camino Real) where the road traverses the western portion of the community of Santa Margarita. The width of the work site, including excavation areas and staging, varies from approximately 150 feet at the eastern end to less than 50 feet in the middle section (please refer to Exhibit B; Figure 3, Western Excavation Area). The disturbance footprint for

remedial activities is approximately 2 acres, including staging. The site is level at approximately 1,000 feet msl in the eastern portion and then gradually slopes to an elevation of approximately 1,100 feet msl in the eastern portion. Little Tassajara Creek, an intermittent tributary to Santa Margarita Creek flows in an east-west direction through the Western Remediation Area. Excavation activity will avoid creek resources and tree removal.

Eastern Remediation Area
The Eastern Remediation Area is an approximately 1,500-foot segment of the pipeline alignment located in the central portion of the property. The alignment traverses a corral and is in proximity to existing ranch structures. The eastern end of the segment is located near the top of the western bank of Santa Margarita Creek. The site is approximately 1,900 feet west of El Camino Real, north of Santa Margarita. The width of the excavation area varies from approximately 250 feet at the northeastern end to less than 100 feet in the southwestern section. The disturbance footprint for remedial activities is approximately 3 acres, including excavation areas and staging. The site is on level land at an elevation of approximately 1,000 feet above msl. Limited tree pruning or removal may be required in the developed areas of the ranch central event area. Excavation activity will avoid creek resources.

PROJECT BACKGROUND: The purpose of the project is to implement remedial actions at the subject sites in accordance with a Corrective Action Plan (CAP), subject to approval by the Central Coast Regional Water Quality Control Board (RWQCB). There are no Cortese listings or GeoTracker sites located on-site, outside of the regulatory actions reported on the GeoTracker database associated with the proposed remediation project.

Hydrocarbon-impacted soils near a recently replaced segment of oil pipeline have been identified within the pipeline alignment and further defined by extensive drill testing. The CAP prepared for the project provides detailed analysis of site conditions and recommended remedial actions at the subject sites. The CAP has been approved by the RWQCB. The primary activity entails excavation of impacted soils at varying depths and widths within the two-pipeline alignment and the excavations and restoration of the sites to current grade.

PROJECT DESCRIPTION: As discussed above, the purpose of the project is to implement remedial actions at the subject sites in accordance with a CAP, as approved by the RWQCB. Please refer to Exhibit B, Project Figures, for a detailed depiction of the project location, overall site plan, and the Western and Eastern Excavation Areas.

The primary activity entails excavation of impacted soils at varying depths and widths within the two pipeline alignment areas as detailed in the CAP, and then backfilling of the excavations and restoration of the sites to current grade.

A total volume of 83,851 cubic yards of excavation are planned, as follows:

- 57,153 cubic yards of anticipated impacted soils
- 1,429 cubic yards of over-excavation contingency
- 22,219 cubic yards of clean overburden
- 3,050 cubic yards of anticipated seedbank (top 6-inches of surface soils)

The 1,429 cubic yards of over-excavation contingency are planned in the event that additional unanticipated impacted soils are encountered. The contingency volume is 2.5% of the anticipated volume of impacted soils.

A total volume of 92,670 cubic yards of backfill are planned, as follows:

- 14,885 cubic yards of slurry cement
- 52,516 bulk cubic yards of clean fill material from an the borrow source; this volume accounts for an additional 20% of fill material for compaction;
- 22,219 cubic yards of clean overburden which will be tested prior to use; and
- 3,050 cubic yards of clean segregated seedbank (top 6-inches of surface soil from the excavations).

Remedial Excavation

Impacted soil is proposed to be excavated to the prescribed depth, varying from 6 – 20 feet below ground surface or to the point of contact with shallow bedrock at each remediation area. The excavation process will entail several excavation techniques designed to protect and maintain structural integrity of the existing oil and gas pipelines which will remain active during Remediation Project activities.

Conventional excavation techniques are proposed in the Western and Eastern Remediation Areas outside of the pipeline easement to excavate to the proposed depths. The same techniques will also be used outside of a 2-foot radius safety buffer around the pipelines. Conventional excavation techniques utilize standard earth moving equipment such as an excavator, backhoe, or dozer.

Suction excavation is proposed for the Western and Eastern Remediation Areas to expose the pipelines as a safety measure to prevent inadvertently striking and breaching the pipelines with mechanical equipment. Suction excavation is similar to hydro-excavating or air-knifing but on a larger scale. Suction excavation utilizes high pressure dry air to break up the soil while vacuuming the loose soil into a seal-tight compartment. Suction excavation is considered a soft-dig technique and safe alternative to hand-digging of impacted soils adjacent to the pipelines.

Slot trenching is proposed along the pipeline easement to removed impacted soils beneath the pipelines. Slot trenching addresses the safety concerns associated with excavating along and beneath active pipelines where the span of the exposed pipelines will be greater than 15 feet and proposed excavation depth is greater than 10 feet (i.e. sections of Excavation 5 and all of Excavation 8). Slot trenching consists of excavating sets of 15 - 25-foot wide trenches perpendicular to the pipeline alignment at forty-five (45) linear foot intervals using a telescoping excavator. The telescoping excavator starts removing soil from underneath the pipelines allowing impacted soils around the active pipelines to fall into the trench for removal. The slot trenches are immediately backfilled with cement slurry. Once the slurry cures in the first set of slot trenches, a second set of slot trenches are installed adjacent to the first set of trenches in a "hopscotching" fashion. This method of “hopscotching” slot trenches allows for maximizing the span of the exposed pipelines while excavating beneath the pipelines and maintaining lateral and vertical support. The process of slot trenching is repeated until all the impacted soils beneath the pipelines are removed to the proposed depth. This technique is a safe alternative to using mechanical equipment to excavate around the pipelines and inadvertently striking the pipelines.

Dewatering

To minimize the accumulation of groundwater during excavation activities and the need for dewatering efforts, all excavations are proposed to be backfilled in a timely manner following collection of confirmation soil samples.

It is not anticipated that groundwater will be encountered for excavations ranging between 6 and 10 feet below ground surface since the depth to groundwater in the excavation areas ranges from 11 – 25 feet below ground surface.

The proposed excavation depth for two small areas of excavation (Excavation 5 and most of Excavation 8) is 15 below ground surface. It is anticipated that moist or lightly saturated soils may be encountered in these areas, but it is not anticipated that groundwater will accumulate, and dewatering efforts be required since the Remediation Project will be implemented in the dry season when groundwater elevation is at the lower range and most likely greater than 15 feet below ground surface.

The excavation depth of the most eastern end of Excavation 8 is proposed to 20 feet below ground surface if shallow bedrock is not encountered at a shallow depth. Heavily saturated soils and groundwater may be encountered in this portion of Excavation 8 and dewatering efforts may be required to facilitate removal of impacted soils to the proposed excavation depth. Measures to minimize the accumulation of groundwater will

be implemented to the extent possible. However, in the event that dewatering efforts are required, submersible pumps, hoses, and fittings, or, vacuum trucks will be used for dewatering. All dewatered groundwater will be stored in temporary, portable steel tanks with secondary containment and activated carbon canisters for emissions control. The recovered groundwater from dewatering will be sampled for characterization prior to transport to an approved off-site disposal facility. Excavated impacted soil that is heavily saturated will be segregated and blended with other dry impacted soils to facilitate drying prior to being transported for off-site disposal facility.

Separate Phase Hydrocarbon (SPH) Recovery

SPH is not anticipated to be encountered during the excavation process as recoverable free product. However, it is anticipated that hydrocarbon-saturated soils may be encountered in the excavations proposed to a depth of 15 feet below ground surface or greater. If SPH free product is encountered, it is anticipated to be very limited in volume or as a layer on top of groundwater. In the event that SPH free product is encountered, it will be recovered from the excavation using appropriate technologies depending on the thickness and depth to groundwater. Recovery methods may include absorbent materials, recovery during dewatering efforts, or via use of a vacuum truck. The recovery effort will seek to maximize removal of SPH while minimizing groundwater recovery. The recovered SPH will be placed into portable steel tanks within secondary containment and activated carbon canisters for emission control. It is not anticipated that separate storage tanks will be required for SPH and dewatered groundwater.

Excavation Confirmation Soil Sampling

Once the limits of excavations have been achieved, confirmation soil samples would be collected from the sidewalls and bottom to document removal of hydrocarbon-impacted soil to the established cleanup goals in the CAP and to characterize remaining soils left in-place. Soil samples collected from the excavations will be analyzed for the following constituents:

- Total petroleum hydrocarbon (TPH) as gasoline range (TPHg), diesel range (TPHd), and oil range (TPHo); and
- Benzene, toluene, ethylbenzene and total xylenes (BTEX) and naphthalene.

Additional but limited over-excavation may be required based on the results of the confirmation soil samples. For planning purposes, the total volume of impacted soils to be trucked off-site for disposal includes a 2.5% contingency. Confirmation sampling details including frequency, quality control, and total number of confirmation samples anticipated are provided in the CAP.

Offsite Waste Disposal

Impacted soil is proposed to be transported under waste manifest by licensed haulers to an approved and permitted recycling/disposal facility. The disposal facility will be selected prior to commencement of Remediation Project activities. The preferred destination for impacted soil is Waste Management Inc. in Kettleman City, located in western Kings County, approximately 70 miles from the project site. Other potential locations include the Clean Harbors Buttonwillow facility or the McKittrick facility in western Kern County; these facilities are located approximately 100 miles from the Remediation Project. For evaluation of the air emissions, the Clean Harbors Buttonwillow Facility was assumed to account for the longest distance to a disposal facility.

All trucks for off-site hauling of impacted soils or other waste streams will access the Remediation Project via Highway 101 to Highway 58 to Stagecoach Road during non-peak hours only. Loaded trucks will travel west on Highway 58 from Stagecoach Road to Highway 101 north, to State Route 46 (Highway 46) east in Paso Robles, to State Route 41 (Highway 41) north at the James Dean Memorial Junction, to Waste Management in Kettleman City near the intersection of Highway 41 and U.S. Interstate 5 in King County.

Backfilling

The excavations are proposed to be backfilled using a combination of cement slurry, clean fill, segregated clean overburden and seedbank materials.

Backfilling outside of the pipeline easement will consist of a combination of clean fill, clean overburden, and re-spreading of the seedbank stockpile to finished grade. Clean overburden that has been inspected for sensitive cultural artifacts will be used to backfill 4 – 5 feet below top of grade. Clean fill will then be applied over the clean overburden to 6-inches below top of grade. Seedbank material will be used to backfill the top 6-inches to finished grade. Finished grade be will restore the original topography to the greatest extent possible.

Proposed Hauling Schedule

The implementation of the tasks discussed above are interdependent, the timing of which can be dependent on multiple factors. As such, the proposed trucking and hauling schedule is subject to change based on equipment availability, weather conditions, personnel shifting, etc. In order to accommodate the dynamic nature of the project and provide a hauling schedule for the required environmental impact analysis, three off-site trucking timeframes have been considered (Scenarios A, B and C) and have been adopted as part of the proposed project.

These three scenarios were evaluated in the air quality analysis and traffic assessment prepared for this project to ensure that air quality and traffic impacts remain below established thresholds to ensure that any of the potential hauling scenarios could be used in as individual schedules or in combination as needed during project implementation. The proposed scenarios are discussed below.

Scenario A. It is anticipated that off-site hauling will be completed during daytime non-peak hours only as shown below. Under Scenario A, it is estimated that 35 – 37 trucks will depart the Project Area Monday through Thursday and 15 – 18 on Friday with an average of 8 trucks per hour.

Dates	Days	Period	Time
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
	Friday	Daytime	9:00 AM to 12:00 PM

Scenario B. If off-site trucking delays are encountered either due to truck availability or reallocation of personnel or equipment from loading trucks to other project activities, off-site trucking will continue into the evening non-peak hours as shown below. Under this scenario, the estimated number of trucks departing the Project Area will remain unchanged at 35 – 37 Monday through Thursday and 15 – 18 trucks on Friday. However, by increasing the duration of daily trucking by adding the evening shift, the average trucks per hour is reduced to 4 - 5 trucks. It should be noted, that in order to maintain compliance with air quality standards the number of trucks per day cannot be increased. Additionally, evening off-site trucking is limited to one hour past sunset at which time all trucking activities are required to cease.

Dates	Days	Period	Time
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
		Evening	6:00 PM to 1 hour after sunset
	Friday	Daytime	9:00 AM to 12:00 PM

Scenario C. If long term trucking delays are encountered either due to truck availability, weather conditions, or reallocation of personnel or equipment from loading trucks to other more critical project activities, it is probable that off-site trucking will cease or be reduced during the 2021 project period and would not be completed prior to the onset of the rainy season. Impacted soils that are not trucked off-site prior to the rainy season will be stockpiled and secured during the rainy months and trucking will resume in the early part of 2022.

Dates	Days	Period	Time
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
		Evening	6:00 PM to 1 hour after sunset
	Friday	Daytime	9:00 AM to 12:00 PM
March to May 2022[1]	Monday to Thursday	Daytime	9:00 AM to 3:00 PM
	Friday	Daytime	9:00 AM to 12:00 PM

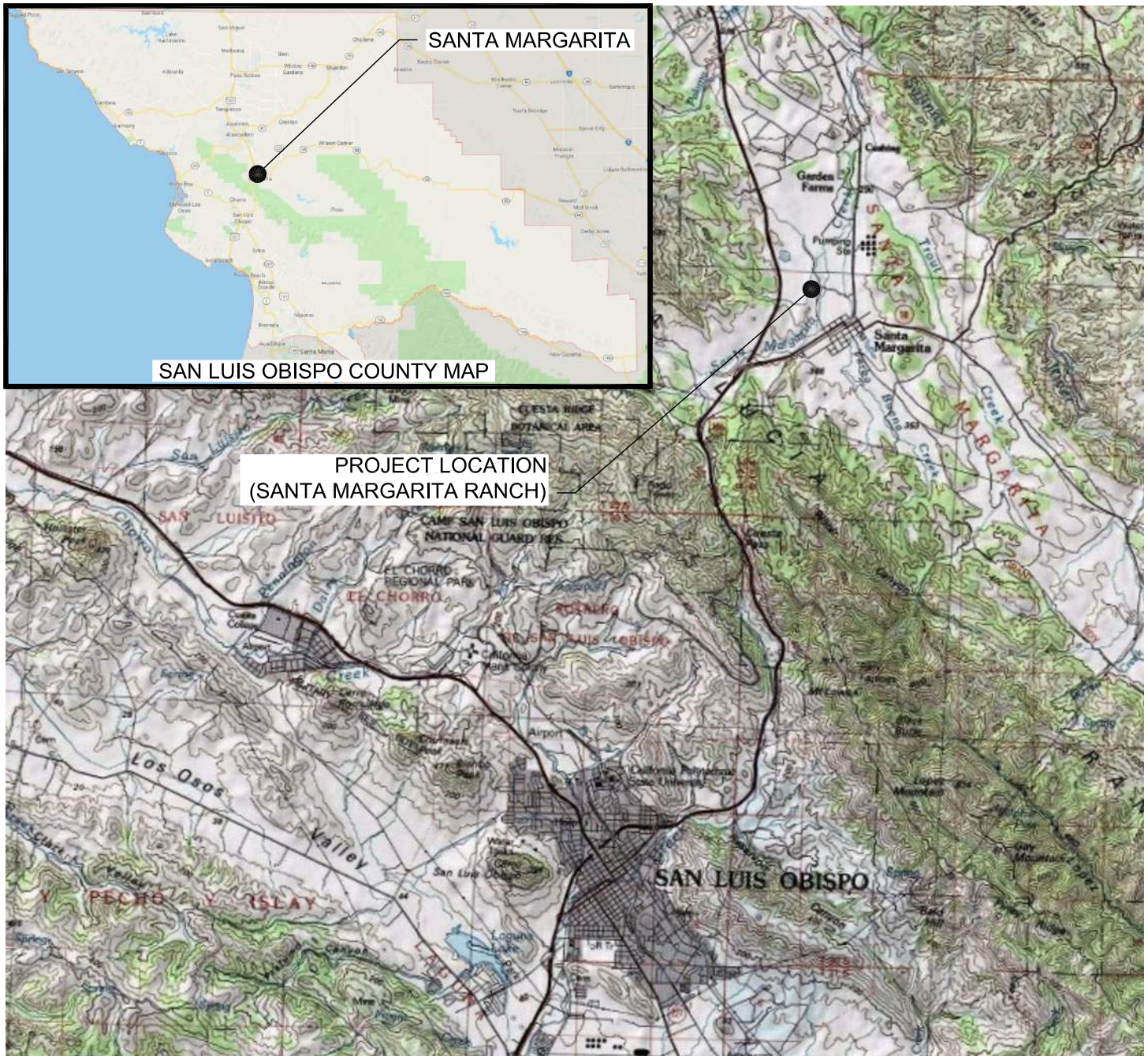
[1] The off-site trucking that would resume in 2022 is estimated to occur between March and May. However, weather permitting, it is possible that off-site trucking begins earlier in the year.

Site Demobilization and Restoration

In undeveloped locations, backfilled areas will be graded to match the surrounding grade and lightly scarified. Salvaged seedbank material will be redistributed over the top 6-inches to the extent possible. An appropriate seed mixture and soil amendments, if needed, will be applied to promote revegetation of the disturbed areas and appropriate erosion controls will be installed.

In developed areas, ground surface will be graded to match the surrounding material (i.e., asphalt, road base etc.). Pre-existing roads, narrow-gauge rail, fences or other improvements removed during Remediation Project activities will be replaced in-kind. Removed vegetation will be restored/replaced in accordance with a restoration plan. All construction equipment and temporary facilities will be removed from the work areas upon completion of Remediation Project activities.

Last saved by: CONNELLYJ1(2020-03-17) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\CEQA\60592267-SMME CEQA-FIG01-PROJ LOC MAP.DWG
ANSI A 8.5" x 11"



Source: USA Topo Maps ©2013, National Geographic Society, Contour Interval = 10'

N

0 10,000' 20,000'

1" = 10,000'

Santa Margarita
Remediation Project
Phillips 66 - 76 Broadway - Sacramento, CA 95818
Project No.: 60592267 Date: April 2020

PROJECT LOCATION MAP

AECOM

Figure: 1

Last saved by: CONNELLYJ1(2020-04-03) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\CEQA\60592267-SMME CEQA-FIG02-SITE PLAN.DWG

ANSI B 11" x 17"

LEGEND

- PROPERTY LINE
- PHILLIPS 66 PIPELINES (3)
- LIMITS OF PROJECT WORK AREA
- EXISTING RANCH ACCESS ROAD

NOTES

1. WETLANDS AND OAK TREES WITHIN 10 FEET OF THE RANCH ACCESS ROADS TO BE USED BY THE PROJECT SHALL BE PROTECTED WITH ORANGE CONSTRUCTION FENCING OR OTHER BARRIER (TYPICAL SHOWN ON FIGURE, TO BE FIELD DETERMINED). OAK TREES WITHIN WORK AREAS ENCLOSED BY ERTEC FENCING SHALL BE PROTECTED WITH ORANGE CONSTRUCTION FENCING AT THE DRIPLINE.
2. RESERVOIRS PROJECT CONSTRUCTED BY LAND OWNER UNDER SEPARATE PERMIT (PMTG2016-00320) AND FOR SEPARATE PURPOSE WITH INDEPENDENT UTILITY.
3. SPAN BRIDGE PROJECT CONSTRUCTED BY LAND OWNER UNDER SEPARATE PERMIT (PERMIT #PMTG2019-00057) AND FOR SEPARATE PURPOSE WITH INDEPENDENT UTILITY.
4. THE AERIAL PHOTOS IN THESE DRAWINGS ARE PLACED FOR DIAGRAMMATIC PURPOSES ONLY AND ARE NOT INTENDED OR INFERRED TO AS BEING AN ACTUAL REPRESENTATION OF THE TRUE POSITIONS OF THE FEATURES THAT ARE SHOWN HEREIN. ANY DESIGN OR REFERENCE TO THE FEATURES AS SHOWN ON THESE DRAWINGS MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION OR DESIGN.

Santa Margarita
Remediation Project
Phillips 66 - 76 Broadway - Sacramento, CA 95818
Project No.: 60592267 Date: April 2020

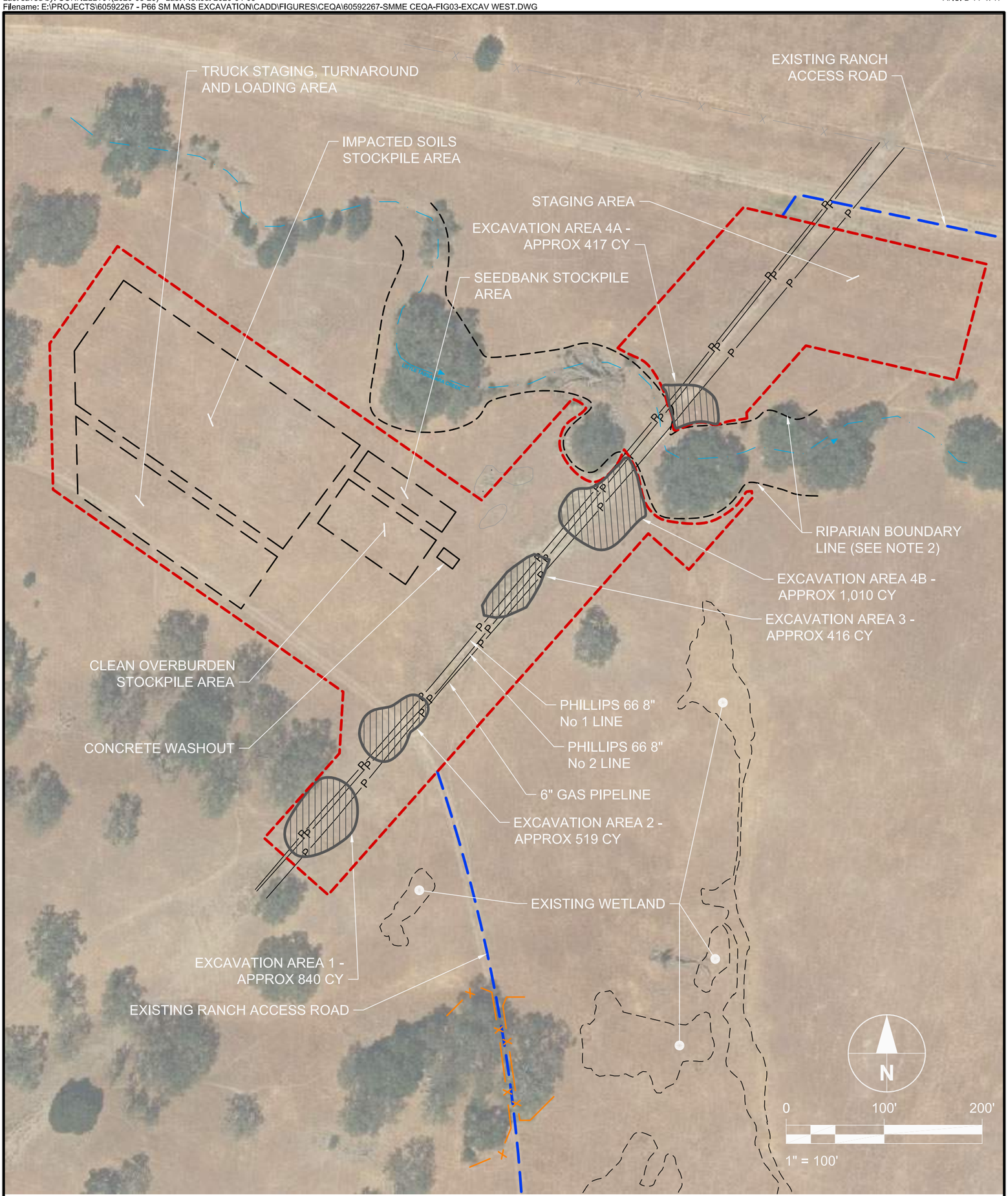
OVERALL SITE PLAN

AECOM

Figure: 2

Last saved by: CONNELLYJ1(2020-03-26) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\CEQA\60592267-SMME CEQA-FIG03-EXCAV WEST.DWG

ANSI B 11" x 17"



LEGEND

- LIMITS OF PROJECT WORK AREA (ENCLOSED WITH ERTEC WILDLIFE EXCLUSION FENCING)
- LIMITS OF SOIL REMEDIATION AREA
- CONSTRUCTION SAFETY FENCING (VEGETATION BARRIER)
- EXISTING RANCH ACCESS ROAD
- RIVER/STREAM
- PIPELINE

NOTES

1. TOTAL VOLUME IS EXCAVATION VOLUME PLUS 2.5%.
2. ERTEC WILDLIFE EXCLUSION FENCE WILL HAVE A 5-FOOT OFFSET FROM TOP OF BANK/RIPARIAN BOUNDARY LINE.
3. THE AERIAL PHOTOS IN THESE DRAWINGS ARE PLACED FOR DIAGRAMMATIC PURPOSES ONLY AND ARE NOT INTENDED OR INFERRED TO AS BEING AN ACTUAL REPRESENTATION OF THE TRUE POSITIONS OF THE FEATURES THAT ARE SHOWN HEREIN. ANY DESIGN OR REFERENCE TO THE FEATURES AS SHOWN ON THESE DRAWINGS MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION OR DESIGN.

Santa Margarita
Remediation Project
Phillips 66 - 76 Broadway - Sacramento, CA 95818
Project No.: 60592267 Date: April 2020

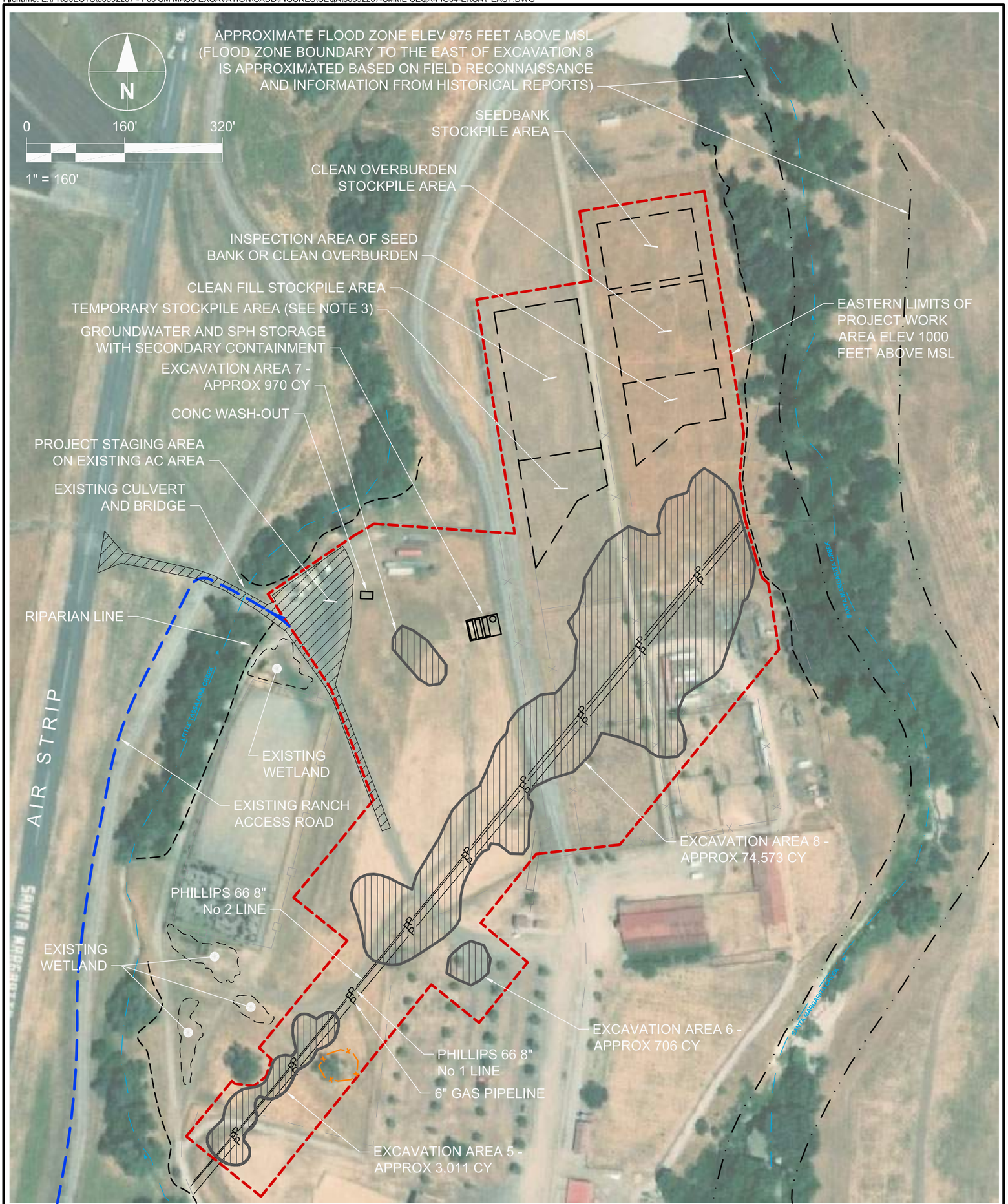
CONCEPTUAL REMEDIAL EXCAVATIONS
WESTERN EXCAVATION AREA

AECOM

Figure: 3

Last saved by: CONNELLYJ1(2020-04-06) Last Plotted: 2020-04-06
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\CEQA\60592267-SMME CEQA-FIG04-EXCAV EAST.DWG

ANSI B 11" x 17"



LEGEND

- LIMITS OF PROJECT WORK AREA (ENCLOSED WITH ERTEC WILDLIFE EXCLUSION FENCING)
- LIMITS OF SOIL REMEDIATION AREA
- CONSTRUCTION SAFETY FENCING (VEGETATION BARRIER)
- EXISTING RANCH ACCESS ROAD
- RIVER/STREAM
- PIPELINE

NOTES

1. TOTAL VOLUME IS EXCAVATION VOLUME PLUS 2.5%.
2. ERTEC WILDLIFE EXCLUSION FENCE WILL HAVE A 5-FOOT OFFSET FROM TOP OF BANK/RIPARIAN BOUNDARY LINE.
3. THE TEMPORARY STOCKPILE AREA WILL BE USED TO MANAGE SOILS (AS NEEDED) PRIOR TO TRANSFERRING TO RESPECTIVE STOCKPILES. ALL IMPACTED SOIL WILL BE STOCKPILED IN THE WESTERN REMEDIATION AREA AND TRANSFERRED ROUTINELY.
4. THE AERIAL PHOTOS IN THESE DRAWINGS ARE PLACED FOR DIAGRAMMATIC PURPOSES ONLY AND ARE NOT INTENDED OR INFERRED TO AS BEING AN ACTUAL REPRESENTATION OF THE TRUE POSITIONS OF THE FEATURES THAT ARE SHOWN HEREIN. ANY DESIGN OR REFERENCE TO THE FEATURES AS SHOWN ON THESE DRAWINGS MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION OR DESIGN.

Santa Margarita
Remediation Project
Phillips 66 - 76 Broadway - Sacramento, CA 95818
Project No.: 60592267 Date: April 2020

CONCEPTUAL REMEDIAL EXCAVATIONS
EASTERN EXCAVATION AREA

AECOM

Figure: 4

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PLANNING & BUILDING

NOP Exhibit C

Preliminary Initial Study – Environmental Checklist Summary

Phillips 66 Santa Margarita Remediation Project PMTG2019-00065/ED19-204

Preliminary Initial Study in Support of the Project Notice of Preparation (NOP)

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: The proposed project could have a "Potentially Significant Impact" for environmental factors checked below. The purpose of the following discussion is to provide a summary of the environmental impact issue areas that will be analyzed further in the proposed project Environmental Impact Report (EIR).

☐ Aesthetics	☒ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture & Forestry Resources	☒ Hazards & Hazardous Materials	☐ Recreation
☒ Air Quality	☒ Hydrology & Water Quality	☒ Transportation
☒ Biological Resources	☐ Land Use & Planning	☒ Tribal Cultural Resources
☒ Cultural Resources	☐ Mineral Resources	☐ Utilities & Service Systems
☐ Energy	☐ Noise	☐ Wildfire
☒ Geology & Soils	☐ Population & Housing	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation, the Environmental Coordinator finds that:

☐ The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Jeff Oliveira, Oliveira Environmental Consulting LLC		
Prepared by (Print)	Signature	Date
Steve McMasters, Principal Environmental Specialist		
Reviewed by (Print)	Signature	Date

Preliminary Initial Study – Environmental Checklist Summary

Project Environmental Analysis

The County's environmental review process incorporates all of the requirements for completing the Initial Study as required by the California Environmental Quality Act (CEQA) and the CEQA Guidelines. The Initial Study includes staff's on-site inspection of the project site and surroundings and a detailed review of the information in the file for the project. In addition, available background information is reviewed for each project. Relevant information regarding soil types and characteristics, geologic information, significant vegetation and/or wildlife resources, water availability, wastewater disposal services, existing land uses and surrounding land use categories and other information relevant to the environmental review process are summarized for each project. The County Planning Department uses the checklist to summarize the results of the research accomplished during the initial environmental review of the project.

Persons, agencies or organizations interested in obtaining more information regarding the environmental review process for a project should contact the County of San Luis Obispo Planning Department, 976 Osos Street, Rm. 200, San Luis Obispo, CA, 93408-2040 or call (805) 781-5600.

A. Project

DESCRIPTION: Request by Phillips 66 for a major grading permit (PMTG2019-00065) for the excavation of impacted soils at varying depths and widths within the two pipeline alignment areas on the subject parcel as detailed in the project Corrective Action Plan (CAP), including the backfilling of the excavations and restoration of the sites to current grade. Please refer to Exhibit A, Detailed Project Description for Environmental Analysis, of the Notice of Preparation (NOP) for a detailed discussion of the proposed project elements. The project will result in the disturbance of approximately 20-acres, including approximately 87,046-cubic yards of cut and 96,023-cubic-yards of fill material on the 899-acre parcel. The proposed project is located within the Agriculture land use category and is located at 9295 Yerba Buena Avenue in the community of Santa Margarita. The site is in the Salinas River Sub Area of the North County Planning Area.

ASSESSOR PARCEL NUMBER(S): 070-091-036

Latitude: 35 º 23 ' 39.4908 " N **Longitude:** 120 º 36 ' 58.2264 " W **SUPERVISORIAL DISTRICT #** 5

Other Public Agencies Whose Approval is Required

Permit Type/Action	Agency
Corrective Action Plan, SWPPP	Regional Water Quality Control Board
Encroachment Permit	CalTrans
Authority to Construct	Air Pollution Control District

B. Existing Setting

Plan Area: North County **Sub:** Salinas River **Comm:** Santa Margarita

Land Use Category: Agriculture

Combining Designation: Flood Hazard Historic

Parcel Size: 900 acres

Topography: Nearly level to gently sloping

Vegetation: Grasses Scattered Oaks Riparian

Existing Uses: Agricultural uses

Surrounding Land Use Categories and Uses:

North: Agriculture; ***East:*** Agriculture;

South: Agriculture; ***West:*** Agriculture;

C. Environmental Analysis

The Preliminary Initital Study Checklist provides introductory information about the potential environmental impacts of the proposed project that will be analyzed in the proposed Environmental Impact Report (EIR).

Preliminary Initial Study – Environmental Checklist Summary

I. AESTHETICS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:					
(a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
(b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
(c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
(d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Setting

CEQA establishes that it is the policy of the state to take all action necessary to provide people of the state "with… enjoyment of aesthetic, natural, scenic and historic environmental qualities" (Public Resources Code Section 21001(b)).

A scenic vista is generally defined as a high-quality view displaying good aesthetic and compositional values that can be seen from public viewpoints. A substantial adverse effect on a scenic vista would occur if the project would significantly degrade the scenic landscape as viewed from public roads or other public areas.

The County of San Luis Obispo Inland Land Use Ordinance (LUO) establishes regulations for exterior lighting (LUO 22.10.060), height limitations for each land use category (LUO 22.10.090), scenic highway corridor standards (LUO 22.10.095), and other visual resource protection policies.

In addition to policies set forth in the LUO, the County Conservation and Open Space Element (COSE) provides guidelines for the appropriate placement of development so that the natural landscape continues to be the dominant view in rural parts of the county and to ensure the visual character contributes to a robust sense of place in urban areas.

Discussion

Temporary construction activities associated with the proposed project could impact scenic resources and potentially introduce a source of temporary additional light and glare that could adversely affect the nearby areas. Although these issues will be discussed further in the proposed EIR, aesthetic impacts are not expected to be a significant issue area and will not be a focus of the EIR effort.

II. AGRICULTURE AND FORESTRY RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
	In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:			
(a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
(b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
(c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☒	☐
(d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
(e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

Setting

The County of San Luis Obispo supports a unique, diverse, and valuable agricultural industry that can be attributed to its Mediterranean climate, fertile soils, and sufficient water supply. In addition, the County functions as an important center for agricultural commerce, both locally and beyond.

The County of San Luis Obispo Agriculture Element includes policies, goals, objectives, and other requirements that apply to lands designated in the Agriculture land use category.

The Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agriculture or related open space use.

The Santa Margarita Ranch area has been historically utilized for grazing and crop production since the late 1700s. Crops such as wine grapes and olives were cultivated in the Ranch Headquarters area (north of the community of Santa Margarita) and herds of horses, cattle and sheep were grazed on the surrounding rangelands.

Discussion

The Santa Margarita Ranch is an existing agricultural operation and has the potential to contain prime or unique farmland. The temporary nature of the proposed remediation activities are not ultimately expected to result in permanent impacts. This will be discussed further in the proposed EIR.

III. AIR QUALITY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:					
(a)	Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
(b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☒	☐	☐	☐
(c)	Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
(d)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☒	☐	☐	☐

Setting

Air quality is defined by the concentration of pollutants in relation to their impact on human health. Concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and the atmosphere's ability to transport and dilute such emissions. Natural factors that

affect transport and dilution include terrain, wind, and sunlight. Therefore, ambient air quality conditions within the local air basin are influenced by natural factors such as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

The project site is part of the South Central Coast Air Basin, (SCCAB) which also includes Santa Barbara and Ventura Counties. Air quality within the SCCAB is regulated by several jurisdictions including the U.S. Environmental Protection Agency (EPA), California Air Resources Board (ARB), and the San Luis Obispo County Air Pollution Control District (SLOAPCD).

The APCD has established thresholds for both short-term construction emissions and long-term operational emissions. Use of heavy equipment and earth moving operations during project construction can generate fugitive dust and engine combustion emissions that may have substantial temporary impacts on local air quality and climate change. SLOAPCD has established thresholds of significance for each of these contaminants.

Discussion

The proposed project activities have the potential to result in an increase in vehicular traffic, which would result in the marginal degradation of the air quality of the air basin. Project implementation may also increase air pollution due to construction activities and energy generation for equipment used. Modeling has been conducted to estimate increases in criteria air pollutants and precursors (e.g., respirable particulate matter [PM_{10}], fine particulate matter [$PM_{2.5}$], reactive organic gases [ROG], and oxides of nitrogen [NO_X]) as a result of the proposed project activities. The modeling and study methodology has been reviewed by the APCD. It is anticipated that air quality impacts have the potential to be an area of focus in the proposed EIR. These issues will be analyzed further in the EIR.

IV. BIOLOGICAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
(b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☒	☐	☐	☐

Preliminary Initial Study – Environmental Checklist Summary

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☒	☐	☐	☐
(d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☒	☐	☐	☐
(e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
(f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☒	☐	☐	☐

Setting

As discussed in the biological resource assessment prepared by Monk & Associates, Inc. and revised based on the County's review (March, 2020), the Western Remediation Area is an approximately 750-foot segment of the pipeline alignment located on undeveloped pastureland in the southwestern portion of the property. This remediation area is located approximately 500 feet east of Highway 101 and approximately 2,800 feet northwest of Highway 58. The width of the excavation area, including excavation areas and staging varies from approximately 250 feet at the eastern end to 600 feet in the middle section. Little Tassajara Creek, an intermittent tributary to Santa Margarita Creek flows in an east-west direction through the Western Remediation Area and will be avoided by the proposed project activities. The disturbance area for work activities in the Western Remediation Area is approximately 5.5 acres, including excavation footprints, stockpiling and staging.

The Eastern Remediation Area is an approximately 1,400-foot segment of the pipeline alignment located in the central portion of the Santa Margarita Ranch. The eastern end of the segment is located near the top of the western bank of Santa Margarita Creek. Excavation activity will not impact this creek or its associated riparian vegetation. The width of the excavation area varies from approximately 800 feet at the eastern end to 650 feet in the middle section. The disturbance footprint for work activities in the Eastern Remediation Area is approximately 14.5 acres, including excavation footprints, stockpiling and staging areas.

Biological resources within the project site include common plant and animal species, and special-status plants and animals as designated by the US Fish and Wildlife Service, California Department of Fish and Wildlife, National Marine Fisheries Service, and other resource organizations including the California Native Plant Society. Biological resources also include waters of the United States and State, as regulated by the Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife.

The County of San Luis Obispo includes policies for addressing biological impacts under the Sensitive Resource Area Designations identified in the General Plan. This includes policies under the Oak Woodland Ordinance and policies identified in the comprehensive General Plan Conservation and Open Space Element.

These resources are also regulated through the Federal and State Endangered Species Acts, Migratory Bird Treaty Act and the Clean Water Act.

Discussion

Implementation of the proposed remediation project has the potential to affect potentially sensitive species, their habitats, and wildlife corridors. In addition, there is the potential for project activities to result in losses to special status native vegetation and locally designated natural communities. The on-site biological resources assessment and study methodology have been reviewed by the County and submitted to CDFW and USFWS for review. Issues related to the effects of project implementation on these biological resources are expected to be a focus of the proposed impact analysis and will be analyzed further in the proposed EIR.

V. CULTURAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☒	☐	☐	☐
(b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☒	☐	☐	☐
(c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	☒	☐	☐	☐

Setting

San Luis Obispo County possesses a rich and diverse cultural heritage and therefore has a wealth of historic and prehistoric resources, including sites and buildings associated with Native American inhabitation, Spanish missionaries, and immigrant settlers.

In order to assess the cultural resource landscape of the project site, Applied EarthWorks, Inc. (Æ) completed several cultural resource studies in coordination with the County in support of the proposed Project (Applied EarthWorks 2019a and 2019b).

The Phase 1 cultural resource study (Applied EarthWorks 2019a) included background research, review of previous investigations, record search, surface survey, and outreach to local Native American representatives.

Background research identified eight archaeological resources within 0.25 mile of the remediation areas and the Eastern Remediation area is within the historic SMR Headquarters, which contains several historic-period structures.

Along with the historic features present within the SMR Headquarters area, two archaeological sites are within or near the footprint of the Eastern Remediation area. The Phase 1 survey work resulted in confirmation of the location of the known archaeological sites, including the expansion of the boundary of one site.

The Phase 2 study included subsurface archaeological testing to assess the vertical and horizontal extent of cultural deposits within Project disturbance areas. As part of the on-going testing activity, the project archaeology team is conducting archaeological investigations to locate and recover important data, cultural features and human remains prior to the start of construction. Results from the cultural resources studies will be summarized in the proposed EIR.

This testing effort resulted in documentation of the archaeological deposit within a portion of the Eastern Remediation area; and confirmed that no cultural resources are present within the Western Remediation area.

The data gathered during the testing effort was used to develop an Archaeological Work Plan to guide additional excavations employing a combination of methods to address depth and subsurface integrity of midden deposits, recover data from intact features, and use controlled backhoe excavations to identify and record intact features. This effort is ongoing and once fieldwork is complete all cultural materials will be sorted, analyzed and documented in a final report to be submitted to the County for approval.

Tribal Coordination and AB52

Under the requirements of AB52, Native American outreach has been an ongoing process throughout the life of the project. The applicant team, in coordination with the County, contacted the Native American Heritage Commission and local Native American groups including the Northern Chumash Tribal Council, the San Luis Obispo County Chumash Council, the Salinan Tribe of Monterey and San Luis Obispo Counties, and the yak tityu tityu yak tiłhini Northern Chumash Tribe, and the Xolon Salinan Tribe; groups known to have knowledge of or ties to the project area.

The main concerns expressed by the various tribes included proper handling of any human remains recovered, finding a suitable location for reburial on the property, proper curation of all cultural materials and artifacts, and the need for ongoing involvement of the various Native American groups throughout the life of the Project. Tribal monitors have been and will continue to be on site during all archaeological excavations and during all ground-disturbing activities.

During recent archaeological fieldwork, fragmented human remains and evidence of multiple human burials have been found throughout portions of the eastern remediation area. Once human remains were identified and confirmed, per California Health and Safety Code 7050.5 and San Luis Obispo County Land Use Ordinance Section 23.05.140(b), the project team notified the San Luis Obispo County Coroner

immediately to report the discovery. At the request of the coroner, Æ notified the Native American Heritage Commission (NAHC) who then assigned two Most Likely Descendants (MLD). In coordination with the County, the project team worked with the MLDs and the landowner to store the remains in an appropriate manner and work towards identification of a suitable location for future reburial.

Discussion

Implementation of the proposed remediation project has the potential to significantly impact known archaeological resources and could result in impacts to unknown resources upon project implementation. The project team, in coordination with the County, have conducted extensive background research, surface investigations, subsurface archaeological testing and data recovery. This includes an extensive outreach and monitoring program in partnership with Native American tribal representatives.

Because the project site includes a significant cultural resource and based on the identified impacts to archaeological and tribal resources, the proposed remediation project has the potential to result in significant unavoidable impacts. As such, the analysis of cultural resource impacts is anticipated to be the primary effort under the proposed EIR, which will include a detailed summary of the archaeological investigations and testing prepared to-date, a summary of Native American tribal coordination under AB52, an assessment of impacts to known and as-yet undiscovered archaeological resources and mitigation measures to reduce impacts to the greatest extent feasible.

VI. ENERGY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
(b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Setting

The proposed remediation project entails short-term construction activities related to soil remediation near the rural community of Santa Margarita and associated hauling of material to and from the work site. The project does not include any development and does not include an operational phase that would have the potential to consume energy resources in the long run.

Standard diesel-fueled construction equipment is proposed for use. In accordance with applicable air quality regulations, the construction equipment will be equipped with fuel-efficient engines and properly maintained. At the completion of remediation, energy consumption will be limited to occasional vehicle trips and equipment used for site restoration.

Discussion

Energy impacts are not expected, however, the proposed EIR will include assessment discussion of energy impacts.

VII. GEOLOGY AND SOILS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☒	☐	☐	☐
	(ii) Strong seismic ground shaking?	☒	☐	☐	☐
	(iii) Seismic-related ground failure, including liquefaction?	☒	☐	☐	☐
	(iv) Landslides?	☒	☐	☐	☐
(b)	Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐
(c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☒	☐	☐	☐
(d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☒	☐	☐	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☒	☐	☐	☐
(f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐

Setting

The project site is located in the southern portion of the Coast Ranges geomorphic province of California. The Coast Ranges are characterized by northwest-southeast trending mountain ranges and intervening valleys which are generally bounded by faults. The site is between the Rinconada fault zone to the east and the Nacimiento fault zone to the west. The Santa Margarita Valley is bounded by the granitic La Panza Range to the northeast and the Santa Lucia Range of coastal mountains to the southwest. In addition to being stratigraphically complex, the rock formations present in the Santa Margarita area have been extensively faulted and folded as a result of two or more periods of major deformation.

Several geologic units are exposed or present at shallow depth beneath the pipeline alignment crossing the site. These geologic units, from youngest to oldest, include recent alluvium, older alluvium, Santa Margarita formation, Atascadero formation, and the Franciscan formation assemblage.

Several fault zones are located in the vicinity of the Remediation Project Area, including the Nacimiento Fault Zone and the Rinconada Fault Zone. The Rinconada Fault is zoned as potentially active under the California Alquist-Priolo Earthquake Fault Zoning Act (California Department of Conservation 2019).

However, it is important to note that no permanent structures will be constructed as a result of the proposed short-term (temporary) remediation Project.

In addition, the published record identifies numerous invertebrate fossil localities in the Santa Margarita region, especially in marine rocks. These fossils are usually well preserved in the rock, and are commonplace throughout the area, although some sites are more productive than others. Invertebrate fossils generally are regarded as less significant than other types of paleontological remains. Elevated areas within the Santa Margarita Valley have extensive exposures of the Late Cretaceous Atascadero and Late Miocene Santa Margarita and Monterey formations.

Impacts related to geologic resources are regulated locally and at the State level. This includes requirements stipulated in the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) and the County General Plan, which includes consistency with the County Safety and Conservation and Open Space Elements as well as the County's Land Use Ordinance.

Discussion

There are several faults within the vicinity of the project site as introduced above. Other geologic hazards in the project area include liquefaction, slope stability (landslides primarily) and alluvial soils. The EIR will

include a discussion of potential seismic and landslide hazards, as well as expansive soil related hazards. The project area is not located in an area that would be subject to hazards associated with tsunami, seiche, or mudflow. It should be noted that the County of San Luis Obispo recognizes these geologic influences in the application of the Uniform Building Code to all new development. Although the project has the potential for significant but mitigable geologic impact and these issues will be analyzed in the proposed EIR, it is not expected to be a focus of the analysis.

VIII. GREENHOUSE GAS EMISSIONS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
(b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Setting

Greenhouse gases (GHG) are any gases that absorb infrared radiation in the atmosphere, and are different from the criteria pollutants discussed in Section III, Air Quality, above. The primary GHGs that are emitted into the atmosphere as a result of human activities are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases. These are most commonly emitted through the burning of fossil fuels (oil, natural gas, and coal), agricultural practices, decay of organic waste in landfills, and a variety of other chemical reactions and industrial processes (e.g., the manufacturing of cement).

In March 2012, the SLOAPCD approved thresholds for Greenhouse Gas (GHG) emission impacts, and these thresholds have been incorporated into the CEQA Air Quality Handbook. The Bright-Line Threshold of 1,150 Metric Tons CO_2/year (MT CO_2e/yr) is the most applicable GHG threshold for most projects. Table 1-1 in the APCD CEQA Air Quality Handbook provides a list of general land uses and the estimated sizes or capacity of those uses expected to exceed the GHG Bight Line Threshold of 1,150 Metric Tons of carbon dioxide per year (MT CO_2/yr).

In October 2008, the California Air Resources Board (ARB) published its *Climate Change Proposed Scoping Plan*, which is the State's plan to achieve GHG reductions in California required by Assembly Bill (AB) 32. This initial Scoping Plan contained the main strategies to be implemented in order to achieve the target emission levels identified in AB 32.

The County Energy Wise Plan (EWP; 2011) identifies ways in which the community and County government can reduce greenhouse gas emissions from their various sources. In 2016 the County published the EnergyWise Plan 2016 Update, which describes the progress made toward implementing measures in the 2011 EWP, overall trends in energy use and emissions since the baseline year of the inventory (2006), and

the addition of implementation measures intended to provide a greater understanding of the County's emissions status.

Discussion

Heavy-duty off-road equipment, materials transport, and worker commutes during the proposed remediation project construction period would result in exhaust-related GHG emissions. Construction-related GHG emissions were estimated by the applicant team, in coordination with the APCD, using the methodology discussed above under Section III, Air Quality. Construction of the Remediation Project is anticipated to occur over approximately 6 months with an anticipated start date of April 2021. The proposed project is limited to temporary construction and hauling activities and no operational phase or development is proposed. Although this issue area is not anticipated to be a focus of the EIR analysis, GHG impacts and project consistency with GHG policies and requirements will be analyzed as part of the proposed EIR.

IX. HAZARDS AND HAZARDOUS MATERIALS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐	☐	☐
(b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐
(c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☒	☐	☐	☐
(d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☒	☐	☐	☐

Preliminary Initial Study – Environmental Checklist Summary

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☒	☐	☐	☐
(f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☒	☐	☐	☐
(g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☒	☐	☐	☐

Setting

The proposed project will take place entirely within the Santa Margarita Ranch property. The purpose of the proposed remediation project is to remove hydrocarbon impacted soil from a previous release within and adjacent to the pipeline easement. The western excavation area is undeveloped open space with active grazing. A private airstrip is located to the north of the work site. The eastern excavation area is located primarily within a fenced corral and adjacent to other agricultural structures related to the Santa Margarita Ranch operations. Existing pipelines are located within an established easement alignment where project excavation is proposed to take place. Excavations outside of the established easement will be conducted under an established access agreement with the landowner.

There are no GeoTracker sites or Cortese listings located on-site, outside of the regulatory actions reported on the GeoTracker database associated with the proposed remediation project. As presented in the CAP submitted to the Central Coast RWQCB, the remediation action objective for excavations is to implement the following measures:

- Removing impacted soil exceeding the established cleanup goals identified below to a maximum depth of 10 feet below ground surface (bgs) at Sites 2/4B and up to 15 or 20 feet bgs or encountered bedrock at Sites 9/11, respectively, subject to any limitations imposed in the Remediation project entitlements or permits;
- Recovering measurable SPH on groundwater within open excavations to the extent practicable and within a designated timeframe prior to backfilling;
- Restoring the disturbed areas and removed surface structures/improvements to pre-existing conditions to the extent practicable, promoting revegetation and drainage of storm water, and minimizing erosion;

- Completing all site restoration activities without health and safety incidents including property damage and personal injury; and
- Preparing a soil and groundwater management plan (SGMP) to address affected soil remaining in place onsite post-remediation.

Discussion

It is important to note that the proposed project is limited to the remediation of a known hazardous materials release related to hydrocarbon contamination that has resulted from leakage in the existing subsurface pipelines. Although not expected to be a focus of the proposed EIR, impacts related to destabilization of the existing pipelines within the excavation footprints, as well as general fire hazards, will be addressed in the EIR.

X. HYDROLOGY AND WATER QUALITY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☒	☐	☐	☐
(b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☒	☐	☐	☐
(c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	(i) Result in substantial erosion or siltation on- or off-site;	☒	☐	☐	☐
	(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☒	☐	☐	☐

Preliminary Initial Study – Environmental Checklist Summary

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(iii)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☒	☐	☐	☐
(iv)	Impede or redirect flood flows?	☒	☐	☐	☐
(d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☒	☐	☐	☐
(e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☒	☐	☐	☐

Setting

Existing Santa Margarita Ranch water uses are supplied entirely by groundwater. The northern portion of the pipeline alignment, outside of the proposed project area, is within a narrow alluvial basin that is a southern extension of the Atascadero Ground Water Basin. The southern portion of the pipeline alignment that crosses the Ranch is not within a recognized groundwater basin and is dominantly underlain by Atascadero formation sandstone at shallow depths which does not yield significant water supply.

The proposed remediation project and excavation operations will be short-term (six month construction period) and it is not anticipated that extensive groundwater will be encounter due to the shallow depth of the excavations (6 – 20 feet below ground surface) and the project will be implemented in the dry season when groundwater elevation are lower. If groundwater is encountered, construction measures are proposed to be implemented to minimize dewatering of groundwater including maintaining the open excavations sections small and backfilling in a timely manner to allow groundwater to accumulate.

If groundwater is encountered during excavation activities, the proposed project includes provisions to ensure that it will be collected and disposed offsite at an approved facility. Any surface stormwater runoff entering the project area will be tested and handled in accordance with criteria of the Central Coast Basin Plan (RWQCB) and the project specific Storm Water Pollution Prevention Plan (SWPPP).

If impacted soil cannot be hauled offsite during the dry season due to schedule constraints, the project includes a requirement that the impacted soil stockpile would remain at the project area during the rainy season and then hauled offsite after the rainy season. If impacted soils remain stockpiled during the rainy season, additional Best Management Practices (BMPs) will be employed to prevent impacted runoff from the stockpiles.

In addition to regulation under the approved CAP, groundwater impacts are regulated under the RWQCB which has established Total Maximum Daily Load (TMDL) thresholds for waterbodies within the County.

The regulatory environment also includes the RWQCB's Water Quality Control Plan for the Central Coast Basin (Basin Plan; 2017) which describes how the quality of surface water and groundwater in the Central Coast Region should be managed to provide the highest water quality reasonably possible.

In addition, the U.S. Army Corps of Engineers (USACE), through Section 404 of the CWA, regulates the discharge of dredged or fill material into waters of the U.S., including wetlands.

The County LUO dictates which projects are required to prepare a drainage plan, including any project that would, for example, change the runoff volume or velocity leaving any point of the site, result in an impervious surface of more than 20,000 square feet, or involve hillside development on slopes steeper than 10 percent.

Per the County's Stormwater Program, the Public Works Department is responsible for ensuring that new construction sites implement best management practices during construction, and that site plans incorporate appropriate post-construction stormwater runoff controls.

Discussion

Drainage issues, flooding and impacts related to the 100-year floodplain will be discussed in the proposed EIR. Surface waters and stormwater runoff may be significantly affected by construction associated with the project as well. These issues have the potential to require mitigation measures and will be analyzed in the EIR.

XI. LAND USE AND PLANNING

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Physically divide an established community?	☐	☐	☒	☐
(b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Setting

The proposed remediation project will take place entirely within the Santa Margarita Ranch property which is under the "Agricultural" land use designation and is within the North County Planning Area in accordance with the County General Plan and Land Use Ordinance. The western remediation area is undeveloped open space with active grazing. Excavation activities outside of the pipeline easement will be conducted under an access agreement with the landowner.

The County's LUO was established to guide and manage the future growth in the County in accordance with the General Plan, to regulate land use in a manner that will encourage and support orderly development and beneficial use of lands, to minimize adverse effects on the public resulting from inappropriate creation,

location, use or design of buildings or land uses, and to protect and enhance significant natural, historic, archeological, and scenic resources within the county.

The County Land Use Element (LUE) provides policies and standards for the management of growth and development in each unincorporated community and rural areas of the county and serves as a reference point and guide for future land use planning studies throughout the county.

The inland LUE also contains the area plans of each of the four inland planning areas: Carrizo, North County, San Luis Obispo, and South County. The area plans establish policies and programs for land use, circulation, public facilities, services, and resources that apply "areawide", in rural areas, and in unincorporated urban areas within each planning area.

Discussion

The proposed EIR will examine the project's consistency with regional plans, including those related to transportation, air quality, and the protection of natural resources. The proposed project would not conflict with any adopted habitat conservation plan. These issues are not expected to result in significant impacts, but will be examined further in the EIR.

XII. MINERAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
(b)	Result in the loss of availability of a locally- important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

Setting

The California Surface Mining and Reclamation Act of 1975 (SMARA) requires that the State Geologist classify land into mineral resource zones (MRZ) according to the known or inferred mineral potential of the land (Public Resources Code Sections 2710–2796).

The County LUO provides regulations for development in delineated Energy and Extractive Resource Areas (EX) and Extractive Resource Areas (EX1). The purpose of this combining designation is to protect significant resource extraction and energy production areas identified by the County LUE from encroachment by incompatible land uses that could hinder resource extraction or energy production operations, or land uses that would be adversely affected by extraction or energy production.

Discussion

The proposed project is limited to the excavation of hydrocarbon-impacted soil and replacement with clean soil within an established easement on the Santa Margarita Ranch. The project is considered to be temporary in nature and no physical development is proposed that would impact future mineral extraction. This impact is anticipated to be less than significant and will be included in the proposed EIR.

XIII. NOISE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:					
(a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
(b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
(c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Setting

The San Luis Obispo County Noise Element of the General Plan provides a policy framework for addressing potential noise impacts in the planning process. The purpose of the Noise Element is to minimize future noise conflicts. Major sources of noise in the County identified in the General Plan Noise Element include: roadways, airports, railroads, and stationary sources such as agricultural operations, construction, and commercial and industrial facilities (County of San Luis Obispo 1992). The existing sources of noise in the vicinity of the Santa Margarita Ranch include noise generated from vehicle traffic along area roadways, the operation of a private air strip on the property, the Union Pacific Railroad (UPRR), and adjacent agriculture and mining operations.

The property has no permanent population, the existing private air strip does not include any employees or sensitive receptors and project–related noise is not anticipated to be audible from offsite locations. Excavation work may occasionally overlap with events at Santa Margarita Ranch.

Discussion

The proposed project is temporary in nature and is limited to construction activity associated with the extraction of hydrocarbon impacted soils and backfilling. Short-term construction activities would be

limited in nature and duration per County LUO standards. No long-term operational noise or ground vibration would occur as a result of the project. Impacts related to noise generation are not expected to be significant but will be analyzed in the proposed EIR.

XIV. POPULATION AND HOUSING

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
(b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

Setting

The County of San Luis Obispo General Plan Housing Element recognizes the difficulty for residents to find suitable and affordable housing within San Luis Obispo County. The Housing Element includes an analysis of vacant and underutilized land located in urban areas that is suitable for residential development and considers zoning provisions and development standards to encourage development of these areas.

The County's Inclusionary Housing Ordinance requires the provision of new affordable housing in conjunction with both residential and nonresidential development and subdivisions.

The proposed project is limited to temporary construction activity associated with the remediation of hydrocarbon impacted soils on-site. The project does not include any physical development or potential to introduce populations to the area or displace existing housing.

Discussion

It is anticipated that the project would not result in significant impacts related to population and housing. This issue will be discussed in the EIR.

XV. PUBLIC SERVICES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	Fire protection?	☐	☐	☒	☐
	Police protection?	☐	☐	☒	☐
	Schools?	☐	☐	☒	☐
	Parks?	☐	☐	☒	☐
	Other public facilities?	☐	☐	☒	☐

Setting

Fire protection services in unincorporated San Luis Obispo County are provided by the California Department of Forestry and Fire Protection (CAL FIRE), which has been under contract with the County of San Luis Obispo to provide full-service fire protection since 1930.

Police protection and emergency services in the unincorporated portions of the county are provided by the San Luis Obispo County Sheriff's Office. The North Station in Templeton is the closest in proximity to the project site.

San Luis Obispo County has a total of 12 school districts that currently enroll approximately 34,000 students in over 75 schools.

Within the County's unincorporated areas, there are currently 23 parks, three golf courses, four trails/staging areas, and eight Special Areas that include natural areas, coastal access, and historic facilities currently operated and maintained by the County.

Public facilities fees, Quimby fees, and developer conditions are several ways the County currently funds public services. A public facility fee program (i.e., development impact fee program) has been adopted to address impacts related to public facilities (county) and schools (State Government Code 65995 et seq.).

Discussion

The proposed remediation project is limited to the grading and excavation discussed under the Project Description. No development is proposed with the potential to impact public services and impacts are anticipated to be less than significant. However, the project site is mapped as a high fire hazard area under the County Safety Element of the General Plan. These issues will be discussed in the proposed EIR.

XVI. RECREATION

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
(b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Setting

The County of San Luis Obispo Parks and Recreation Element (Recreation Element) establishes goals, policies, and implementation measures for the management, renovation, and expansion of existing, and the development of new, parks and recreation facilities in order to meet existing and projected needs and to assure an equitable distribution of parks throughout the county.

Public facilities fees, Quimby fees, and developer conditions are several ways the County currently funds public parks and recreational facilities. Public facility fees are collected upon construction of new residential units and currently provide funding for new community-serving recreation facilities.

Discussion

The proposed project is limited to the remediation/excavation activities discussed throughout this document and does not include any development. The County's Parks and Recreation Element does not identify any public trails, parks, or recreational facilities in the project vicinity. The Santa Margarita Ranch hosts a wide range of ongoing public and private events, such as weddings, fundraisers and festivals; however, no events will be scheduled to occur in the areas proposed for remediation until after all work is completed. This issue is not expected to result in significant impacts; however, this will be discussed in the proposed EIR.

XVII. TRANSPORTATION

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☒	☐	☐	☐
(b)	Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☒	☐	☐	☐
(c)	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
(d)	Result in inadequate emergency access?	☒	☐	☐	☐

Setting

With respect to local traffic regulation, the County Department of Public Works maintains updated traffic count data for all County-maintained roadways. In addition, Traffic Circulation Studies have been conducted within several community areas using traffic models to reasonably simulate current traffic flow patterns and forecast future travel demands and traffic flow patterns

In 2013, Senate Bill 743 was signed into law with the intent to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions". As a result, in December 2018, the California Natural Resources Agency certified and adopted updates to the State CEQA Guidelines that require analysis of vehicle miles traveled (VMT) which will take effect on July 1, 2020. Subsequently, the California Department of Transportation (CalTrans) has prepared a Draft Transportation Impacts Analysis for Projects on the State Highway System (3/1/20). This document is available at: https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743

The County's Framework for Planning (Inland), includes the Land Use and Circulation Elements of the County's General Plan. The Framework establishes goals and strategies to meet pedestrian circulation needs by providing usable and attractive sidewalks, pathways, and trails to establish maximum access and connectivity between land use designations.

Regional access to the project area is provided via Highway 101 and Highway 58. Local access is also provided by El Camino Real. At present, primary access to the Santa Margarita Ranch is via Highway 58 to Yerba Buena Avenue in the community of Santa Margarita. The Remediation Project access route will be via

Stagecoach Road (a private agricultural road on the Ranch) from Highway 58, minimizing traffic through the residential portion of the community.

With respect to traffic regulation at the State level, this access will require an Encroachment Permit to be issued by California Department of Transportation (Caltrans), District 5. Highway 58 is regularly used by commuting vehicles and recreation bicyclist. The segment of Highway 58 within the County of San Luis Obispo is under the jurisdictional control and review oversight of Caltrans, District 5 which maintains, and grants encroachment permits within the Highway 58 Right-of-Way.

Project construction workers would access the site for 10-hour shifts Monday through Thursday with a small crew (3 – 5 construction workers) on Fridays for half a day for off-site hauling activities. In addition to the Project workers, and truck hauling of impacted soil offsite, it is anticipated that there will be transport of project materials including cement slurry during the first four months of the project construction period during slot trenching excavation and backfilling. It is anticipated that off-site hauling of impacted soil will occur between June and October 2021.

As discussed under Section III, Air Quality, for planning and project implementation purposes, three distinct off-site trucking timeframes (Scenarios A - C) were included as part of the proposed project in order to address potential changes to the fleet composition due to unforeseen factors and to ensure that all potential scenarios are analyzed in the proposed EIR.

In order to assess traffic impacts, the project applicant team prepared a Traffic Assessment for the proposed project, in accordance with the latest state of the practice traffic analysis procedures for roadway segments, including impacts related to construction worker traffic and the three proposed hauling scenarios.

Discussion

The proposed remediation project and planned excavation activities would be short-term, minimizing the effect on long-term circulation/transportation goals, including the County's Framework for Planning/Inland - Circulation Chapter, and the "vehicle miles traveled" threshold of significance established by SB743, including the recently published CalTrans guidance for transportation impact analysis, as well as Section 15064.3 of the CEQA Guidelines. Traffic and circulation impacts have been modeled and discussed in coordination with CalTrans and the County Public Works Department. Impacts have the potential to be significant but mitigable and will be analyzed in the proposed EIR.

XVIII. TRIBAL CULTURAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
	(i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☒	☐	☐	☐
	(ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☒	☐	☐	☐

Setting

Approved in 2014, AB 52 added tribal cultural resources to the categories of resources that must be evaluated under CEQA. Tribal cultural resources are defined as either of the following:

1) Sites, features, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    a. Included or determined to be eligible for inclusion in the California Register of Historical Resources; or
    b. Included in a local register of historical resources as defined in subdivision (k) of California Public Resources Code Section 5020.1.

2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of California Public Resources Code Section 5024.1. In applying these criteria for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe.

Recognizing that tribes have expertise with regard to their tribal history and practices, AB 52 requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if they have requested notice of projects proposed within that area.

Discussion

As described above in Section V, Cultural Resources, Applied EarthWorks, Inc. (Æ) completed several cultural resource studies in support of the proposed Project. The Phase 1 cultural resource study (Applied EarthWorks, June 2019) included background research, review of previous investigations, record search, surface survey, and outreach to local Native American representatives. The Phase 2 study (Æ, September 2019) included archaeological testing to assess the vertical and horizontal extent of cultural deposits within Project areas. Currently, Æ is conducting archaeological investigations to locate and recover important data, cultural features and human remains prior to the start of construction.

In coordination with the County as part of the AB52 program, Native American outreach has been an ongoing process throughout the life of the project. As part of the cultural resource investigation, the County and applicant team contacted the Native American Heritage Commission and local Native American groups including the Northern Chumash Tribal Council, the San Luis Obispo County Chumash Council, the Salinan Tribe of Monterey and San Luis Obispo Counties, and the yak titᵛu titᵛu yak tiłhini Northern Chumash Tribe, and the Xolon Salinan Tribe; groups known to have knowledge of or ties to the project area. The dates, methods, and context of the various episodes of contact and formal meetings are detailed in the Phase 1 cultural resource study.

The main concerns expressed by the various tribes included proper handling of any human remains recovered, finding a suitable location for reburial on the property, proper curation of all cultural materials and artifacts, and the need for ongoing involvement of the various Native American groups throughout the life of the Project. Communication with local tribal representatives regarding the proposed project is an ongoing effort. Tribal monitors have been and will continue to be on-site during all archaeological excavations at CA-SLO-1430 and during all ground-disturbing activities.

Although Native American tribal outreach and coordination has been integrated into the project archaeological assessment process, consultation invitations in accordance with AB52 were sent out by the County to the appropriate tribal representatives provided by the Native American Heritage Commission on April 13, 2020.

The issues regarding tribal resources at the project site containing known sensitive resources have the potential to result in significant impacts and are expected to be part of the focus of the proposed EIR. Similarly, any requests for consultation and the results of consultation will be documented in the EIR as well.

XIX. UTILITIES AND SERVICE SYSTEMS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
(b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
(c)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
(d)	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
(e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Setting

The County Public Works Department provides water and wastewater services for specific County Service Areas (CSAs) that are managed through issuance of water/wastewater "will serve" letters. The Department of Public Works currently maintains a CSA for the community of Santa Margarita.

Per the County's Stormwater Program, the Public Works Department is responsible for ensuring that new construction sites implement best management practices during construction, and that site plans incorporate appropriate post-construction stormwater runoff controls. Construction sites that disturb 1.0 acre or more must obtain coverage under the SWRCB's Construction General Permit.

Pacific Gas & Electric Company (PG&E) is the primary electricity provider and both PG&E and Southern California Gas Company provide natural gas services for urban and rural communities within the County of

San Luis Obispo. There are three landfills in San Luis Obispo County: Cold Canyon Landfill, located near the City of San Luis Obispo, Chicago Grade Landfill, located near the community of Templeton, and Paso Robles Landfill, located east of the City of Paso Robles.

Discussion

As it relates to the proposed remediation project, there is no housing or permanent population existing or projected within the project area. As such, there is no additional demand for permanent public utilities or services.

The Santa Margarita Ranch is not currently served by wastewater infrastructure. Existing development on the Ranch property is served by individual on-site septic systems.

Existing Santa Margarita Ranch water uses are supplied entirely by groundwater. The northern portion of the pipeline easement is within a narrow alluvial basin that is a southern extension of the Paso Robles Ground Water Basin (California Department of Water Resources, 1980). The southern portion of the pipeline easement crossing the Ranch does not yield significant water supply.

Impacts related to utility services from the temporary project are not anticipated to be significant, however, this will be discussed in the proposed EIR.

XX. WILDFIRE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:					
(a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
(b)	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
(c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐

Preliminary Initial Study – Environmental Checklist Summary

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Setting

In central California, the fire season usually extends from roughly May through October, however, recent events indicate that wildfire behavior, frequency, and duration of the fire season are changing in California. Fire Hazard Severity Zones (FHSZ) are defined by the California Department of Forestry and Fire Protection (CalFire) based on the presence of fire-prone vegetation, climate, topography, assets at risk (e.g., high population centers), and a fire protection agency's ability to provide service to the area (CAL FIRE 2007).

The County Emergency Operations Plan (EOP) addresses several overall policy and coordination functions related to emergency management. The County of San Luis Obispo Safety Element establishes goals, policies, and programs to reduce the threat to life, structures, and the environment caused by fire.

The California Fire Code provides minimum standards for many aspects of fire prevention and suppression activities. These standards include provisions for emergency vehicle access, water supply, fire protection systems, and the use of fire-resistant building materials.

Discussion

According to the San Luis Obispo County Safety Element, the Santa Margarita Ranch property is in a zone of high to very high fire hazard. The majority of the property, including the project site, is located in a high fire hazard severity zone (SLO County Safety Element 1999). The topography of the Ranch varies, ranging from gently to moderately sloping areas to deeply incised drainage channels. The intermixing of native vegetation, steep slopes, and difficult access conditions have produced a Wildland Urban Interface (WUI) in the Santa Margarita area, resulting in an increased risk of wildfire-related hazards (SLO County Safety Element 1999).

The proposed project is limited to remediation and excavation activity. There are no existing structures, or population, within the project site that could be potentially impacted by a wildfire. This issue is not expected to result in significant impacts but will be discussed in the proposed EIR.

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

June 22, 2020

Cindy Chambers
County of San Luis Obispo Dept. of Planning & Building
976 Osos Street Room 300
San Luis Obispo, CA 93408

Re: 2020060361, Phillips 66 Santa Margarita Remediation Project PMTG2019-00065 Environmental Impact Report Notice of Preparation Project, San Luis Obispo County

Dear Ms. Chambers:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **A**

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.

b. The lead agency contact information.

c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).

d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.

b. Recommended mitigation measures.

c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

a. Type of environmental review necessary.

b. Significance of the tribal cultural resources.

c. Significance of the project's impacts on tribal cultural resources.

d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.

b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez
Cultural Resources Analyst

cc: State Clearinghouse

NOP Comment Responses

Native American Heritage Commission Comment Letter

Comment Number	Comment Issues	Responses
Comment A	Commenter recommends consultation with tribes that are affiliated with the project area in accordance with AB52. Remainder of letter provides an outline of Lead Agency requirements under AB52 and recommendations for mitigating impacts to tribal cultural resources.	Section 4.1, Cultural and Tribal Cultural Resources, provides a detailed discussion of the County's tribal consultation under AB52, including the applicant's tribal coordination efforts. Recommended mitigation measures have been incorporated into the EIR.

RE: [EXT]RE: Notice of Preparation of Environmental Impact Report: PMTG2019-00065

Fred Collins [redacted]

Tue 7/21/2020 1[illegible] AM

To: Cindy A. Chambers <cchambers@co.slo.ca.us>

I had it a 11, I will call now.

From: Cindy A. Chambers [mailto:cchambers@co.slo.ca.us]
Sent: Tuesday, July 21, 2020 11:28 AM
To: fcollins_ [redacted]
Subject: Re: [EXT]RE: Notice of Preparation of Environmental Impact Report: PMTG2019-00065

Fred,
I have no availability next week, as I am preparing to take time off and will be out of the office from Thursday July 30 through August 10.

If there is any way you can keep the 11:30 meeting time today, please do so. I will open the line now. The call-in number is provided below.

Subject: Phillips-66 Santa Margarita EIR - AB52 Consult with NCTC
When: Tuesday, July 21, 2020 11:30-12:00.
Where:

Revised Meeting time: Please set aside this time or iscussion of t e cultural resource aspect of the Soil Remediation Grading an EIR propose or MTG2019-00065
Room 300's extension/credentials:
1. Call 805-788-9200
2. Input the 4-digit Meeting Number [4020] followed by '#
3. Press '#' again to continue as a participant
4. Enter Attendee Access Code [124578] followed by '#'
5. If the call/meeting organizer has not yet joined, hold music will play.

Cindy Chambers
Planner III
(p) 805-781-5608
cchambers@co.slo.ca.us

COUNTY OF SAN LUIS OBISPO
PLANNING & BUILDING

www.slocounty.ca.gov
www.sloplanning.org
Like us on Facebook

Follow us on Twitter
Follow us on LinkedIn
Subscribe on YouTube

I am currently working remotely and the best way to reach me is by email. I am able to retrieve phone messages at (805) 781-5608; please note that when I return your call, it will be via a private line.

For updates on COVID-19 in SLO County: Visit ReadySLO.org or call the recorded Public Health Information Line at (805) 788-2903. A staffed phone assistance center at (805) 543-2444 is available seven (7) days a week from 8 a.m. to 5 p.m. for questions related to COVID-19.

From: Fred Collin[redacted]rg>
Sent: Tuesday, July 21, 2020 11:09 AM
To: Cindy A. Chambers <cchambers@co.slo.ca.us>
Subject: RE: [EXT]RE: Notice of Preparation of Environmental Impact Report: PMTG2019-00065

Hello Cindy,

Let's talk soon, was just on the conference number, no one was there, let me know next week's availabilities thank you.

Fred

From: Cindy A. Chambers [mailto:cchambers@co.slo.ca.us]
Sent: Wednesday, July 15, 2020 8:02 AM
To: fcollins[redacted]
Cc: Jeff Oliveira; Steve Mc Masters
Subject: Re: [EXT]RE: Notice of Preparation of Environmental Impact Report: PMTG2019-00065

Hi, Fred,

We can do that. What is your availability for this Friday, or for next week Monday or Tuesday?

Cindy Chambers
Planner III
(p) 805-781-5608
cchambers@co.slo.ca.us

COUNTY OF SAN LUIS OBISPO
PLANNING & BUILDING

www.slocounty.ca.gov
www.sloplanning.org
Like us on Facebook
Follow us on Twitter
Follow us on LinkedIn

Subscribe on YouTube

I am currently working remotely and the best way to reach me is by email. I am able to retrieve phone messages at (805) 781-5608; please note that when I return your call, it will be via a private line.

For updates on COVID-19 in SLO County: Visit ReadySLO.org or call the recorded Public Health Information Line at (805) 788-2903. A staffed phone assistance center at (805) 543-2444 is available seven (7) days a week from 8 a.m. to 5 p.m. for questions related to COVID-19.

From: Fred Collins <[redacted]>
Sent: Wednesday, July 15, 2020 6:08 AM
To: Cindy A. Chambers <cchambers@co.slo.ca.us>
Subject: [EXT]RE: Notice of Preparation of Environmental Impact Report: PMTG2019-00065

ATTENTION: This email originated from outside the County's network. Use caution when opening attachments or links.

Hello Cindy,

NCTC would like to talk with the County on this project, let's set up a conference.

Fred Collins
NCTC

From: Mail for PL_Referrals Group [mailto:plreferrals@co.slo.ca.us]
Sent: Thursday, June 18, 2020 12:36 PM
To: Cindy A. Chambers
Subject: Notice of Preparation of Environmental Impact Report: PMTG2019-00065

** For hyperlink or technical issues, or to update your agency/department's recipient and contact information, please contact Hilary Brown (hbrown@co.slo.ca.us or 805-788-2009)

TO:
Responsible Agencies, Trustee Agencies, and Interested Persons

FROM:
Cindy Chambers, Planner III
Department of Planning and Building
976 Osos St., Room 300
San Luis Obispo, CA 93408-2040
Email: cchambers@co.slo.ca.us

PROJECT TITLE:
Phillips 66 Santa Margarita Remediation Project Major Grading Permit PMTG2019-00065 (ED19-204)
(click here for full NOP and summary, titled "2020-06-11_Phillips 66_NOP+Attchmts.FIN.pdf")

PROJECT APPLICANT:
Rob Rossi (Property Owner); Olegario Acosta (AECOM, Consultant); Edward Ralston (Phillips 66 Company, Applicant)

RESPONSES DUE BY:
5:00 pm on Wednesday, July 22, 2020

PURPOSE OF NOTICE:
The County of San Luis Obispo will be the Lead Agency and will prepare an Environmental Impact Report (EIR)
for the above-referenced project. We need to know the views of your agency as to the scope and content of the
environmental information which is germane to your agency's statutory responsibilities in connection with the
proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit
or other approval for the project.

NOP Comment Responses

Northern Chumash Tribal Council Comment Letter

Comment Number	Comment Issues	Responses
No Comments.	Comment letter limited to email communication requesting a conference call. No project comments included.	Section 4.1, Cultural and Tribal Cultural Resources, provides a detailed discussion of the County's tribal consultation under AB52, including the applicant's tribal coordination efforts. All tribal representative comments and communications are listed and included.

Follow us on LinkedIn
Subscribe on YouTube

I am currently working remotely and the best way to reach me is by email. I am able to retrieve phone messages at (805) 781-5608; please note that when I return your call, it will be via a private line.

For updates on COVID-19 in SLO County: Visit ReadySLO.org or call the recorded Public Health Information Line at (805) 788-2903. A staffed phone assistance center at (805) 543-2444 is available seven (7) days a week from 8 a.m. to 5 p.m. for questions related to COVID-19.

From: Lorrie Laguna <[redacted]
Sent: Tuesday, July 7, 2020 2:43 PM
To: Cindy A. Chambers <cchambers@co.slo.ca.us>
Subject: Re: [EXT]Phillips 66 Santa Margarita Remediation PMTG2019-00065 (ED19-204)

Hi Cindy,

Thank You. Actually , I would think so? I believe that's where the process is righ now ?? If you think that would be best then maybe we can set up a time to talk and I will include Mona as well. She is MLD here at SMR. Thursday may be a good day for both Me and Mona?

Thoughts?
Many Thanks,
Lorie

B

From: Cindy A. Chambers <cchambers@co.slo.ca.us>
Sent: Tuesday, July 7, 2020 2:17 PM
To: Lorrie Laguna <[redacted]
Subject: Re: [EXT]Phillips 66 Santa Margarita Remediation PMTG2019-00065 (ED19-204)

Hi, Lorrrie,
I am working at home, and using my personal cellphone. If you want to call me, I am available at 805 423-2044 for the next hour or you can tell me when to call you.

Is this a discussion that we would want to include the County's consultant EIR preparer?

Cindy Chambers
Planner III
(p) 805-781-5608
cchambers@co.slo.ca.us

COUNTY OF SAN LUIS OBISPO
PLANNING & BUILDING

www.slocounty.ca.gov

www.sloplanning.org
Like us on Facebook
Follow us on Twitter
Follow us on LinkedIn
Subscribe on YouTube

I am currently working remotely and the best way to reach me is by email. I am able to retrieve phone messages at (805) 781-5608; please note that when I return your call, it will be via a private line.

For updates on COVID-19 in SLO County: Visit ReadySLO.org or call the recorded Public Health Information Line at (805) 788-2903. A staffed phone assistance center at (805) 543-2444 is available seven (7) days a week from 8 a.m. to 5 p.m. for questions related to COVID-19.

From: Lorrie Laguna <[redacted]
Sent: Tuesday, July 7, 2020 12:19 PM
To: Cindy A. Chambers <cchambers@co.slo.ca.us>
Subject: [EXT]Phillips 66 Santa Margarita Remediation PMTG2019-00065 (ED19-204)

ATTENTION: This email originated from outside the County's network. Use caution when opening attachments or links.

Good afternoo Cindy,

I had followe up on this AB52 with you an Schani and had a recent conversation with Schani regar ing this subject matter. Shani said, to reach out to you for discussion. Is there a time to chat about this project and the EIR ? We just comp eted a reburial here from this ast phase. We k ow that there will be more HR fou d in the excavation phase. This of a Great concern to us (Yak tityu tityu yak tilthini- Northern Chumash Tribe).

A

Respectfully,
Lorie Lathrop-Laguna YTT

NOP Comment Responses

YTT Northern Chumash Tribe Comment Letter

Comment Number	Comment Issues	Responses
Comment A	Comment limited to email communication requesting additional consultation regarding project and EIR and concerns regarding burials.	Section 4.1, Cultural and Tribal Cultural Resources, provides a detailed discussion of the County's tribal consultation under AB52, including the applicant's tribal coordination efforts. All tribal representative comments and communications are listed and included.
Comment B	Comment limited to coordination of conference call for additional tribal consultation.	Section 4.1, Cultural and Tribal Cultural Resources, provides a detailed discussion of the County's tribal consultation under AB52, including the applicant's tribal coordination efforts. All tribal representative comments and communications are listed and included.

NOP Comment Letter #4

[EXT]EIR PMTG2019-00065, Phillips 66 Santa Margarita Remediation Project Major Grading Permit.

info@salinantribe.com <info@salinantribe.com>

Sat 7/25/2020 12:21 PM

To: Cindy A. Chambers <cchambers@co.slo.ca.us>

Greetings Cindy, hope all is well with you. I can't remember if I already responded to this project but maybe not your department. I believe that we requested that all ground disturbing activities must be monitored by a cultural resource specialist from our tribe and requested AB 52 consultation. Can you please give us an update on the project.

A

Take Care,

Patti Dunton, Tribal Administrator

NOP Comment Responses

Salinan Tribe Comment Letter

Comment Number	Comment Issues	Responses
Comment A	Comment limited to email communication reiterating previous request for the monitoring of all ground disturbing activity in accordance with their request. Letter also includes a request for project update.	Section 4.1, Cultural and Tribal Cultural Resources, provides a detailed discussion of the County's tribal consultation under AB52, including the applicant's tribal coordination efforts. All tribal representative comments and communications are listed and included. Section 2.0, Project Description includes a detailed description of project activities.

State of California — Transportation Agency

Memorandum

Date: July 2, 2020

To: Templeton Area

From: **DEPARTMENT OF CALIFORNIA HIGHWAY PATROL**
Special Projects Section

File No.: 063.A10212.A14630.Nop.Doc

Subject: ENVIRONMENTAL DOCUMENT REVIEW AND RESPONSE
SCH# 2020060361

Special Projects Section (SPS) recently received the referenced "Notice of Preparation" environmental impact document from the State Clearinghouse (SCH).

Due to the project's geographical proximity to the Templeton Area, please use the attached checklist to assess its potential impact to local Area operations and public safety. If it is determined that departmental input is advisable, your written comments referencing the above SCH number must be sent to the lead agency and emailed to state.clearinghouse@opr.ca.gov. Your written comments must be received by the lead agency no later than **July 17, 2020**. For reference, additional information can be found in General Order 41.2, Environmental Impact Documents.

A

For project tracking purposes, SPS must be notified of Templeton Area's assessment of the project (including negative reports). Please e-mail a copy of Area's response to Associate Governmental Program Analyst Leah Mora at LeMora@chp.ca.gov. For questions or concerns, please contact Mrs. Mora at (916) 843-3370.

L. NARVAEZ, SSM III
Commander

Attachments: Checklist
Project File

cc: Coastal Division

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Phillips 66 Santa Margarita Remediation Project PMTG2019-00065 Environmental Impact Report Notice of Preparation

Lead Agency: County of San Luis Obispo Dept. of Planning & Building
Contact Person: Cindy Chambers - cchambers@co.slo.ca.us

Mailing Address: 976 Osos Street Room 300
Phone: (805) 781-5608

City: San Luis Obispo, CA
Zip: 93408
County: San Luis Obispo

Project Location: County: San Luis Obispo
City/Nearest Community: Santa Margarita

Cross Streets: Yerba Buena Ave, between US 101 and El Camino Real
Zip Code:

Longitude/Latitude (degrees, minutes and seconds): 35 ° 23 ′ 4908 ″ N / 120 ° 36 ′ 2264 ″ W Total Acres: 20 ACRES OF AN 899-ACRE LOT

Assessor's Parcel No.: 070-091-036
Section: Twp.: Range: Base:

Within 2 Miles: State Hwy #: US 101, SR 58
Waterways: Salinas River

Airports: Santa Margarita Ranch (private airstrip)
Railways: SPRR
Schools:

Document Type:

CEQA: ☒ NOP ☐ Draft EIR
☐ Early Cons ☐ Supplement/Subsequent EIR
☐ Neg Dec (Prior SCH No.)
☐ Mit Neg Dec Other:

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other:

Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☒ Other: Major Grading Permit

Development Type:

☐ Residential: Units Acres
☐ Office: Sq.ft. Acres Employees
☐ Commercial: Sq.ft. Acres Employees
☐ Industrial: Sq.ft. Acres Employees
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type MGD

☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type MW
☐ Waste Treatment: Type MGD
☒ Hazardous Waste: Type Hydrocarbon-contaminated soil removal
☒ Other: Major grading

Project Issues Discussed in Document:

☐ Aesthetic/Visual ☐ Fiscal ☐ Recreation/Parks ☒ Vegetation
☐ Agricultural Land ☒ Flood Plain/Flooding ☐ Schools/Universities ☒ Water Quality
☒ Air Quality ☐ Forest Land/Fire Hazard ☐ Septic Systems ☒ Water Supply/Groundwater
☒ Archeological/Historical ☐ Geologic/Seismic ☐ Sewer Capacity ☒ Wetland/Riparian
☒ Biological Resources ☐ Minerals ☒ Soil Erosion/Compaction/Grading ☐ Growth Inducement
☐ Coastal Zone ☐ Noise ☐ Solid Waste ☐ Land Use
☐ Drainage/Absorption ☐ Population/Housing Balance ☒ Toxic/Hazardous ☒ Cumulative Effects
☐ Economic/Jobs ☐ Public Services/Facilities ☒ Traffic/Circulation ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Agriculture

Project Description: *(please use a separate page if necessary)*

The County of San Luis Obispo as Lead Agency will prepare an Environmental Impact Report for a soil remediation grading project. The project is a request by Phillips 66 for a County Major Grading permit (PMTG2019-00065) for excavation of hydrocarbon-impacted soils at varying depths and widths within two affected areas along an existing oil pipeline alignment. The proposed work will be consistent with the project Corrective Action Plan (CAP), including backfilling the excavations and restoration of the site to current grade. The remediation project will result in the disturbance of approximately 20 acres, including approximately 87,046 cubic yards of cut and 96,023 cubic yards of fill material on the 899-acre parcel (APN 070-091-036). The project site is located at 9295 Yerba Buena Avenue, on a portion of the Santa Margarita Ranch located north of the community of Santa Margarita between US Highway 101 and El Camino Real. The proposed project is within the Agriculture land use category in the Salinas River Sub Area of the North County Planning Area.
The proposed project may result in potentially significant environmental impacts relating and not limited to Cultural and Tribal Resources. This issue, together with the analysis of other issue areas as mandated by the CEQA Guidelines (Appendix G) including Alternatives, Cumulative Effects, and Growth Inducement, will be addressed in the Environmental Impact Report to be prepared for the project. There are no Cortese listings or GeoTracker sites located on-site, outside of the regulatory actions reported on the GeoTracker database associated with the proposed remediation project. At this time there is no tentative hearing date for the project.
See Notice of Preparation and attachments for full description.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

x	Air Resources Board	x	Office of Historic Preservation
	Boating & Waterways, Department of		Office of Public School Construction
	California Emergency Management Agency		Parks & Recreation, Department of
	California Highway Patrol		Pesticide Regulation, Department of
x	Caltrans District # 5		Public Utilities Commission
	Caltrans Division of Aeronautics		Regional WQCB #
	Caltrans Planning		Resources Agency
	Central Valley Flood Protection Board		Resources Recycling and Recovery, Department of
	Coachella Valley Mtns. Conservancy		S.F. Bay Conservation & Development Comm.
	Coastal Commission		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
	Colorado River Board		San Joaquin River Conservancy
	Conservation, Department of		Santa Monica Mtns. Conservancy
	Corrections, Department of		State Lands Commission
	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of	x	SWRCB: Water Quality
	Energy Commission		SWRCB: Water Rights
x	Fish & Game Region #		Tahoe Regional Planning Agency
	Food & Agriculture, Department of		Toxic Substances Control, Department of
	Forestry and Fire Protection, Department of	x	Water Resources, Department of
	General Services, Department of		
x	Health Services, Department of		Other:
	Housing & Community Development		Other:
x	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date June 18, 2020 Ending Date July 22, 2020

Lead Agency (Complete if applicable):

Consulting Firm: Oliveira Environmental Consulting
Address: 3155 Rose Ave
City/State/Zip: San Luis Obispo, CA 93401
Contact: Jeff Oliveira, jeffo@olive-env.com
Phone: (805) 234-7393

Applicant: Olegario Acosta, AECOM: olegario.acosta@aecom.com
Address: 5001 E. Commercenter Dr. STE 100
City/State/Zip: Bakersfield, CA 93309
Phone: (661) 325-7253

Signature of Lead Agency Representative: Cynthia Chambers **Date:** June 18, 2020

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

NOP Comment Responses

California Highway Patrol Comment Letter

Comment Number	Comment Issues	Responses
Comment A	Comment includes communication from the Department of the CHP to the Templeton CHP station specifying that the local station should review the NOP and reply if needed. Letter requests that the Department of the CHP be copied on any comment letter coming from the local station.	No comments on the NOP received from the local (Templeton) CHP station.

DEPARTMENT OF TRANSPORTATION
CALTRANS DISTRICT 5
50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
PHONE (805) 549-3101
FAX (805) 549-3329
TTY 711
www.dot.ca.gov/dist05/

Making Conservation a California Way of Life.

July 22, 2020

SLO SR 58 PM 0.44
SCH# 2020060361

Cindy Chambers, Planner III
Department of Planning and Building
County of San Luis Obispo
976 Osos Street, Room 300
San Luis Obispo, CA 93408

COMMENTS FOR THE NOTICE OF PREPARATION (NOP) FOR THE PHILLIPS 66 SANTA MARGARITA REMEDIATION PROJECT MAJOR GRADING PERMIT PMTG2019- 00065 (ED19-204) PROJECT

Dear Ms. Chambers:

The California Department of Transportation (Caltrans) appreciates the opportunity to review the NOP for the Phillips 66 Santa Margarita Remediation Project. The proposed project is to complete remediation work on the Santa Margarita Ranch which will include excavation and removal of contaminated soil from two locations on the property. Caltrans has previously been in communication with representatives for the applicant and the County to discuss truck access to the site, hauling routes, and requirements for activity within the State right of way regarding this project. Caltrans has reviewed the above project and offers the following comments at this time: **A**

- Caltrans will accept any of the three hauling scenarios presented. As noted in the provided documents truck access to the work site should only be via Stage Coach Road. Additionally, the applicant will need to provide signage and traffic control during and pavement restoration upon completion of hauling operations. **B**

- Any work within, over, or under the State's ROW, will require an encroachment permit from Caltrans and must be done to our engineering and environmental standards, and at no cost to the State. The conditions of approval and the requirements for the encroachment permit are issued at the sole discretion of the Permits Office, and nothing in this letter shall be **C**

implied as limiting those future conditioned and requirements. For more information regarding the encroachment permit process, please visit our Encroachment Permit Website at: https://dot.ca.gov/caltrans-near-me/district-5/district-5-programs/d5-encroachment-permits. C

Caltrans requests to be included in any future public noticing regarding this project to allow us to prepare for and participate in the public process. D

We look forward to continued coordination on this project. If you have any questions, or need further clarification on items discussed above, please contact me at (805) 835-6432 or Jenna.Schudson@dot.ca.gov .

Sincerely,

Jenna Schudson
Development Review Coordinator
District 5, LD-IGR South Branch

Caltrans Comment Responses

Caltrans Comment Letter

Comment Number	Comment Issues	Responses
Comment A	Comment includes specification that Caltrans has been working with the applicant team and County to discuss truck access, hauling routes and requirements for activity within State right of way.	Commenter's statements are noted.
Comment B	Comment states Caltrans accepts any of the three proposed hauling scenarios with access from Stagecoach Road. Comment includes request for signage and traffic control during hauling and pavement repair post-construction.	Commenter's statements are noted and requests have been incorporated into the project design during consultation with Caltrans.
Comment C	Comment states that work within/over/under right of way requires an encroachment permit.	Comments are noted and requirements have been incorporated into the project. Applicant will work with Caltrans on obtaining required permit.
Comment D	Comment includes request to be included in all public noticing for the project.	County notes the comment and will include Caltrans in all noticing.

Attachment D

Regional Water Quality Control Board Acceptance Letter (Including Links to Project CAP and CAP Addendum)

September 5, 2019

Mr. Ed Ralston
Remediation Management
Phillips 66 Company
76 Broadway
Sacramento, CA 95818
Email: Ed.C.Ralston@p66.com

via Electronic Mail

Dear Mr. Ralston:

SITE CLEANUP PROGRAM: CONOCOPHILLIPS PIPELINE – SANTA MARGARITA TO TASSAJARA CREEK (SANTA MARGARITA RANCH), SANTA MARGARITA, SAN LUIS OBISPO COUNTY – CONCURRENCE WITH CORRECTIVE ACTION PLAN

The Central Coast Regional Water Quality Control Board (Central Coast Water Board) reviewed Stantec Consulting Services Inc.'s (Stantec) March 7, 2019 *Corrective Action Plan* (CAP)[1] and AECOM's July 26, 2019 *Corrective Action Plan (CEMC Site No. 351313) Addendum 01* (Addendum)[2] prepared on behalf of Phillips 66 Company (Phillips 66) for the property located at Santa Margarita Ranch in Santa Margarita (Site). In the CAP and Addendum, Phillips 66 describes remedial actions to be implemented at the Site to address subsurface hydrocarbon impacts in two areas identified by the Site owner for proposed developments, Eastern and Western Remediation Areas. This letter provides Central Coast Water Board's conditional concurrence with the scope of work outlined in the CAP and Addendum provided Phillips 66 addresses our requirements described in this letter.

Background and Scope of Work

In response to a historical pipeline release identified in Santa Margarita in 1994, the responsible parties, through iterations of subsurface investigations conducted between 1994 and 2017, have characterized the extent of hydrocarbon impacted material underlying 15 investigation sites situated throughout Santa Margarita Ranch. As presented in the March 7, 2019 CAP and July 26, 2019 Addendum, Phillips 66's proposed scope of work includes the removal of hydrocarbon impacted soil to defined depths from the Eastern (investigation sites 9 and 11) and Western (investigation sites 2 and 4B) Remediation Areas.

Phillips 66's proposed remedial tasks are:

- Remedial Actions - Excavate hydrocarbon impacted soil reported exceeding target cleanup goals specified in the CAP to defined depths from two designated remediation areas.

[1] The March 7, 2019 CAP is available at https://geotracker.waterboards.ca.gov/?surl=24ddv.
[2] The July 26, 2019 Addendum is available at https://geotracker.waterboards.ca.gov/?surl=vdio8.

Anticipated future land uses, after implementation of the CAP, include unrestricted at the Eastern Remediation Area and commercial/industrial at the Western Remediation Area.
    - Eastern Remediation Area (four excavation areas): Remove hydrocarbon impacted soil to a maximum depth of 15 feet below the ground surface or shallower bedrock. If separate phase hydrocarbon (SPH) is identified in the upper 20 feet, remove SPH to the extent practicable.
    - Western Remediation Area (five excavation areas): Remove hydrocarbon impacted soil to a maximum depth of 10 feet below the ground surface.
- Methods
    - Use slot trenching methods and controlled density fill when excavating beneath active pipelines; otherwise, use conventional mechanical excavation methods.
- SPH Recovery - Use applicable technologies to recover SPH from excavations.
    - Slot Trenching: Remove any accumulation of SPH and/or groundwater within slot trenches, where possible. Slot trenches will not be left open for extended periods of time.
    - Conventional Excavation Methods: Remove SPH until it is no longer present in 'measurable' quantities after twenty-four (24) hours to recharge, provided that the excavation is not left open for more than one week, unless a shorter time is required by applicable permits.
- Confirmation Sampling - Collect confirmation soil samples, in accordance with the density proposed within the CAP and Addendum.
    - Analyze confirmation soil samples for:
        - TPH-gasoline, TPH-diesel, and TPH-motor oil (EPA Test Method 8015M)
        - BTEX and naphthalene (EPA Test Method 8260B)
    - Use both a Photoionization detector (PID) and PetroFLAG as field screening tools.
- Disposal - Off-haul impacted soils, under waste manifest, to an appropriate facility.
- Backfill - Backfill the excavations with clean and/or overburden soil. Acceptable backfill material must meet the (1) modified Tier 1 Environmental Screening Levels (ESLs) specified in the CAP and (2) Tier 1 ESLs established by the San Francisco Bay Regional Water Quality Control Board.
    - Import Soil: Sample in accordance with the criteria specified in California Department of Toxic Substances' (DTSC) *Information Advisory – Clean Imported Fill Material*.
    - Onsite Sourced Backfill: Sample at a rate of one sample per 250 cubic yards. The onsite borrow source 'Ranch reservoir' (located at least 2,500 feet from the pipelines) is to be sampled at a frequency of one sample per 1,000 cubic yards.
- Conclusion of Remedial Activities
    - Survey final excavation limits.
    - Restore disturbed areas to pre-existing conditions to the extent practical.
    - Prepare and implement an approved soil and groundwater management plan.

Public Notice

Central Coast Water Board staff identified and contacted property owners located within an approximate 1,000-foot radius of the remediation area on August 16, 2019, as a public notice of soil remediation. In this case, Central Coast Water Board staff identified Mr. Rob Rossi, the owner of Santa Margarita Ranch, as the sole property owner located within a 1,000-foot radius of the remediation area. On August 21, 2019, Mr. Rob Rossi, via electronic correspondence, did not provide comment/object to the proposed scope of work outlined in the CAP and Addendum, and indicated that he waived the 30-day comment period.[3]

[3] The August 21, 2019 Response to Public Notice is available at: https://geotracker.waterboards.ca.gov/?surl=6t56l

Central Coast Water Board Staff Comments and Requirements

Central Coast Water Board staff have reviewed the March 7, 2019 CAP and July 26, 2019 Addendum and concur with the proposed scope of work outlined by Phillips 66 provided the following conditions are met:

- Phillips 66 must adopt and implement the revised cleanup goals specified in Table 1 below.[4]

Table 1: Revisions to Specific Cleanup Goals

Location	Depth (feet)	Constituent	Revised Cleanup Goal (mg/kg)	Basis
Sites 2/4B	6 - 10	TPH- gasoline	2,000	2019 ESL - Commercial/Industrial
Sites 2/4B	6 - 10	TPH-motor oil	5,100	2019 ESL – Gross Contamination Levels
Sites 9/11	6 - 15	TPH-gasoline	430	2019 ESL – Residential

TPH- Total Petroleum Hydrocarbons

- Phillips 66 must destroy groundwater monitoring wells, specified in the CAP, in accordance with California Department of Water Resources Bulletin No. 74-81 and Supplement No. 74-90, Porter Cologne Water Quality Control Act Sections 13710 through 13755 and any local permitting requirements. Phillips 66 must submit a Well Destruction Completion Report to this office.

- Phillips 66 must submit a groundwater monitoring workplan to this office upon completing soil excavations and no later than **March 31, 2022**.

Phillips 66 will begin implementation of the CAP on April 15, 2020. After implementation of the CAP, Phillips 66 will submit a Site Restoration Report (SRR) by **March 31, 2022**. In the SRR, Phillips 66 will document remedial work performed, present analytical data in tabular form, and provide data interpretation and recommendations. The SRR will include soil laboratory reports, vicinity and site maps, final excavation limits, impacted soil excavation volumes, SPH removal quantities, estimates of affected soils remaining in place, waste disposal documentation and other pertinent documentation.

Central Coast Water Board staff understands that on December 7, 2018, the Site owner recorded a Covenant and Environmental Restriction on the Site (Environmental Covenant) pursuant to California Civil Code § 1471. The Environmental Covenant restricts uses within certain areas of the Site, including investigation sites not included in the CAP. As discussed at the time of a July 16, 2019 meeting held between Central Coast Water Board, Phillips 66, Chevron, and AECOM staff, Phillips 66 plans to address known subsurface hydrocarbon impacts identified at the remaining 11 investigation sites at a later date. The Central Coast Water Board did not participate in the preparation of the Environmental Covenant. The Central

[4] At the time of the July 16, 2019 meeting, Central Coast Water Board, Phillips 66, and Chevron staff discussed and agreed to implement the revised cleanup goals specified in Table 1.

Coast Water Board will evaluate the need future land use restrictions upon completion of remedial activities.

The Central Coast Water Board requires that Phillips 66 submit quarterly progress reports beginning the second quarter of 2020 and continuing until the SRR is submitted. Each quarterly monitoring report must be submitted within 30 days of the end of the quarter and shall contain a description of the work performed and provide information regarding any events that have delayed or have the potential to delay implementation of the CAP.

Failure to comply with the requirement to (1) submit the SRR by **March 31, 2022**, and (2) the quarterly progress reports may subject Phillips 66 to enforcement action by the Central Coast Water Board, including issuance of an order under Water Code sections 13267 and/or 13304, and potential administrative civil liabilities.

If you have any questions regarding this letter, please contact **Kelsey Gerhart** at (805) 594-6182 or Kelsey.Gerhart@Waterboards.ca.gov or Greg Bishop at (805) 549-3132.

Sincerely,

for John M. Robertson
Executive Officer

cc via email:

Mr. Rob Rossi, rob@rossi-ent.com
Mr. Olegario Acosta, AECOM, olegario.acosta@aecom.com
Mr. Aaron Labarre, San Luis Obispo Div. of Env. Health Services, alabarre@co.slo.ca.us
Ms. Kate Shea, County of San Luis Obispo Dept. of Planning & Building, kbshea@co.slo.ca.us
Mr. Steve McMasters, County of San Luis Obispo Dept. of Planning & Building, smcmasters@co.slo.ca.us
Ms. Cindy Chambers, County of San Luis Obispo Dept. of Planning & Building, cchambers@co.slo.ca.us
Mr. Greg Bishop, Central Coast Water Board, Greg.Bishop@Waterboards.ca.gov
Ms. Kelsey Gerhart, Central Coast Water Board, Kelsey.Gerhart@Waterboards.ca.gov

R:\RB3\Shared\SCP\SITES\SLOCo\Pipelines\SantaMargaritaRanch\Letters\2019_08_Santa_Margarita_Ranch_Response_to_CAP

CR# 2030151
GT ID SL0607989492

Attachment E

Preliminary Grading Plans (Partial Set)

GRADING PLAN FOR REMEDIAL SOIL EXCAVATION
EASTERN AND WESTERN REMEDIATION AREAS
SAN LUIS OBISPO COUNTY, CALIFORNIA
APRIL 2020
APN 070-091-036

WESTERN REMEDIATION AREA (SEE DWG C-01)

0 500' 1000' Scale 1" = 500 FT

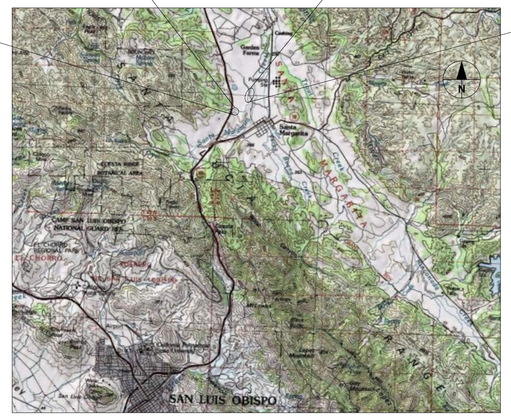
VICINITY MAP

NTS

EASTERN REMEDIATION AREA (SEE DWG C-01)

Scale 1" = 500 FT

0 500' 1000'



PROJECT LOCATION MAP

Scale 1" = 10,000 FT

0 5,000' 10,000'

STAKEHOLDER POINTS OF CONTACT

Phillips 66 Company (Project Owner)
Ed Ralston, Program Manager
76 Broadway
Sacramento, CA 95818
(916) 558-7633 (Office)
Ed.C.Ralston@p66.com

Rossi Enterprises (Property Owner)
Robin Rossi
(805) 545-7788 (Office)
rob@rossi-ent.com

California Regional Water Quality Control Board, Region 3
Kelsey Gerhart
(805) 594-6182 (Office)
kelsey.gerhart@waterboards.ca.gov

San Luis Obispo County, Planning and Building
Cindy Chambers
(805) 781-4097
ccchambers@co.slo.ca.us

San Luis Obispo County, Planning and Building
Katie Nall
(805) 781-5702
knall@co.slo.ca.us

San Luis Obispo County, Air Pollution Control District
Andrew Mutziger
(805) 781-5956 (Office)
amutziger@co.slo.ca.us

California Department of Transportation, District 5
Jenna Schudson
(805) 549-3432 (Office)
Jenna.Schudson@dot.ca.gov

PROJECT DESCRIPTION

HYDROCARBON-IMPACTED SOIL WILL BE REMOVED FROM TWO AREAS ALONG THE PHILLIPS 66 PIPELINE EASEMENT AND ADJACENT AREAS ON THE SANTA MARGARITA RANCH. THESE AREAS ARE DESIGNATED AS THE WESTERN REMEDIATION AREA AND THE EASTERN REMEDIATION AREA. INGRESS AND EGRESS TO THE REMEDIATION AREAS IS VIA STAGECOACH ROAD FROM STATE ROUTE 58 (HIGHWAY 58) AND WILL AVOID PROJECT TRAFFIC THROUGH THE SANTA MARGARITA COMMUNITY AND RESIDENTIAL AREAS. EXISTING RANCH ACCESS ROADS AND BRIDGES WILL BE USED AS PROJECT ROUTES; THEREFORE, NO ROAD IMPROVEMENTS ARE REQUIRED FOR THE PROJECT. THE REMEDIATION AREAS WILL BE FULLY ENCLOSED WITH ERTEC WILDLIFE EXCLUSION FENCE WITH SEDIMENT CONTROL PANEL FOR PROTECTION OF WILDLIFE AND VEGETATION DURING PROJECT ACTIVITIES.

A TOTAL OF EIGHT (8) EXCAVATIONS ARE PLANNED TO DEPTHS VARYING BETWEEN 6 AND 20 FEET BELOW GROUND SURFACE. DUE TO THE PRESENCE OF ACTIVE PETROLEUM PIPELINES, VARIOUS EXCAVATION TECHNIQUES WILL BE UTILIZED TO ENSURE STABILITY OF THE PIPELINES. EXCAVATED "SEEDBANK" (TOP 6-INCHES OF EXCAVATED SOIL) AND CLEAN OVERBURDEN (6-INCHES TO 4.5 FEET BELOW GROUND SURFACE) WILL BE INSPECTED FOR CULTURAL ARTIFACTS. MEASURES WILL BE IMPLEMENTED FOR DUST CONTROL AND MANAGEMENT OF NUISANCE ODORS. GROUNDWATER AND SEPARATE PHASE HYDROCARBONS, IF ENCOUNTERED IN THE EXCAVATIONS, WILL BE RECOVERED, TEMPORARILY STORED, SAMPLED, CHARACTERIZED, AND TRANSPORTED TO AN APPROVED DISPOSAL FACILITY. CONFIRMATION SOIL SAMPLES WILL BE COLLECTED FROM THE EXCAVATIONS TO VERIFY REMOVAL OF HYDROCARBON-IMPACTED SOIL TO THE ESTABLISHED CLEANUP GOALS. EXCAVATIONS WILL BE BACKFILLED USING A COMBINATION OF "SEEDBANK", CLEAN OVERBURDEN, CEMENT SLURRY (UNDERNEATH AND SLIGHTLY OVER PIPELINES), AND CLEAN FILL FROM A BORROW SOURCE ON THE RANCH. THE CLEAN FILL WILL BE SOURCED FROM CONSTRUCTION OF AGRICULTURAL RESERVOIRS ON THE RANCH BY THE PROPERTY OWNER UNDER A SEPARATE PERMIT AND PURPOSE, UNRELATED TO THIS PROJECT. THE EXISTING CLEAN FILL BORROW SOURCE IS LOCATED ADJACENT TO RANCH ACCESS ROADS TO BE USED BY THE PROJECT. HYDROCARBON-IMPACTED SOIL WILL BE TEMPORARILY STOCKPILED IN THE WESTERN REMEDIATION AREA, SAMPLED, CHARACTERIZED, AND TRANSPORTED TO AN APPROVED DISPOSAL FACILITY. TRANSPORT OF HYDROCARBON-IMPACTED SOIL TO THE DISPOSAL FACILITY WILL OCCUR DURING NON-PEAK HOURS. FINAL GRADE WILL BE RESTORED TO MATCH PRE-CONSTRUCTION GRADE.

A SUMMARY OF THE PROJECT SCOPE OF WORK WITH REFERENCES TO KEY DRAWINGS IS PROVIDED IN DRAWING G-02 OF THIS GRADING PLAN AND A DETAILED PROJECT DESCRIPTION IS PROVIDED AS PART OF THE REVISED INITIAL STUDY PREPARED BY AECOM AND SUBMITTED UNDER SEPARATE COVER.

NOTE

NO CONSTRUCTION OF UTILITIES OR STRUCTURES ARE PROPOSED ON THIS PROJECT.

PROJECT SITE ADDRESS

Santa Margarita Ranch
9000 Yerba Buena Avenue
Santa Margarita, CA 93453

BENCHMARK INFORMATION

PROJECT BENCHMARK FOR THIS PROJECT IS A FOUND NGS MONUMENT PID: FV0178, DESIGNATION: SANTA D. ELEVATION = 981.40' (NAVD 88) - FOR ADDITIONAL SURVEY INFORMATION, SEE DRAWING G-03

PROJECT PERMITS

SAN LUIS OBISPO COUNTY PLANNING AND BUILDING GRADING PERMIT NO: PENDING APPROVAL OF FINAL EIR

SAN LUIS OBISPO APCD AUTHORITY TO CONSTRUCT PERMIT NO:
PENDING APPROVAL OF FINAL EIR

CALTRANS ENCROACHMENT PERMIT NO:
PENDING APPROVAL OF FINAL EIR

STATE WATER RESOURCES CONTROL BOARD WDID NO:
PENDING

INDEX OF DRAWINGS

PROJECT CONSULTANTS INFORMATION

Engineering Services
AECOM Technical Services, Inc.
ATTN: Mark Riley, P.E.
3995 Via Oro Avenue,
Long Beach, CA 90810
(562) 213-4150

Engineer of Record
Mark Riley, P.E.
Licensed Civil Engineer
No. C68581
AECOM Technical Services, Inc.
3995 Via Oro Avenue,
Long Beach, CA 90810

Qualified SWPPP Developer
Alexis De Larme, P.E.
QSD Registered under PE #C75445
AECOM Technical Services, Inc.
3995 Via Oro Avenue,
Long Beach, CA 90810

Geotechnical Engineer
AECOM Technical Services, Inc.
ATTN: Stanley Kline P.E, G.E.
300 Lakeside Drive, Suite 400
Oakland, CA 94612

Surveyor
Jeffrey G. Zambo, PLS No. 9210
Diversified Project Services International
1998 Santa Barbara Ave, Suite 120
San Luis Obispo, CA 93401

Qualified SWPPP Practioner
Andy Evans, P.G., QSD/P
QSP Certificate #26921
AECOM Technical Services
130 Robin Hill Road, Suite 100
Santa Barbara, CA 93117

Special Inspector (Soils and Slurry)
Earth Systems Pacific
4738 Old Santa Fe Road
San Luis Obispo, CA 93401
(805) 544-3276

AECOM

PROJECT
Santa Margarita
Remediation Project

CLIENT
Phillips 66
76 Broadway
Sacramento, CA 95818

CONSULTANT
AECOM Technical Services, Inc
3995 Via Oro Avenue
Long Beach, CA 90810
562.420.2933 tel
www.aecom.com

REGISTRATION

REGISTERED PROFESSIONAL ENGINEER
MARK R. RILEY
C68581
CIVIL
STATE OF CALIFORNIA

ISSUE/REVISION

C	APR 2020	RE-ISSUE FOR PERMITTING
B	JUNE 2019	ISSUE FOR PERMITTING
A	MAY 2019	30% DESIGN REVIEW
I/R	DATE	DESCRIPTION

PROJECT MANAGEMENT

Drawn: JSC
Checked: OFA
Approved: MRR

PROJECT NUMBER

60592267

SHEET TITLE

COVER SHEET, VICINITY MAP, LOCATION MAP, PROJECT CONTACTS & INDEX OF DRAWINGS

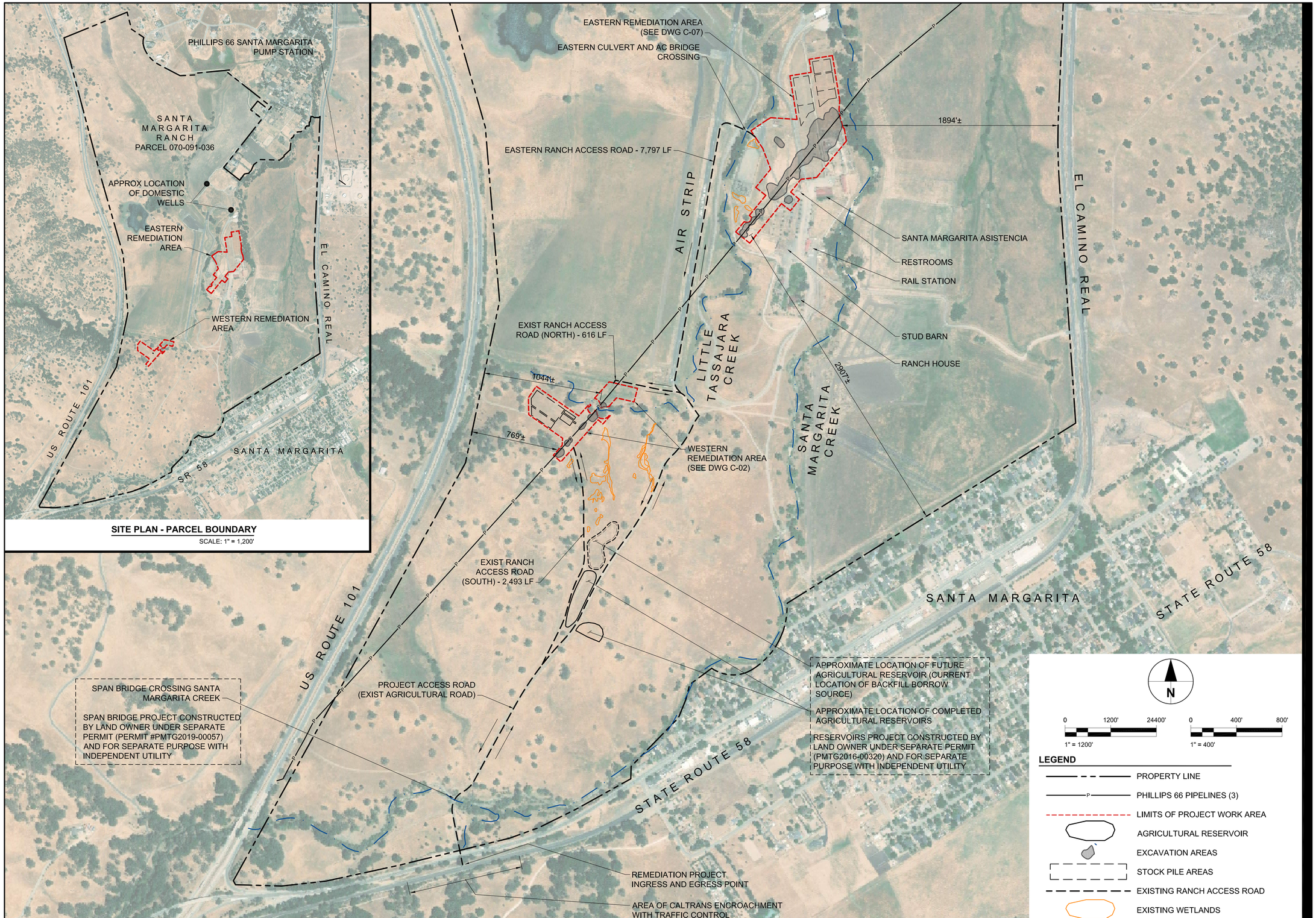
DRAWING NUMBER **SHEET NUMBER**

COVER 1 of 28 Sheets

ANSI D 22" x 34"

SITE PLAN - PARCEL BOUNDARY

SCALE: 1" = 1,200'



SITE PLAN - WORK AREA

SCALE: 1" = 400'

Last saved by: CONNELLYJ1(2020-04-03) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\60592267-SMME-SHT-C01.DWG

AECOM

PROJECT

Santa Margarita Remediation Project

CLIENT

Phillips 66
76 Broadway
Sacramento, CA 95818

CONSULTANT

AECOM Technical Services, Inc
3995 Via Oro Avenue
Long Beach, CA 90810
562.420.2933 tel
www.aecom.com

REGISTRATION

REGISTERED PROFESSIONAL ENGINEER
MARK R. RILEY
C68581
CIVIL
STATE OF CALIFORNIA

ISSUE/REVISION

C	APR 2020	RE-ISSUE FOR PERMITTING
B	JUNE 2019	ISSUE FOR PERMITTING
A	MAY 2019	30% DESIGN REVIEW
I/R	DATE	DESCRIPTION

PROJECT MANAGEMENT

Drawn: JSC
Checked: OFA
Approved: MRR

PROJECT NUMBER

60592267

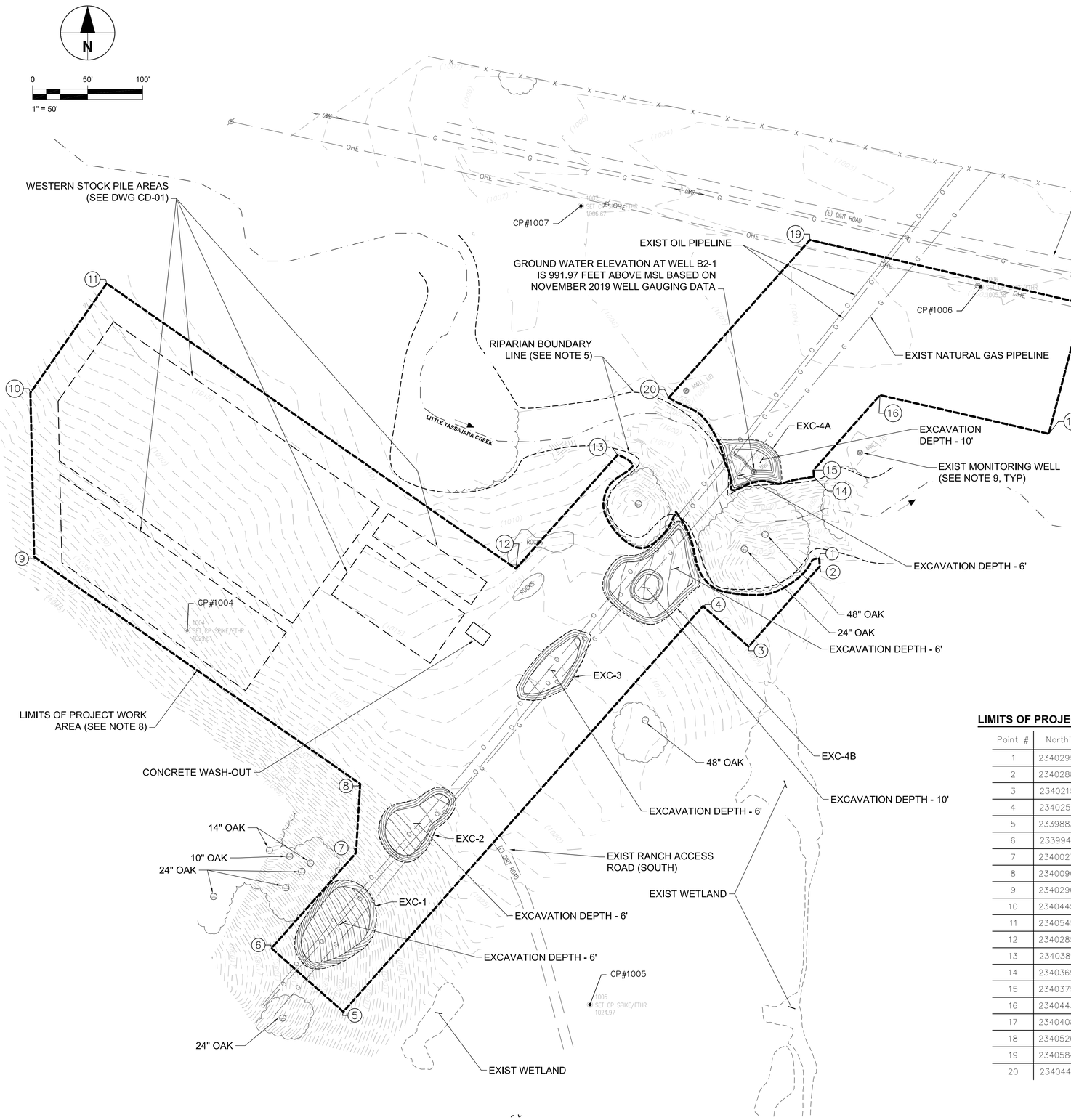
SHEET TITLE

OVERALL SITE PLAN

DRAWING NUMBER C-01

SHEET NUMBER 5 of 28 Sheets

ANSI D 22" x 34"



LOCAL CONTROL POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1002	2342246.31	5783058.06	1008.97	SET REBAR W/ CAP @ EDGE FENCE
1003	2338836.57	5783063.52	1005.27	SET COTTON SPINDLE W/TAG IN ASPHALT
1004	2340229.75	5780734.19	1029.81	SET 60D NAIL & FEATHER
1005	2339889.91	5781099.83	1024.97	SET 60D NAIL & FEATHER
1006	2340541.75	5781454.89	1005.38	SET 60D NAIL & FEATHER
1007	2340615.47	5781091.70	1006.67	SET 60D NAIL & FEATHER
1008	2341848.26	5782646.92	1007.93	SET REBAR W/ CAP @ CORNER WALL
1009	2342613.22	5783341.88	1006.45	SET REBAR W/ CAP @ CORNER FENCE

LIMITS OF PROJECT WORK POINTS

Point #	Northing	Easting
1	2340295.07	5781308.11
2	2340288.02	5781308.57
3	2340215.13	5781243.97
4	2340251.89	5781202.49
5	2339883.33	5780875.83
6	2339941.13	5780810.62
7	2340027.77	5780887.41
8	2340090.37	5780891.15
9	2340296.75	5780595.11
10	2340445.64	5780591.62
11	2340545.00	5780660.88
12	2340285.92	5781032.51
13	2340389.15	5781124.84
14	2340369.47	5781303.26
15	2340375.40	5781302.88
16	2340443.58	5781363.31
17	2340408.45	5781516.56
18	2340526.82	5781547.60
19	2340584.57	5781299.62
20	2340441.15	5781171.35

NOTES:

1. SEE GENERAL DRAWINGS FOR GRADING PLAN NOTES, INFORMATION, LEGENDS AND ABBREVIATIONS.
2. SEE SURVEY INFORMATION ON DRAWING G-03.
3. OAK TREES AND SUBSEQUENT DRIPLINES SHALL BE PROTECTED IN PLACE BY ERTEC WILDLIFE EXCLUSION FENCE. OAK TREES ADJACENT TO EXISTING RANCH ACCESS ROADS AND OUTSIDE OF PROJECT WORK AREA SHALL BE PROTECTED WITH CONSTRUCTION FENCING.
4. EXISTING OVERHEAD POWER LINE SUSPENDED APPROXIMATELY 30 FEET FROM GROUND SURFACE AND WILL NOT BE IMPACTED BY PROJECT TRAFFIC.
5. PROJECT ACTIVITIES WILL HAVE A 5-FOOT OFFSET FROM RIPARIAN BOUNDARY LINE USING EXCLUSION FENCING (ERTEC). SEE DRAWING EC-02.
6. EXISTING SOCAL GAS LINE IS BURIED APPROXIMATELY 3-5 FEET BELOW GROUND SURFACE AND WILL NOT BE IMPACTED BY PROJECT TRAFFIC.
7. REMEDIATION PROJECT WILL OCCUR WITHIN 1909 AND 1930 PHILLIPS 66 EASEMENTS AND OUTSIDE EASEMENTS FOR WHICH PHILLIPS 66 HAS AN ACCESS AGREEMENT WITH THE LANDOWNER. EASEMENTS NOT SHOWN ON DRAWING DUE TO EASEMENT WIDTH INFORMATION IS SILENT IN EASEMENT DOCUMENT.
8. LIMITS OF DISTURBANCE WILL BE ENCLOSED WITH ERTEC WILDLIFE EXCLUSION FENCING. SEE DRAWING EC-02.
9. WELLS TO BE DESTROYED PRIOR TO WORK COMMENCEMENT WILL BE PROVIDED IN SEPARATE COVER WITH THE WELL DESTRUCTION WORK PLAN.

AECOM

PROJECT

Santa Margarita Remediation Project

CLIENT

Phillips 66
76 Broadway
Sacramento, CA 95818

CONSULTANT

AECOM Technical Services, Inc
3995 Via Oro Avenue
Long Beach, CA 90810
562.420.2933 tel
www.aecom.com

REGISTRATION

REGISTERED PROFESSIONAL ENGINEER
MARK R. RILEY
C68581
CIVIL
STATE OF CALIFORNIA

ISSUE/REVISION

C	APR 2020	RE-ISSUE FOR PERMITTING
B	JUNE 2019	ISSUE FOR PERMITTING
A	MAY 2019	30% DESIGN REVIEW
I/R	DATE	DESCRIPTION

PROJECT MANAGEMENT

Drawn: JSC
Checked: OFA
Approved: MRR

PROJECT NUMBER

60592267

SHEET TITLE

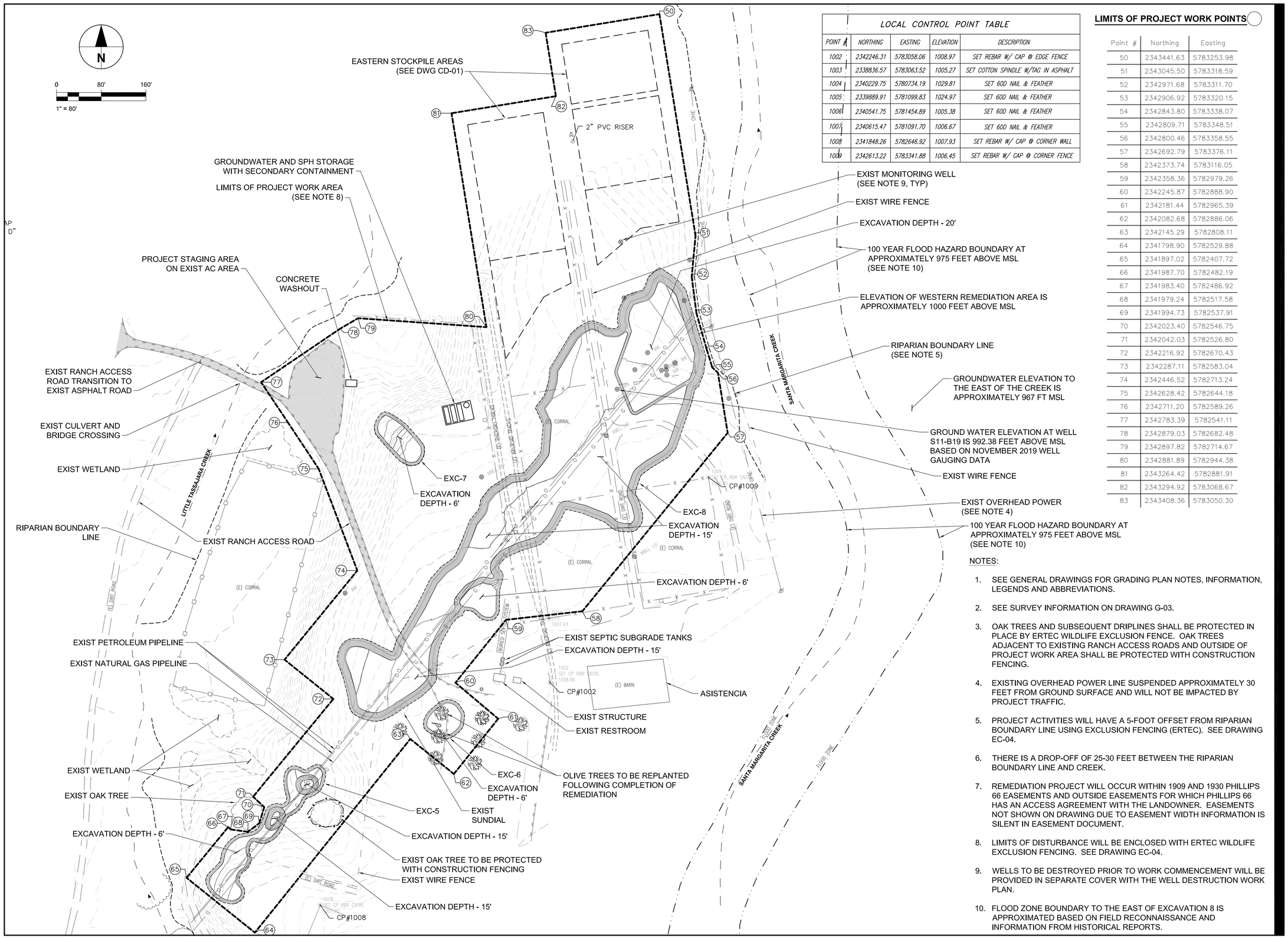
SITE PLAN, SURVEY CONTROL AND KEY FEATURES - WESTERN REMEDIATION AREA

DRAWING NUMBER C-02

SHEET NUMBER 6 of 28 Sheets

Last saved by: CONNELLY1 (2020-04-06) Last Plotted: 2020-04-06
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\60592267-SMME-SHT-C02.DWG

ANSI D 22" x 34"



LOCAL CONTROL POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1002	2342246.31	5783058.06	1008.97	SET REBAR W/ CAP @ EDGE FENCE
1003	2338836.57	5783063.52	1005.27	SET COTTON SPINDLE W/TAG IN ASPHALT
1004	2340229.75	5780734.19	1029.81	SET 60D NAIL & FEATHER
1005	2339889.91	5781099.83	1024.97	SET 60D NAIL & FEATHER
1006	2340541.75	5781454.89	1005.38	SET 60D NAIL & FEATHER
1007	2340615.47	5781091.70	1006.67	SET 60D NAIL & FEATHER
1008	2341848.26	5782646.92	1007.93	SET REBAR W/ CAP @ CORNER WALL
1009	2342613.22	5783341.88	1006.45	SET REBAR W/ CAP @ CORNER FENCE

LIMITS OF PROJECT WORK POINTS

Point #	Northing	Easting
50	2343441.63	5783253.98
51	2343045.50	5783318.59
52	2342971.68	5783311.70
53	2342906.92	5783320.15
54	2342843.80	5783338.07
55	2342809.71	5783348.51
56	2342800.46	5783358.55
57	2342692.79	5783376.11
58	2342373.74	5783116.05
59	2342358.36	5782979.26
60	2342245.87	5782888.90
61	2342181.44	5782965.39
62	2342082.68	5782886.06
63	2342145.29	5782808.11
64	2341798.90	5782529.88
65	2341897.02	5782407.72
66	2341987.70	5782482.19
67	2341983.40	5782486.92
68	2341979.24	5782517.58
69	2341994.73	5782537.91
70	2342023.40	5782546.75
71	2342042.03	5782526.80
72	2342216.92	5782670.43
73	2342287.11	5782583.04
74	2342446.52	5782713.24
75	2342628.42	5782644.18
76	2342711.20	5782589.26
77	2342783.39	5782541.11
78	2342879.03	5782682.48
79	2342897.82	5782714.67
80	2342881.89	5782944.38
81	2343264.42	5782881.91
82	2343294.92	5783068.67
83	2343408.36	5783050.30

NOTES:

1. SEE GENERAL DRAWINGS FOR GRADING PLAN NOTES, INFORMATION, LEGENDS AND ABBREVIATIONS.
2. SEE SURVEY INFORMATION ON DRAWING G-03.
3. OAK TREES AND SUBSEQUENT DRIPLINES SHALL BE PROTECTED IN PLACE BY ERTEC WILDLIFE EXCLUSION FENCE. OAK TREES ADJACENT TO EXISTING RANCH ACCESS ROADS AND OUTSIDE OF PROJECT WORK AREA SHALL BE PROTECTED WITH CONSTRUCTION FENCING.
4. EXISTING OVERHEAD POWER LINE SUSPENDED APPROXIMATELY 30 FEET FROM GROUND SURFACE AND WILL NOT BE IMPACTED BY PROJECT TRAFFIC.
5. PROJECT ACTIVITIES WILL HAVE A 5-FOOT OFFSET FROM RIPARIAN BOUNDARY LINE USING EXCLUSION FENCING (ERTEC). SEE DRAWING EC-04.
6. THERE IS A DROP-OFF OF 25-30 FEET BETWEEN THE RIPARIAN BOUNDARY LINE AND CREEK.
7. REMEDIATION PROJECT WILL OCCUR WITHIN 1909 AND 1930 PHILLIPS 66 EASEMENTS AND OUTSIDE EASEMENTS FOR WHICH PHILLIPS 66 HAS AN ACCESS AGREEMENT WITH THE LANDOWNER. EASEMENTS NOT SHOWN ON DRAWING DUE TO EASEMENT WIDTH INFORMATION IS SILENT IN EASEMENT DOCUMENT.
8. LIMITS OF DISTURBANCE WILL BE ENCLOSED WITH ERTEC WILDLIFE EXCLUSION FENCING. SEE DRAWING EC-04.
9. WELLS TO BE DESTROYED PRIOR TO WORK COMMENCEMENT WILL BE PROVIDED IN SEPARATE COVER WITH THE WELL DESTRUCTION WORK PLAN.
10. FLOOD ZONE BOUNDARY TO THE EAST OF EXCAVATION 8 IS APPROXIMATED BASED ON FIELD RECONNAISSANCE AND INFORMATION FROM HISTORICAL REPORTS.

AECOM

PROJECT

Santa Margarita
Remediation Project

CLIENT

Phillips 66
76 Broadway
Sacramento, CA 95818

CONSULTANT

AECOM Technical Services, Inc
3995 Via Oro Avenue
Long Beach, CA 90810
562.420.2933 tel
www.aecom.com

REGISTRATION

REGISTERED PROFESSIONAL ENGINEER
MARK R. RILEY
C68581
CIVIL
STATE OF CALIFORNIA

ISSUE/REVISION

C	APR 2020	RE-ISSUE FOR PERMITTING
B	JUNE 2019	ISSUE FOR PERMITTING
A	MAY 2019	30% DESIGN REVIEW
I/R	DATE	DESCRIPTION

PROJECT MANAGEMENT

Drawn: JSC
Checked: OFA
Approved: MRR

PROJECT NUMBER

60592267

SHEET TITLE

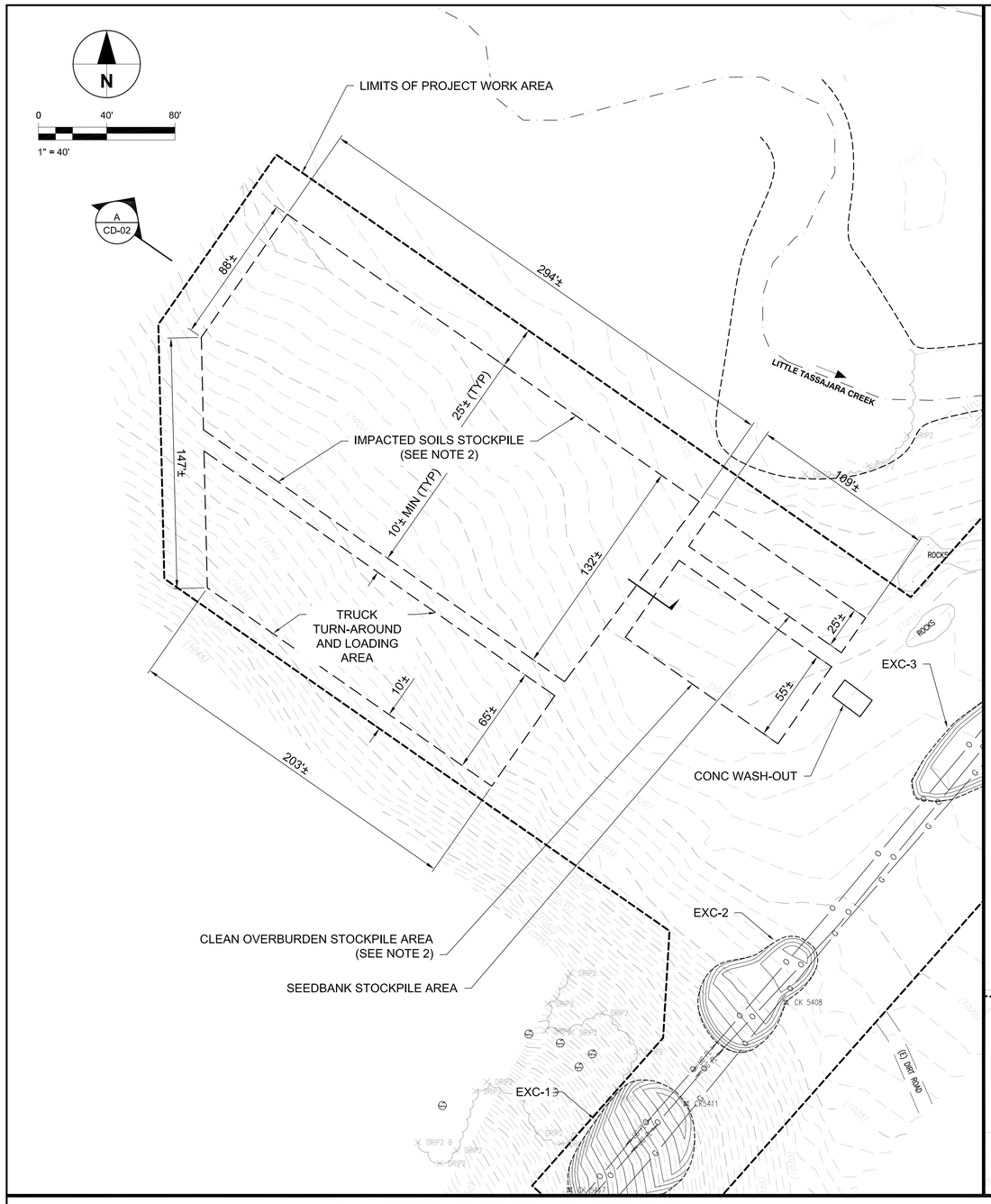
SITE PLAN, SURVEY CONTROL AND KEY FEATURES - EASTERN REMEDIATION AREA

DRAWING NUMBER C-07

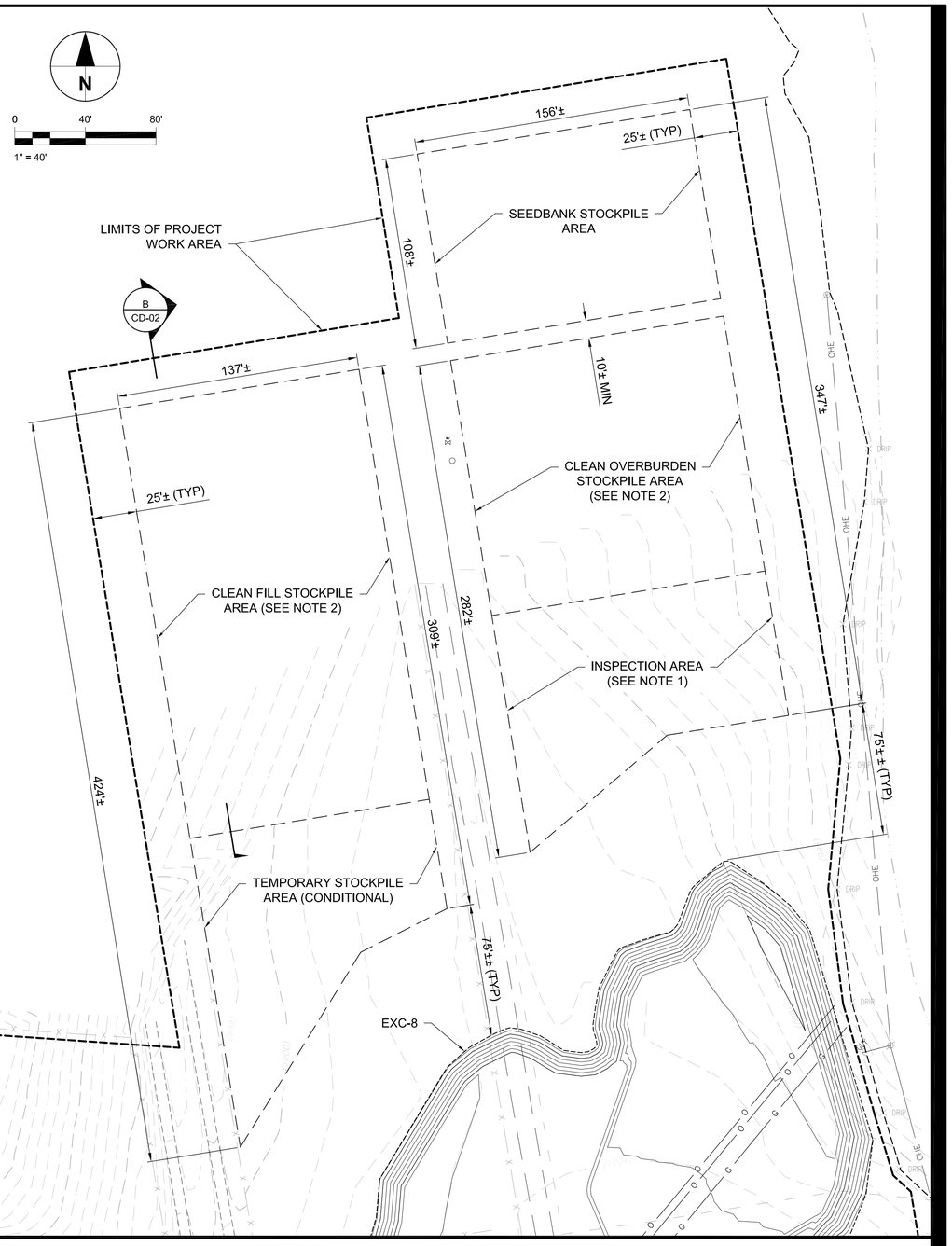
SHEET NUMBER 11 of 28 Sheets

Last saved by: CONNELLY1/1(2020-04-06) Last Plotted: 2020-04-06
Filename: E:\PROJECTS\60592267 - PG6 SM MASS EXCAVATION\CADD\60592267-SMME-SHT-C07.DWG

ANSI D 22" x 34"



PLAN - WESTERN REMEDIATION AREA STOCKPILES



PLAN - EASTERN REMEDIATION AREA STOCKPILES

NOTES:

1. TEMPORARY ROWS OF SMALL STOCKPILES OF SEEDBANK MATERIAL AND/OR CLEAN OVERBURDEN FOR INSPECTION BY AN ARCHAEOLOGIST.
2. STOCKPILES SHOWN ARE MAXIMUM SIZE. STOCKPILES ARE DYNAMIC AND THE SIZES AND HEIGHTS WILL VARY PENDING EXCAVATED MATERIAL VOLUME AND HAULING FREQUENCY OF IMPACTED SOILS.

AECOM

PROJECT

Santa Margarita
Remediation Project

CLIENT

Phillips 66
76 Broadway
Sacramento, CA 95818

CONSULTANT

AECOM Technical Services, Inc
3995 Via Oro Avenue
Long Beach, CA 90810
562.420.2933 tel
www.aecom.com

REGISTRATION

REGISTERED PROFESSIONAL ENGINEER
MARK R. RILEY
C68581
CIVIL
STATE OF CALIFORNIA

ISSUE/REVISION

C	APR 2020	RE-ISSUE FOR PERMITTING
B	JUNE 2019	ISSUE FOR PERMITTING
A	MAY 2019	30% DESIGN REVIEW
I/R	DATE	DESCRIPTION

PROJECT MANAGEMENT

Drawn: JSC
Checked: OFA
Approved: MRR

PROJECT NUMBER

60592267

SHEET TITLE

STOCKPILE DETAILS

DRAWING NUMBER **SHEET NUMBER**

CD-01 19 of 28 Sheets

Last saved by: CONNELLY1 (2020-03-26) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\60592267-SMME-SHT-CD01.DWG

ANSI D 22" x 34"

EROSION CONTROL NOTES:

1. A NOTICE OF INTENT (NOI) SHALL BE FILED BY THE CLIENT WITH THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) AND A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PREPARED BY THE CONTRACTOR'S QUALIFIED SWPPP DEVELOPER (QSD) AND UPLOADED TO THE SMARTS WEBSITE IN ACCORDANCE WITH THE REQUIREMENTS OF CALIFORNIA GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES. THE CONTRACTOR SHALL KEEP A COPY OF THE SWPPP ON SITE AND AVAILABLE FOR REVIEW.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE WATER QUALITY REGULATIONS AT ALL TIMES. THE BEST MANAGEMENT PRACTICES (BMPS) THAT HAVE BEEN INCORPORATED INTO THIS PLAN AND THE SWPPP SHALL BE IMPLEMENTED TO EFFECTIVELY PREVENT OR MINIMIZE THE POTENTIALLY NEGATIVE IMPACTS OF THIS PROJECT'S CONSTRUCTION ON WATER QUALITY. THE MAINTENANCE OF THE BMPS IS THE CONTRACTOR'S RESPONSIBILITY. WEEKLY BMP INSPECTIONS AND STORMWATER RUNOFF SAMPLING WILL BE COMPLETED BY A QUALIFIED SWPPP PRACTITIONER (QSP). THE CONTRACTOR'S FAILURE TO INSTALL OR MAINTAIN THE BMPS MAY RESULT IN ENFORCEMENT ACTION. IF INSTALLED BMPS FAIL, THEY SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR WITHIN 72 HOURS, OR SOONER IF SAFE TO DO SO.
3. CONTRACTOR SHALL NOT WORK OUTSIDE OF PROJECT LIMITS UNLESS NOTED OTHERWISE ON THE PLAN.
4. THE CONTRACTOR SHALL RETAIN ERODED SEDIMENTS AND POLLUTANTS ONSITE AND SHALL NOT TRANSPORT THEM FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSE OR WIND.
5. ALL EXCAVATED SOIL MATERIAL AND DEBRIS GENERATED DURING CONSTRUCTION SHALL BE STORED IN SEPARATE STOCKPILES. HYDROCARBON CONTAMINATED SOIL SHALL EITHER BE PLACED ON APPROPRIATE PLASTIC LINERS AND COVERED BY PLASTIC SHEETING OR COVERED WITH AT LEAST 6 INCHES PACKED UNCONTAMINATED SOIL. COVER AND BERM STOCKPILES NOT ACTIVELY BEING USED. THE COVERS SHALL BE SECURED TO THE STOCKPILE MATERIAL TO PROTECT AGAINST WIND AND RAIN. OTHERWISE, EXPOSED STOCKPILES WILL BE STABILIZED VIA SOIL BINDER/DUST PALLIATIVE IN ACCORDANCE WITH CASQA BMP EC-5 AND WE-1.
6. THE CONTRACTOR SHALL STORE FUELS, OILS, SOLVENTS AND OTHER HAZARDOUS MATERIALS IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL NOR THE SURFACE WATERS. ALL HAZARDOUS MATERIALS SHALL BE PROTECTED FROM THE WEATHER BY THE CONTRACTOR. SPILLS SHALL BE CLEANED UP IMMEDIATELY AND DISPOSED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS BY THE CONTRACTOR. SPILLS SHALL NOT BE WASHED INTO THE DRAINAGE SYSTEM BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL NOT WASH EXCESS OR WASTE CONCRETE INTO THE PUBLIC WAY OR ANY DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE BY THE CONTRACTOR TO RETAIN CONCRETE WASTE ONSITE UNTIL PROPERLY DISPOSED OR RECYCLED. CONTRACTOR SHALL ENSURE THE CONTAINMENT OF CONCRETE WASHOUT AREAS TO PREVENT DISCHARGE TO THE UNDERLYING SOIL AND SURROUNDING AREAS.
8. THE CONTRACTOR SHALL DEPOSIT TRASH AND CONSTRUCTION-RELATED SOLID WASTES INTO COVERED RECEPTACLES TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
9. THE CONTRACTOR'S VEHICLE TRAFFIC SHALL NOT TRACK SEDIMENTS AND OTHER MATERIALS FROM THE SITE. ACCIDENTAL DEPOSITIONS SHALL BE SWEPT UP IMMEDIATELY BY THE CONTRACTOR AND SHALL NOT BE WASHED DOWN BY RAIN OR BY ANY OTHER MEANS.
10. INSTALLATION OF DEVICES SHALL BE YEAR-ROUND, IF REQUIRED.

BEST MANAGEMENT PRACTICES (BMPS):

THE FOLLOWING BMPS FROM THE "CALIFORNIA STORMWATER BMP HANDBOOK - CONSTRUCTION" (JANUARY 2015) SHALL BE IMPLEMENTED FOR CONSTRUCTION ACTIVITIES AS APPLICABLE. WASTE AND MATERIAL MANAGEMENT, NON-STORMWATER MANAGEMENT, AND WIND EROSION CONTROL BMPS SHALL BE IMPLEMENTED SITE-WIDE. LOCATIONS OF EROSION CONTROL, TEMPORARY SEDIMENT CONTROL, AND TRACKING CONTROL BMPS ARE IDENTIFIED ON THE EROSION CONTROL PLANS.

EROSION CONTROL

EC-1	SCHEDULING
EC-2	PRESERVATION OF EXISTING VEGETATION
EC-4	HYDROSEEDING
EC-5	SOIL BINDERS
EC-7	GEOTEXTILES AND MATS
EC-16	NON-VEGETATIVE STABILIZATION

TEMPORARY SEDIMENT CONTROL

SE-1	SILT FENCE
SE-5	FIBER ROLLS
SE-6	GRAVEL BAG BERM
SE-7	STREET SWEEPING AND VACUUMING

WASTE AND MATERIAL MANAGEMENT

WM-1	MATERIAL DELIVERY AND STORAGE
WM-2	MATERIAL USE
WM-3	STOCKPILE MANAGEMENT
WM-4	SPILL PREVENTION AND CONTROL
WM-5	SOLID WASTE MANAGEMENT
WM-6	HAZARDOUS WASTE MANAGEMENT
WM-7	CONTAMINATED SOIL MANAGEMENT
WM-8	CONCRETE WASTE MANAGEMENT
WM-9	SANITARY/SEPTIC WASTE MANAGEMENT
WM-10	LIQUID WASTE MANAGEMENT

TRACKING CONTROL

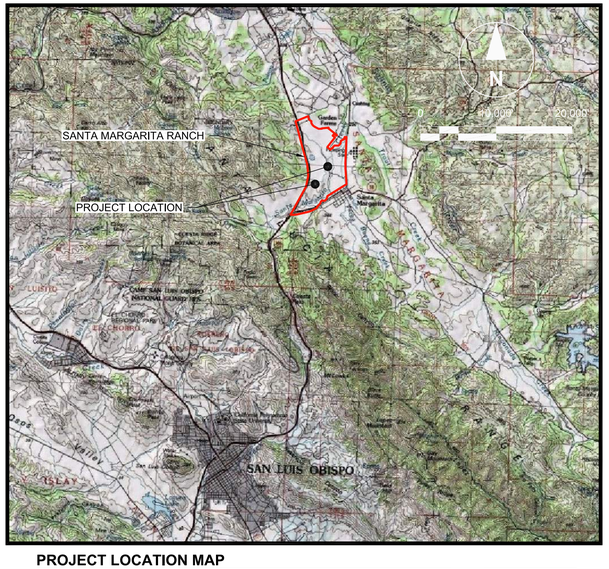
TC-1	STABILIZED CONSTRUCTION ENTRANCE/EXIT
TC-2	STABILIZED CONSTRUCTION ROADWAY
TC-3	ENTRANCE/OUTLET TIRE WASH

NON-STORMWATER MANAGEMENT

NS-1	WATER CONSERVATION PRACTICES
NS-6	ILLICIT CONNECTION/DISCHARGE
NS-8	VEHICLE AND EQUIPMENT CLEANING
NS-9	VEHICLE AND EQUIPMENT FUELING
NS-10	VEHICLE AND EQUIPMENT MAINTENANCE

WIND EROSION CONTROL

WE-1	WIND EROSION CONTROL



PROJECT LOCATION MAP

SCALE: 1" = 10,000'

SITE PLAN

SCALE: 1" = 800'

AECOM

PROJECT

Santa Margarita Remediation Project

CLIENT

Phillips 66

76 Broadway
Sacramento, CA 95818

CONSULTANT

AECOM Technical Services, Inc
3995 Via Oro Avenue
Long Beach, CA 90810
562.420.2933 tel
www.aecom.com

REGISTRATION

REGISTERED PROFESSIONAL ENGINEER
ALEXIS DE LARKE
C 75445
CIVIL
STATE OF CALIFORNIA

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	APR 2020	RE-ISSUE FOR PERMITTING
B	JUNE 2019	ISSUE FOR PERMITTING
A	MAY 2019	30% DESIGN REVIEW

PROJECT MANAGEMENT

Drawn: JSC
Checked: WLS
Approved: AUD

PROJECT NUMBER

60592267

SHEET TITLE

EROSION CONTROL & BMP NOTES

DRAWING NUMBER EC-01

SHEET NUMBER 22 of 28 Sheets

Last saved by: CONNELLY1 (2020-03-26) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CAD\60592267-SMME-SHT-EC01.DWG

ANSI D 22" x 34"

NOTE:

1. LIMITS OF PROJECT WORK AREA WILL BE ENCLOSED WITH ERTEC WILDLIFE EXCLUSION FENCING. SEE DRAWING EC-07.

LEGEND

- LIMITS OF PROJECT WORK AREA
- DRAINAGE FLOW DIRECTION
- RANCH ACCESS ROAD — TC-2 — 3 / EC-06
- FIBER ROLL — SE-5
- WIND EROSION CONTROL — WE-1
- CONSTRUCTION ENTRANCE — TC-1 — 2 / EC-06

AECOM

PROJECT

Santa Margarita Remediation Project

CLIENT

Phillips 66
76 Broadway
Sacramento, CA 95818

CONSULTANT

AECOM Technical Services, Inc
3995 Via Oro Avenue
Long Beach, CA 90810
562.420.2933 tel
www.aecom.com

REGISTRATION

REGISTERED PROFESSIONAL ENGINEER
ALEXIS DE LARME
C 75445
CIVIL
STATE OF CALIFORNIA

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	APR 2020	RE-ISSUE FOR PERMITTING
B	JUNE 2019	ISSUE FOR PERMITTING
A	MAY 2019	30% DESIGN REVIEW

PROJECT MANAGEMENT

Drawn: JSC
Checked: WLS
Approved: AUD

PROJECT NUMBER

60592267

SHEET TITLE

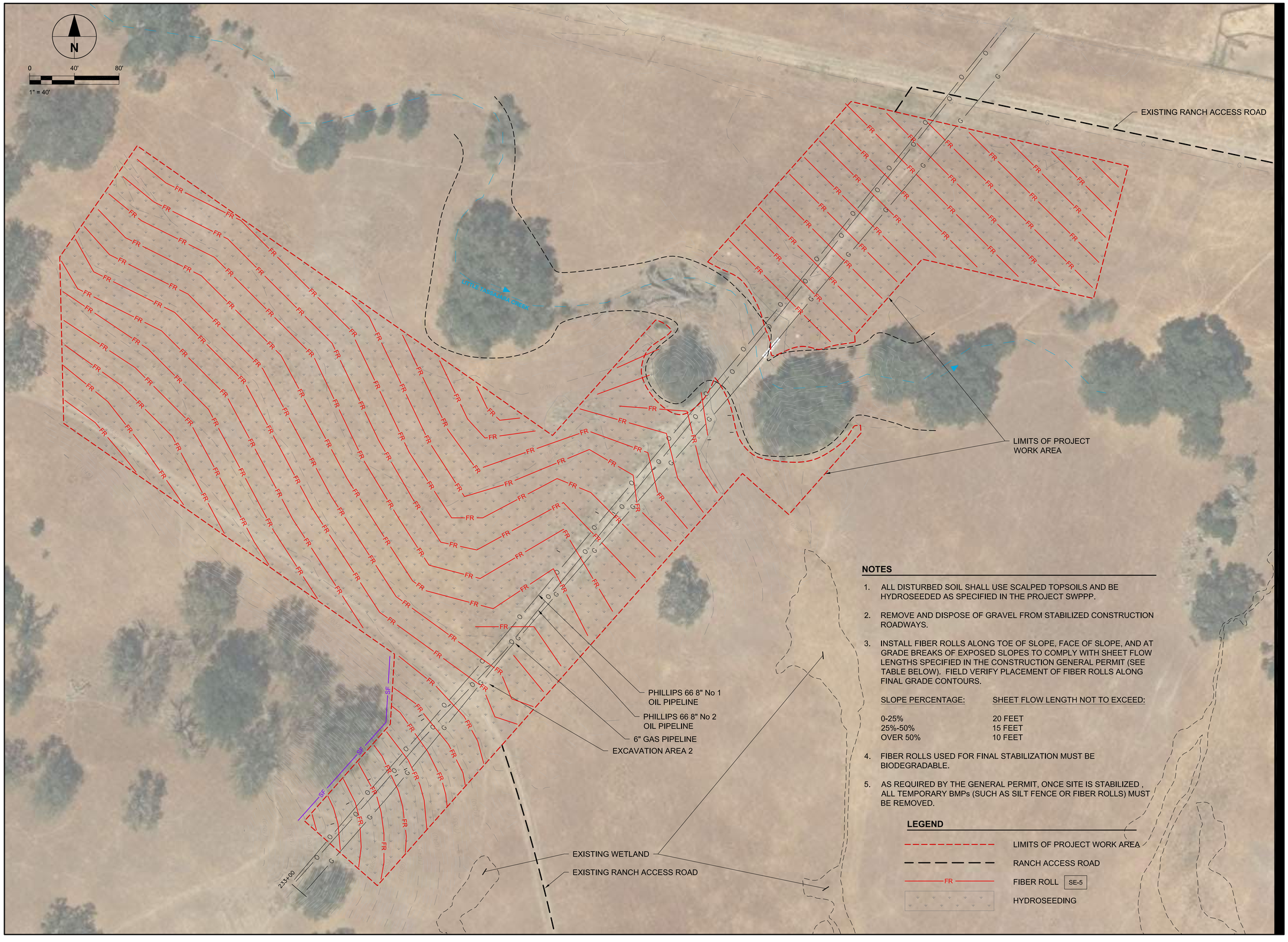
CONSTRUCTION BMPs - WESTERN REMEDIATION AREA

DRAWING NUMBER EC-02

SHEET NUMBER 23 of 28 Sheets

Last saved by: CONNELLYJ1(2020-03-30) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\60592267-SMME-SHT-EC02.DWG

ANSI D 22" x 34"



NOTES

1. ALL DISTURBED SOIL SHALL USE SCALPED TOPSOILS AND BE HYDROSEEDED AS SPECIFIED IN THE PROJECT SWPPP.
2. REMOVE AND DISPOSE OF GRAVEL FROM STABILIZED CONSTRUCTION ROADWAYS.
3. INSTALL FIBER ROLLS ALONG TOE OF SLOPE, FACE OF SLOPE, AND AT GRADE BREAKS OF EXPOSED SLOPES TO COMPLY WITH SHEET FLOW LENGTHS SPECIFIED IN THE CONSTRUCTION GENERAL PERMIT (SEE TABLE BELOW). FIELD VERIFY PLACEMENT OF FIBER ROLLS ALONG FINAL GRADE CONTOURS.

SLOPE PERCENTAGE:	SHEET FLOW LENGTH NOT TO EXCEED:
0-25%	20 FEET
25%-50%	15 FEET
OVER 50%	10 FEET

4. FIBER ROLLS USED FOR FINAL STABILIZATION MUST BE BIODEGRADABLE.
5. AS REQUIRED BY THE GENERAL PERMIT, ONCE SITE IS STABILIZED , ALL TEMPORARY BMPs (SUCH AS SILT FENCE OR FIBER ROLLS) MUST BE REMOVED.

LEGEND

- LIMITS OF PROJECT WORK AREA
- RANCH ACCESS ROAD
- FIBER ROLL SE-5
- HYDROSEEDING

AECOM

PROJECT

Santa Margarita
Remediation Project

CLIENT

Phillips 66
76 Broadway
Sacramento, CA 95818

CONSULTANT

AECOM Technical Services, Inc
3995 Via Oro Avenue
Long Beach, CA 90810
562.420.2933 tel
www.aecom.com

REGISTRATION

REGISTERED PROFESSIONAL ENGINEER
ALEXIS DE LARKE
C 75445
CIVIL
STATE OF CALIFORNIA

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	APR 2020	RE-ISSUE FOR PERMITTING
B	JUNE 2019	ISSUE FOR PERMITTING
A	MAY 2019	30% DESIGN REVIEW

PROJECT MANAGEMENT

Drawn: JSC
Checked: WLS
Approved: AUD

PROJECT NUMBER

60592267

SHEET TITLE

POST CONSTRUCTION BMPs - WESTERN REMEDIATION AREA

DRAWING NUMBER EC-03

SHEET NUMBER 24 of 28 Sheets

Last saved by: CONNELLYJ1(2020-03-26) Last Plotted: 2020-04-03
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\60592267-SMME-SHT-EC03.DWG

ANSI D 22" x 34"

NOTE:

1. LIMITS OF PROJECT WORK AREA WILL BE ENCLOSED WITH ERTEC WILDLIFE EXCLUSION FENCING. SEE DRAWING EC-07.
2. PLAN SHOWS GENERAL LOCATION FOR SILT FENCE. ACTUAL LOCATIONS MUST BE ON CONTOURS BASED ON FIELD CONDITIONS AND VERIFIED BY QSP. SILT FENCE WILL NOT BE INSTALLED UP OR DOWN A SLOPE, BUT MUST BE INSTALLED ON CONTOURS AND TURNED UPHILL PER DETAIL ON SHEET EC-06. WHERE SILT FENCE CANNOT BE INSTALLED AS SHOWN ON THE DETAILS, ANOTHER BMP MAY BE USED IN PLACE OF SILT FENCE, SUCH AS GRAVEL BAG BERMS OR FIBER ROLLS.
3. FLOOD ZONE BOUNDARY TO THE EAST OF EXCAVATION 8 IS APPROXIMATED BASED ON FIELD RECONNAISSANCE AND INFORMATION FROM HISTORICAL REPORTS.

LEGEND

- LIMITS OF PROJECT WORK AREA
- CONSTRUCTION FENCING FOR VEGETATION PROTECTION
- DRAINAGE FLOW DIRECTION
- RANCH ACCESS ROAD — TC-2 — 3 EC-06
- SILT FENCE — SE-1 — 1 EC-06
- FIBER ROLL — SE-5
- WIND EROSION CONTROL — WE-1
- CONSTRUCTION ENTRANCE — TC-1 — 2 EC-06

AECOM

PROJECT

Santa Margarita Remediation Project

CLIENT

Phillips 66
76 Broadway
Sacramento, CA 95818

CONSULTANT

AECOM Technical Services, Inc
3995 Via Oro Avenue
Long Beach, CA 90810
562.420.2933 tel
www.aecom.com

REGISTRATION

REGISTERED PROFESSIONAL ENGINEER
ALEXIS DE LARME
C 75445
CIVIL
STATE OF CALIFORNIA

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	APR 2020	RE-ISSUE FOR PERMITTING
B	JUNE 2019	ISSUE FOR PERMITTING
A	MAY 2019	30% DESIGN REVIEW

PROJECT MANAGEMENT

Drawn: JSC
Checked: WLS
Approved: AUD

PROJECT NUMBER

60592267

SHEET TITLE

CONSTRUCTION BMPs - EASTERN REMEDIATION AREA

DRAWING NUMBER EC-04

SHEET NUMBER 25 of 28 Sheets

Last saved by: CONNELLYJ1(2020-04-06) Last Plotted: 2020-04-06
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CAD\60592267-SMME-SHT-EC04.DWG

ANSI D 22" x 34"

NOTES

1. ALL DISTURBED SOIL SHALL USE SCALPED TOPSOILS AND BE HYDROSEEDED AS SPECIFIED IN THE PROJECT SWPPP.
2. REMOVE AND DISPOSE OF GRAVEL FROM STABILIZED CONSTRUCTION ROADWAYS.
3. INSTALL FIBER ROLLS ALONG TOE OF SLOPE, FACE OF SLOPE, AND AT GRADE BREAKS OF EXPOSED SLOPES TO COMPLY WITH SHEET FLOW LENGTHS SPECIFIED IN THE CONSTRUCTION GENERAL PERMIT (SEE TABLE BELOW). FIELD VERIFY PLACEMENT OF FIBER ROLLS ALONG FINAL GRADE CONTOURS.

SLOPE PERCENTAGE:	SHEET FLOW LENGTH NOT TO EXCEED:
0-25%	20 FEET
25%-50%	15 FEET
OVER 50%	10 FEET

4. FIBER ROLLS USED FOR FINAL STABILIZATION MUST BE BIODEGRADABLE.
5. AS REQUIRED BY THE GENERAL PERMIT, ONCE SITE IS STABILIZED , ALL TEMPORARY BMPs (SUCH AS SILT FENCE OR FIBER ROLLS) MUST BE REMOVED.
6. FLOOD ZONE BOUNDARY TO THE EAST OF EXCAVATION 8 IS APPROXIMATED BASED ON FIELD RECONNAISSANCE AND INFORMATION FROM HISTORICAL REPORTS.

LEGEND

- LIMITS OF PROJECT WORK AREA
- RANCH ACCESS ROAD
- FIBER ROLL SE-5
- HYDROSEEDING

AECOM

PROJECT

Santa Margarita Remediation Project

CLIENT

Phillips 66
76 Broadway
Sacramento, CA 95818

CONSULTANT

AECOM Technical Services, Inc
3995 Via Oro Avenue
Long Beach, CA 90810
562.420.2933 tel
www.aecom.com

REGISTRATION

REGISTERED PROFESSIONAL ENGINEER
ALEXIS DE LARAE
C 75445
CIVIL
STATE OF CALIFORNIA

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	APR 2020	RE-ISSUE FOR PERMITTING
B	JUNE 2019	ISSUE FOR PERMITTING
A	MAY 2019	30% DESIGN REVIEW

PROJECT MANAGEMENT

Drawn: JSC
Checked: WLS
Approved: AUD

PROJECT NUMBER

60592267

SHEET TITLE

POST-CONSTRUCTION BMPs - EASTERN REMEDIATION AREA

DRAWING NUMBER EC-05

SHEET NUMBER 26 of 28 Sheets

Last saved by: CONNELLYJ1(2020-04-06) Last Plotted: 2020-04-06
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CAD\60592267-SMME-SHT-EC05.DWG

Attachment F

Air Quality and Greenhouse Gas Study for Santa Margarita Ranch Remediation Project

AECOM
5001 E Commercenter Drive
Suite 100
Bakersfield, CA 93309
www.aecom.com

661.325.7253 tel

Attachment A: Technical Memorandum

To	County of San Luis Obispo, Planning and Building Department
CC	Edward C. Ralston, Program Manager, Remediation Management, Phillips 66 Company
Subject	Air Quality and Greenhouse Gas Emissions Study
From	Paola Peña, Amir Fanai, AECOM
Date	March 23, 2020

The purpose of this technical memorandum is to summarize and detail the methodology and assumptions used in the air quality and greenhouse gas (AQ-GHG) study for the Santa Margarita Remediation Project.

INTRODUCTION

The Santa Margarita Remediation Project ("Remediation Project") is located on a portion of the Santa Margarita Ranch (APN 070-091-036) in the unincorporated community of Santa Margarita, San Luis Obispo County, California. Phillips 66 Pipeline LLC, a subsidiary of the Remediation Project proponent and Applicant Phillips 66 Company ("Phillips 66") currently operates two parallel 8-inch diameter petroleum pipelines and a 6-inch diameter natural gas pipeline within an easement owned by Phillips 66 that traverse a portion of the Ranch from the eastern side of U.S. 101.

As discussed in more detail within the Project Description of the Initial Study, hydrocarbon-impacted soil has been identified in the vicinity of the pipeline alignment at two segments on Santa Margarita Ranch (Ranch). These segments are located within the areas referred to as the Western Remediation and Eastern Remediation Areas, collectively referred to as Project Area. The purpose of the Remediation Project is to implement remediation actions at the Project Area in accordance with a Corrective Action Plan (CAP) and CAP Addendum 01 that were submitted to and approved by the Central Coast Regional Water Quality Control Board (RWQCB) on September 5, 2019. The CAP and Addendum 01 prepared for the Remediation Project provides detailed analysis of conditions and recommended remediation actions at the Remediation Project area. The primary activities detailed in the CAP and Addendum 01 entail the excavation of impacted soil at varying depths and widths within the Western and Eastern Remediation Areas, as well as backfilling the excavations with cement slurry beneath the pipelines and with clean, locally available fill material in the remainder of the excavations. Upon completion of the backfill activities, all excavations will be restored to match pre-construction grades.

AIR QUALITY BACKGROUND

The Project Area is located within the South Central Coast Air Basin (SCCAB) under the jurisdiction of the San Luis Obispo County Air Pollution Control District (SLOAPCD). The SLOAPCD is the local agency that monitors air quality within the SLOAPCD by implementing regulations and programs to reduce air pollution and assist San Luis Obispo County in reaching outdoor air quality standards.

Individual air pollutants at certain concentrations may adversely affect human or health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the United States Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) as being of concern both on a nationwide and statewide level: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). Because the air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as “criteria air pollutants.”

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE BACKGROUND

Certain gases in the earth’s atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth’s surface temperature. A portion of the solar radiation that enters earth’s atmosphere is absorbed by the earth’s surface, and a smaller portion of this radiation is reflected back toward space. Infrared radiation is absorbed by GHGs; as a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead “trapped,” resulting in a warming of the atmosphere. This phenomenon, known as the “greenhouse effect,” is responsible for maintaining a habitable climate on Earth.

GHGs are present in the atmosphere naturally, are released by natural sources and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. The following are GHGs that are widely accepted as the principal contributors to human-induced global climate change that are relevant to the Remediation Project:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)

SLOAPCD CEQA THRESHOLDS

In April 2012, SLOAPCD developed and updated the California Environmental Quality Act (CEQA) Air Quality Handbook (SLOAPCD 2012) to ensure that environmental impacts from new development are addressed and adequately mitigated. The SLOAPCD's CEQA Air Quality Handbook provides information on the SLOAPCD's significance thresholds for

determining potential air quality and GHG emissions impacts from proposed development and provides recommendations on the level of mitigation necessary to reduce those impacts.

SLOAPCD released a Clarification Memorandum in 2017 as an update and supplement to the CEQA Air Quality Handbook (SLOPACD 2017). Phillips 66 and AECOM met with SLOAPCD staff on April 24, 2019, to review project details and confirm the applicable methods and thresholds for CEQA review, taking into consideration that the Project entails only short-term remediation activity with no operational emissions. In a subsequent email communication, SLOAPCD staff clarified that the daily diesel particulate emissions should be addressed, regardless of whether or not the Remediation Project is over 90 days (email correspondence between A. Mutziger, SLOAPCD, and T. Murphy, AECOM, 6 May 2019). Table 1 lists the emissions thresholds from the SLOAPCD CEQA Air Quality Handbook.

SLOAPCD staff confirmed that these thresholds are applicable to the Remediation Project with the exception of GHG emissions. With regard to GHG emissions, SLOAPCD staff confirmed that SLOAPCD does not have a numerical GHG threshold that would apply to a short-term remediation or construction-only project; however, SLOAPCD recommends that GHG emissions should nonetheless be quantified and disclosed in the CEQA air quality assessment (email correspondence between A. Mutziger, SLOAPCD, and T. Murphy, AECOM, May 6, 2019). On August 8, 2019, the Phillips 66 and AECOM met with SLOAPCD staff again to review and discuss the AQ-GHG Study and methodology.

Table 1
SLOAPCD Thresholds of Significance for Construction Emissions

Pollutant	Threshold[(1)]		
	Daily	**Quarterly Tier 1**	**Quarterly Tier 2**
ROG + NO_X (combined)	137 lbs	2.5 tons	6.3 tons
Diesel Particulate Matter (DPM)	7 lbs	0.13 ton	0.32 ton
Fugitive Particulate Matter (PM_{10}), Dust	--	2.5 tons	--
Greenhouse Gas Emissions	Estimated for informational purposes		

Notes:
1. Daily and quarterly emission thresholds are based on the California Health and Safety Code and the ARB Carl Moyer Guidelines.

SLOAPCD = San Luis Obispo County Air Pollution Control District; lbs = pounds; ROG = reactive organic gases; NO_X = nitrogen oxides

Source: SLOAPCD 2012 CEQA Air Quality Handbook, Table 2-1, and 2017 Clarification Memo.

CONSTRUCTION PHASING AND OFFSITE HAULING ASSUMPTIONS

The Remediation Project would result in the generation of criteria air pollutant and GHG emissions during remediation activities. Remediation Project activities will include excavation of impacted soil using primarily conventional excavation and slot trenching techniques,

stockpiling, backfilling with slurry and clean fill material, dewatering, off-site trucking and disposal of impacted soil and other waste streams, and Project area restoration.

Sources of construction-related emissions include construction equipment exhaust; Project-related trips by workers, delivery of cement slurry and off-site haul truck trips; and fugitive dust from grading activities. Project-related emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 (CAPCOA 2017). CalEEMod allows the user to enter project-specific construction information, such as the construction period, the types and number of construction equipment, and the number and length of off-site hauling truck trips.

Work is planned to occur over one construction period in 2021 between mid-April and the end of October. During peak months of remediation activities, excavation, trenching, stockpiling, backfilling, and off-site trucking will occur concurrently at multiple excavation footprints. Project construction equipment will generally include loaders, dozers, water truck, skid steer, excavators, extended lifts, vibratory rollers, a dry suction excavator, backhoes, and graders. Generally, Project remediation activities will occur as overlapping activities, as shown by subphases in Table 2. It is anticipated that these activities would occur Monday through Thursday. Additional modeling details and outputs provided in Attachment 1 of this AQ-GHG Study.

Table 2
On-Site Remediation Activities

Phase	Corresponding CalEEMod Phase	Start Date	End Date
Mobilization/Site Preparation	Site Preparation	4/19/2021	5/21/2021
Conventional Excavation Areas 1-7	Grading	5/24/2021	10/21/2021
Slot Trenching Excavation Area 8	Grading	5/24/2021	8/27/2021
Conventional Excavation Area 8	Grading	8/30/2021	10/21/2021
Demobilization/Restoration	Site Preparation	10/4/2021	10/29/2021

Off-site trucking of impacted soil is anticipated to commence in June 2021 and be completed by October 2021 during daytime non-peak hours. It is estimated that approximately 58,582 cubic yards (CY) of impacted soils will be trucked off-site (including a 2.5% over-excavation contingency) and approximately 14,885 CY of cement slurry will be imported to the Project. The analysis assumed the cement slurry will be arriving via trucks from a facility approximately 24 miles away (in Paso Robles, California). Impacted soil will be transported off-site to an approved and permitted recycling/disposal facility. The disposal site will be selected prior to commencement of remediation activities. The preferred destination for the transported impacted soil is the Waste Management Inc. facility in Kettleman City in western Kings County, approximately 70 miles from the project area. Other potential locations include the Clean Harbors Buttonwillow facility or the McKittrick facility in western Kern County; these facilities are located approximately 100 miles from the project area. For purposes of this AQ-GHG

Study, and comparison to the SLOAPCD thresholds, a haul truck trip length of 53 miles to the SLOAPCD boundary was used for the emission estimates. For purposes of the GHG emissions analysis, the full haul truck trip length of 100 miles was used in the emission estimates.

As described previously, it is anticipated that off-site trucking will occur between June and October 2021. However, for planning and project implementation purposes, three distinct off-site trucking timeframes (Scenarios A - C) have been considered. Consistent with the traffic assessment, the following trucking scenarios were evaluated in the AQ-GHG Study . It should be noted, however, if the actual dates and timeframes vary from those shown in Tables 3 through 5, the AQ-GHG Study would still be representative of Project emissions as long as the number of daily and total trucks does not change.

Scenario A. As shown in Table 3, under Scenario A, it is estimated that approximately 35 - 37 loaded truck trips, or 70-74 daily one-way trips, would be required Monday through Thursday and between 15-18 loaded truck trips, or 30-36 one-way trips, would be required on Fridays between June and October 2021.

Table 3
Scenario A Trucking Assumptions

Dates	Days	Period	Time	Daily One-Way Truck Trips
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 4:00 PM	74
	Friday	Daytime	9:00 AM to 12:00 PM	36

Scenario B. If off-site trucking delays are encountered either due to truck availability or reallocation of project resources (personnel and/or equipment) from loading trucks to other Project remediation activities, it is anticipated that off-site trucking will continue into the evening non-peak hours as shown in Table 4. Under this scenario (Scenario B), the estimated number of daily truck trips are anticipated to remain the same as under Scenario A, with approximately 37 loaded truck trips Monday through Thursday and between 15-18 loaded truck trips on Friday.

However, under this scenario, for the AQ-GHG Study, , it was assumed that equipment necessary for loading the trucks would need to be operated for an additional three hours of evening loading of haul trucks.

Table 4
Scenario B Trucking Assumptions

Dates	Days	Period	Time	Daily One-Way Truck Trips
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 4:00 PM	74
		Evening	6:00 PM to 1 hour after sunset	
	Friday	Daytime	9:00 AM to 12:00 PM	36

Scenario C. Under this scenario, off-site trucking delays would cause the Project to run into the rainy season; in which case, off-site trucking would have to resume after the rainy season ends. In this case, impacted soil not transported from the Project area by the start of the rainy season would be stockpiled and secured during the rainy months. As shown in Table 5, it is anticipated that off-site trucking of the remaining stockpiled impacted soil would resume in the early part of 2022. Under Scenario C, there would be approximately 26 loaded haul truck trips per day (52 one-way trips), on Monday through Thursday, and approximately 13 daily loaded haul truck trips (26 one-way trips), on Friday.

Table 5
Scenario C Trucking Assumptions

Dates	Days	Period	Time	Daily One-Way Truck Trips
June to October 2021	Monday to Thursday	Daytime	9:00 AM to 4:00 PM	52
	Friday	Daytime	9:00 AM to 12:00 PM	26
March to May 2022[1]	Monday to Thursday	Daytime	9:00 AM to 4:00 PM	52
	Friday	Daytime	9:00 AM to 12:00 PM	26

[1] The off-site trucking that would resume in 2022 is estimated to occur between March and May. However, weather dependent, it is possible that off-site trucking begins earlier in the year. If trucking begins earlier in the year, the air quality and GHG analysis performed for the Project would still be accurate as the total and daily number of trucks would not change.

CALEEMOD LIMITATIONS AND OFF-MODEL ADJUSTMENTS

CalEEMod, described above, was used to estimate emissions associated with the different Project remediation activities and schedules, and multiple haul trucking timeframes (Scenarios A to C).

CalEEMod Run 1 incorporates and estimates emissions associated with the Project remediation activities, including the construction equipment used during site preparation, excavation, slot trenching, and restoration phases; worker and slurry truck trips; as well as fugitive dust associated with total material quantities.

CalEEMod Runs 2-A, 2-B, and 2-C estimate emissions associated with each of the haul trucking timeframes (Scenarios A to C) described above, and also include additional equipment required for loading impacted soil onto the haul trucks.

The SLOAPCD CEQA Handbook has thresholds for combined reactive organic gases (ROG) and nitrogen oxides (NO_X), diesel particulate matter (DPM), and fugitive dust. The analysis assumed DPM emissions are equal to exhaust PM_{10}. This is a conservative approach as more than 90 percent of DPM is less than 1 micrometer in diameter (CARB 2020). The analysis also assumed fugitive dust is equal to fugitive dust PM_{10} and did not include reductions associated with fugitive dust control requirements per SLOAPCD Rules and Regulations. For example, because the Remediation Project is larger than 4 acres, per SLOAPCD guidelines, the Project shall implement measures to manage fugitive dust emissions such that they do not exceed the SLOAPCD's 20 percent opacity limit (Rule 401) or prompt nuisance violations (Rule 402). As such, emissions would be further reduced with implementation of the fugitive dust control measures. The sections below describe how the emissions were summarized from the various runs for comparison to each of the thresholds.

Daily Emissions Thresholds

As shown in Table 1, the SLOAPCD daily thresholds of significance are 137 pounds per day of combined ROG and NO_X, and 7 pounds per day for DPM. Since the remediation activities would occur in the summer/fall of 2021, the CalEEMod summer output for each run was used in estimating total maximum daily emissions. Therefore, for comparison to the SLOAPCD daily thresholds of significance, daily emissions associated with the Remediation Project were calculated by adding the maximum daily emissions of Run 1 to the maximum daily emissions of each trucking scenario (Runs 2-A, 2-B, and 2-C). See Attachment 1 of this AQ-GHG Study for a detailed summary of results.

Quarterly Thresholds

As shown in Table 1, the SLOAPCD quarterly thresholds of significance are 0.13 ton per quarter for DPM, 2.5 tons per quarter of fugitive dust, and 2.5 tons per quarter of combined ROG and NO_X.

CalEEMod calculates quarterly emissions of ROG and NO_X but does not generate quarterly emissions for DPM and fugitive dust. Therefore, to be conservative, *maximum annual* emissions of DPM (exhaust PM_{10}) and fugitive dust emissions (fugitive PM_{10}) are reported instead. Thus, the quarterly emissions of DPM and fugitive dust were derived by adding the maximum annual emissions of Run 1 to the maximum annual emissions of each trucking scenario (Runs 2-A, 2-B, and 2-C). See Attachment 1 of this AQ-GHG Study for a detailed summary of results.

In summary, Project remediation activities are anticipated to occur 4 days per week, Monday through Thursday; while off-site trucking activities will occur Monday through Friday with only half-days on Fridays (9 AM to 12 PM). The shortest user option in CalEEMod (Version 2016.3.2) for days per week of construction is 5 days. Therefore, the CalEEMod runs for the Project remediation activities and off-site trucking activities were modeled assuming a 5-day construction week schedule. This results in an overestimation of the CalEEMod reported quarterly emissions of combined ROG and NO_X. Thus, the emission estimates were adjusted off-model to correct the emissions for the Remediation Project planned schedule.

For the Project remediation activities (Run 1), a 20 percent reduction was applied to the quarterly results of ROG and NO_X in the CalEEMod run to account for the 4-day remediation work week. Similarly, for Runs 2-A, 2-B, and 2-C, a 10 percent reduction was applied to the quarterly results of ROG + NO_X in the CalEEMod run to account for the 4.5-day trucking work week.

As shown in Table 6 below, mobilization, site preparation and the start of grading activities will begin prior to trucking activity (as impacted soil will need to be accumulated before hauling can begin). Therefore, the maximum quarter emissions associated with the Project remediation activities (Run 1) will not necessarily coincide with the maximum quarter emissions reported for the hauling activities (Runs 2-A, 2-B, and 2-C). Table 6 shows the start and end dates of the quarters with maximum emissions associated with Runs 1 and 2 as reported by CalEEMod.

Table 6
Maximum Quarter as Reported by CalEEMod Start and End Dates

Run	Start Date	End Date
Onsite Remediation Activities (Run 1)	4/19/2021	7/18/2021
Trucking Activities (Runs 2-A, 2-B, and 2-C)	6/7/2021	9/6/2021

The methodology used in determining the peak quarterly emissions of combined ROG and NO_X under each trucking timeframe (Scenario A to C) is depicted and summarized in Figure 1 below. The maximum quarterly emissions of combined ROG and NO_X were calculated considering the number of days in which overlapping Run 1 and Run 2 activities could occur and the associated maximum emissions that could occur in that quarter. This approach was discussed with SLOAPCD staff on January 21, 2020, and concurrence confirmation was provided in a subsequent email correspondence (J. Mansoor, SLOAPCD, and C. Chambers, County of San Luis Obispo, 14 February 2020). See Attachment 1 of this AQ-GHG Study for additional details and results.

Figure 1
Methodology for Calculation of Maximum Quarterly Emissions

Week	12-Apr-21	19-Apr-21	26-Apr-21	3-May-21	10-May-21	17-May-21	24-May-21	31-May-21	7-Jun-21	14-Jun-21	21-Jun-21	28-Jun-21	5-Jul-21	12-Jul-21	19-Jul-21	26-Jul-21	2-Aug-21	9-Aug-21	16-Aug-21	23-Aug-21	30-Aug-21	6-Sep-21	13-Sep-21	20-Sep-21	Total Work Days	Overlapping Work Days	ROG+NO_X Emissions (tons/qtr.)[1]	Emissions (tons/qtr.) during overlapping period	Maximum Emissions (tons/qtr.)[2]
Run 1									46%																65	30	x	(0.46)x	**x+(0.45y)**
Run 2									45%																66	30	y	(0.45)y	**y+(0.46x)**

Notes: tons/qtr. = tons per quarter
[1] Maximum quarterly emissions reported in CalEEMod with adjustment to account for the project-specific construction workday schedule.
[2] Emissions reported for each scenario is the highest of the two maximum emission cases.

REFERENCES

California Air Resources Board (CARB). 2020. Overview: Diesel Exhaust & Health. Available online at: https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health.

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2016.3.2. November 2017.

Mansoor, J. Re: Phillips 66 Santa Margarita SLOAPCD Emission Summary - For Discussion Only. Message to Chambers, C. February 14, 2020. Email.

Mutziger, A. Re: [EXT] Phillips 66 project meeting with SLOAPCD Wed 4/24 9:00 AM. Message to Murphy, T. May 6, 2019. Email.

San Luis Obispo County Air Pollution Control District (SLOAPCD). 2017. *Clarification Memorandum for the San Luis Obispo County Air Pollution Control District's 2012 CEQA Air Quality Handbook.* Available online at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/FINAL_Clarification%20Memorandum%2020172.pdf

-----. 2012. *CEQA Air Quality Handbook.* April. Available online at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20Map2019%29_LinkedwithMemo.pdf

Attachment 1: Air Quality and Greenhouse Gas Emission Estimates and CalEEMod Outputs

Emissions Summary
Criteria Pollutants - Hauling Scenario A

Table 1. Unmitigated Maximum Daily Emissions			
	ROG + NOx (lbs/day)	Diesel Particulate Matter (lbs/day)[1]	Fugitive Dust (lbs/day)[2]
Run 1	53.74	1.41	9.63
Run 2	54.73	0.57	6.61
Maximum Daily Emissions	108.48	1.98	16.24
SLOAPCD Daily Threshold	137	7.00	N/A
Threshold Exceeded?	No	No	N/A

[1] Diesel particulate matter emissions are equal to exhaust PM10. This is a conservative approach as more than 90% of DPM is less than 1 um in diameter. (CARB 2019, EPA 2004)

[2] Fugitive dust is equal to fugitive dust PM10. Does not include reductions associated with fugitive dust control per SLOAPCD Rules and Regulations.

Table 2. Unmitigated Quarterly Results			
	ROG + NOx (tons/quarter)	Diesel Particulate Matter (tons/quarter)[1]	Fugitive Dust (tons/quarter)[2]
Run 1	see results in Table 3B	0.08	0.24
Run 2	see results in Table 3B	0.03	0.34
Maximum Tons/Quarter	see results in Table 3B	0.11	0.58
SLOAPCD Tier 1 Threshold (tons/quarter)		0.13	2.5
Threshold Exceeded?		No	No

Notes: CalEEMod calculates quarterly emissions of ROG+NOx, but does not generate quarterly emissions for DPM and dust. DPM and fugitive dust emissions for off-road equipment, worker, and vendor trips conservatively shown for maximum annual.

CalEEMod calculates quarterly emissions based on a 5 day construction work week. Since onsite construction activities are anticipated to only occur over a 4-day work week, quarterly emissions of off-road equipment, worker, and vendor trips were scaled down by 20%. 0.8

CalEEMod calculates quarterly emissions based on a 5 day construction work week. Since the hauling activity is anticipated to only occur over a 4.5 day work week, quarterly emissions of off-road equipment, worker, and haul truck trips were scaled down by 10%. 0.9

The default haul truck trip length of 20 miles in CalEEMod was adjusted to 53 miles (the distance to the air district boundary); default vendor trip length for slurry trucks of 13 miles adjusted to 24 miles (distance to likely cement source).

[1] Diesel particulate matter emissions are equal to exhaust PM10. This is a conservative approach as more than 90% of DPM is less than 1 um in diameter. (CARB 2019, EPA 2004)

[2] Fugitive dust is equal to fugitive dust PM10. Does not include reductions associated with fugitive dust control per SLOAPCD Rules and Regulations.

Table 3A. CalEEMod (ROG +NOx) Results for Adjustments					
	ROG + NOx (tons per quarter)	Start Date	End Date	Work Days	
Run 1 Max Quarter	1.09512	4/19/2021	7/18/2021	65	Work Days between 6/7/21 and 7/18/21
Run 2 Max Quarter	1.6186	6/7/2021	9/6/2021	66	
Percentage of the Emissions in Run 2 Between 6/7/2021 and 7/18/2021				45%	30
Percentage of the Emissions in Run 1 Between 6/7/2021 and 7/18/2021				46%	30

Table 3B. Unmitigated Quarterly (ROG +NOx) Results			
	Start Date	End Date	ROG+NOx (tons/quarter)
Maximum Quarter Calculations	4/19/2021	7/18/2021	1.83
	6/7/2021	9/6/2021	2.12
Maximum Quarter			2.12
SLOAPCD Tier 1 Threshold (tons/quarter)			2.5
Threshold Exceeded?			No

Greenhouse Gas Emissions
Haul Scenario A

	Construction-Related GHG Emissions MT CO_2e
Run 1	432
Run 2	1,244
Total GHG Emissions	1,676

Notes: The default haul trip length of 20 miles in CalEEMod was adjusted to 100 miles (distance to a potential facility in Kern County).

0.8

CalEEMod calculates annual emissions based on a 5 day construction work week. Since the project is anticipated to only occur over a 4-day work week, annual emissions of off-road equipment, worker, and vendor trips were scaled down by 20%. Haul truck trips are also anticipated to occur over a 4.5-day work week; annual emissions from hauling activity were scaled down by 10%. 0.9

MT CO_2e = metric tons carbon dioxide equivalents

Emissions Summary
Criteria Pollutants - Hauling Scenario B

Table 1. Unmitigated Maximum Daily Emissions			
	ROG + NOx (lbs/day)	Diesel Particulate Matter (lbs/day)[1]	Fugitive Dust (lbs/day)[2]
Run 1	53.74	1.41	9.63
Run 2	60.26	0.82	8.87
Maximum Daily Emissions	114.00	2.22	18.50
SLOAPCD Daily Threshold	137	7.00	N/A
Threshold Exceeded?	No	No	N/A

[1] Diesel particulate matter emissions are equal to exhaust PM10. This is a conservative approach as more than 90% of DPM is less than 1 um in diameter. (CARB 2019, EPA 2004)

[2] Fugitive dust is equal to fugitive dust PM10. Does not include reductions associated with fugitive dust control per SLOAPCD Rules and Regulations.

Table 2. Unmitigated Quarterly Results			
	ROG + NOx (tons/quarter)	Diesel Particulate Matter (tons/quarter)[1]	Fugitive Dust (tons/quarter)[2]
Run 1	see results in Table 3B	0.08	0.24
Run 2	see results in Table 3B	0.04	0.46
Maximum Tons/Quarter	see results in Table 3B	0.12	0.70
SLOAPCD Tier 1 Threshold (tons/quarter)		0.13	2.5
Threshold Exceeded?		No	No

Notes: CalEEMod calculates quarterly emissions of ROG+NOx, but does not generate quarterly emissions for DPM and dust. DPM and fugitive dust emissions for off-road equipment, worker, and vendor trips conservatively shown for maximum annual.

CalEEMod calculates quarterly emissions based on a 5 day construction work week. Since onsite construction activities are anticipated to only occur over a 4-day work week, quarterly emissions of off-road equipment, worker, and vendor trips were scaled down by 20%. 0.8

CalEEMod calculates quarterly emissions based on a 5 day construction work week. Since the hauling activity is anticipated to only occur over a 4.5 day work week, quarterly emissions of off-road equipment, worker, and haul truck trips were scaled down by 10%. 0.9

The default haul truck trip length of 20 miles in CalEEMod was adjusted to 53 miles (the distance to the air district boundary); default vendor trip length for slurry trucks of 13 miles adjusted to 24 miles (distance to likely cement source).

[1] Diesel particulate matter emissions are equal to exhaust PM10. This is a conservative approach as more than 90% of DPM is less than 1 um in diameter. (CARB 2019, EPA 2004)

[2] Fugitive dust is equal to fugitive dust PM10. Does not include reductions associated with fugitive dust control per SLOAPCD Rules and Regulations.

Table 3A. CalEEMod (ROG +NOx) Results for Adjustments					
	ROG + NOx (tons per quarter)	Start Date	End Date	Work Days	
Run 1 Max Quarter	1.09512	4/19/2021	7/18/2021	65	Work Days between 6/7/21 and 7/18/21
Run 2 Max Quarter	1.7820	6/7/2021	9/6/2021	66	
Percentage of the Emissions in Run 2 Between 6/7/2021 and 7/18/2021				45%	30
Percentage of the Emissions in Run 1 Between 6/7/2021 and 7/18/2021				46%	30

Table 3B. Unmitigated Quarterly (ROG +NOx) Results			
	Start Date	End Date	ROG+NOx (tons/quarter)
Maximum Quarter Calculations	4/19/2021	7/18/2021	1.91
	6/7/2021	9/6/2021	2.29
Maximum Quarter			2.29
SLOAPCD Tier 1 Threshold (tons/quarter)			2.5
Threshold Exceeded?			No

Greenhouse Gas Emissions
Haul Scenario B

	Construction-Related GHG Emissions MT CO_2e
Run 1	432
Run 2	1,264
Total GHG Emissions	1,697

Notes: The default haul trip length of 20 miles in CalEEMod was adjusted to 100 miles (distance to a potential facility in Kern County).

0.8

CalEEMod calculates annual emissions based on a 5 day construction work week. Since the project is anticipated to only occur over a 4-day work week, annual emissions of off-road equipment, worker, and vendor trips were scaled down by 20%. Haul truck trips are also anticipated to occur over a 4.5-day work week; annual emissions from hauling activity were scaled down by 10%. 0.9

MT CO_2e = metric tons carbon dioxide equivalents

Emissions Summary
Criteria Pollutants - Hauling Scenario C

Table 1. Unmitigated Maximum Daily Emissions			
	ROG + NOx (lbs/day)	Diesel Particulate Matter (lbs/day)[1]	Fugitive Dust (lbs/day)[2]
Run 1	53.74	1.41	9.63
Run 2	40.75	0.50	6.03
Maximum Daily Emissions	94.49	1.91	15.65
SLOAPCD Daily Threshold	137	7.00	N/A
Threshold Exceeded?	No	No	N/A

[1] Diesel particulate matter emissions are equal to exhaust PM10. This is a conservative approach as more than 90% of DPM is less than 1 um in diameter. (CARB 2019, EPA 2004)

[2] Fugitive dust is equal to fugitive dust PM10. Does not include reductions associated with fugitive dust control per SLOAPCD Rules and Regulations.

Table 2. Unmitigated Quarterly Results			
	ROG + NOx (tons/quarter)	Diesel Particulate Matter (tons/quarter)[1]	Fugitive Dust (tons/quarter)[2]
Run 1	see results in Table 3B	0.08	0.24
Run 2	see results in Table 3B	0.03	0.29
Maximum Tons/Quarter	see results in Table 3B	0.11	0.53
SLOAPCD Tier 1 Threshold (tons/quarter)		0.13	2.5
Threshold Exceeded?		No	No

Notes: CalEEMod calculates quarterly emissions of ROG+NOx, but does not generate quarterly emissions for DPM and dust. DPM and fugitive dust emissions for off-road equipment, worker, and vendor trips conservatively shown for maximum annual.

CalEEMod calculates quarterly emissions based on a 5 day construction work week. Since onsite construction activities are anticipated to only occur over a 4-day work week, quarterly emissions of off-road equipment, worker, and vendor trips were scaled down by 20%. 0.8

CalEEMod calculates quarterly emissions based on a 5 day construction work week. Since the hauling activity is anticipated to only occur over a 4.5 day work week, quarterly emissions of off-road equipment, worker, and haul truck trips were scaled down by 10%. 0.9

The default haul truck trip length of 20 miles in CalEEMod was adjusted to 53 miles (the distance to the air district boundary); default vendor trip length for slurry trucks of 13 miles adjusted to 24 miles (distance to likely cement source).

[1] Diesel particulate matter emissions are equal to exhaust PM10. This is a conservative approach as more than 90% of DPM is less than 1 um in diameter. (CARB 2019, EPA 2004)

[2] Fugitive dust is equal to fugitive dust PM10. Does not include reductions associated with fugitive dust control per SLOAPCD Rules and Regulations.

Table 3A. CalEEMod (ROG +NOx) Results for Adjustments					
	ROG + NOx (tons per quarter)	Start Date	End Date	Work Days	
Run 1 Max Quarter	1.0951	4/19/2021	7/18/2021	65	Work Days between 6/7/21 and 7/18/21
Run 2 Max Quarter	1.2050	6/7/2021	9/6/2021	66	
Percentage of the Emissions in Run 2 Between 6/7/2021 and 7/18/2021				45%	30
Percentage of the Emissions in Run 1 Between 6/7/2021 and 7/18/2021				46%	30

Table 3B. Unmitigated Quarterly (ROG +NOx) Results			
	Start Date	End Date	ROG+NOx (tons/quarter)
Maximum Quarter Calculations	4/19/2021	7/18/2021	1.64
	6/7/2021	9/6/2021	1.71
Maximum Quarter			1.71
SLOAPCD Tier 1 Threshold (tons/quarter)			2.5
Threshold Exceeded?			No

Greenhouse Gas Emissions
Haul Scenario C

	Construction-Related GHG Emissions MT CO_2e
Run 1	432
Run 2	1,257
Total GHG Emissions	1,690

Notes: The default haul trip length of 20 miles in CalEEMod was adjusted to 100 miles (distance to a potential facility in Kern County).

0.8

CalEEMod calculates annual emissions based on a 5 day construction work week. Since the project is anticipated to only occur over a 4-day work week, annual emissions of off-road equipment, worker, and vendor trips were scaled down by 20%. Haul truck trips are also anticipated to occur over a 4.5-day work week; annual emissions from hauling activity were scaled down by 10%. 0.9

MT CO_2e = metric tons carbon dioxide equivalents

CalEEMod Annual and Summer Outputs:
Run 1

Phillips 66 SM Remediation Project Run 1

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Phillips 66 SM Remediation Project Run 1 - San Luis Obispo County, Annual

Project Characteristics - Construction only run

Land Use - Includes a 5-acre active work site and 3 acres of staging and stockpiling.

Construction Phase - Project specific phasing and schedule

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment. Dino modeled as off-highway truck. Dumper to account for onsite haul truck hours.

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment.

Grading - Assumes 14,885 CY of slurry import and approx. 58,582 CY of exported soils. Soil export trips included in separate run.

Trips and VMT - Assumes 30 personal vehicles (mix of LDA and LDT1, LDT2). Slurry trucks accounted as vendor trucks, assumed to orginate from site approx. 24 miles away.

Energy Use -

Construction Off-road Equipment Mitigation - Fugitive dust control of watering twice per day and limiting vehicle speeds to 15 mph. Assumes dump truck meets Tier 4 Final (CAT 730 EJ).

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	109.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	20.00	70.00
tblConstructionPhase	NumDays	20.00	39.00
tblConstructionPhase	PhaseEndDate	6/25/2021	10/21/2021
tblConstructionPhase	PhaseEndDate	5/28/2021	5/21/2021
tblConstructionPhase	PhaseStartDate	5/29/2021	5/24/2021
tblConstructionPhase	PhaseStartDate	5/15/2021	4/19/2021
tblGrading	AcresOfGrading	0.00	10.00

tblGrading	AcresOfGrading	61.25	35.00
tblGrading	AcresOfGrading	0.00	19.50
tblGrading	AcresOfGrading	6.25	10.00
tblGrading	MaterialExported	0.00	58,582.00
tblGrading	MaterialImported	0.00	14,885.00
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	HorsePower	158.00	347.00
tblOffRoadEquipment	HorsePower	158.00	347.00
tblOffRoadEquipment	HorsePower	158.00	347.00
tblOffRoadEquipment	HorsePower	402.00	200.00
tblOffRoadEquipment	HorsePower	16.00	367.00
tblOffRoadEquipment	HorsePower	402.00	367.00
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders

tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00

tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	7,323.00	0.00
tblTripsAndVMT	HaulingTripNumber	1,861.00	0.00
tblTripsAndVMT	VendorTripLength	13.00	24.00
tblTripsAndVMT	VendorTripNumber	0.00	48.00
tblTripsAndVMT	WorkerTripNumber	13.00	60.00
tblTripsAndVMT	WorkerTripNumber	18.00	60.00
tblTripsAndVMT	WorkerTripNumber	43.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	60.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2431	2.5411	1.4901	5.9800e-003	0.2401	0.0814	0.3215	0.0897	0.0749	0.1646	0.0000	537.2443	537.2443	0.1276	0.0000	540.4353
Maximum	**0.2431**	**2.5411**	**1.4901**	**5.9800e-003**	**0.2401**	**0.0814**	**0.3215**	**0.0897**	**0.0749**	**0.1646**	**0.0000**	**537.2443**	**537.2443**	**0.1276**	**0.0000**	**540.4353**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2431	2.5411	1.4901	5.9800e-003	0.1526	0.0814	0.2340	0.0527	0.0749	0.1276	0.0000	537.2438	537.2438	0.1276	0.0000	540.4349
Maximum	**0.2431**	**2.5411**	**1.4901**	**5.9800e-003**	**0.1526**	**0.0814**	**0.2340**	**0.0527**	**0.0749**	**0.1276**	**0.0000**	**537.2438**	**537.2438**	**0.1276**	**0.0000**	**540.4349**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**36.46**	**0.00**	**27.23**	**41.30**	**0.00**	**22.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-19-2021	7-18-2021	1.3689	1.3689
2	7-19-2021	9-30-2021	1.0960	1.0960
		Highest	1.3689	1.3689

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization/Site Prep	Site Preparation	4/19/2021	5/21/2021	5	25	
2	Conventional Excavation Areas 1-7	Grading	5/24/2021	10/21/2021	5	109	
3	Slot Trenching Excavation Area 8	Grading	5/24/2021	8/27/2021	5	70	
4	Conventional Excavation Area 8	Grading	8/30/2021	10/21/2021	5	39	
5	Demobilization/Restoration	Grading	10/4/2021	10/29/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Slot Trenching Excavation Area 8	Excavators	1	7.00	347	0.38
Conventional Excavation Area 8	Excavators	1	7.00	347	0.38
Demobilization/Restoration	Excavators	0	0.00	158	0.38
Conventional Excavation Areas 1-7	Excavators	1	7.00	347	0.38
Slot Trenching Excavation Area 8	Graders	2	7.00	187	0.41
Conventional Excavation Area 8	Graders	0	0.00	187	0.41
Demobilization/Restoration	Graders	1	5.00	187	0.41
Slot Trenching Excavation Area 8	Rubber Tired Dozers	0	0.00	247	0.40
Conventional Excavation Area 8	Rubber Tired Dozers	0	0.00	247	0.40
Demobilization/Restoration	Rubber Tired Dozers	0	0.00	247	0.40
Conventional Excavation Areas 1-7	Rubber Tired Dozers	0	0.00	247	0.40

Slot Trenching Excavation Area 8	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Conventional Excavation Areas 1-7	Graders	0	0.00	187	0.41
Conventional Excavation Areas 1-7	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Conventional Excavation Area 8	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Mobilization/Site Prep	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Mobilization/Site Prep	Rubber Tired Dozers	2	6.00	247	0.40
Demobilization/Restoration	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Mobilization/Site Prep	Rubber Tired Loaders	1	6.00	203	0.36
Mobilization/Site Prep	Off-Highway Trucks	1	6.00	200	0.38
Mobilization/Site Prep	Skid Steer Loaders	1	7.00	65	0.37
Conventional Excavation Areas 1-7	Dumpers/Tenders	1	8.00	367	0.38
Conventional Excavation Areas 1-7	Rubber Tired Loaders	1	7.00	203	0.36
Conventional Excavation Areas 1-7	Skid Steer Loaders	1	4.00	65	0.37
Conventional Excavation Areas 1-7	Rollers	1	7.00	80	0.38
Conventional Excavation Areas 1-7	Off-Highway Trucks	1	8.00	367	0.38
Conventional Excavation Areas 1-7	Off-Highway Trucks	1	7.00	402	0.38
Slot Trenching Excavation Area 8	Rubber Tired Loaders	1	4.00	203	0.36
Slot Trenching Excavation Area 8	Off-Highway Trucks	1	2.00	402	0.38
Slot Trenching Excavation Area 8	Off-Highway Trucks	12	0.50	402	0.38
Conventional Excavation Area 8	Rubber Tired Loaders	1	6.00	203	0.36
Conventional Excavation Area 8	Rollers	1	5.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Slot Trenching Excavation Area 8	17	0.00	48.00	0.00	13.00	24.00	20.00	LD_Mix	HDT_Mix	HHDT
Mobilization/Site Prep	5	60.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Conventional Excavation Areas 1-7	7	60.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Conventional Excavation Area 8	3	0.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization/Restoration	1	60.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Mobilization/Site Prep - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1129	0.0000	0.1129	0.0621	0.0000	0.0621	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0268	0.2797	0.1229	3.0000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	26.6115	26.6115	8.6100e-003	0.0000	26.8267
Total	**0.0268**	**0.2797**	**0.1229**	**3.0000e-004**	**0.1129**	**0.0127**	**0.1256**	**0.0621**	**0.0117**	**0.0737**	**0.0000**	**26.6115**	**26.6115**	**8.6100e-003**	**0.0000**	**26.8267**

3.2 Mobilization/Site Prep - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0600e-003	2.6600e-003	0.0234	6.0000e-005	7.2200e-003	5.0000e-005	7.2700e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	5.8347	5.8347	1.8000e-004	0.0000	5.8391
Total	**3.0600e-003**	**2.6600e-003**	**0.0234**	**6.0000e-005**	**7.2200e-003**	**5.0000e-005**	**7.2700e-003**	**1.9200e-003**	**4.0000e-005**	**1.9600e-003**	**0.0000**	**5.8347**	**5.8347**	**1.8000e-004**	**0.0000**	**5.8391**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0508	0.0000	0.0508	0.0279	0.0000	0.0279	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0268	0.2797	0.1229	3.0000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	26.6115	26.6115	8.6100e-003	0.0000	26.8266
Total	**0.0268**	**0.2797**	**0.1229**	**3.0000e-004**	**0.0508**	**0.0127**	**0.0635**	**0.0279**	**0.0117**	**0.0396**	**0.0000**	**26.6115**	**26.6115**	**8.6100e-003**	**0.0000**	**26.8266**

3.2 Mobilization/Site Prep - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0600e-003	2.6600e-003	0.0234	6.0000e-005	7.2200e-003	5.0000e-005	7.2700e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	5.8347	5.8347	1.8000e-004	0.0000	5.8391
Total	**3.0600e-003**	**2.6600e-003**	**0.0234**	**6.0000e-005**	**7.2200e-003**	**5.0000e-005**	**7.2700e-003**	**1.9200e-003**	**4.0000e-005**	**1.9600e-003**	**0.0000**	**5.8347**	**5.8347**	**1.8000e-004**	**0.0000**	**5.8391**

3.3 Conventional Excavation Areas 1-7 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0107	0.0000	0.0107	1.3900e-003	0.0000	1.3900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1024	0.9639	0.6756	2.3000e-003		0.0366	0.0366		0.0337	0.0337	0.0000	202.3911	202.3911	0.0655	0.0000	204.0276
Total	**0.1024**	**0.9639**	**0.6756**	**2.3000e-003**	**0.0107**	**0.0366**	**0.0473**	**1.3900e-003**	**0.0337**	**0.0351**	**0.0000**	**202.3911**	**202.3911**	**0.0655**	**0.0000**	**204.0276**

3.3 Conventional Excavation Areas 1-7 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0133	0.0116	0.1019	2.8000e-004	0.0315	2.0000e-004	0.0317	8.3700e-003	1.8000e-004	8.5500e-003	0.0000	25.4393	25.4393	7.7000e-004	0.0000	25.4585
Total	**0.0133**	**0.0116**	**0.1019**	**2.8000e-004**	**0.0315**	**2.0000e-004**	**0.0317**	**8.3700e-003**	**1.8000e-004**	**8.5500e-003**	**0.0000**	**25.4393**	**25.4393**	**7.7000e-004**	**0.0000**	**25.4585**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.8100e-003	0.0000	4.8100e-003	6.3000e-004	0.0000	6.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1023	0.9639	0.6756	2.3000e-003		0.0366	0.0366		0.0337	0.0337	0.0000	202.3909	202.3909	0.0655	0.0000	204.0273
Total	**0.1023**	**0.9639**	**0.6756**	**2.3000e-003**	**4.8100e-003**	**0.0366**	**0.0414**	**6.3000e-004**	**0.0337**	**0.0343**	**0.0000**	**202.3909**	**202.3909**	**0.0655**	**0.0000**	**204.0273**

3.3 Conventional Excavation Areas 1-7 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0133	0.0116	0.1019	2.8000e-004	0.0315	2.0000e-004	0.0317	8.3700e-003	1.8000e-004	8.5500e-003	0.0000	25.4393	25.4393	7.7000e-004	0.0000	25.4585
Total	**0.0133**	**0.0116**	**0.1019**	**2.8000e-004**	**0.0315**	**2.0000e-004**	**0.0317**	**8.3700e-003**	**1.8000e-004**	**8.5500e-003**	**0.0000**	**25.4393**	**25.4393**	**7.7000e-004**	**0.0000**	**25.4585**

3.4 Slot Trenching Excavation Area 8 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0199	0.0000	0.0199	2.2100e-003	0.0000	2.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0651	0.7096	0.3398	1.3200e-003		0.0237	0.0237		0.0218	0.0218	0.0000	116.2011	116.2011	0.0376	0.0000	117.1407
Total	**0.0651**	**0.7096**	**0.3398**	**1.3200e-003**	**0.0199**	**0.0237**	**0.0436**	**2.2100e-003**	**0.0218**	**0.0240**	**0.0000**	**116.2011**	**116.2011**	**0.0376**	**0.0000**	**117.1407**

3.4 Slot Trenching Excavation Area 8 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0142	0.4017	0.1073	1.2900e-003	0.0365	1.8500e-003	0.0383	0.0105	1.7700e-003	0.0123	0.0000	124.7116	124.7116	4.7600e-003	0.0000	124.8305
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0142**	**0.4017**	**0.1073**	**1.2900e-003**	**0.0365**	**1.8500e-003**	**0.0383**	**0.0105**	**1.7700e-003**	**0.0123**	**0.0000**	**124.7116**	**124.7116**	**4.7600e-003**	**0.0000**	**124.8305**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.9700e-003	0.0000	8.9700e-003	1.0000e-003	0.0000	1.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0651	0.7096	0.3398	1.3200e-003		0.0237	0.0237		0.0218	0.0218	0.0000	116.2010	116.2010	0.0376	0.0000	117.1405
Total	**0.0651**	**0.7096**	**0.3398**	**1.3200e-003**	**8.9700e-003**	**0.0237**	**0.0327**	**1.0000e-003**	**0.0218**	**0.0228**	**0.0000**	**116.2010**	**116.2010**	**0.0376**	**0.0000**	**117.1405**

3.4 Slot Trenching Excavation Area 8 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0142	0.4017	0.1073	1.2900e-003	0.0365	1.8500e-003	0.0383	0.0105	1.7700e-003	0.0123	0.0000	124.7116	124.7116	4.7600e-003	0.0000	124.8305
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0142**	**0.4017**	**0.1073**	**1.2900e-003**	**0.0365**	**1.8500e-003**	**0.0383**	**0.0105**	**1.7700e-003**	**0.0123**	**0.0000**	**124.7116**	**124.7116**	**4.7600e-003**	**0.0000**	**124.8305**

3.5 Conventional Excavation Area 8 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0103	0.0000	0.0103	1.1200e-003	0.0000	1.1200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0130	0.1328	0.0893	3.2000e-004		5.0800e-003	5.0800e-003		4.6700e-003	4.6700e-003	0.0000	27.7490	27.7490	8.9700e-003	0.0000	27.9733
Total	**0.0130**	**0.1328**	**0.0893**	**3.2000e-004**	**0.0103**	**5.0800e-003**	**0.0154**	**1.1200e-003**	**4.6700e-003**	**5.7900e-003**	**0.0000**	**27.7490**	**27.7490**	**8.9700e-003**	**0.0000**	**27.9733**

3.5 Conventional Excavation Area 8 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.6500e-003	0.0000	4.6500e-003	5.0000e-004	0.0000	5.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0130	0.1328	0.0893	3.2000e-004		5.0800e-003	5.0800e-003		4.6700e-003	4.6700e-003	0.0000	27.7489	27.7489	8.9700e-003	0.0000	27.9733
Total	**0.0130**	**0.1328**	**0.0893**	**3.2000e-004**	**4.6500e-003**	**5.0800e-003**	**9.7300e-003**	**5.0000e-004**	**4.6700e-003**	**5.1700e-003**	**0.0000**	**27.7489**	**27.7489**	**8.9700e-003**	**0.0000**	**27.9733**

3.5 Conventional Excavation Area 8 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Demobilization/Restoration - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3000e-003	0.0000	5.3000e-003	5.7000e-004	0.0000	5.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8300e-003	0.0370	0.0110	4.0000e-005		1.1700e-003	1.1700e-003		1.0800e-003	1.0800e-003	0.0000	3.6383	3.6383	1.1800e-003	0.0000	3.6677
Total	**2.8300e-003**	**0.0370**	**0.0110**	**4.0000e-005**	**5.3000e-003**	**1.1700e-003**	**6.4700e-003**	**5.7000e-004**	**1.0800e-003**	**1.6500e-003**	**0.0000**	**3.6383**	**3.6383**	**1.1800e-003**	**0.0000**	**3.6677**

3.6 Demobilization/Restoration - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4500e-003	2.1300e-003	0.0187	5.0000e-005	5.7800e-003	4.0000e-005	5.8100e-003	1.5400e-003	3.0000e-005	1.5700e-003	0.0000	4.6678	4.6678	1.4000e-004	0.0000	4.6713
Total	**2.4500e-003**	**2.1300e-003**	**0.0187**	**5.0000e-005**	**5.7800e-003**	**4.0000e-005**	**5.8100e-003**	**1.5400e-003**	**3.0000e-005**	**1.5700e-003**	**0.0000**	**4.6678**	**4.6678**	**1.4000e-004**	**0.0000**	**4.6713**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8300e-003	0.0370	0.0110	4.0000e-005		1.1700e-003	1.1700e-003		1.0800e-003	1.0800e-003	0.0000	3.6383	3.6383	1.1800e-003	0.0000	3.6677
Total	**2.8300e-003**	**0.0370**	**0.0110**	**4.0000e-005**	**2.3900e-003**	**1.1700e-003**	**3.5600e-003**	**2.6000e-004**	**1.0800e-003**	**1.3400e-003**	**0.0000**	**3.6383**	**3.6383**	**1.1800e-003**	**0.0000**	**3.6677**

3.6 Demobilization/Restoration - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4500e-003	2.1300e-003	0.0187	5.0000e-005	5.7800e-003	4.0000e-005	5.8100e-003	1.5400e-003	3.0000e-005	1.5700e-003	0.0000	4.6678	4.6678	1.4000e-004	0.0000	4.6713
Total	**2.4500e-003**	**2.1300e-003**	**0.0187**	**5.0000e-005**	**5.7800e-003**	**4.0000e-005**	**5.8100e-003**	**1.5400e-003**	**3.0000e-005**	**1.5700e-003**	**0.0000**	**4.6678**	**4.6678**	**1.4000e-004**	**0.0000**	**4.6713**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phillips 66 SM Remediation Project Run 1

San Luis Obispo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Phillips 66 SM Remediation Project Run 1 - San Luis Obispo County, Summer

Project Characteristics - Construction only run

Land Use - Includes a 5-acre active work site and 3 acres of staging and stockpiling.

Construction Phase - Project specific phasing and schedule

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment. Dino modeled as off-highway truck. Dumper to account for onsite haul truck hours.

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment.

Grading - Assumes 14,885 CY of slurry import and approx. 58,582 CY of exported soils. Soil export trips included in separate run.

Trips and VMT - Assumes 30 personal vehicles (mix of LDA and LDT1, LDT2). Slurry trucks accounted as vendor trucks, assumed to orginate from site approx. 24 miles away.

Energy Use -

Construction Off-road Equipment Mitigation - Fugitive dust control of watering twice per day and limiting vehicle speeds to 15 mph. Assumes dump truck meets Tier 4 Final (CAT 730 EJ).

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	109.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	20.00	70.00
tblConstructionPhase	NumDays	20.00	39.00
tblConstructionPhase	PhaseEndDate	6/25/2021	10/21/2021
tblConstructionPhase	PhaseEndDate	5/28/2021	5/21/2021
tblConstructionPhase	PhaseStartDate	5/29/2021	5/24/2021
tblConstructionPhase	PhaseStartDate	5/15/2021	4/19/2021
tblGrading	AcresOfGrading	0.00	10.00

tblGrading	AcresOfGrading	61.25	35.00
tblGrading	AcresOfGrading	0.00	19.50
tblGrading	AcresOfGrading	6.25	10.00
tblGrading	MaterialExported	0.00	58,582.00
tblGrading	MaterialImported	0.00	14,885.00
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	HorsePower	158.00	347.00
tblOffRoadEquipment	HorsePower	158.00	347.00
tblOffRoadEquipment	HorsePower	158.00	347.00
tblOffRoadEquipment	HorsePower	402.00	200.00
tblOffRoadEquipment	HorsePower	16.00	367.00
tblOffRoadEquipment	HorsePower	402.00	367.00
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders

tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00

tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	7,323.00	0.00
tblTripsAndVMT	HaulingTripNumber	1,861.00	0.00
tblTripsAndVMT	VendorTripLength	13.00	24.00
tblTripsAndVMT	VendorTripNumber	0.00	48.00
tblTripsAndVMT	WorkerTripNumber	13.00	60.00
tblTripsAndVMT	WorkerTripNumber	18.00	60.00
tblTripsAndVMT	WorkerTripNumber	43.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	60.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.3777	49.3656	27.0386	0.1225	9.6263	1.4050	10.6443	5.1227	1.2945	6.0593	0.0000	12,229.6615	12,229.6615	2.6718	0.0000	12,296.4556
Maximum	**4.3777**	**49.3656**	**27.0386**	**0.1225**	**9.6263**	**1.4050**	**10.6443**	**5.1227**	**1.2945**	**6.0593**	**0.0000**	**12,229.6615**	**12,229.6615**	**2.6718**	**0.0000**	**12,296.4556**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.3777	49.3656	27.0386	0.1225	4.6581	1.4050	5.6761	2.3917	1.2945	3.3283	0.0000	12,229.6615	12,229.6615	2.6718	0.0000	12,296.4556
Maximum	**4.3777**	**49.3656**	**27.0386**	**0.1225**	**4.6581**	**1.4050**	**5.6761**	**2.3917**	**1.2945**	**3.3283**	**0.0000**	**12,229.6615**	**12,229.6615**	**2.6718**	**0.0000**	**12,296.4556**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.61**	**0.00**	**46.67**	**53.31**	**0.00**	**45.07**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization/Site Prep	Site Preparation	4/19/2021	5/21/2021	5	25	
2	Conventional Excavation Areas 1-7	Grading	5/24/2021	10/21/2021	5	109	
3	Slot Trenching Excavation Area 8	Grading	5/24/2021	8/27/2021	5	70	
4	Conventional Excavation Area 8	Grading	8/30/2021	10/21/2021	5	39	
5	Demobilization/Restoration	Grading	10/4/2021	10/29/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Slot Trenching Excavation Area 8	Excavators	1	7.00	347	0.38
Conventional Excavation Area 8	Excavators	1	7.00	347	0.38
Demobilization/Restoration	Excavators	0	0.00	158	0.38
Conventional Excavation Areas 1-7	Excavators	1	7.00	347	0.38
Slot Trenching Excavation Area 8	Graders	2	7.00	187	0.41

Conventional Excavation Area 8	Graders	0	0.00	187	0.41
Demobilization/Restoration	Graders	1	5.00	187	0.41
Slot Trenching Excavation Area 8	Rubber Tired Dozers	0	0.00	247	0.40
Conventional Excavation Area 8	Rubber Tired Dozers	0	0.00	247	0.40
Demobilization/Restoration	Rubber Tired Dozers	0	0.00	247	0.40
Conventional Excavation Areas 1-7	Rubber Tired Dozers	0	0.00	247	0.40
Slot Trenching Excavation Area 8	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Conventional Excavation Areas 1-7	Graders	0	0.00	187	0.41
Conventional Excavation Areas 1-7	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Conventional Excavation Area 8	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Mobilization/Site Prep	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Mobilization/Site Prep	Rubber Tired Dozers	2	6.00	247	0.40
Demobilization/Restoration	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Mobilization/Site Prep	Rubber Tired Loaders	1	6.00	203	0.36
Mobilization/Site Prep	Off-Highway Trucks	1	6.00	200	0.38
Mobilization/Site Prep	Skid Steer Loaders	1	7.00	65	0.37
Conventional Excavation Areas 1-7	Dumpers/Tenders	1	8.00	367	0.38
Conventional Excavation Areas 1-7	Rubber Tired Loaders	1	7.00	203	0.36
Conventional Excavation Areas 1-7	Skid Steer Loaders	1	4.00	65	0.37
Conventional Excavation Areas 1-7	Rollers	1	7.00	80	0.38
Conventional Excavation Areas 1-7	Off-Highway Trucks	1	8.00	367	0.38
Conventional Excavation Areas 1-7	Off-Highway Trucks	1	7.00	402	0.38
Slot Trenching Excavation Area 8	Rubber Tired Loaders	1	4.00	203	0.36
Slot Trenching Excavation Area 8	Off-Highway Trucks	1	2.00	402	0.38
Slot Trenching Excavation Area 8	Off-Highway Trucks	12	0.50	402	0.38
Conventional Excavation Area 8	Rubber Tired Loaders	1	6.00	203	0.36
Conventional Excavation Area 8	Rollers	1	5.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Slot Trenching Excavation Area 8	17	0.00	48.00	0.00	13.00	24.00	20.00	LD_Mix	HDT_Mix	HHDT
Mobilization/Site Prep	5	60.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Conventional Excavation Areas 1-7	7	60.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Conventional Excavation Area 8	3	0.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization/Restoration	1	60.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Mobilization/Site Prep - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0331	0.0000	9.0331	4.9653	0.0000	4.9653			0.0000			0.0000
Off-Road	2.1458	22.3743	9.8353	0.0242		1.0144	1.0144		0.9332	0.9332		2,346.7333	2,346.7333	0.7590		2,365.7078
Total	**2.1458**	**22.3743**	**9.8353**	**0.0242**	**9.0331**	**1.0144**	**10.0475**	**4.9653**	**0.9332**	**5.8985**		**2,346.7333**	**2,346.7333**	**0.7590**		**2,365.7078**

3.2 Mobilization/Site Prep - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2390	0.1915	1.9341	5.3800e-003	0.5932	3.6700e-003	0.5968	0.1573	3.3900e-003	0.1607		535.4414	535.4414	0.0161		535.8433
Total	**0.2390**	**0.1915**	**1.9341**	**5.3800e-003**	**0.5932**	**3.6700e-003**	**0.5968**	**0.1573**	**3.3900e-003**	**0.1607**		**535.4414**	**535.4414**	**0.0161**		**535.8433**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0649	0.0000	4.0649	2.2344	0.0000	2.2344			0.0000			0.0000
Off-Road	2.1458	22.3743	9.8353	0.0242		1.0144	1.0144		0.9332	0.9332	0.0000	2,346.7333	2,346.7333	0.7590		2,365.7078
Total	**2.1458**	**22.3743**	**9.8353**	**0.0242**	**4.0649**	**1.0144**	**5.0793**	**2.2344**	**0.9332**	**3.1676**	**0.0000**	**2,346.7333**	**2,346.7333**	**0.7590**		**2,365.7078**

3.2 Mobilization/Site Prep - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2390	0.1915	1.9341	5.3800e-003	0.5932	3.6700e-003	0.5968	0.1573	3.3900e-003	0.1607		535.4414	535.4414	0.0161		535.8433
Total	**0.2390**	**0.1915**	**1.9341**	**5.3800e-003**	**0.5932**	**3.6700e-003**	**0.5968**	**0.1573**	**3.3900e-003**	**0.1607**		**535.4414**	**535.4414**	**0.0161**		**535.8433**

3.3 Conventional Excavation Areas 1-7 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1962	0.0000	0.1962	0.0255	0.0000	0.0255			0.0000			0.0000
Off-Road	1.8779	17.6868	12.3971	0.0423		0.6720	0.6720		0.6182	0.6182		4,093.5421	4,093.5421	1.3239		4,126.6405
Total	**1.8779**	**17.6868**	**12.3971**	**0.0423**	**0.1962**	**0.6720**	**0.8682**	**0.0255**	**0.6182**	**0.6437**		**4,093.5421**	**4,093.5421**	**1.3239**		**4,126.6405**

3.3 Conventional Excavation Areas 1-7 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2390	0.1915	1.9341	5.3800e-003	0.5932	3.6700e-003	0.5968	0.1573	3.3900e-003	0.1607		535.4414	535.4414	0.0161		535.8433
Total	**0.2390**	**0.1915**	**1.9341**	**5.3800e-003**	**0.5932**	**3.6700e-003**	**0.5968**	**0.1573**	**3.3900e-003**	**0.1607**		**535.4414**	**535.4414**	**0.0161**		**535.8433**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0883	0.0000	0.0883	0.0115	0.0000	0.0115			0.0000			0.0000
Off-Road	1.8779	17.6868	12.3971	0.0423		0.6720	0.6720		0.6182	0.6182	0.0000	4,093.5421	4,093.5421	1.3239		4,126.6405
Total	**1.8779**	**17.6868**	**12.3971**	**0.0423**	**0.0883**	**0.6720**	**0.7603**	**0.0115**	**0.6182**	**0.6297**	**0.0000**	**4,093.5421**	**4,093.5421**	**1.3239**		**4,126.6405**

3.3 Conventional Excavation Areas 1-7 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2390	0.1915	1.9341	5.3800e-003	0.5932	3.6700e-003	0.5968	0.1573	3.3900e-003	0.1607		535.4414	535.4414	0.0161		535.8433
Total	**0.2390**	**0.1915**	**1.9341**	**5.3800e-003**	**0.5932**	**3.6700e-003**	**0.5968**	**0.1573**	**3.3900e-003**	**0.1607**		**535.4414**	**535.4414**	**0.0161**		**535.8433**

3.4 Slot Trenching Excavation Area 8 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5694	0.0000	0.5694	0.0632	0.0000	0.0632			0.0000			0.0000
Off-Road	1.8610	20.2732	9.7098	0.0378		0.6767	0.6767		0.6225	0.6225		3,659.7091	3,659.7091	1.1836		3,689.2997
Total	**1.8610**	**20.2732**	**9.7098**	**0.0378**	**0.5694**	**0.6767**	**1.2460**	**0.0632**	**0.6225**	**0.6857**		**3,659.7091**	**3,659.7091**	**1.1836**		**3,689.2997**

3.4 Slot Trenching Excavation Area 8 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3998	11.2141	2.9977	0.0370	1.0649	0.0527	1.1176	0.3062	0.0504	0.3566		3,940.9689	3,940.9689	0.1481		3,944.6721
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.3998**	**11.2141**	**2.9977**	**0.0370**	**1.0649**	**0.0527**	**1.1176**	**0.3062**	**0.0504**	**0.3566**		**3,940.9689**	**3,940.9689**	**0.1481**		**3,944.6721**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2562	0.0000	0.2562	0.0284	0.0000	0.0284			0.0000			0.0000
Off-Road	1.8610	20.2732	9.7098	0.0378		0.6767	0.6767		0.6225	0.6225	0.0000	3,659.7091	3,659.7091	1.1836		3,689.2997
Total	**1.8610**	**20.2732**	**9.7098**	**0.0378**	**0.2562**	**0.6767**	**0.9329**	**0.0284**	**0.6225**	**0.6509**	**0.0000**	**3,659.7091**	**3,659.7091**	**1.1836**		**3,689.2997**

3.4 Slot Trenching Excavation Area 8 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3998	11.2141	2.9977	0.0370	1.0649	0.0527	1.1176	0.3062	0.0504	0.3566		3,940.9689	3,940.9689	0.1481		3,944.6721
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.3998**	**11.2141**	**2.9977**	**0.0370**	**1.0649**	**0.0527**	**1.1176**	**0.3062**	**0.0504**	**0.3566**		**3,940.9689**	**3,940.9689**	**0.1481**		**3,944.6721**

3.5 Conventional Excavation Area 8 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6664	6.8098	4.5790	0.0162		0.2604	0.2604		0.2396	0.2396		1,568.6147	1,568.6147	0.5073		1,581.2977
Total	**0.6664**	**6.8098**	**4.5790**	**0.0162**	**0.5303**	**0.2604**	**0.7907**	**0.0573**	**0.2396**	**0.2968**		**1,568.6147**	**1,568.6147**	**0.5073**		**1,581.2977**

3.5 Conventional Excavation Area 8 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.6664	6.8098	4.5790	0.0162		0.2604	0.2604		0.2396	0.2396	0.0000	1,568.6147	1,568.6147	0.5073		1,581.2977
Total	**0.6664**	**6.8098**	**4.5790**	**0.0162**	**0.2386**	**0.2604**	**0.4990**	**0.0258**	**0.2396**	**0.2653**	**0.0000**	**1,568.6147**	**1,568.6147**	**0.5073**		**1,581.2977**

3.5 Conventional Excavation Area 8 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Demobilization/Restoration - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.2831	3.7029	1.1045	4.1400e-003		0.1173	0.1173		0.1079	0.1079		401.0526	401.0526	0.1297		404.2953
Total	**0.2831**	**3.7029**	**1.1045**	**4.1400e-003**	**0.5303**	**0.1173**	**0.6476**	**0.0573**	**0.1079**	**0.1652**		**401.0526**	**401.0526**	**0.1297**		**404.2953**

3.6 Demobilization/Restoration - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2390	0.1915	1.9341	5.3800e-003	0.5932	3.6700e-003	0.5968	0.1573	3.3900e-003	0.1607		535.4414	535.4414	0.0161		535.8433
Total	**0.2390**	**0.1915**	**1.9341**	**5.3800e-003**	**0.5932**	**3.6700e-003**	**0.5968**	**0.1573**	**3.3900e-003**	**0.1607**		**535.4414**	**535.4414**	**0.0161**		**535.8433**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.2831	3.7029	1.1045	4.1400e-003		0.1173	0.1173		0.1079	0.1079	0.0000	401.0526	401.0526	0.1297		404.2953
Total	**0.2831**	**3.7029**	**1.1045**	**4.1400e-003**	**0.2386**	**0.1173**	**0.3559**	**0.0258**	**0.1079**	**0.1337**	**0.0000**	**401.0526**	**401.0526**	**0.1297**		**404.2953**

3.6 Demobilization/Restoration - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2390	0.1915	1.9341	5.3800e-003	0.5932	3.6700e-003	0.5968	0.1573	3.3900e-003	0.1607		535.4414	535.4414	0.0161		535.8433
Total	**0.2390**	**0.1915**	**1.9341**	**5.3800e-003**	**0.5932**	**3.6700e-003**	**0.5968**	**0.1573**	**3.3900e-003**	**0.1607**		**535.4414**	**535.4414**	**0.0161**		**535.8433**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Annual and Summer Outputs:
Run 2 - Scenario A

Phillips 66 SM Remediation Project Run 2 Scenario A

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 2 to account for offsite hauling related activities.

Land Use - Includes a 5-acre active work site and 3 acres of staging and stockpiling.

Construction Phase - Project specific schedule for hauling. AC phase included as placeholder.

Off-road Equipment - Project specific equipment for hauling activities.

Off-road Equipment - No arch coating phase.

Grading - Material quantities included in Run 1.

Trips and VMT - Default worker trips. Scenario A includes approximately 37 haul trucks per day. Modeled as vendor trucks, adjusted to HHDT with 53 mile trip length.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day and 15 mph vehicle speed on unpaved roads.

Phillips 66 SM Remediation Project Run 2 Scenario A - San Luis Obispo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	NumDays	20.00	105.00
tblConstructionPhase	PhaseEndDate	8/26/2022	7/30/2021
tblConstructionPhase	PhaseEndDate	8/13/2021	10/29/2021
tblConstructionPhase	PhaseStartDate	7/30/2022	7/30/2021
tblConstructionPhase	PhaseStartDate	7/17/2021	6/7/2021
tblGrading	AcresOfGrading	0.00	10.00
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	13.00	53.00
tblTripsAndVMT	VendorTripNumber	0.00	74.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1077	2.8304	0.8017	7.8300e-003	0.3429	0.0300	0.3729	0.1367	0.0281	0.1648	0.0000	763.7582	763.7582	0.0485	0.0000	764.9715
Maximum	**0.1077**	**2.8304**	**0.8017**	**7.8300e-003**	**0.3429**	**0.0300**	**0.3729**	**0.1367**	**0.0281**	**0.1648**	**0.0000**	**763.7582**	**763.7582**	**0.0485**	**0.0000**	**764.9715**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1077	2.8304	0.8017	7.8300e-003	0.2531	0.0300	0.2831	0.0886	0.0281	0.1167	0.0000	763.7582	763.7582	0.0485	0.0000	764.9714
Maximum	**0.1077**	**2.8304**	**0.8017**	**7.8300e-003**	**0.2531**	**0.0300**	**0.2831**	**0.0886**	**0.0281**	**0.1167**	**0.0000**	**763.7582**	**763.7582**	**0.0485**	**0.0000**	**764.9714**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**26.21**	**0.00**	**24.10**	**35.18**	**0.00**	**29.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-7-2021	9-6-2021	1.7984	1.7984
2	9-7-2021	9-30-2021	0.4692	0.4692
		Highest	1.7984	1.7984

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/7/2021	10/29/2021	5	105	
2	Architectural Coating	Architectural Coating	7/30/2021	7/30/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	0.00	78	0.48
Grading	Aerial Lifts	1	4.00	63	0.31
Grading	Excavators	0	0.00	158	0.38
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Grading	Graders	0	0.00	187	0.41
Grading	Tractors/Loaders/Backhoes	1	5.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	74.00	0.00	13.00	53.00	20.00	LD_Mix	HHDT	HHDT
Architectural Coating	0	0.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1634	0.0000	0.1634	0.0875	0.0000	0.0875	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0346	0.3659	0.2087	3.7000e-004		0.0179	0.0179		0.0165	0.0165	0.0000	32.5092	32.5092	0.0105	0.0000	32.7721
Total	**0.0346**	**0.3659**	**0.2087**	**3.7000e-004**	**0.1634**	**0.0179**	**0.1813**	**0.0875**	**0.0165**	**0.1040**	**0.0000**	**32.5092**	**32.5092**	**0.0105**	**0.0000**	**32.7721**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0714	2.4630	0.5799	7.4300e-003	0.1755	0.0121	0.1875	0.0482	0.0115	0.0597	0.0000	727.9816	727.9816	0.0379	0.0000	728.9295
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.0731**	**2.4645**	**0.5929**	**7.4700e-003**	**0.1795**	**0.0121**	**0.1916**	**0.0493**	**0.0116**	**0.0608**	**0.0000**	**731.2490**	**731.2490**	**0.0380**	**0.0000**	**732.1994**

3.2 Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0735	0.0000	0.0735	0.0394	0.0000	0.0394	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0346	0.3659	0.2087	3.7000e-004		0.0179	0.0179		0.0165	0.0165	0.0000	32.5092	32.5092	0.0105	0.0000	32.7720
Total	**0.0346**	**0.3659**	**0.2087**	**3.7000e-004**	**0.0735**	**0.0179**	**0.0915**	**0.0394**	**0.0165**	**0.0559**	**0.0000**	**32.5092**	**32.5092**	**0.0105**	**0.0000**	**32.7720**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0714	2.4630	0.5799	7.4300e-003	0.1755	0.0121	0.1875	0.0482	0.0115	0.0597	0.0000	727.9816	727.9816	0.0379	0.0000	728.9295
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.0731**	**2.4645**	**0.5929**	**7.4700e-003**	**0.1795**	**0.0121**	**0.1916**	**0.0493**	**0.0116**	**0.0608**	**0.0000**	**731.2490**	**731.2490**	**0.0380**	**0.0000**	**732.1994**

3.3 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phillips 66 SM Remediation Project Run 2 Scenario A

San Luis Obispo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 2 to account for offsite hauling related activities.

Land Use - Includes a 5-acre active work site and 3 acres of staging and stockpiling.

Construction Phase - Project specific schedule for hauling. AC phase included as placeholder.

Off-road Equipment - Project specific equipment for hauling activities.

Off-road Equipment - No arch coating phase.

Grading - Material quantities included in Run 1.

Trips and VMT - Default worker trips. Scenario A includes approximately 37 haul trucks per day. Modeled as vendor trucks, adjusted to HHDT with 53 mile trip length.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day and 15 mph vehicle speed on unpaved roads.

Phillips 66 SM Remediation Project Run 2 Scenario A - San Luis Obispo County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	NumDays	20.00	105.00
tblConstructionPhase	PhaseEndDate	8/26/2022	7/30/2021
tblConstructionPhase	PhaseEndDate	8/13/2021	10/29/2021
tblConstructionPhase	PhaseStartDate	7/30/2022	7/30/2021
tblConstructionPhase	PhaseStartDate	7/17/2021	6/7/2021
tblGrading	AcresOfGrading	0.00	10.00
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	13.00	53.00
tblTripsAndVMT	VendorTripNumber	0.00	74.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.0437	52.6910	15.1996	0.1496	6.6117	0.5710	7.1828	2.6239	0.5338	3.1577	0.0000	16,078.3151	16,078.3151	1.0143	0.0000	16,103.6734
Maximum	**2.0437**	**52.6910**	**15.1996**	**0.1496**	**6.6117**	**0.5710**	**7.1828**	**2.6239**	**0.5338**	**3.1577**	**0.0000**	**16,078.3151**	**16,078.3151**	**1.0143**	**0.0000**	**16,103.6734**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.0437	52.6910	15.1996	0.1496	4.9001	0.5710	5.4712	1.7076	0.5338	2.2414	0.0000	16,078.3151	16,078.3151	1.0143	0.0000	16,103.6734
Maximum	**2.0437**	**52.6910**	**15.1996**	**0.1496**	**4.9001**	**0.5710**	**5.4712**	**1.7076**	**0.5338**	**2.2414**	**0.0000**	**16,078.3151**	**16,078.3151**	**1.0143**	**0.0000**	**16,103.6734**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**25.89**	**0.00**	**23.83**	**34.92**	**0.00**	**29.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/7/2021	10/29/2021	5	105	
2	Architectural Coating	Architectural Coating	7/30/2021	7/30/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	0.00	78	0.48
Grading	Aerial Lifts	1	4.00	63	0.31
Grading	Excavators	0	0.00	158	0.38
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Grading	Graders	0	0.00	187	0.41
Grading	Tractors/Loaders/Backhoes	1	5.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	74.00	0.00	13.00	53.00	20.00	LD_Mix	HHDT	HHDT
Architectural Coating	0	0.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1120	0.0000	3.1120	1.6660	0.0000	1.6660			0.0000			0.0000
Off-Road	0.6589	6.9691	3.9754	7.0400e-003		0.3418	0.3418		0.3144	0.3144		682.5765	682.5765	0.2208		688.0954
Total	**0.6589**	**6.9691**	**3.9754**	**7.0400e-003**	**3.1120**	**0.3418**	**3.4538**	**1.6660**	**0.3144**	**1.9805**		**682.5765**	**682.5765**	**0.2208**		**688.0954**

3.2 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.3530	45.6964	10.9664	0.1418	3.4206	0.2288	3.6494	0.9369	0.2189	1.1558		15,324.3465	15,324.3465	0.7914		15,344.1322
Worker	0.0319	0.0255	0.2579	7.2000e-004	0.0791	4.9000e-004	0.0796	0.0210	4.5000e-004	0.0214		71.3922	71.3922	2.1400e-003		71.4458
Total	**1.3848**	**45.7219**	**11.2242**	**0.1426**	**3.4997**	**0.2293**	**3.7290**	**0.9579**	**0.2193**	**1.1772**		**15,395.7387**	**15,395.7387**	**0.7936**		**15,415.5780**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.4004	0.0000	1.4004	0.7497	0.0000	0.7497			0.0000			0.0000
Off-Road	0.6589	6.9691	3.9754	7.0400e-003		0.3418	0.3418		0.3144	0.3144	0.0000	682.5765	682.5765	0.2208		688.0954
Total	**0.6589**	**6.9691**	**3.9754**	**7.0400e-003**	**1.4004**	**0.3418**	**1.7422**	**0.7497**	**0.3144**	**1.0642**	**0.0000**	**682.5765**	**682.5765**	**0.2208**		**688.0954**

3.2 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.3530	45.6964	10.9664	0.1418	3.4206	0.2288	3.6494	0.9369	0.2189	1.1558		15,324.3465	15,324.3465	0.7914		15,344.1322
Worker	0.0319	0.0255	0.2579	7.2000e-004	0.0791	4.9000e-004	0.0796	0.0210	4.5000e-004	0.0214		71.3922	71.3922	2.1400e-003		71.4458
Total	**1.3848**	**45.7219**	**11.2242**	**0.1426**	**3.4997**	**0.2293**	**3.7290**	**0.9579**	**0.2193**	**1.1772**		**15,395.7387**	**15,395.7387**	**0.7936**		**15,415.5780**

3.3 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.3 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.3 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Annual and Summer Outputs:
Run 2 - Scenario B

Phillips 66 SM Remediation Project Run 2 Scenario B

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 2 to acount for offsite hauling related activities.

Land Use - Includes 5-acre active work site, and 3 acres of staging and stockpiling

Construction Phase - Project specific schedule for hauling. AC phase included as placeholder.

Off-road Equipment - Project specific equipment for hauling activities.

Off-road Equipment - No arch coating phase.

Grading - Material quantities included in Run 1.

Trips and VMT - Default worker trips. Scenario B includes 37 haul trucks per day. Modeled as vendor trucks, adjusted to HHDT with 53 mile trip length.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day and 15 mph vehicle speed on unpaved roads.

Phillips 66 SM Remediation Project Run 2 Scenario B - San Luis Obispo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	NumDays	20.00	105.00
tblConstructionPhase	PhaseEndDate	8/26/2022	7/30/2021
tblConstructionPhase	PhaseEndDate	8/13/2021	10/29/2021
tblConstructionPhase	PhaseStartDate	7/30/2022	7/30/2021
tblConstructionPhase	PhaseStartDate	7/17/2021	6/7/2021
tblGrading	AcresOfGrading	0.00	10.00
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	13.00	53.00
tblTripsAndVMT	VendorTripNumber	0.00	74.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1327	3.0955	0.9471	8.0900e-003	0.4615	0.0429	0.5044	0.2019	0.0399	0.2418	0.0000	786.7966	786.7966	0.0560	0.0000	788.1961
Maximum	**0.1327**	**3.0955**	**0.9471**	**8.0900e-003**	**0.4615**	**0.0429**	**0.5044**	**0.2019**	**0.0399**	**0.2418**	**0.0000**	**786.7966**	**786.7966**	**0.0560**	**0.0000**	**788.1961**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1327	3.0955	0.9471	8.0900e-003	0.3064	0.0429	0.3493	0.1179	0.0399	0.1579	0.0000	786.7965	786.7965	0.0560	0.0000	788.1961
Maximum	**0.1327**	**3.0955**	**0.9471**	**8.0900e-003**	**0.3064**	**0.0429**	**0.3493**	**0.1179**	**0.0399**	**0.1579**	**0.0000**	**786.7965**	**786.7965**	**0.0560**	**0.0000**	**788.1961**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**33.60**	**0.00**	**30.74**	**41.58**	**0.00**	**34.71**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-7-2021	9-6-2021	1.9800	1.9800
2	9-7-2021	9-30-2021	0.5165	0.5165
		Highest	1.9800	1.9800

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/7/2021	10/29/2021	5	105	
2	Architectural Coating	Architectural Coating	7/30/2021	7/30/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	0.00	78	0.48
Grading	Aerial Lifts	1	7.00	63	0.31
Grading	Excavators	0	0.00	158	0.38
Grading	Rubber Tired Dozers	1	7.00	247	0.40
Grading	Graders	0	0.00	187	0.41
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	74.00	0.00	13.00	53.00	20.00	LD_Mix	HHDT	HHDT
Architectural Coating	0	0.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2819	0.0000	0.2819	0.1526	0.0000	0.1526	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0596	0.6310	0.3541	6.3000e-004		0.0309	0.0309		0.0284	0.0284	0.0000	55.5476	55.5476	0.0180	0.0000	55.9967
Total	**0.0596**	**0.6310**	**0.3541**	**6.3000e-004**	**0.2819**	**0.0309**	**0.3128**	**0.1526**	**0.0284**	**0.1810**	**0.0000**	**55.5476**	**55.5476**	**0.0180**	**0.0000**	**55.9967**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0714	2.4630	0.5799	7.4300e-003	0.1755	0.0121	0.1875	0.0482	0.0115	0.0597	0.0000	727.9816	727.9816	0.0379	0.0000	728.9295
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.0731**	**2.4645**	**0.5929**	**7.4700e-003**	**0.1795**	**0.0121**	**0.1916**	**0.0493**	**0.0116**	**0.0608**	**0.0000**	**731.2490**	**731.2490**	**0.0380**	**0.0000**	**732.1994**

3.2 Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1269	0.0000	0.1269	0.0687	0.0000	0.0687	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0596	0.6310	0.3541	6.3000e-004		0.0309	0.0309		0.0284	0.0284	0.0000	55.5475	55.5475	0.0180	0.0000	55.9966
Total	**0.0596**	**0.6310**	**0.3541**	**6.3000e-004**	**0.1269**	**0.0309**	**0.1577**	**0.0687**	**0.0284**	**0.0971**	**0.0000**	**55.5475**	**55.5475**	**0.0180**	**0.0000**	**55.9966**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0714	2.4630	0.5799	7.4300e-003	0.1755	0.0121	0.1875	0.0482	0.0115	0.0597	0.0000	727.9816	727.9816	0.0379	0.0000	728.9295
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.0731**	**2.4645**	**0.5929**	**7.4700e-003**	**0.1795**	**0.0121**	**0.1916**	**0.0493**	**0.0116**	**0.0608**	**0.0000**	**731.2490**	**731.2490**	**0.0380**	**0.0000**	**732.1994**

3.3 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phillips 66 SM Remediation Project Run 2 Scenario B

San Luis Obispo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 2 to acount for offsite hauling related activities.

Land Use - Includes 5-acre active work site, and 3 acres of staging and stockpiling

Construction Phase - Project specific schedule for hauling. AC phase included as placeholder.

Off-road Equipment - Project specific equipment for hauling activities.

Off-road Equipment - No arch coating phase.

Grading - Material quantities included in Run 1.

Trips and VMT - Default worker trips. Scenario B includes 37 haul trucks per day. Modeled as vendor trucks, adjusted to HHDT with 53 mile trip length.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day and 15 mph vehicle speed on unpaved roads.

Phillips 66 SM Remediation Project Run 2 Scenario B - San Luis Obispo County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	NumDays	20.00	105.00
tblConstructionPhase	PhaseEndDate	8/26/2022	7/30/2021
tblConstructionPhase	PhaseEndDate	8/13/2021	10/29/2021
tblConstructionPhase	PhaseStartDate	7/30/2022	7/30/2021
tblConstructionPhase	PhaseStartDate	7/17/2021	6/7/2021
tblGrading	AcresOfGrading	0.00	10.00
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	13.00	53.00
tblTripsAndVMT	VendorTripNumber	0.00	74.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.5203	57.7401	17.9693	0.1546	8.8700	0.8169	9.6869	3.8653	0.7599	4.6252	0.0000	16,562.0381	16,562.0381	1.1708	0.0000	16,591.3075
Maximum	**2.5203**	**57.7401**	**17.9693**	**0.1546**	**8.8700**	**0.8169**	**9.6869**	**3.8653**	**0.7599**	**4.6252**	**0.0000**	**16,562.0381**	**16,562.0381**	**1.1708**	**0.0000**	**16,591.3075**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.5203	57.7401	17.9693	0.1546	5.9164	0.8169	6.7332	2.2662	0.7599	3.0262	0.0000	16,562.0381	16,562.0381	1.1708	0.0000	16,591.3075
Maximum	**2.5203**	**57.7401**	**17.9693**	**0.1546**	**5.9164**	**0.8169**	**6.7332**	**2.2662**	**0.7599**	**3.0262**	**0.0000**	**16,562.0381**	**16,562.0381**	**1.1708**	**0.0000**	**16,591.3075**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**33.30**	**0.00**	**30.49**	**41.37**	**0.00**	**34.57**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/7/2021	10/29/2021	5	105	
2	Architectural Coating	Architectural Coating	7/30/2021	7/30/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	0.00	78	0.48
Grading	Aerial Lifts	1	7.00	63	0.31
Grading	Excavators	0	0.00	158	0.38
Grading	Rubber Tired Dozers	1	7.00	247	0.40
Grading	Graders	0	0.00	187	0.41
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	74.00	0.00	13.00	53.00	20.00	LD_Mix	HHDT	HHDT
Architectural Coating	0	0.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.3703	0.0000	5.3703	2.9074	0.0000	2.9074			0.0000			0.0000
Off-Road	1.1355	12.0182	6.7450	0.0120		0.5876	0.5876		0.5406	0.5406		1,166.2994	1,166.2994	0.3772		1,175.7295
Total	**1.1355**	**12.0182**	**6.7450**	**0.0120**	**5.3703**	**0.5876**	**5.9580**	**2.9074**	**0.5406**	**3.4480**		**1,166.2994**	**1,166.2994**	**0.3772**		**1,175.7295**

3.2 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.3530	45.6964	10.9664	0.1418	3.4206	0.2288	3.6494	0.9369	0.2189	1.1558		15,324.3465	15,324.3465	0.7914		15,344.1322
Worker	0.0319	0.0255	0.2579	7.2000e-004	0.0791	4.9000e-004	0.0796	0.0210	4.5000e-004	0.0214		71.3922	71.3922	2.1400e-003		71.4458
Total	**1.3848**	**45.7219**	**11.2242**	**0.1426**	**3.4997**	**0.2293**	**3.7290**	**0.9579**	**0.2193**	**1.1772**		**15,395.7387**	**15,395.7387**	**0.7936**		**15,415.5780**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4167	0.0000	2.4167	1.3083	0.0000	1.3083			0.0000			0.0000
Off-Road	1.1355	12.0182	6.7450	0.0120		0.5876	0.5876		0.5406	0.5406	0.0000	1,166.2994	1,166.2994	0.3772		1,175.7295
Total	**1.1355**	**12.0182**	**6.7450**	**0.0120**	**2.4167**	**0.5876**	**3.0043**	**1.3083**	**0.5406**	**1.8489**	**0.0000**	**1,166.2994**	**1,166.2994**	**0.3772**		**1,175.7295**

3.2 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.3530	45.6964	10.9664	0.1418	3.4206	0.2288	3.6494	0.9369	0.2189	1.1558		15,324.3465	15,324.3465	0.7914		15,344.1322
Worker	0.0319	0.0255	0.2579	7.2000e-004	0.0791	4.9000e-004	0.0796	0.0210	4.5000e-004	0.0214		71.3922	71.3922	2.1400e-003		71.4458
Total	**1.3848**	**45.7219**	**11.2242**	**0.1426**	**3.4997**	**0.2293**	**3.7290**	**0.9579**	**0.2193**	**1.1772**		**15,395.7387**	**15,395.7387**	**0.7936**		**15,415.5780**

3.3 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.3 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.3 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Annual and Summer Outputs:
Run 2 - Scenario C

Phillips 66 SM Remediation Project Run 2 Scenario C

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 2 to account for offsite hauling activites.

Land Use - Includes 5-acre active work site, and 3 acres of staging and stockpiling.

Construction Phase - Project specific schedule for hauling.

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment.

Grading - Material quantities included in Run 1.

Trips and VMT - Default worker trips. Scenario C includes 26 haul trucks per day. Modeled as vendor trucks, adjusted to HHDT with 53 mile trip length.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day and 15 mph vehicle speed on unpaved roads.

Phillips 66 SM Remediation Project Run 2 Scenario C - San Luis Obispo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	105.00
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	PhaseEndDate	8/13/2021	10/29/2021
tblConstructionPhase	PhaseStartDate	7/17/2021	6/7/2021
tblGrading	AcresOfGrading	0.00	10.00
tblGrading	AcresOfGrading	0.00	22.50
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	13.00	53.00

tblTripsAndVMT	VendorTripLength	13.00	53.00
tblTripsAndVMT	VendorTripNumber	0.00	52.00
tblTripsAndVMT	VendorTripNumber	0.00	52.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0865	2.0982	0.6294	5.6300e-003	0.2907	0.0264	0.3172	0.1224	0.0246	0.1470	0.0000	547.3538	547.3538	0.0373	0.0000	548.2854
2022	0.0330	0.7963	0.2584	2.3800e-003	0.1343	9.2200e-003	0.1435	0.0535	8.5900e-003	0.0621	0.0000	231.6948	231.6948	0.0162	0.0000	232.0985
Maximum	**0.0865**	**2.0982**	**0.6294**	**5.6300e-003**	**0.2907**	**0.0264**	**0.3172**	**0.1224**	**0.0246**	**0.1470**	**0.0000**	**547.3538**	**547.3538**	**0.0373**	**0.0000**	**548.2854**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0865	2.0982	0.6294	5.6300e-003	0.2009	0.0264	0.2273	0.0743	0.0246	0.0989	0.0000	547.3537	547.3537	0.0373	0.0000	548.2853
2022	0.0330	0.7963	0.2584	2.3800e-003	0.0905	9.2200e-003	0.0997	0.0323	8.5900e-003	0.0409	0.0000	231.6948	231.6948	0.0162	0.0000	232.0985
Maximum	**0.0865**	**2.0982**	**0.6294**	**5.6300e-003**	**0.2009**	**0.0264**	**0.2273**	**0.0743**	**0.0246**	**0.0989**	**0.0000**	**547.3537**	**547.3537**	**0.0373**	**0.0000**	**548.2853**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**31.45**	**0.00**	**29.02**	**39.40**	**0.00**	**33.14**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-7-2021	9-6-2021	1.3389	1.3389
2	9-7-2021	12-6-2021	0.7769	0.7769
4	3-7-2022	6-6-2022	0.7881	0.7881
		Highest	1.3389	1.3389

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Haul Truck Phase 1	Grading	6/7/2021	10/29/2021	5	105	
2	Haul Truck Phase 2	Grading	3/21/2022	5/20/2022	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Haul Truck Phase 2	Excavators	0	0.00	158	0.38
Haul Truck Phase 2	Graders	0	0.00	187	0.41
Haul Truck Phase 2	Rubber Tired Dozers	1	4.00	247	0.40
Haul Truck Phase 1	Excavators	0	0.00	158	0.38
Haul Truck Phase 2	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Haul Truck Phase 1	Aerial Lifts	1	4.00	63	0.31
Haul Truck Phase 2	Aerial Lifts	1	4.00	63	0.31
Haul Truck Phase 1	Rubber Tired Dozers	1	4.00	247	0.40
Haul Truck Phase 1	Graders	0	0.00	187	0.41
Haul Truck Phase 1	Tractors/Loaders/Backhoes	1	5.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Haul Truck Phase 2	3	8.00	52.00	0.00	13.00	53.00	20.00	LD_Mix	HHDT	HHDT
Haul Truck Phase 1	3	8.00	52.00	0.00	13.00	53.00	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Haul Truck Phase 1 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1634	0.0000	0.1634	0.0875	0.0000	0.0875	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0346	0.3660	0.2089	3.7000e-004		0.0180	0.0180		0.0165	0.0165	0.0000	32.5317	32.5317	0.0105	0.0000	32.7947
Total	**0.0346**	**0.3660**	**0.2089**	**3.7000e-004**	**0.1634**	**0.0180**	**0.1813**	**0.0875**	**0.0165**	**0.1040**	**0.0000**	**32.5317**	**32.5317**	**0.0105**	**0.0000**	**32.7947**

3.2 Haul Truck Phase 1 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0501	1.7308	0.4075	5.2200e-003	0.1233	8.4700e-003	0.1318	0.0339	8.1100e-003	0.0420	0.0000	511.5546	511.5546	0.0266	0.0000	512.2207
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.0519**	**1.7323**	**0.4206**	**5.2600e-003**	**0.1274**	**8.5000e-003**	**0.1359**	**0.0349**	**8.1300e-003**	**0.0431**	**0.0000**	**514.8221**	**514.8221**	**0.0267**	**0.0000**	**515.4906**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0735	0.0000	0.0735	0.0394	0.0000	0.0394	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0346	0.3660	0.2089	3.7000e-004		0.0180	0.0180		0.0165	0.0165	0.0000	32.5317	32.5317	0.0105	0.0000	32.7947
Total	**0.0346**	**0.3660**	**0.2089**	**3.7000e-004**	**0.0735**	**0.0180**	**0.0915**	**0.0394**	**0.0165**	**0.0559**	**0.0000**	**32.5317**	**32.5317**	**0.0105**	**0.0000**	**32.7947**

3.2 Haul Truck Phase 1 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0501	1.7308	0.4075	5.2200e-003	0.1233	8.4700e-003	0.1318	0.0339	8.1100e-003	0.0420	0.0000	511.5546	511.5546	0.0266	0.0000	512.2207
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.0519**	**1.7323**	**0.4206**	**5.2600e-003**	**0.1274**	**8.5000e-003**	**0.1359**	**0.0349**	**8.1300e-003**	**0.0431**	**0.0000**	**514.8221**	**514.8221**	**0.0267**	**0.0000**	**515.4906**

3.3 Haul Truck Phase 2 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0797	0.0000	0.0797	0.0385	0.0000	0.0385	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.1288	0.0841	1.6000e-004		6.0800e-003	6.0800e-003		5.5900e-003	5.5900e-003	0.0000	13.9432	13.9432	4.5100e-003	0.0000	14.0560
Total	**0.0121**	**0.1288**	**0.0841**	**1.6000e-004**	**0.0797**	**6.0800e-003**	**0.0858**	**0.0385**	**5.5900e-003**	**0.0441**	**0.0000**	**13.9432**	**13.9432**	**4.5100e-003**	**0.0000**	**14.0560**

3.3 Haul Truck Phase 2 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0201	0.6669	0.1692	2.2000e-003	0.0529	3.1200e-003	0.0560	0.0145	2.9900e-003	0.0175	0.0000	216.4013	216.4013	0.0116	0.0000	216.6913
Worker	6.9000e-004	5.8000e-004	5.1400e-003	1.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.3503	1.3503	4.0000e-005	0.0000	1.3512
Total	**0.0208**	**0.6675**	**0.1744**	**2.2100e-003**	**0.0546**	**3.1300e-003**	**0.0577**	**0.0150**	**3.0000e-003**	**0.0180**	**0.0000**	**217.7515**	**217.7515**	**0.0116**	**0.0000**	**218.0425**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0359	0.0000	0.0359	0.0173	0.0000	0.0173	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.1288	0.0841	1.6000e-004		6.0800e-003	6.0800e-003		5.5900e-003	5.5900e-003	0.0000	13.9432	13.9432	4.5100e-003	0.0000	14.0560
Total	**0.0121**	**0.1288**	**0.0841**	**1.6000e-004**	**0.0359**	**6.0800e-003**	**0.0419**	**0.0173**	**5.5900e-003**	**0.0229**	**0.0000**	**13.9432**	**13.9432**	**4.5100e-003**	**0.0000**	**14.0560**

3.3 Haul Truck Phase 2 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0201	0.6669	0.1692	2.2000e-003	0.0529	3.1200e-003	0.0560	0.0145	2.9900e-003	0.0175	0.0000	216.4013	216.4013	0.0116	0.0000	216.6913
Worker	6.9000e-004	5.8000e-004	5.1400e-003	1.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.3503	1.3503	4.0000e-005	0.0000	1.3512
Total	**0.0208**	**0.6675**	**0.1744**	**2.2100e-003**	**0.0546**	**3.1300e-003**	**0.0577**	**0.0150**	**3.0000e-003**	**0.0180**	**0.0000**	**217.7515**	**217.7515**	**0.0116**	**0.0000**	**218.0425**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phillips 66 SM Remediation Project Run 2 Scenario C

San Luis Obispo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 2 to account for offsite hauling activites.

Land Use - Includes 5-acre active work site, and 3 acres of staging and stockpiling.

Construction Phase - Project specific schedule for hauling.

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment.

Grading - Material quantities included in Run 1.

Trips and VMT - Default worker trips. Scenario C includes 26 haul trucks per day. Modeled as vendor trucks, adjusted to HHDT with 53 mile trip length.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day and 15 mph vehicle speed on unpaved roads.

Phillips 66 SM Remediation Project Run 2 Scenario C - San Luis Obispo County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	105.00
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	PhaseEndDate	8/13/2021	10/29/2021
tblConstructionPhase	PhaseStartDate	7/17/2021	6/7/2021
tblGrading	AcresOfGrading	0.00	10.00
tblGrading	AcresOfGrading	0.00	22.50
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	13.00	53.00

tblTripsAndVMT	VendorTripLength	13.00	53.00
tblTripsAndVMT	VendorTripNumber	0.00	52.00
tblTripsAndVMT	VendorTripNumber	0.00	52.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.6416	39.1073	11.9425	0.1074	5.5948	0.5031	6.0979	2.3454	0.4687	2.8141	0.0000	11,522.9004	11,522.9004	0.7792	0.0000	11,542.3803
2022	1.4594	34.6332	11.4400	0.1060	6.0250	0.4090	6.4340	2.3921	0.3813	2.7734	0.0000	11,381.6771	11,381.6771	0.7879	0.0000	11,401.3756
Maximum	**1.6416**	**39.1073**	**11.9425**	**0.1074**	**6.0250**	**0.5031**	**6.4340**	**2.3921**	**0.4687**	**2.8141**	**0.0000**	**11,522.9004**	**11,522.9004**	**0.7879**	**0.0000**	**11,542.3803**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.6416	39.1073	11.9425	0.1074	3.8832	0.5031	4.3862	1.4291	0.4687	1.8978	0.0000	11,522.9004	11,522.9004	0.7792	0.0000	11,542.3803
2022	1.4594	34.6332	11.4400	0.1060	4.0773	0.4090	4.4863	1.4503	0.3813	1.8316	0.0000	11,381.6771	11,381.6771	0.7879	0.0000	11,401.3756
Maximum	**1.6416**	**39.1073**	**11.9425**	**0.1074**	**4.0773**	**0.5031**	**4.4863**	**1.4503**	**0.4687**	**1.8978**	**0.0000**	**11,522.9004**	**11,522.9004**	**0.7879**	**0.0000**	**11,542.3803**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**31.49**	**0.00**	**29.20**	**39.22**	**0.00**	**33.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Haul Truck Phase 1	Grading	6/7/2021	10/29/2021	5	105	
2	Haul Truck Phase 2	Grading	3/21/2022	5/20/2022	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Haul Truck Phase 2	Excavators	0	0.00	158	0.38
Haul Truck Phase 2	Graders	0	0.00	187	0.41
Haul Truck Phase 2	Rubber Tired Dozers	1	4.00	247	0.40
Haul Truck Phase 1	Excavators	0	0.00	158	0.38
Haul Truck Phase 2	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Haul Truck Phase 1	Aerial Lifts	1	4.00	63	0.31
Haul Truck Phase 2	Aerial Lifts	1	4.00	63	0.31
Haul Truck Phase 1	Rubber Tired Dozers	1	4.00	247	0.40
Haul Truck Phase 1	Graders	0	0.00	187	0.41
Haul Truck Phase 1	Tractors/Loaders/Backhoes	1	5.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Haul Truck Phase 2	3	8.00	52.00	0.00	13.00	53.00	20.00	LD_Mix	HHDT	HHDT
Haul Truck Phase 1	3	8.00	52.00	0.00	13.00	53.00	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Haul Truck Phase 1 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1120	0.0000	3.1120	1.6660	0.0000	1.6660			0.0000			0.0000
Off-Road	0.6590	6.9708	3.9786	7.0500e-003		0.3418	0.3418		0.3145	0.3145		683.0486	683.0486	0.2209		688.5714
Total	**0.6590**	**6.9708**	**3.9786**	**7.0500e-003**	**3.1120**	**0.3418**	**3.4539**	**1.6660**	**0.3145**	**1.9805**		**683.0486**	**683.0486**	**0.2209**		**688.5714**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.9507	32.1110	7.7061	0.0997	2.4037	0.1608	2.5644	0.6584	0.1538	0.8122		10,768.4597	10,768.4597	0.5561		10,782.3632
Worker	0.0319	0.0255	0.2579	7.2000e-004	0.0791	4.9000e-004	0.0796	0.0210	4.5000e-004	0.0214		71.3922	71.3922	2.1400e-003		71.4458
Total	**0.9826**	**32.1365**	**7.9640**	**0.1004**	**2.4828**	**0.1612**	**2.6440**	**0.6794**	**0.1542**	**0.8336**		**10,839.8519**	**10,839.8519**	**0.5583**		**10,853.8090**

3.2 Haul Truck Phase 1 - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.4004	0.0000	1.4004	0.7497	0.0000	0.7497			0.0000			0.0000
Off-Road	0.6590	6.9708	3.9786	7.0500e-003		0.3418	0.3418		0.3145	0.3145	0.0000	683.0486	683.0486	0.2209		688.5714
Total	**0.6590**	**6.9708**	**3.9786**	**7.0500e-003**	**1.4004**	**0.3418**	**1.7422**	**0.7497**	**0.3145**	**1.0642**	**0.0000**	**683.0486**	**683.0486**	**0.2209**		**688.5714**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.9507	32.1110	7.7061	0.0997	2.4037	0.1608	2.5644	0.6584	0.1538	0.8122		10,768.4597	10,768.4597	0.5561		10,782.3632
Worker	0.0319	0.0255	0.2579	7.2000e-004	0.0791	4.9000e-004	0.0796	0.0210	4.5000e-004	0.0214		71.3922	71.3922	2.1400e-003		71.4458
Total	**0.9826**	**32.1365**	**7.9640**	**0.1004**	**2.4828**	**0.1612**	**2.6440**	**0.6794**	**0.1542**	**0.8336**		**10,839.8519**	**10,839.8519**	**0.5583**		**10,853.8090**

3.3 Haul Truck Phase 2 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5413	0.0000	3.5413	1.7124	0.0000	1.7124			0.0000			0.0000
Off-Road	0.5395	5.7242	3.7367	7.0500e-003		0.2702	0.2702		0.2486	0.2486		683.1019	683.1019	0.2209		688.6252
Total	**0.5395**	**5.7242**	**3.7367**	**7.0500e-003**	**3.5413**	**0.2702**	**3.8115**	**1.7124**	**0.2486**	**1.9610**		**683.1019**	**683.1019**	**0.2209**		**688.6252**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8900	28.8860	7.4667	0.0982	2.4046	0.1383	2.5429	0.6587	0.1323	0.7910		10,629.7356	10,629.7356	0.5651		10,643.8629
Worker	0.0299	0.0230	0.2366	6.9000e-004	0.0791	4.8000e-004	0.0796	0.0210	4.4000e-004	0.0214		68.8395	68.8395	1.9200e-003		68.8876
Total	**0.9199**	**28.9090**	**7.7033**	**0.0989**	**2.4837**	**0.1388**	**2.6225**	**0.6797**	**0.1328**	**0.8124**		**10,698.5751**	**10,698.5751**	**0.5670**		**10,712.7505**

3.3 Haul Truck Phase 2 - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5936	0.0000	1.5936	0.7706	0.0000	0.7706			0.0000			0.0000
Off-Road	0.5395	5.7242	3.7367	7.0500e-003		0.2702	0.2702		0.2486	0.2486	0.0000	683.1019	683.1019	0.2209		688.6252
Total	**0.5395**	**5.7242**	**3.7367**	**7.0500e-003**	**1.5936**	**0.2702**	**1.8638**	**0.7706**	**0.2486**	**1.0192**	**0.0000**	**683.1019**	**683.1019**	**0.2209**		**688.6252**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8900	28.8860	7.4667	0.0982	2.4046	0.1383	2.5429	0.6587	0.1323	0.7910		10,629.7356	10,629.7356	0.5651		10,643.8629
Worker	0.0299	0.0230	0.2366	6.9000e-004	0.0791	4.8000e-004	0.0796	0.0210	4.4000e-004	0.0214		68.8395	68.8395	1.9200e-003		68.8876
Total	**0.9199**	**28.9090**	**7.7033**	**0.0989**	**2.4837**	**0.1388**	**2.6225**	**0.6797**	**0.1328**	**0.8124**		**10,698.5751**	**10,698.5751**	**0.5670**		**10,712.7505**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Outputs: Run 2
GHG Emissions for Scenarios A, B, and C

Phillips 66 SM Remediation Project Run 2 Scenario A - GHG

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 2 to account for offsite hauling related activities.

Land Use - Includes a 5-acre active work site and 3 acres of staging and stockpiling.

Construction Phase - Project specific schedule for hauling. AC phase included as placeholder.

Off-road Equipment - No arch coating phase.

Off-road Equipment - Project specific equipment for hauling activities.

Trips and VMT - Default worker trips. Scenario A includes approximately 37 haul trucks per day. Modeled as vendor trucks, adjusted to HHDT with 100 mile total trip distance.

Grading - Material quantities included in Run 1.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day and 15 mph vehicle speed on unpaved roads.

Phillips 66 SM Remediation Project Run 2 Scenario A - GHG - San Luis Obispo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	NumDays	20.00	105.00
tblGrading	AcresOfGrading	0.00	10.00
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	13.00	100.00
tblTripsAndVMT	VendorTripNumber	0.00	74.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1645	4.7108	1.2597	0.0141	0.4985	0.0404	0.5388	0.1794	0.0380	0.2174	0.0000	1,379.7457	1,379.7457	0.0781	0.0000	1,381.6981
Maximum	**0.1645**	**4.7108**	**1.2597**	**0.0141**	**0.4985**	**0.0404**	**0.5388**	**0.1794**	**0.0380**	**0.2174**	**0.0000**	**1,379.7457**	**1,379.7457**	**0.0781**	**0.0000**	**1,381.6981**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1645	4.7108	1.2597	0.0141	0.4086	0.0404	0.4490	0.1313	0.0380	0.1693	0.0000	1,379.7456	1,379.7456	0.0781	0.0000	1,381.6981
Maximum	**0.1645**	**4.7108**	**1.2597**	**0.0141**	**0.4086**	**0.0404**	**0.4490**	**0.1313**	**0.0380**	**0.1693**	**0.0000**	**1,379.7456**	**1,379.7456**	**0.0781**	**0.0000**	**1,381.6981**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**18.03**	**0.00**	**16.68**	**26.81**	**0.00**	**22.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-7-2021	9-6-2021	2.9725	2.9725
2	9-7-2021	9-30-2021	0.7754	0.7754
		Highest	2.9725	2.9725

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/7/2021	10/29/2021	5	105	
2	Architectural Coating	Architectural Coating	7/30/2021	7/30/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Aerial Lifts	1	4.00	63	0.31
Grading	Excavators	0	0.00	158	0.38
Grading	Graders	0	0.00	187	0.41
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Architectural Coating	Air Compressors	0	0.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	74.00	0.00	13.00	100.00	20.00	LD_Mix	HHDT	HHDT
Architectural Coating	0	0.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1634	0.0000	0.1634	0.0875	0.0000	0.0875	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0346	0.3660	0.2089	3.7000e-004		0.0180	0.0180		0.0165	0.0165	0.0000	32.5317	32.5317	0.0105	0.0000	32.7947
Total	**0.0346**	**0.3660**	**0.2089**	**3.7000e-004**	**0.1634**	**0.0180**	**0.1813**	**0.0875**	**0.0165**	**0.1040**	**0.0000**	**32.5317**	**32.5317**	**0.0105**	**0.0000**	**32.7947**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1282	4.3433	1.0377	0.0137	0.3310	0.0224	0.3535	0.0909	0.0215	0.1123	0.0000	1,343.9465	1,343.9465	0.0675	0.0000	1,345.6335
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.1299**	**4.3448**	**1.0508**	**0.0138**	**0.3351**	**0.0225**	**0.3575**	**0.0920**	**0.0215**	**0.1134**	**0.0000**	**1,347.2140**	**1,347.2140**	**0.0676**	**0.0000**	**1,348.9034**

3.2 Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0735	0.0000	0.0735	0.0394	0.0000	0.0394	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0346	0.3660	0.2089	3.7000e-004		0.0180	0.0180		0.0165	0.0165	0.0000	32.5317	32.5317	0.0105	0.0000	32.7947
Total	**0.0346**	**0.3660**	**0.2089**	**3.7000e-004**	**0.0735**	**0.0180**	**0.0915**	**0.0394**	**0.0165**	**0.0559**	**0.0000**	**32.5317**	**32.5317**	**0.0105**	**0.0000**	**32.7947**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1282	4.3433	1.0377	0.0137	0.3310	0.0224	0.3535	0.0909	0.0215	0.1123	0.0000	1,343.9465	1,343.9465	0.0675	0.0000	1,345.6335
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.1299**	**4.3448**	**1.0508**	**0.0138**	**0.3351**	**0.0225**	**0.3575**	**0.0920**	**0.0215**	**0.1134**	**0.0000**	**1,347.2140**	**1,347.2140**	**0.0676**	**0.0000**	**1,348.9034**

3.3 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phillips 66 SM Remediation Project Run 2 Scenario B - GHG

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 2 to acount for offsite hauling related activities.

Land Use - Includes 5-acre active work site, and 3 acres of staging and stockpiling

Construction Phase - Project specific schedule for hauling. AC phase included as placeholder.

Off-road Equipment - No arch coating phase.

Off-road Equipment - Project specific equipment for hauling activities.

Trips and VMT - Default worker trips. Scenario B includes 37 haul trucks per day. Modeled as vendor trucks, adjusted to HHDT with 100 mile total trip distance.

Grading - Material quantities included in Run 1.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day and 15 mph vehicle speed on unpaved roads.

Phillips 66 SM Remediation Project Run 2 Scenario B - GHG - San Luis Obispo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	NumDays	20.00	105.00
tblGrading	AcresOfGrading	0.00	10.00
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	13.00	100.00
tblTripsAndVMT	VendorTripNumber	0.00	74.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1895	4.9759	1.4052	0.0144	0.6170	0.0533	0.6703	0.2446	0.0499	0.2945	0.0000	1,402.8009	1,402.8009	0.0856	0.0000	1,404.9398
Maximum	**0.1895**	**4.9759**	**1.4052**	**0.0144**	**0.6170**	**0.0533**	**0.6703**	**0.2446**	**0.0499**	**0.2945**	**0.0000**	**1,402.8009**	**1,402.8009**	**0.0856**	**0.0000**	**1,404.9398**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1895	4.9759	1.4052	0.0144	0.4619	0.0533	0.5152	0.1606	0.0499	0.2105	0.0000	1,402.8008	1,402.8008	0.0856	0.0000	1,404.9397
Maximum	**0.1895**	**4.9759**	**1.4052**	**0.0144**	**0.4619**	**0.0533**	**0.5152**	**0.1606**	**0.0499**	**0.2105**	**0.0000**	**1,402.8008**	**1,402.8008**	**0.0856**	**0.0000**	**1,404.9397**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**25.13**	**0.00**	**23.13**	**34.32**	**0.00**	**28.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-7-2021	9-6-2021	3.1541	3.1541
2	9-7-2021	9-30-2021	0.8228	0.8228
		Highest	3.1541	3.1541

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/7/2021	10/29/2021	5	105	
2	Architectural Coating	Architectural Coating	7/30/2021	7/30/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Aerial Lifts	1	7.00	63	0.31
Grading	Excavators	0	0.00	158	0.38
Grading	Graders	0	0.00	187	0.41
Grading	Rubber Tired Dozers	1	7.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	0	0.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	3	8.00	74.00	0.00	13.00	100.00	20.00	LD_Mix	HHDT	HHDT
Architectural Coating	0	0.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2819	0.0000	0.2819	0.1526	0.0000	0.1526	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0596	0.6311	0.3544	6.3000e-004		0.0309	0.0309		0.0284	0.0284	0.0000	55.5869	55.5869	0.0180	0.0000	56.0364
Total	**0.0596**	**0.6311**	**0.3544**	**6.3000e-004**	**0.2819**	**0.0309**	**0.3128**	**0.1526**	**0.0284**	**0.1810**	**0.0000**	**55.5869**	**55.5869**	**0.0180**	**0.0000**	**56.0364**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1282	4.3433	1.0377	0.0137	0.3310	0.0224	0.3535	0.0909	0.0215	0.1123	0.0000	1,343.9465	1,343.9465	0.0675	0.0000	1,345.6335
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.1299**	**4.3448**	**1.0508**	**0.0138**	**0.3351**	**0.0225**	**0.3575**	**0.0920**	**0.0215**	**0.1134**	**0.0000**	**1,347.2140**	**1,347.2140**	**0.0676**	**0.0000**	**1,348.9034**

3.2 Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1269	0.0000	0.1269	0.0687	0.0000	0.0687	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0596	0.6311	0.3544	6.3000e-004		0.0309	0.0309		0.0284	0.0284	0.0000	55.5869	55.5869	0.0180	0.0000	56.0363
Total	**0.0596**	**0.6311**	**0.3544**	**6.3000e-004**	**0.1269**	**0.0309**	**0.1577**	**0.0687**	**0.0284**	**0.0971**	**0.0000**	**55.5869**	**55.5869**	**0.0180**	**0.0000**	**56.0363**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1282	4.3433	1.0377	0.0137	0.3310	0.0224	0.3535	0.0909	0.0215	0.1123	0.0000	1,343.9465	1,343.9465	0.0675	0.0000	1,345.6335
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.1299**	**4.3448**	**1.0508**	**0.0138**	**0.3351**	**0.0225**	**0.3575**	**0.0920**	**0.0215**	**0.1134**	**0.0000**	**1,347.2140**	**1,347.2140**	**0.0676**	**0.0000**	**1,348.9034**

3.3 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Phillips 66 SM Remediation Project Run 2 Scenario C - GHG

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 2 to account for offsite hauling activites.

Land Use - Includes 5-acre active work site, and 3 acres of staging and stockpiling.

Construction Phase - Project specific schedule for hauling.

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment.

Trips and VMT - Default worker trips. Scenario C includes 26 haul trucks per day. Modeled as vendor trucks, adjusted to HHDT with 100 mile total trip distance.

Grading - Material quantities included in Run 1.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day and 15 mph vehicle speed on unpaved roads.

Phillips 66 SM Remediation Project Run 2 Scenario C - GHG - San Luis Obispo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	105.00
tblConstructionPhase	NumDays	20.00	45.00
tblGrading	AcresOfGrading	0.00	10.00
tblGrading	AcresOfGrading	0.00	22.50
tblLandUse	LotAcreage	0.00	8.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Haul Truck Phase 2
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripLength	13.00	100.00
tblTripsAndVMT	VendorTripLength	13.00	100.00
tblTripsAndVMT	VendorTripNumber	0.00	52.00

tblTripsAndVMT	VendorTripNumber	0.00	52.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1264	3.4195	0.9512	0.0100	0.4000	0.0337	0.4338	0.1524	0.0316	0.1840	0.0000	980.1940	980.1940	0.0580	0.0000	981.6449
2022	0.0490	1.2985	0.3925	4.2400e-003	0.1811	0.0119	0.1930	0.0664	0.0112	0.0775	0.0000	414.6642	414.6642	0.0252	0.0000	415.2950
Maximum	**0.1264**	**3.4195**	**0.9512**	**0.0100**	**0.4000**	**0.0337**	**0.4338**	**0.1524**	**0.0316**	**0.1840**	**0.0000**	**980.1940**	**980.1940**	**0.0580**	**0.0000**	**981.6449**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1264	3.4195	0.9512	0.0100	0.3102	0.0337	0.3439	0.1043	0.0316	0.1359	0.0000	980.1939	980.1939	0.0580	0.0000	981.6449
2022	0.0490	1.2985	0.3925	4.2400e-003	0.1373	0.0119	0.1492	0.0452	0.0112	0.0563	0.0000	414.6642	414.6642	0.0252	0.0000	415.2950
Maximum	**0.1264**	**3.4195**	**0.9512**	**0.0100**	**0.3102**	**0.0337**	**0.3439**	**0.1043**	**0.0316**	**0.1359**	**0.0000**	**980.1939**	**980.1939**	**0.0580**	**0.0000**	**981.6449**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**23.00**	**0.00**	**21.33**	**31.67**	**0.00**	**26.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Phillips 66 SM Remediation Project Run 2 Scenario C - GHG - San Luis Obispo County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-7-2021	9-6-2021	2.1639	2.1639
2	9-7-2021	12-6-2021	1.2584	1.2584
4	3-7-2022	6-6-2022	1.2761	1.2761
		Highest	2.1639	2.1639

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Haul Truck Phase 1	Grading	6/7/2021	10/29/2021	5	105	
2	Haul Truck Phase 2	Grading	3/21/2022	5/20/2022	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Haul Truck Phase 1	Aerial Lifts	1	4.00	63	0.31
Haul Truck Phase 1	Excavators	0	0.00	158	0.38
Haul Truck Phase 1	Graders	0	0.00	187	0.41
Haul Truck Phase 1	Rubber Tired Dozers	1	4.00	247	0.40
Haul Truck Phase 1	Tractors/Loaders/Backhoes	1	5.00	97	0.37
Haul Truck Phase 2	Aerial Lifts	1	4.00	63	0.31
Haul Truck Phase 2	Excavators	0	0.00	158	0.38
Haul Truck Phase 2	Graders	0	0.00	187	0.41
Haul Truck Phase 2	Rubber Tired Dozers	1	4.00	247	0.40
Haul Truck Phase 2	Tractors/Loaders/Backhoes	1	5.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Haul Truck Phase 1	3	8.00	52.00	0.00	13.00	100.00	20.00	LD_Mix	HHDT	HHDT
Haul Truck Phase 2	3	8.00	52.00	0.00	13.00	100.00	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Haul Truck Phase 1 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1634	0.0000	0.1634	0.0875	0.0000	0.0875	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0346	0.3660	0.2089	3.7000e-004		0.0180	0.0180		0.0165	0.0165	0.0000	32.5317	32.5317	0.0105	0.0000	32.7947
Total	**0.0346**	**0.3660**	**0.2089**	**3.7000e-004**	**0.1634**	**0.0180**	**0.1813**	**0.0875**	**0.0165**	**0.1040**	**0.0000**	**32.5317**	**32.5317**	**0.0105**	**0.0000**	**32.7947**

3.2 Haul Truck Phase 1 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0901	3.0520	0.7292	9.6300e-003	0.2326	0.0158	0.2484	0.0639	0.0151	0.0789	0.0000	944.3949	944.3949	0.0474	0.0000	945.5803
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.0918**	**3.0535**	**0.7423**	**9.6700e-003**	**0.2367**	**0.0158**	**0.2524**	**0.0649**	**0.0151**	**0.0800**	**0.0000**	**947.6623**	**947.6623**	**0.0475**	**0.0000**	**948.8502**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0735	0.0000	0.0735	0.0394	0.0000	0.0394	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0346	0.3660	0.2089	3.7000e-004		0.0180	0.0180		0.0165	0.0165	0.0000	32.5317	32.5317	0.0105	0.0000	32.7947
Total	**0.0346**	**0.3660**	**0.2089**	**3.7000e-004**	**0.0735**	**0.0180**	**0.0915**	**0.0394**	**0.0165**	**0.0559**	**0.0000**	**32.5317**	**32.5317**	**0.0105**	**0.0000**	**32.7947**

3.2 Haul Truck Phase 1 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0901	3.0520	0.7292	9.6300e-003	0.2326	0.0158	0.2484	0.0639	0.0151	0.0789	0.0000	944.3949	944.3949	0.0474	0.0000	945.5803
Worker	1.7100e-003	1.4900e-003	0.0131	4.0000e-005	4.0400e-003	3.0000e-005	4.0700e-003	1.0700e-003	2.0000e-005	1.1000e-003	0.0000	3.2674	3.2674	1.0000e-004	0.0000	3.2699
Total	**0.0918**	**3.0535**	**0.7423**	**9.6700e-003**	**0.2367**	**0.0158**	**0.2524**	**0.0649**	**0.0151**	**0.0800**	**0.0000**	**947.6623**	**947.6623**	**0.0475**	**0.0000**	**948.8502**

3.3 Haul Truck Phase 2 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0797	0.0000	0.0797	0.0385	0.0000	0.0385	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.1288	0.0841	1.6000e-004		6.0800e-003	6.0800e-003		5.5900e-003	5.5900e-003	0.0000	13.9432	13.9432	4.5100e-003	0.0000	14.0560
Total	**0.0121**	**0.1288**	**0.0841**	**1.6000e-004**	**0.0797**	**6.0800e-003**	**0.0858**	**0.0385**	**5.5900e-003**	**0.0441**	**0.0000**	**13.9432**	**13.9432**	**4.5100e-003**	**0.0000**	**14.0560**

3.3 Haul Truck Phase 2 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0361	1.1691	0.3033	4.0700e-003	0.0997	5.8100e-003	0.1055	0.0274	5.5600e-003	0.0329	0.0000	399.3707	399.3707	0.0207	0.0000	399.8878
Worker	6.9000e-004	5.8000e-004	5.1400e-003	1.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.3503	1.3503	4.0000e-005	0.0000	1.3512
Total	**0.0368**	**1.1697**	**0.3084**	**4.0800e-003**	**0.1015**	**5.8200e-003**	**0.1073**	**0.0278**	**5.5700e-003**	**0.0334**	**0.0000**	**400.7210**	**400.7210**	**0.0207**	**0.0000**	**401.2390**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0359	0.0000	0.0359	0.0173	0.0000	0.0173	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.1288	0.0841	1.6000e-004		6.0800e-003	6.0800e-003		5.5900e-003	5.5900e-003	0.0000	13.9432	13.9432	4.5100e-003	0.0000	14.0560
Total	**0.0121**	**0.1288**	**0.0841**	**1.6000e-004**	**0.0359**	**6.0800e-003**	**0.0419**	**0.0173**	**5.5900e-003**	**0.0229**	**0.0000**	**13.9432**	**13.9432**	**4.5100e-003**	**0.0000**	**14.0560**

3.3 Haul Truck Phase 2 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0361	1.1691	0.3033	4.0700e-003	0.0997	5.8100e-003	0.1055	0.0274	5.5600e-003	0.0329	0.0000	399.3707	399.3707	0.0207	0.0000	399.8878
Worker	6.9000e-004	5.8000e-004	5.1400e-003	1.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.3503	1.3503	4.0000e-005	0.0000	1.3512
Total	**0.0368**	**1.1697**	**0.3084**	**4.0800e-003**	**0.1015**	**5.8200e-003**	**0.1073**	**0.0278**	**5.5700e-003**	**0.0334**	**0.0000**	**400.7210**	**400.7210**	**0.0207**	**0.0000**	**401.2390**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment G

Response to CDFW Comments on the Phillips 66 Santa Margarita Ranch (Rossi) Major Grading Permit

Response to Comment Letter, Santa Margarita Ranch Remediation Project

Biological Resources Analysis, Santa Margarita Ranch Remediation Project

MONK & ASSOCIATES
Environmental Consultants

August 3, 2020

Cindy Chambers, Project Planner
Planning & Building Department
976 Osos Street, Room 300
San Luis Obispo, California 93408

RE: Response to California Department of Fish and Wildlife's Comments on the Phillips 66 Santa Margarita Ranch (Rossi) Major Grading Permit Early Consultation

Dear Ms. Chambers:

1. INTRODUCTION

On April 27, 2020, the California Department of Fish and Wildlife (CDFW) provided the County of San Luis Obispo Planning and Building Department (the County) written comments on Phillips 66's Santa Margarita Pipeline Remediation project at 9000 Yerba Buena, Santa Margarita, California (the "project site") (Exhibits A and B). During the County's review of this comment letter it became clear that CDFW was conflating several projects in their comment letter and that some of the CDFW's comments may not pertain specifically to Phillips 66's project. The County addressed these issues in a May 11, 2020, email response to the CDFW. On May 13, 2020, CDFW responded stating that they "intended for Crotch's bumblebee, California tiger salamander, and foothill yellow-legged frog to be included in the comment letter." M&A has prepared this letter to address those three species in response to CDFW's concerns.

2. SURVEYS

M&A biologists have spent multiple field days on the project site looking for many different special-status species (that is, threatened, endangered, rare species). In addition to conducting a general wildlife and vegetation inventory of the project site in January and February 2019, M&A surveyed for the American badger (*Taxidea taxus*) in January, February, and March 2019; the California red-legged frog (*Rana draytonii*), the foothill yellow-legged frog (*Rana boylii*), and the western spadefoot (*Spea hammondii*) (nocturnal and diurnal surveys) in January, February, and March 2019 and November of 2019. M&A biologists surveyed for special-status plants and delineated wetlands and looked for nesting birds, including eagles, in March, April, May, and July 2019. In 2020, M&A returned to the project site to address the Crotch bumble bee (*Bombus crotchii*) per CDFW's comment letter. As M&A's Senior Associate Biologist and the Project Manager for the Phillip's 66 project, I participated in almost all of these surveys and am very familiar with the flora and fauna of the project site.

2.1 Crotch Bumble Bee

The Crotch bumble bee is a California candidate for listing as a state endangered species[1]. It has no special federal status. It is known in coastal California east to the sierra-cascade crest and South into Mexico. This bumble bee inhabits grassland and scrub areas, with select food plants: *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum*. It nests underground, often in abandoned rodent dens. The closest known occurrence of this bumble bee to the project site is a little over five miles northeast of the project site where in 1965 a bumble bee was collected (exact location unknown; CNDDB records, Occurrence No. 81).

On May 6, 2020, I conducted a survey of the project site for Crotch bumble bees. Crotch bumblebees are generally active from April to September with their peak of activity occurring in June (Koch et. al. 2012[2]).Worker bees of this species are active from April to August and queen bees are active for only two months from March until May; the peak of worker activity is between May and June, while queens reach maximum activity in April (op.cit.). The weather on May 6th when the survey was conducted was warm, sunny and calm, ideal conditions for observing Crotch bumble bee activity. Thus, the timing of the survey was optimal for detection of Crotch bumble bees had they been present.

Systematic surveys were conducted on the project site by slowly walking parallel transects throughout the project site looking at the ground, all burrows, the flowers and grasses looking for evidence indicating the presence of Crotch bumble bee. I searched all active and abandoned rodent/animal burrows for the presence of bumble bees since this bumble bee nests underground, often in abandoned rodent burrows. Finally, I also looked for bumble bees on nectar plants and flying within and outside the project site. Photographs of all bees, flies, and butterflies that were encountered were taken with a 300 millimeter lens mounted on a Nikon camera. Should any bee that was observed not be recognized to genus, the photograph would have been thereafter submitted to an Entomologist specializing in bee species for confirmation of the species.

No bumble bees in the genus *Bombus* were observed during this survey. The only bees observed were the European honey bee (*Apis mellifera*) and many Andrenid bees digging holes in the bare soil of the existing ranch roads. House flies and blue bottle flies were also observed. The project site only supports one of *Bombus crotchii*'s nectar plants: *Clarkia.* Outside of the project site there are also some *Eschscholzia californica* plants, but both the *Clarkia* and the *E. californica* occur in low numbers randomly distributed across the project site so no particular potential focus areas for the Crotch bumblebee were identified. Finally, during multiple special-status plant, wildlife, and wetland delineation visits to the project site over the last year, a member of the Genus *Bombus* was never observed. Based on the lack of Crotch bumble bees observed during the surveys, M&A concludes that there will be no impacts to the Crotch bumble bee from implementation of the Remediation project.

[1] CDFW. Special animals list. July 2020. 120 pps.
[2] https://www.fs.fed.us/wildflowers/pollinators/documents/BumbleBeeGuideWestern2012.pdf]

2.2 California Tiger Salamander

The project site is located within the known range of the Central California "Distinct Population Segment" (DPS) of the California tiger salamander. The Central California DPS of the California tiger salamander is federally and state listed as threatened. California tiger salamanders occur in grasslands and open oak woodlands that provide suitable over-summering and/or breeding habitats. California tiger salamanders spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. Adult California tiger salamanders have been observed up to 2,092 meters (1.3 miles) from breeding ponds[3]. Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by the California tiger salamander. In such locations, California tiger salamanders attach their eggs to rooted, emergent vegetation, and other stable filamentous objects in the water column. Occasionally California tiger salamanders are found breeding in slow-moving, streams or ditches. Ditches and/or streams that are subject to rapid flows, even if only on occasion, typically will not support or sustain California tiger salamander egg attachment through hatching, and thus, are not usually used successfully by California tiger salamanders for breeding (G. Monk and S. Lynch, pers. observations). Similarly, streams and/or ditches that support California tiger salamander predators such as fish, bullfrogs, red swamp crayfish, or signal crayfish, almost never constitute suitable breeding habitat.

Typically seasonal wetlands that are used for breeding must hold water into the month of May to allow enough time for larvae to fully metamorphose (that is, change from a tadpole into a salamander). In dry years, seasonal wetlands may dry too early to allow enough time for California tiger salamander larvae to successfully metamorphose. Under such circumstances, desiccated California tiger salamander larvae can be found in dried pools. In addition, as pools dry down to very small areas of inundation, California tiger salamander larvae become concentrated and are very susceptible to predation.

The closest known occurrence of the California tiger salamander to the project site is 26.2 miles to the northeast (see Exhibit D). M&A biologists are federal and state permitted California tiger salamander biologists pursuant to a federal 10(a)(1)(A) permit and a state Memorandum of Understanding (MOU) that allows us to survey for and handle this species. However, due to the absence of records for this species in the vicinity of Santa Margarita, specifically within 1.3 miles, its known overland migration distance between breeding ponds and upland over-summering refugia, M&A biologists did not complete a USFWS/CDFW joint protocol[4] level

[3] USFWS (U.S. Fish & Wildlife Service). 2004. Endangered and threatened wildlife and plants; determination of threatened status for the California tiger salamander; and special rule exemption for existing routine ranching activities; Final Rule. Federal Register Vol 69, No 149 pps. 47212-47248. August 4, 2004.

[4] USFWS (U.S. Fish & Wildlife Service). 2003. Interim guidance on site assessment and field surveys for determining presence or a negative finding of the California tiger salamander. October 2003.

survey for this species which requires two years of larval surveys and one year of an upland drift fence survey conducted over one winter season (October 15 through March 15). An upland drift fence survey is labor intensive, and beyond the standards of care required to address a species pursuant to the CEQA Guidelines, especially given that the closest known record is greater than 20 miles away.

However, M&A biologists did conduct several diurnal surveys of the project site's creeks and wetlands looking for amphibian larvae. No California tiger salamander larvae were identified during these surveys. There are no persistent, open water, seasonal wetlands anywhere near the project site that would provide suitable breeding habitat for this species as most of the wetlands are dry by March or April which is not enough time for California tiger salamander larvae to metamorphose (that is, turn from a tadpole into a salamander). The wetlands that do stay inundated above ground beyond March or April are heavily vegetated and do not provide open water habitat; these heavily vegetated habitats are unsuitable for amphibian larval development. During M&A's surveys we found an abundant Sierran treefrog (*Pseudacris sierra*) breeding population in seasonal wetlands and creeks near the project site; the treefrog has a shorter life cycle and does not require water for more than a few weeks for larvae to metamorphose, unlike a California tiger salamander. M&A also found three juvenile bullfrogs (*Lithobates catesbeiana*) in Little Tassajara Creek and California toad (*Anaxyrus boreas halophilus*) larvae in Santa Margarita Creek. The California tiger salamander is not found in fast moving creeks since these creeks are not conducive to breeding/larval development.

Due to an absence of current and historical records within 1.3 miles, an absence of suitable habitats onsite, and no detections of this species during appropriately timed larval surveys, M&A determined that the California tiger salamander is not present on the project site. Thus, this species will not be impacted from implementation of the project. No potentially significant or significant impacts will occur to California tiger salamander from implementation of the project.

2.3 Foothill Yellow-Legged Frog

On December 11, 2019, the California Fish and Game Commission approved California Endangered Species Act (CESA) protections for five of six populations of the foothill yellow-legged frog; the project site is within the range of the endangered Central Coast population. The foothill yellow-legged frog has no federal status. The foothill yellow-legged frog is typically found in or near perennial, rocky streams in a variety of habitats, including valley-foothill woodlands and riparian habitats, mixed conifer, coastal scrub, mixed chaparral, and wet meadows. Mr. G. Monk studied this frog in northern Sonoma County over an 8-year period. At that study location (Patchett Creek) the foothill yellow-legged frog seasonally moved into portions of the stream that were wet in the winter but that dry in the summer. Prior to the stream drying this frog would move downstream into perennially wet areas of Patchett Creek. In all

Joint survey protocol released by the California Department of Fish and Game and the U.S. Fish and Wildlife Service. October 2003. 12 pp.

years of study, this frog was never found outside of the immediate prism of the inundated stream channel. As this frog relies upon cryptic coloring and plunge pools to escape predators, it cannot survive for long outside of an inundated stream channel. In almost all cases this frog is found within the immediate stream zone environment[5]. Tadpoles require water for approximately three to four months while completing their development.

The nearest CNDDB record for foothill yellow-legged frog is located approximately 0.50-mile southeast of the project area (Occurrence No. 825) (Exhibit E). This 1917 record is from what is now a residential community in central Santa Margarita. Expert opinion concludes that this species was likely extirpated from the area between 1975 and 1978 (see "Ecological Comments" section of CNDDB Occurrence No. 825) (attached). In addition, this 1917 record was not detected by independent research crews during surveys between 1981-1993, 1988-1991, or 2011-2014. M&A conducted three diurnal surveys and two nocturnal survey for the foothill yellow-legged frog in the project area in the months of January, February, and March 2019. During these surveys, which were conducted at a suitable time of year to detect foothill yellow-legged frog, only Sierran treefrog, California toad, and American bullfrog were identified in or associated with the Santa Margarita Creek and Little Tassajara Creek. M&A's surveys were within 0.50-mile of the project site, but regarding this frog, were focused on streams/drainages since these frogs are typically associated with perennial creeks/pools. It is M&A's experience with this frog that it will move up and downstream with the drying/hydration cycle of intermittent streams. No foothill yellow-legged frogs were observed during any survey.

M&A observed a large wild pig population on the Santa Margarita Ranch, and in particular in Santa Margarita Creek, and concludes that they would have eradicated most amphibians from this ranch. After conducting surveys, all were negative for foothill yellow-legged frogs, and in consideration of the very large wild pig population that would be expected to predate most amphibians, M&A determined that the foothill yellow-legged frog is not present and that this frog will not be impacted from implementation of the project. No potentially significant or significant impacts will occur to foothill yellow-legged frogs from implementation of the project.

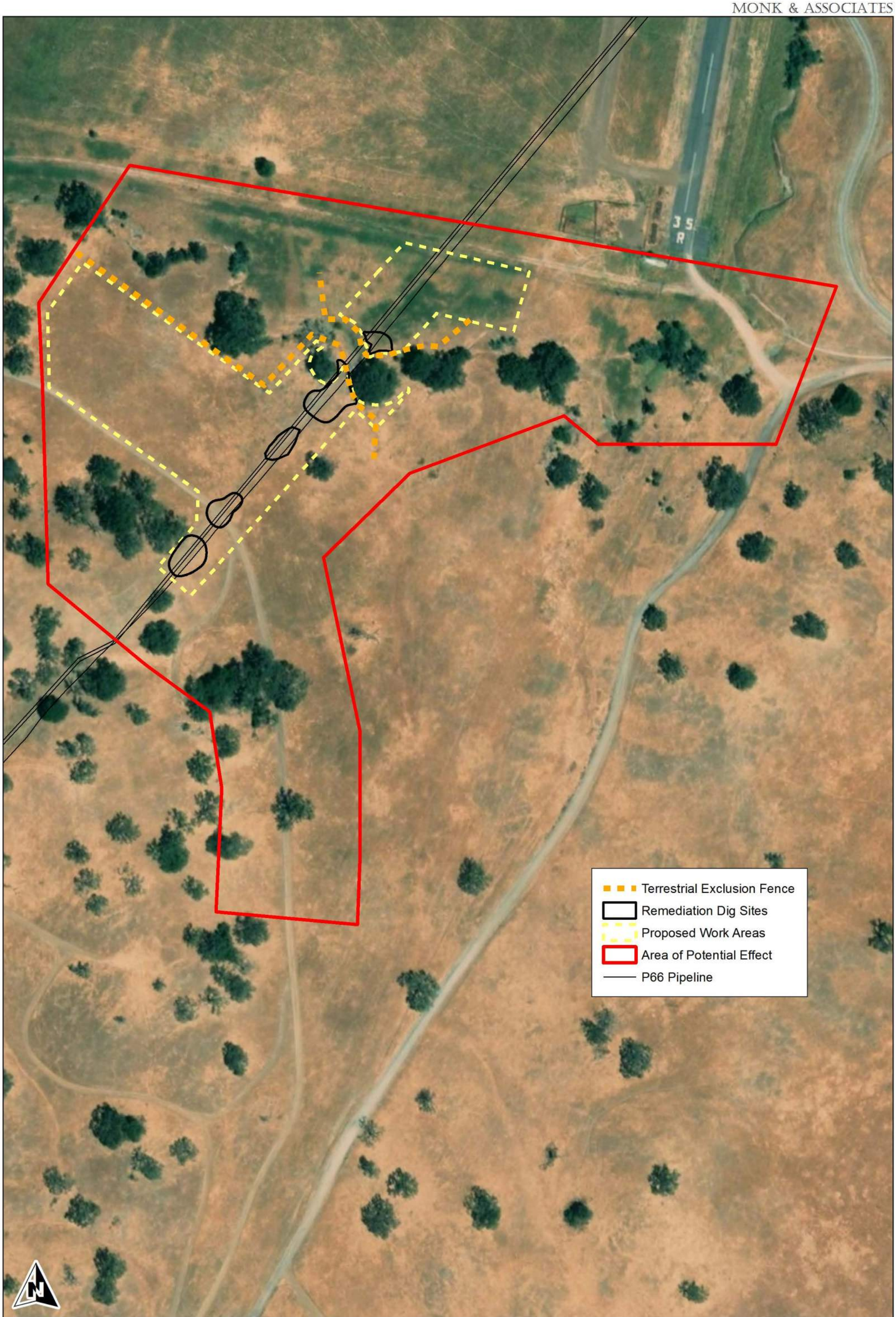
[5] Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1988. California's wildlife, volume I, amphibians and reptiles. State of California, the Resources Agency, Department of Fish and Game, Sacramento, California.

The project will not impact the California tiger salamander, Crotch bumble bee, or foothill yellow-legged frog. All other special-status species issues related to this project and project site have been thoroughly addressed in M&A's Biological Resources Analysis prepared April 3, 2020. This concludes our response to CDFW's comments pertaining to state-protected species. If you have any questions or concerns, please contact me at (925) 947-4867 ext. 203 or on my cell phone at (925) 323-4850. Thank you.

Sincerely,

Sarah Lynch
Senior Associate Biologist

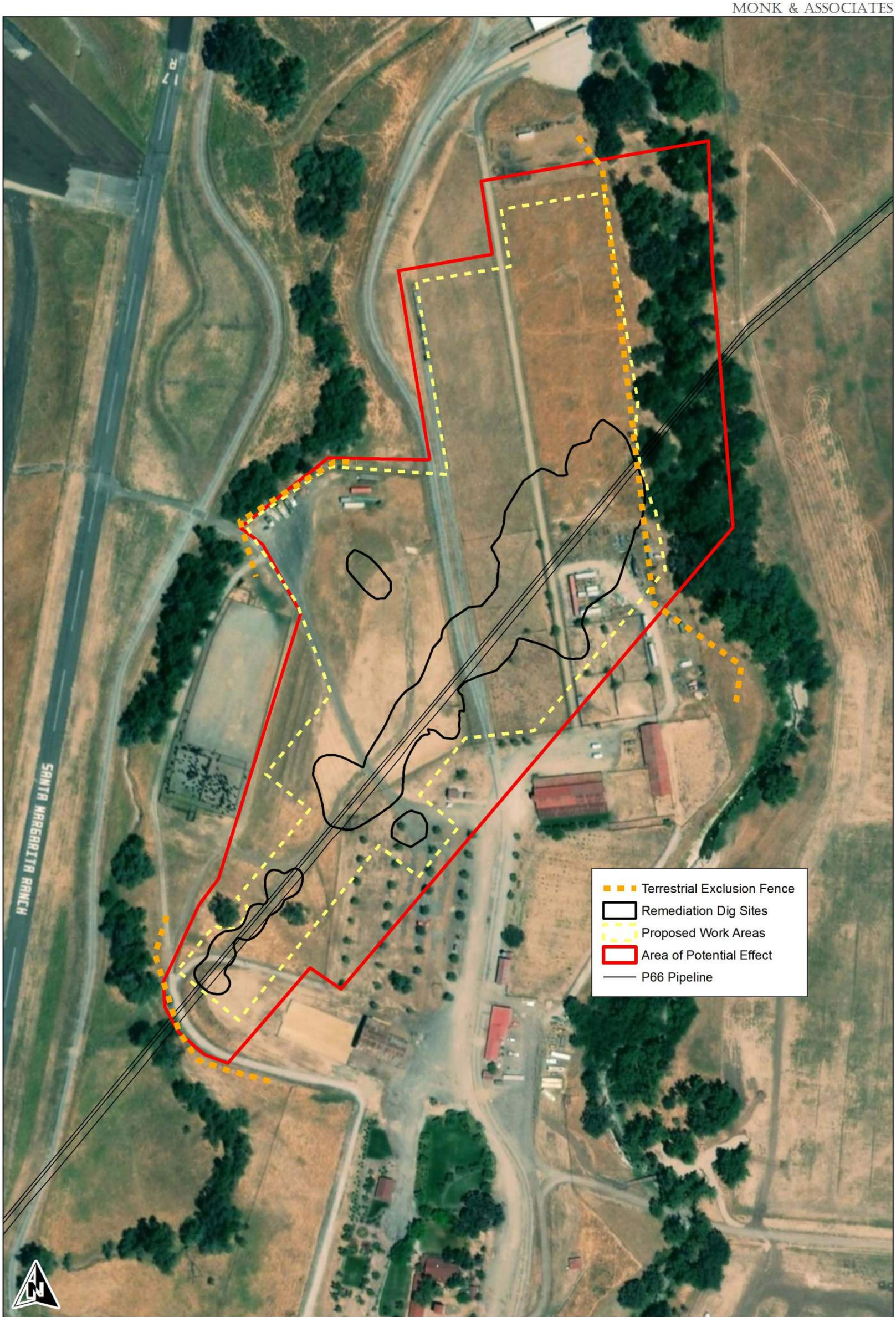
Attachments: Exhibits A-E



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Exhibit A. Western Remediation Work Area
Santa Margarita Ranch Project Site
Santa Margarita, California

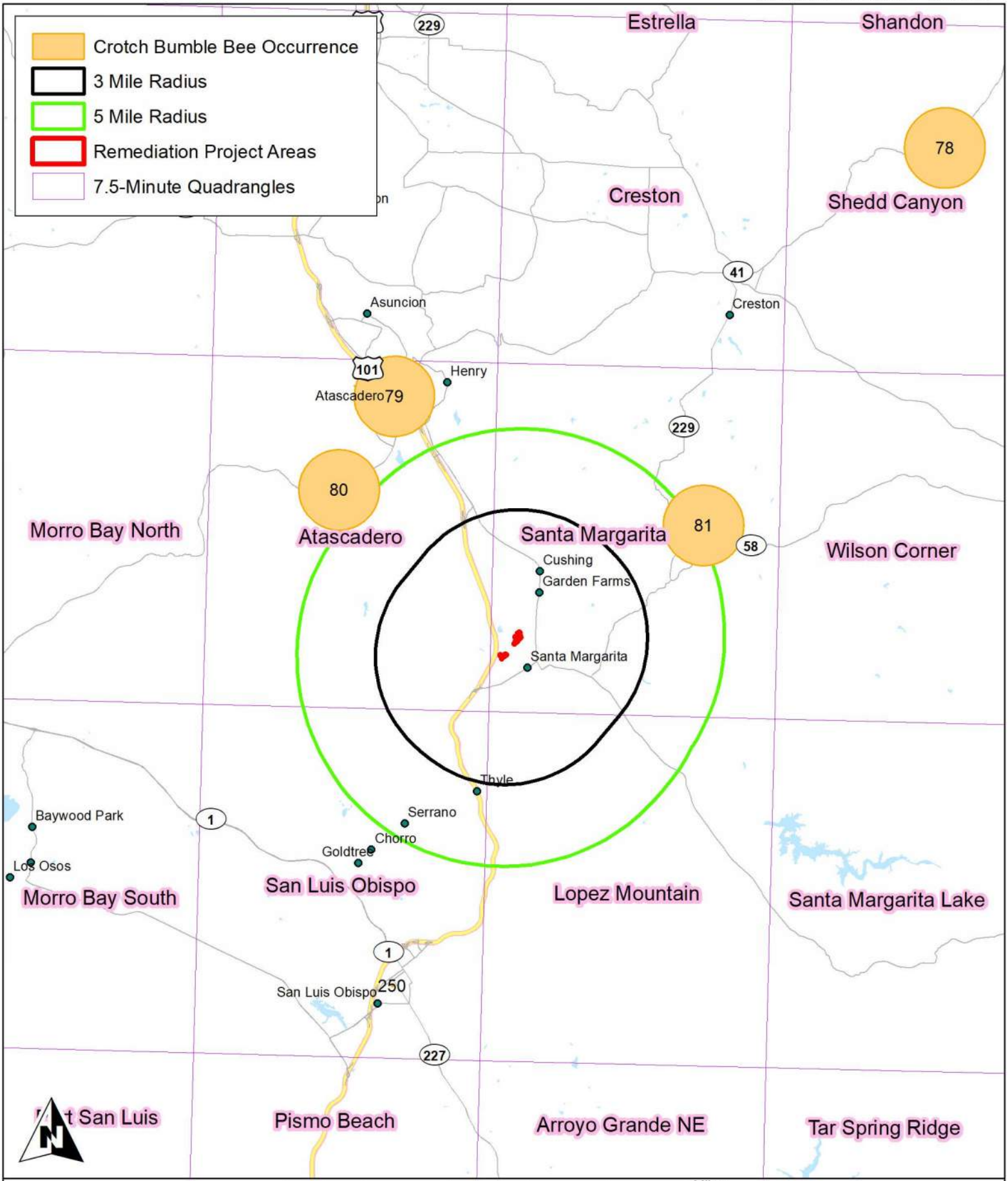
Aerial Photograph Source: ESRI
Map Preparation Date: June 18, 2019



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Exhibit B. Eastern Remediation Work Area
Santa Margarita Ranch Project Site
Santa Margarita, California

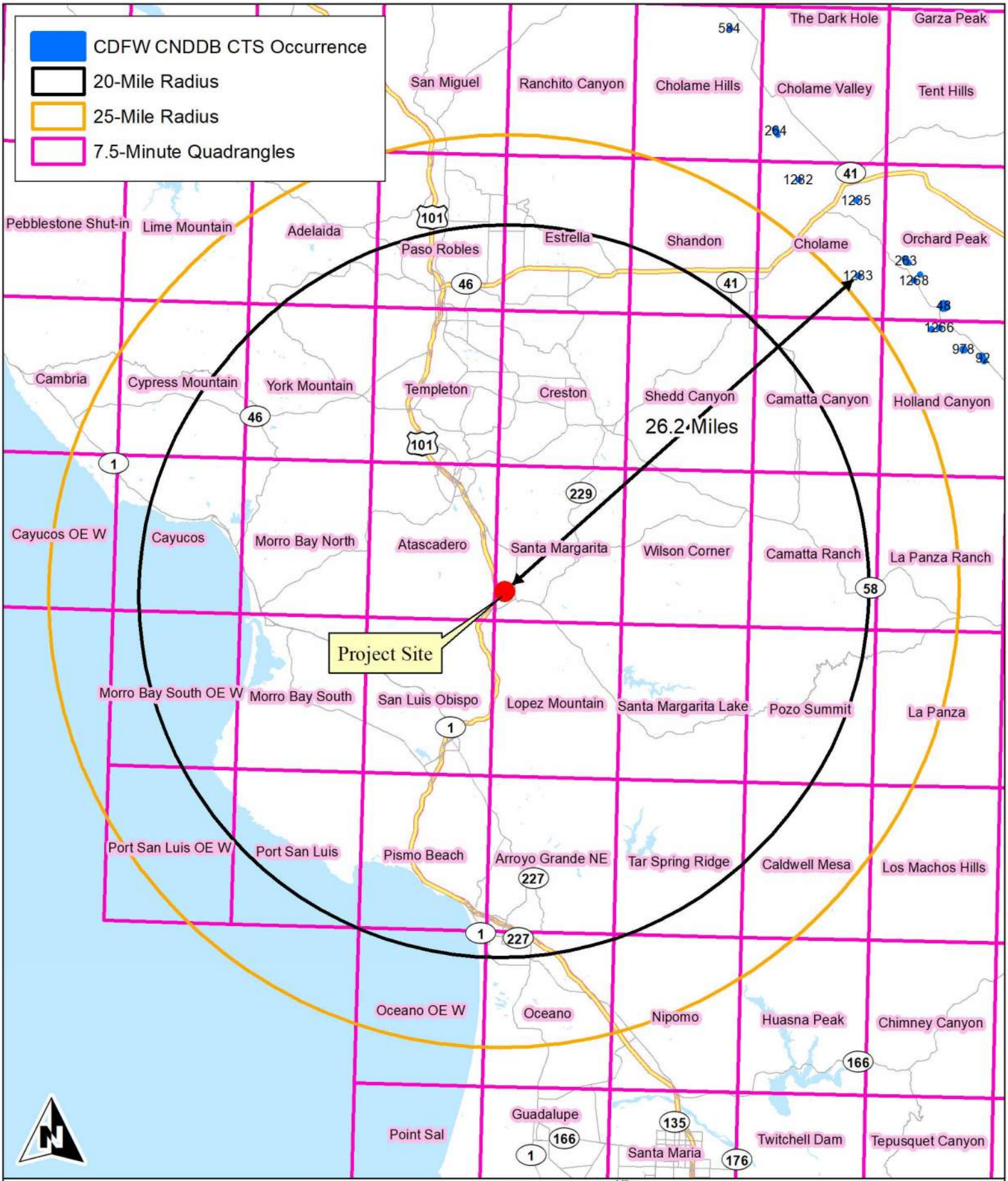
Aerial Photograph Source: ESRI
Map Preparation Date: June 18, 2019



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Exhibit C. Known Crotch Bumble Bee CNDDB Species Records Within the 7.5-Minute Quadrangles in the Vicinity of the Santa Margarita Remediation Project Areas

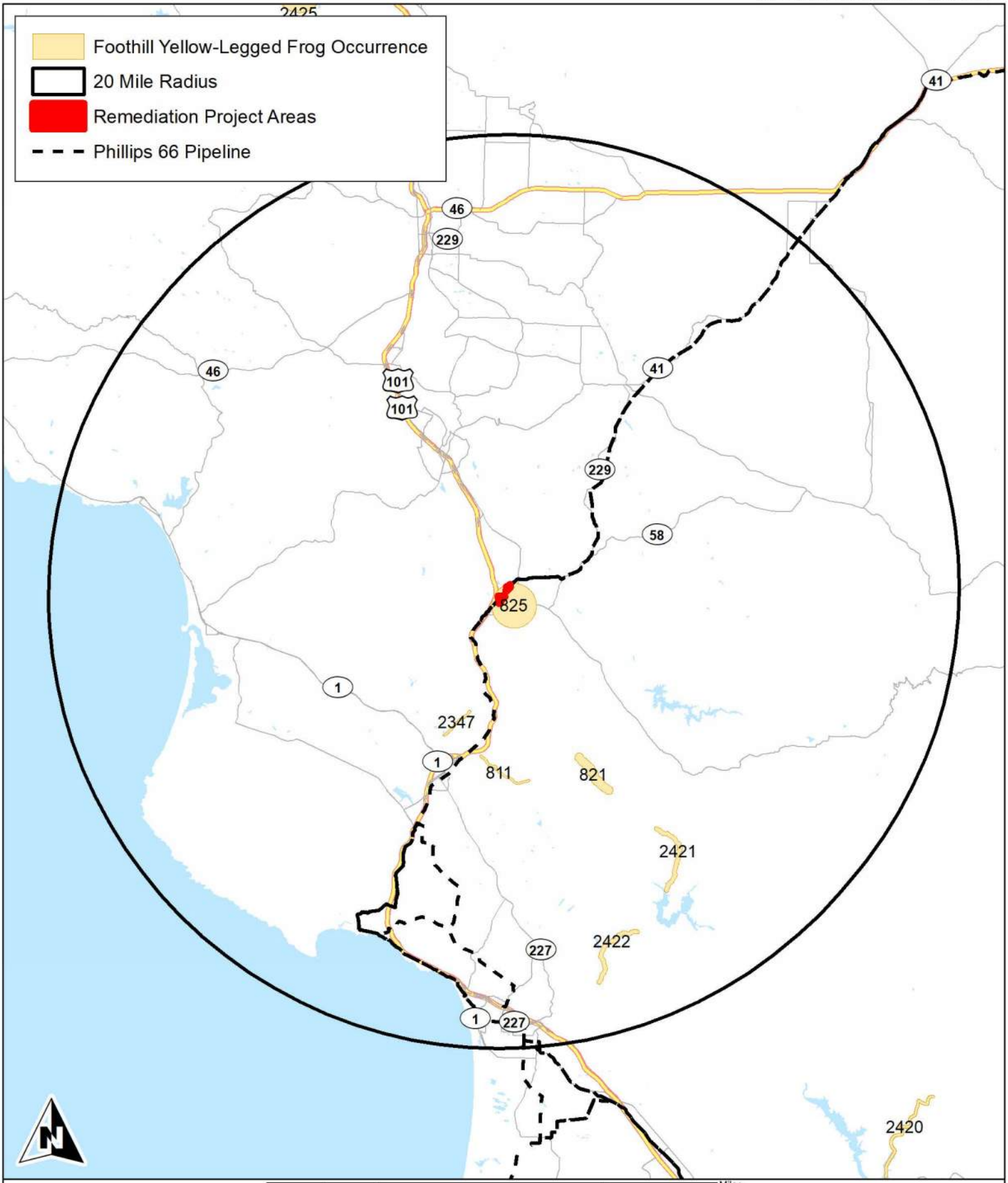
Map Preparation Date:
July 30, 2020
Source: CDFW, California Natural Diversity Data Base, 2020



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Exhibit D. Closest Known CNDDB Records for California Tiger Salamander in the Vicinity of the Santa Margarita Remediation Project Site

Map Preparation Date:
July 30, 2020
Source: CDFW, California Natural Diversity Data Base, 2020



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Exhibit E. Foothill Yellow-Legged Frog CNDDB Occurrences
Within 20 Miles of the
Santa Margarita Remediation Project Sites

Source: CDFW, California
Natural Diversity Data Base, 2020
Map Preparation Date: July 30, 2020

MONK & ASSOCIATES
Environmental Consultants

March 25, 2020

Cindy Chambers, Project Planner
Katie Nall, Project Planner
Planning & Building Department
976 Osos Street, Room 300
San Luis Obispo, California 93408

RE: Response to Comments on the Biological Resources Report
Phillips 66's Santa Margarita Remediation Project

Dear Ms. Chambers and Ms. Nall:

Monk & Associates, Inc. (M&A) has reviewed Terra Verde's comments in their October 8, 2019 letter regarding their review of M&A's Biological Resources Analysis that was prepared for the Phillips 66's Santa Margarita Remediation Project (the "Remediation Project"). We present our responses below.

Comment 1. Terra Verde has requested M&A biologists' resumes. We have attached the resumes of staff who worked on the Remediation Project to M&A's Biological Resources Analysis.

Comment 2. Terra Verde has requested that California Natural Diversity Database (CNDDB) records be included for the special-status species that were identified in the Phillips 66 project area. We have now submitted those CNDDB records and attach copies of them to this response letter.

Comment 3. "The County requires a 9-quadrangle search of the CNDDB and other literature review sources. It is unclear what search radius was used for the report. Please clarify and, if necessary, provide a justification for why a 9-quadrangle search was not conducted."

Since the County requires a 9-quadrangle search of the CNDDB and other literature sources, we have since completed this 9-quadrangle search and literature review and have updated our special-status species tables and species write ups to reflect this search. The additional information from the broader 9-quadrangle search area is incorporated into a revised Biological Resources Analysis (biology report), that is being submitted concurrently with this response. As discussed in that biology report, while the broader search results identified additional special-status species, none of these additional special-status species that resulted from the 9-quadrangle search were found during our surveys. During M&A's winter, spring, and summer surveys in the project area, detailed species lists (Tables 1 and 2) were maintained and any plants that could not be positively identified in the field were collected for further analysis in the lab. None of the additional species were found on the Remediation Project areas. Consequently, the conclusions of our biology report have not changed with the inclusion of the larger search area. That is, the Remediation Project will not impact special-status plant or animal species.

Comment 4. Terra Verde has requested a copy of the wetland delineation and any subsequent correspondence with the U.S. Army Corps of Engineers.

The U.S. Army Corps of Engineers' (Corps) final stamped Aquatic Resources Delineation map and Preliminary Jurisdictional Determination (PJD) letter associated with this Remediation Project is attached to this letter. The PJD represents the Corps of Engineers' official identification of waters of the U.S. that are presumed to fall under federal jurisdiction pursuant to the Clean Water Act within a defined Study Area Boundary, which for this Remediation Project includes the entire remediation footprint and adjacent border areas encompassing the Eastern and Western Remediation work areas. There is no correspondence with the Corps of Engineers subsequent to the issuance of this PJD.

Comment 5. "The report does not appear to identify the referenced on-site borrow location(s). As such, it is not clear if this area or areas were surveyed as part of the field work. Please clarify if these sites and access to them were surveyed, and if so, please include in a revised report or an addendum to the report."

The backfill soil will be obtained from a borrow location on Santa Margarita Ranch where it will be placed by the property owner as part of a different project which was separately permitted by San Luis Obispo County (Grading Permit No. PMTG2016-00320). The Remediation Project is simply picking up soil from that borrow source location and is transporting it as needed to the Remediation Project work areas. Because the excavated soils that will be generated from the borrow location will not have persisted long enough to be an attractant to burrowing mammals and they will not support any vegetation, biological surveys of these stockpiled soils are not necessary. The borrow location will be shown on the revised grading plan set and other Remediation Project figures (a draft figure, C-01, is attached to this letter). However, since the borrow location is not part of the biological survey project area, it is part of the property owner's separate project, it is not included in the biology report figures. The borrow location is located between two ranch access roads, outside of, and near to, the Western Remediation work area. If any of the borrow area soils cannot be used immediately and must be stockpiled at the borrow area, these piles will be covered with tarps or other suitable material during the non-work season to ensure that they do not become an attractant for burrowing mammals. Phillips 66 is not creating any new disturbance in connection with the borrow location, and there is no additional access required to reach the borrow location.

Comment 6. "The report does not indicate whether topsoil salvage is planned for the excavation areas. Please address if this will be feasible, and if so, planned method for topsoil removal and storage until restoration."

The top six (6) inches of soil, which includes the organic horizon, provides a valuable upland seed bank that will be redistributed over reestablished grades as a final site restoration measure. For the Remediation Project, the top six (6") inches of soil, which were not impacted by past pipeline discharges, will be removed and stockpiled separately as "seed bank" from the clean overburden (i.e., clean mineral soils below six inches) and from the underlying contaminated

soils that will be removed from the Remediation Project areas. Soils below six inches in depth are not suitable to save as "seed bank" since this is the mineral horizon. Also, below six inches may not be suitable to be salvaged because cultural artifacts are known to occur in the project area below six inches. During removal of the top six inches, the topsoil will be checked for cultural artifacts by a cultural resources' specialist before it is stockpiled.

Stockpiles will occur within the identified Western and Eastern Remediation areas per the AECOM drawings, Drawing #EC-02 and #EC-03 dated March 2020. This measure has been added to corresponding figures and the Stormwater Pollution Prevention Plan (SWPPP).

Comment 7. Terra Verde is requesting that report exhibits be updated to show the main entry routes and interior roads to be used as part of the project, including any planned road improvements/grading. To address this comment, AECOM, the project engineers, have updated the project exhibits showing all access routes to/from and within the Santa Margarita Ranch that will be used as part of the Remediation Project. The updated AECOM grading plans [Drawing #EC-02 and #EC-03 dated February 2020] are attached to this letter.

The comment also states that the proposed road crossing of Santa Margarita Creek should address at least three protected species (steelhead, California red-legged frog, western pond turtle) and the conditions anticipated for crossing this creek, including time of year, associated impacts, and proposed avoidance, minimization and/or protection measures for protected species, habitat, and water quality.

The Remediation Project does not include any road improvements (including any road grading) on the Santa Margarita Ranch or Remediation Project areas, except for standard BMPs (rumble plates, rattle grates, entrance rock, straw wattles) required by the SWPPP and Caltrans for sediment control from the Western and Eastern Remediation areas and California State Route 58. Within the Santa Margarita Ranch, only existing ranch access roads will be used for this Remediation Project. The proposed existing ranch access roads that will be used to access the Remediation Project areas are the existing Stage Coach Road, originally established in the late 1800s, and other ranch roads that have continued to be used for ranch operations. The Remediation Project will use existing well-established ranch access roads for within the ranch.

As the Remediation Project will be implemented in the dry season, Santa Margarita Creek is expected to be nearly dry or dry, and regardless will utilize a span bridge crossing of this creek that will be installed by the land owner as part of his developments at the ranch under separate permits. The Remediation project would use this span bridge for access, ensuring that no fording of the flowing creek occurs at any time. Thus, no aquatic or natural grassland habitats would be affected by use of existing Stage Coach Road. There will be no potential impacts to special-status species associated with aquatic or grassland habitats from use of Stage Coach Road and the span bridge.

Comment 8. Terra Verde states that M&A's report incorrectly rules out the potential for the federally protected species, California red-legged frog. According to Terra Verde, there are nearby known occurrences of this species that have not been updated in the CNDDB, thus, would not have been available to the Applicant's consultant for review.

On November 4, 2019, Ms. Sarah Lynch of M&A received an email from Ms. Brooke Langle of Terra Verde, the biologist who is under contract to San Luis Obispo County and who peer reviewed M&A's biology report. Ms. Langle provided M&A an undocumented occurrence of a California red-legged frog sighting from 2011, which is not in the CNDDB. This undocumented record is attributed to a Garcia & Associates' 2011 California red-legged frog sighting; one California red-legged frog was identified on the Santa Margarita Ranch property in September 2011 (B. Langle, Terra Verde, email to S. Lynch of M&A). The location of this sighting was approximately 1,900 feet south of the closest part of the Western Remediation Area; this is the closest known sighting of the California red-legged frog to either the Western or Eastern Remediation areas.

The record location is associated with a seasonally wet meadow with an adjacent drainage that has perennially wet areas. Below these perennially wet areas the drainage is intermittent and likely flows in wet winters to Santa Margarita Creek. In many years it may not flow at all outside of the perennially wet areas, which are well upstream (greater than 700 feet as the crow flies) of Santa Margarita Creek as observed by M&A in November 2019.

The one adult California red-legged frog observed by Garcia & Associates in September 2011, was likely associated with small, localized pools along the intermittent drainage. M&A is confident that any California red-legged frogs found in the wet meadow, or the unnamed tributary to Santa Margarita Creek, or any other creeks on the ranch property, would not be impacted in any way by the Remediation Project. Remediation work and associated trucking would be conducted in the hot and dry months of the year when California red-legged frogs would be unlikely to venture far from perennially wet areas. This conclusion, drawn from M&A's experience studying/working with this frog, is supported by scientific literature, as discussed below.

Tatarian (2005[1]) studied an inland population of California red-legged frogs in eastern Contra Costa County where the climate is drier than the coastal environment, similar to the Remediation Project location, and found that all movements of these California red-legged frogs started after the first 0.5 cm of rain fell in the fall. Tatarian (op. cit.) also found that California red-legged frogs moved greater average distances aquatically (84.6 m) than terrestrially (27.7 m). Greater terrestrial distances occurred in the pre-breeding season (35.2 m) than in the breeding season (15.5 m) or post-breeding season (16.3 m). In the study, the majority of California red-legged frogs (57%) were position faithful within a pool, indicating they did not migrate at all. These data suggest that longer forays across the landscape in drier climates such as the Remediation

[1] Tatarian, P. J. 2005. Movement Patterns of the California Red-legged Frogs (*Rana Aurora Draytonii*) in an Inland California Environment (Master's Thesis, Sonoma State University).

Project area are all but unlikely. Rather these California red-legged frogs can be expected to remain within aquatic or perennially wet areas.

In conclusion, California red-legged frogs would not be impacted by the Remediation Project. This conclusion is drawn based on the following:

(A) The long distance of the 2011 California red-legged frog record from the Western Remediation Area and Stage Coach Road (the proposed haul road);
(B) the absence of perennial water near or within the Remediation Project areas;
(C) the Remediation Project areas will be fully enclosed with ERTEC wildlife exclusion fencing which will keep wildlife outside of the work areas and harms' way;
(D) the Remediation Project work will take place during the dry season when conditions are dry and amphibians are not moving across the landscape. Truck hauling will also take place during the dry season (discussed in the paragraph below).

Work and/or trucking may begin after sunrise and shall cease no later than one hour after sunset. It is anticipated that offsite hauling/trucking of impacted soil will occur between April 19 and the end of October between 9 am to 3 pm, Monday through Thursday, plus 9 am to 12 pm on Fridays. Trucking may occur after 6 pm Monday through Thursday but will cease one hour after sunset. If for any reason trucking must occur before or after these times, then all vehicles shall be escorted by a qualified biologist clearing the traveled way ahead of the trucks with a reduced speed limit of no greater than 15 MPH while in the project area and associated access roads. Based on the volume of impacted soil to be hauled offsite, it may be required to extend trucking hours Monday through Thursday past the end of October into November provided a rain event is not predicted. Trucking will cease if a rain event of a 0.25-inch or greater occurs or when the forecast calls for a 70% chance or greater of this type of precipitation event. These conditions are spelled out in M&A's Biological Constraints Analysis. Prior to working beyond the end of October, the County will be notified on a 10-day interval and also prior to work commencing after a rain event.

Finally, the conclusion that the California red-legged frog will not be impacted by the Remediation Project is further supported by the fact that M&A did not observe any California red-legged frogs within the Remediation Project areas' creeks during the nocturnal and diurnal surveys conducted in the winter of 2018-2019, which is an excellent time to hear and see California red-legged frogs, or during subsequent diurnal surveys conducted in November 2019 and January 2020. Thus, the California red-legged frog(s), if still present at the 2011 record location, will not be impacted in any way by the Remediation Project.

M&A has prepared a biology report, attached, that otherwise goes into depth regarding the effects of the Remediation Project on the California red-legged frog. M&A concludes that the Remediation Project will not impact the California red-legged frog or any habitat supporting this species.

Comment 9. "The vegetation maps provided for each remediation site show seasonal wetland with the area of potential effect. The report does not address the potential for vernal pools and associated protected species that occur in vernal pools. Since there are nearby occurrences of protected vernal pool species, this warrants further discussion/analysis. Please address the potential for these species, then revise and send as an addendum or supplement to the report."

The project will not impact any vernal pools or other Corps confirmed wetlands (see Figures 4 and 5 of the biology report which show the proposed work areas and the Corps confirmed wetlands). Thus, there would be no impact to vernal pool endemic species such as fairy shrimp (*Branchinecta* spp., *Linderiella occidentalis*), vernal pool tadpole shrimp (*Lepidurus packardi*, western spadefoot (*Spea hammondii*), or vernal pool endemic flora. As such, these species were regarded as not being affected by the Remediation Project and are dismissed in revised special-status species tables that are included in the biology report.

Most of the seasonal wetlands within an area of influence of the Remediation Project areas are heavily vegetated and do not provide open water habitat for any extended duration. The only wetlands that are not heavily vegetated are shallow scrapes outside the Remediation Project work areas near the livestock corral and hard-packed gravel surfaces. These adjacent seasonal wetlands were surveyed for the presence of fairy shrimp, amphibians, and vernal pool flora during appropriately timed survey periods for detection of special-status flora and fauna. No special-status animal or plant species was observed in adjacent, non-affected seasonal wetlands. Although the surveys were not "protocol-level" for vernal pool invertebrates, that is, the surveys were not conducted bi-weekly, since there would be no impacts to these habitats, there would be no requirement for that level of analysis. Note that M&A biologists conducting these surveys, Mr. G. Monk and Ms. S. Lynch, are both federally permitted 10(A)(1)(a) fairy shrimp biologists. Thus, while our surveys for listed Branchiopods (fairy shrimp) were not per protocol in unaffected wetlands adjacent to the Remediation Areas, we are confident that listed Branchiopods do not occur in these adjacent wetlands.

Comment 10. Terra Verde states that the seasonal wetlands near the Remediation Project areas may hold water for a sufficient period to support western spadefoot toad. The commenter further states that the Biology Report rules this species out within the remediation areas, "…but it's unclear if the Applicant's consultant considered aquatic habitat outside of the project area and/or associated upland habitat for this species within the project area including access routes. Please clarify."

Please see response to Comment 9 above. All wetland habitats within the project area (Area of Potential Effect) were surveyed for western spadefoot toad, including the Stagecoach Road crossing of Santa Margarita Creek. No western spadefoot toads, adults, sub-adults, or larvae were identified in any seasonal wetlands or creeks adjacent to the Remediation Sites. M&A did identify Sierran tree frog, bullfrog, and California toad larvae during our surveys. No impacts will occur to western spadefoot toad or these common species.

Comment 11. The commenter states that the report recommends a straight line of wildlife exclusion fencing such as ERTEC to deter common species from entering the remediation areas and notes that it appears that, with the concern of California red-legged frog and western pond turtle movements occurring across the Remediation Areas, this fencing is warranted as fully enclosing all work areas (excavation, staging, etc.). The commenter also requests that the location of proposed fencing for all work areas and include details regarding the requirements for "sealable" gates to the work areas, "no-climb" lip on the fence, as well as escape funnels for wildlife that may occur within the work area at the time of fence installation be shown.

As the applicant is particularly sensitive to protection of wildlife, the applicant will voluntarily install temporary wildlife exclusion fencing prior to initiating the remediation work. "ERTEC" wildlife exclusion fencing will be installed to completely surround each Remediation work area. This will ensure that wildlife moving along Little Tassajara and Santa Margarita Creeks (for example, amphibians, reptiles, rodents, raccoons, opossums) will be kept out of the work areas and not be impacted by the remediation work. The ERTEC wildlife exclusion fencing will have a one-foot high sediment control panel (high density polyethylene sheet) on the bottom half of the fencing to also ensure that silt and sediments are contained within the Remediation work areas. The ERTEC will be installed per the manufacturer's installation instructions and is shown on AECOM's Drawings #EC-02 and #EC-03 dated March 2020 ("Grading Plans"). All exclusion fencing would be landscape stapled to the ground to prevent animals from getting underneath the fencing. To be certain that animals cannot successfully climb this fencing, the ERTEC fence will be recurved along the top edge outwards away from the Remediation site so that in the event an animal does climb the fence, it will not be able to get over the top of the fence.

All wildlife exclusion fencing will be maintained in good condition through completion of all earth-moving activities. A biologist will inspect this fence every other week from installation through completion of all earth-moving on the Remediation Project areas. In between the biologist's biweekly surveys, a construction manager, trained by the biologist, will monitor the fence daily. The wildlife exclusion fencing will be removed upon completion of all remediation activities.

This concludes our response to comments. Please also see our Biological Resources Analysis report which is attached to this letter. Please contact Geoff Monk or me at (925) 947-4867 if you have any questions. Thank you.

Sincerely,

Sarah Lynch
Senior Associate Biologist

J. Geoff Monk
Principal Biologist

Attachments: CNDDB Records
Biological Resources Analysis Report revised March 2020

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code LYN19F0002
Quad code 3512045
Occ. no. _____
EO index no. _____
Map index no. _____

Scientific name: *Calochortus simulans*

Common name: La Panza mariposa-lily

Date of field work (mm-dd-yyyy): 05-13-2019

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Sarah Lynch

Affiliation: Monk & Associates, Inc.

Address: 1136 Saranap Avenue Suite Q , Walnut Creek, CA 94595

Email: sarah@monkassociates.com

Phone: (925) 947-4867

Other observers: Christy Owens

DETERMINATION

Keyed in: Jepson Manual, 2nd Edition

Compared w/ specimen at:

Compared w/ image in:

By another person: Christy Owens

Other:

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort:

Total number of individuals: 1

Collection? **Collection number:**

Museum/Herbarium:

PLANT INFORMATION

Phenology:

vegetative	flowering	fruiting
	100 %	

SITE INFORMATION

Habitat description: Rocky outcrop within grazed non-native annual grassland. Dominants: Avena, Hordeum murinum leporinum, Bromus hordeaceus, Torilis nodosa, Scandix pectin-veneris.

Slope: Flat

Land owner/manager: Private

Aspect:

Site condition + population viability: Fair

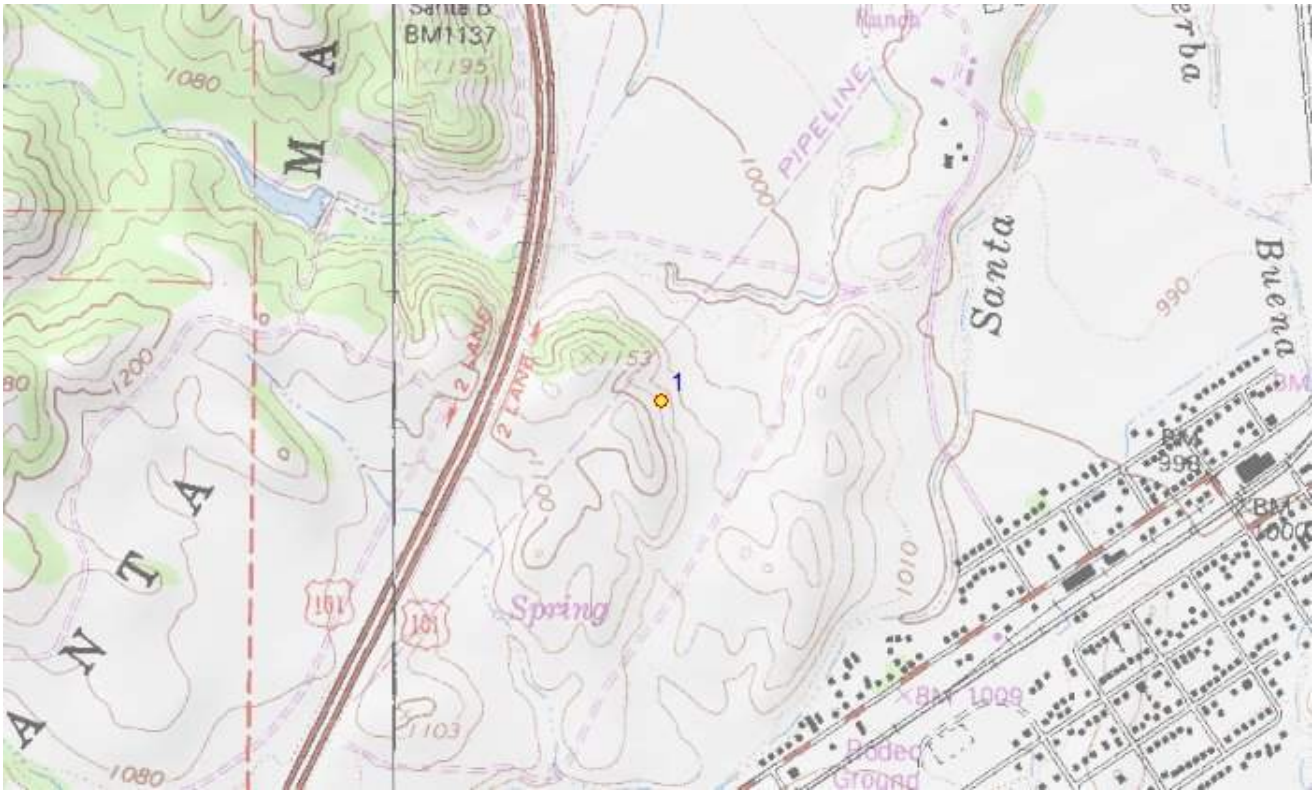
Immediate & surrounding land use: Grazing

Visible disturbances: Grazing and pig damage in area

Threats: Pigs and cattle grazing

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	San Luis Obispo	Santa Margarita	1073	35.39327	-120.61990	716164	3919258	10

ID	Public Land Survey	Feature Comment
1	M T29S R13E 19	

The mapped feature is accurate within: 5 m

Source of mapped feature: GPS

Mapping notes:

Location/directions comments:

Attachment(s):

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code REE19F0001
Quad code 3512045
Occ. no. _____
EO index no. _____
Map index no. _____

Scientific name: *Taxidea taxus*

Common name: American badger

Date of field work (mm-dd-yyyy): 01-30-2019

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Jesse Reebs

Affiliation: Monk & Associates, Inc.

Address: 1136 Saranap Avenue Suite Q , Walnut Creek, CA 94595

Email: jesse@monkassociates.com

Phone: (925) 947-4867

Other observers: Geoff Monk, Zachery Stratton, Sarah Lynch, Christy Owens

DETERMINATION

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person: Identified by Jesse Reebs and Geoff Monk

Other:

Identification explanation: First identification made in field at close range while individual badger was moving from burrow to burrow.

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort:

Total number of individuals: 1

Collection? **Collection number:**

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

adults	juveniles	larvae	egg mass	unknown
1				

Age class comment:

Site use description:

What was the observed behavior? Adult individual observed going from burrow to burrow where it appeared to have dug out California ground squirrel burrows.

Describe any evidence of reproduction:

SITE INFORMATION

Habitat description: Grazed non-native annual grassland adjacent to seasonal creek bordered by valley oak trees.

Slope: Flat ground

Land owner/manager:

Aspect:

Site condition + population viability: Excellent

Immediate & surrounding land use: Grazing and directly north: private airport.

Visible disturbances: Cattle grazing and active private airport.

Threats:

General comments:

MAP INFORMATION

ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	San Luis Obispo	Santa Margarita	1005	35.39553	-120.61837	716297	3919512	10
1	**Public Land Survey**	**Feature Comment**						
	M T29S R13E 19							

The mapped feature is accurate within: 5 m

Source of mapped feature: GPS

Mapping notes:

Location/directions comments:

Attachment(s):

BIOLOGICAL RESOURCES ANALYSIS
SANTA MARGARITA REMEDIATION PROJECT
SAN LUIS OBISPO COUNTY, CALIFORNIA
Assessor Parcel Number: 070-091-036
Permit No. PMTG2019-00065

Revised April 3, 2020

Prepared for
Phillips 66 Company
76 Broadway
Sacramento, California 95818
Attention: Mr. Ed Ralston

Prepared by
Monk & Associates, Inc.
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
Contact: Mr. Geoff Monk

TABLE OF CONTENTS

FIGURES
(At Back of Report)

EXHIBITS
(At Back of Report)

TABLES
(At Back of Report)

ATTACHMENTS
(At Back of Report)

1. EXECUTIVE SUMMARY

The Santa Margarita Remediation Project ("Remediation Project") involves the excavation and remediation of impacted soils at two separate segments of the Phillips 66 pipeline alignment on the Santa Margarita Ranch property in San Luis Obispo County, California (Figures 1, 2, and 3). These two segments are referred to as the Western and Eastern Remediation Areas (Exhibits A and B). Collectively the Western and Eastern Remediation Areas are referred to as the "project area" or "Remediation Project Area." In this report we analyze the effects of the Remediation Project on Biological Resources pursuant to the California Environmental Quality Act (CEQA). Remediation Plans prepared by the project engineers, AECOM, were used for the assessment of the effects of the Remediation Project on Biological Resources reported herein. These plans have been submitted separately to San Luis Obispo County by AECOM and are not included as an attachment to this report.

A wholly-owned subsidiary of Phillips 66 Company (the applicant) currently operates two parallel, 8-inch diameter petroleum pipelines that cross a portion of the Santa Margarita Ranch property from U.S. Route 101 (Highway 101) eastward to the Phillips 66 Santa Margarita Pump Station located directly east of El Camino Real in the town of Santa Margarita. Phillips 66 also currently operates a 6-inch diameter natural gas pipeline within the pipeline easement. The pipeline alignment extends across Santa Margarita Ranch for approximately 1.8 miles. The Western and Eastern Remediation Areas take up a small portion of this 1.8 miles. Santa Margarita Creek, a seasonal tributary to the Salinas River, flows south-to-north directly east of the Eastern Remediation Area. A small unnamed, intermittent tributary to Santa Margarita Creek, known locally as Little Tassajara Creek, runs west-to-east immediately north of the Western Remediation Area; this creek turns and heads north towards the Eastern Remediation Area. These creeks dry in the summer months typically losing all flow by June.

The applicant is particularly sensitive to protection of wildlife and its movements through the Western and Eastern Remediation Areas. Thus, installation of a temporary wildlife exclusion fence is planned prior to initiating the remediation work.

Hydrocarbon-impacted soils have been identified in the pipeline alignment at two segment areas on the Santa Margarita Ranch. The impacted soils are a result of previously used threaded pipeline connections that in 1994 were replaced with welded pipeline sections. The Remediation Project involves the excavation and replacement of affected soils along the two segments of pipeline. Soils will be removed and replaced from the ground surface to prescribe depths varying from 6 – 20 feet below ground surface or to the point of contact with shallow bedrock.

The Remediation Project will avoid impacts to "waters of the United States" and "waters of the State." Accordingly, the Remediation Project will not require any authorizations from the U.S. Army Corps of Engineers (Corps) or the California Regional Water Quality Control Board (RWQCB). Similarly, the Remediation Project avoids impacts to all tributaries and their associated riparian vegetation and thus, the Remediation Project will not require authorization from the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the California Fish and Game Code.

The project may result in impacts to California "species of special concern" (wildlife species) which are protected pursuant to CEQA. However, the Remediation Project will not result in impacts to state and/or federally-listed threatened or endangered species (including plants and/or animals protected pursuant to either the California Endangered Species Act (CESA) and/or Federal Endangered Species Acts (FESA) or to California Native Plant Society (CNPS) "ranked" plant species which are protected pursuant to the CEQA). Accordingly, "Incidental Take" permits from the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and CDFW are not required for the Remediation Project. Following implementation of proposed mitigation measures identified in this biological resource analysis, all potentially significant and significant adverse impacts to sensitive biological resources resulting from the Remediation Project would be mitigated to a level considered less than significant pursuant to CEQA (Pub. Resources Code §§ 21000 et seq.; 14 Cal. Code Regs §§ 15000 et seq).

2. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this biological resource analysis for the Santa Margarita Remediation Project located just north of the town of Santa Margarita in San Luis Obispo County, California (Figures 1 and 2). The Remediation Project will be implemented in two different areas of the Santa Margarita Ranch called the Western Remediation Area and the Eastern Remediation Area, collectively referred to in this analysis as the "project area" or "Remediation Project area" (Figure 3; also see Exhibits A and B). The purpose of our analysis is to provide a description of existing biological resources within the Remediation Project Area and to identify significant or potentially significant adverse impacts as defined in CEQA that could occur to sensitive biological resources from the Remediation Project. Remediation Plans prepared by the project engineers, AECOM, were reviewed by M&A for this biological resources analysis to determine the effects of the Remediation Project on biological resources.

Biological resources include common plant and animal species, and special-status plants and animals as designated by the USFWS, CDFW, NMFS, and other resource organizations including the CNPS. Biological resources also include waters of the United States and State, as regulated by the Corps, RWQCB, and CDFW.

This biological resource analysis also provides mitigation measures for "potentially significant" and "significant" impacts that could occur to biological resources. Upon implementation, the prescribed mitigation measures would reduce impacts to levels considered less than significant pursuant to CEQA. Accordingly, this report is suitable for review and inclusion in any review being conducted by San Luis Obispo County for the Remediation Project pursuant to the CEQA.

2.1 Property Location

The project area is located on a portion of the Santa Margarita Ranch (APN 070-091-036) in the unincorporated community of Santa Margarita, San Luis Obispo County, California (Figures 1 and 2). The entire ranch parcel is approximately 900 acres. The applicant owns the easement for, and through an affiliate the applicant operates, two parallel 8-inch diameter petroleum pipelines that traverse a portion of the ranch from the eastern side of U.S. Highway 101 to the Phillips 66 Santa Margarita Pump Station located on the east side of El Camino Real. Phillips 66 also currently operates a 6-inch diameter natural gas pipeline within the pipeline easement. Hydrocarbon-impacted soils have been identified within the pipeline alignment at two locations on the Santa Margarita Ranch. This project entails excavation of impacted soils at these two distinct segments of the pipeline alignment that are regarded as the project area, as shown on Figure 3. These segments are referred to as the Western and Eastern Remediation Areas (Exhibits A and B).

The pipeline alignment extends across the Santa Margarita Ranch for a distance of approximately 1.8 miles. Average surface elevations along the pipeline corridor from north to south range from approximately 975 feet above sea level in the floodplain areas near Santa Margarita Creek, rising to approximately 1,000 feet in elevation in the terrace area that contains the historic ranch headquarters structures, and achieving an elevation of 1,090 feet in the hilly areas near Highway 101.

The Western Remediation Area is an approximately 750-foot segment of the pipeline alignment located on undeveloped pasture land in the southwestern portion of the Ranch (Exhibit A). This remediation area is located approximately 500 feet east of Highway 101 at its closest point and approximately 2,800 feet northwest of State Route 58 (Highway 58). The width of the disturbed area, including excavation areas, stockpile, and staging areas, varies from approximately 250 feet at the northeastern end to 600 feet at the middle section. The disturbance area for remedial activities is approximately 5.5 acres, including excavation footprints and staging. Little Tassajara Creek, an intermittent tributary to Santa Margarita Creek flows in an west-east direction through the Western Remediation Area but this creek and its associated riparian trees will not be impacted by the Remediation Project. The disturbance area for remedial activities in the Western Remediation Area is approximately 2 acres, including excavation and staging.

The Eastern Remediation Area is an approximately 1,400-foot segment of the pipeline alignment located in the central portion of the Ranch (Exhibit B). The alignment traverses a corral and is in proximity to existing ranch structures. The eastern end of the segment is located near the top of the western bank of Santa Margarita Creek, approximately 25-30 feet above the creek. Excavation activity will not impact this creek or its associated riparian vegetation. The width of the disturbed area, including excavation areas, stockpile areas, and staging, varies from approximately 800 feet at the eastern end to approximately 650 feet in the middle section. The disturbance area for remedial activities in the Eastern Remediation Area is approximately 14.5 acres, including excavation, stockpile, and staging areas. Limited tree pruning or removal may be required in the developed areas of the Ranch central event area where an olive tree orchard is present. Excavation activity will avoid all impacts to oak trees and creek resources.

2.2 Project Description and Purpose

Phillips 66 currently operates two parallel, 8-inch diameter petroleum pipelines that traverse the Santa Margarita Ranch property from the eastern side of Highway 101 to the Phillips 66 Santa Margarita Pump Station located on the east side of El Camino Real. A 6-inch diameter natural gas pipeline also occupies a portion of the pipeline easement.

The purpose of the Remediation Project is to implement remedial actions at the project area in accordance with a Corrective Action Plan (CAP) and the CAP Addendum 01 that was reviewed and conditionally approved by the Central Coast RWQCB in 2019. Phillips 66 will implement the CAP and CAP Addendum 01 as necessary to obtain case closure from the Central Coast RWQCB. The primary activities detailed in the CAP and CAP Addendum entail the excavation of impacted soils at varying depths and widths within the two pipeline alignment areas (i.e., the Western and Eastern Remediation Areas), and then backfilling the excavations with slurry beneath the pipelines and with clean, locally available soils, everywhere else. Upon completion of backfills, all excavations will be restored to match existing grades. An estimated volume of 83,851 cubic yards of excavation are planned. Un-impacted overburden will be preserved, and clean soil (overburden, seedbank and borrow) will be used to replace the excavated material.

2.3 Wildlife Exclusion Fencing

The applicant is particularly sensitive to protection of wildlife. Temporary wildlife exclusion fencing will be installed prior to initiating the remediation work to avoid impacts to wildlife. The

applicant will voluntarily install "ERTEC" wildlife exclusion fencing that completely surrounds each Remediation Project Area. This will ensure that wildlife moving along Little Tassajara Creek and Santa Margarita Creek or elsewhere on the ranch property will be kept out of the project areas and not be impacted by the remediation work (for example, amphibians, reptiles, rodents, raccoons, opossums). A one-foot high sediment control panel (high density polyethylene sheet) incorporated by ERTEC into the bottom of the wildlife exclusion fence will ensure that silt and sediments are contained within the project area. The ERTEC will be installed per the manufacturer's installation instructions and is shown on AECOM's Drawings #EC-02 and #EC-03 dated March 2020 ("Grading Plans"). All exclusion fencing would be landscape stapled to the ground to prevent animals from getting underneath the fencing.

ERTEC is a very effective wildlife barrier for small and medium-sized wildlife species that may move across the landscape. It should be noted that small to medium-sized mammals do not climb this fence nor do amphibians and most snakes, so fence climbing is not anticipated to be a problem keeping all but larger mammals out of remediation areas. To be certain that animals cannot successfully climb this fencing, the ERTEC fence will be recurved along the top edge outwards away from the Remediation areas so that in the event an animal does climb the fence, it will not be able to get over the top of the fence and into the work area.

Typically, shyer mammals such as gray fox (*Urocyon cinereoargenteus*) and red fox (*Vulpes vulpes*), and larger mammals such as Columbian black-tailed deer (*Odocoileus hemionus* ssp. *columbianus*), would not be expected to visit areas that are actively under construction. In working on pipeline repair and remediation sites for many years where ERTEC is installed around work sites, M&A biologist Mr. G. Monk has never observed any animals getting into project areas except smaller, subterranean rodents such as pocket gophers and ground squirrel species. Regarding the remediation areas, no special-status burrowing rodents have been observed or are anticipated as being in the vicinity of Santa Margarita.

The one-foot high sediment control panel, that functions like silt fence, is a best management practice that is used to control threats of downstream degradation of receiving waters. However, since remediation work would take place during the dry season, we do not expect an impact on downstream waters. Additionally, since remediation work will take place inside fenced enclosures, no impacts to wildlife are expected.

All wildlife exclusion fencing will be maintained in good condition through completion of all earth-moving activities. A biologist will inspect this fence every other week from installation through completion of all earth-moving on the Remediation Project area. The biologist will also train the field manager how to perform the fence inspections so that on days the biologist is not present, the foreman can complete his/her own fence inspections. The wildlife exclusion fencing will be removed upon completion of all remediation work activities.

2.4 Project Schedule and Work Sequence

Work is planned to occur over one consecutive construction season between April 19 and the end of October 2021 to avoid excavation activity during the rainy season. Trucking of exported material and other minor activities may continue past the end of October, weather dependent, in

order to ensure that all impacted soil stockpiled at the project area during the preceding dry season excavation is removed. Any work that is completed outside of the ERTEC enclosed project areas after the end of October (for example, truck hauling) will have the following restrictions:

- Remediation Project work activities and/or off-site trucking shall begin after sunrise and shall cease no later than one hour after sunset.

- If for any reason off-site trucking occurs before or after these conditions, then all trucks shall be escorted by a qualified biologist that clears any wildlife encountered from the traveled path ahead of the trucks.

- Off-site trucking and all Remediation Project equipment shall travel at a reduced speed limit of no greater than 15 miles per hours (MPH) between the Project Area and egress point.

- No work will occur during projected rain events of 0.25-inch or greater with work planned to be delayed when the National Oceanic and Atmospheric Administration (NOAA) forecast calls for a 70% chance or greater of this type of precipitation event.

In the event of significant project delays, offsite trucking of impacted soils may cease prior to completion of excavation activities at the end of October 2021. In this event, impacted soils will be stockpiled and secured via implementation of an erosion control plan. Offsite trucking of the remaining impacted soils would resume in spring of 2022, weather permitting.

2.5 Project Work Activities

Excavation will entail the following major activities:

- Site mobilization and preparation
- Excavation and slot trenching
- Stockpiling
- Confirmation soil sampling
- Backfilling
- Pipeline inspections and recoating
- Loading and export of impacted material
- Site restoration
- Demobilization

During peak months of activity, excavation, trenching, stockpiling, backfilling and export activities will occur concurrently at multiple excavation footprints.

Site Access and Staging. Site ingress and egress will be via Highway 101, Highway 58, and Stagecoach Road. Stagecoach Road is a compacted, unpaved agricultural access road from Highway 58, approximately 2,200 feet east of Highway 101. Use of this route will avoid the residential areas of Santa Margarita and Atascadero. Existing ranch agricultural roads will be

utilized to allow equipment and trucks to reach the project areas. Road improvements, including grading of new access roads, *is not planned* for the Remediation Project.

Staging areas for equipment storage and temporary facilities have been identified for the Western and Eastern Remediation Areas. These staging areas will be fully enclosed with "ERTEC" fence with a sediment control panel. Staging locations will minimize placement of materials near sensitive biological areas, on top of site vegetation, and will avoid trees, roads, fencing, and other infrastructure to the extent feasible.

Fuel storage is not anticipated for the Remediation Project. In the event that fuel storage is required within the Project Area, the fuel storage will be in accordance with San Luis Obispo County and San Luis Obispo County Air Pollution Control District regulations, including preparation of a Hazardous Material Storage Plan and Hazardous Materials Business Plan.

3. BIOLOGICAL STUDY METHODOLOGY

Prior to preparing this biological resources analysis report, M&A completed a nine quad search of the most recent version of CDFW's Natural Diversity Database (CNDDB) (RareFind 5 application) for historic and recent records of special-status (i.e., threatened, endangered, rare) plant and animal species known to occur in the region of the project area (CDFW 2019) (see the "Special-Status Species" section for a complete discussion on the CNDDB search). M&A also searched the 2019 electronic version of the CNPS' *Inventory of Rare and Endangered Plants of California* (CNPS 2001) for records of special-status plants known in the region of the project area. All special-status species records were compiled in tables. M&A examined all known record locations for special-status species to determine if special-status species could occur on the project area or within an area of affect. M&A also reviewed the Santa Margarita Ranch EIR (Rincon Dec 2008) for pertinent biological information about sensitive biological resources known to occur within the Santa Margarita Ranch. Finally, M&A reviewed the San Luis Obispo County *Guidelines for Biological Resource Assessments – Guidelines for Biological Consultants* (San Luis Obispo County 2016). Subsequent to this background research and review, M&A biologists conducted focused surveys in the project area for locally known special-status plant and animal species as further detailed below.

3.1 Wildlife Surveys

M&A biologists, Mr. Geoff Monk and Mr. Jesse Reebs, conducted a general survey of the project area on January 30 and 31, 2019, to record wildlife species, plant communities, significant or sensitive biological resources, and to assess the likelihood of resource agency regulated areas in the project area. A diurnal amphibian survey was also conducted on January 30, 2019. Additional wildlife species surveys were conducted by M&A biologists, Mr. Monk and Mr. Zach Stratton, on February 8 and 9, 2019 for western spadefoot toad (*Spea hammondii*), foothill yellow-legged frog (*Rana boylii*), California red-legged frog (*Rana draytonii*), western pond turtle (*Emys marmorata*), American badger (*Taxidea taxus*), and nesting raptors (birds of prey), including bald and golden eagles (*Haliaetus leucocephalus* and *Aquila chrysaetos*, respectively). Mr. Monk and Mr. Reebs returned to the project area again on March 12, 13 and 14, 2019, to survey for nesting raptors, nesting passerine birds, California red-legged frogs,

western spadefoot toads, foothill yellow-legged frogs, western pond turtles, and American badger. All survey data were recorded daily in project notebooks.

3.2 Special-Status Plant Surveys

Ms. Sarah Lynch and Ms. Christina Owens, qualified botanists, have conducted four special-status plant surveys in the project area. The first survey was conducted on March 12, 13, and 14, 2019, the second on April 22 and 23, 2019, the third on May 13 and 14, 2019, and the fourth special-status plant survey was conducted on July 18 and 19, 2019. During the March 2019 survey, Ms. Lynch and Ms. Owens also mapped plant communities. The special-status plant surveys involved searching all habitats on the site and recording all plant species observed. Any plants that could not be definitively determined to species level in the field were collected and keyed in the lab under a high-powered dissecting microscope. M&A cross-referenced the habitats found in the project area against the habitat requirements of local or regionally known special-status species to determine if the Remediation Project could directly or indirectly impact such species. These survey periods correspond with the known flowering periods of potentially occurring special-status plants in the vicinity of the project area.

3.3 Wetland Delineation

M&A biologists Mr. Monk, Ms. Lynch, and Ms. Owens conducted a formal wetland delineation of the project area using criteria prescribed in the Corps' 1987 Wetland Delineation Manual (Corps 1987) and the Corps' Regional Supplement for the Arid West Region (Corps 2008). The wetland delineation was initiated in March 2019 and continued in April 2019 during a period when hydrology was clearly evident, and when dominant plants could be identified to species as necessary to ascertain hydrophytic status. In May 2019, Ms. Lynch and Ms. Owens returned to the project area to positively identify rushes (*Juncus* spp.) and grasses that were not identifiable to species during the earlier survey dates.

4. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES

4.1 Topography

The Western Remediation Area is mostly level at approximately 1,000 feet in elevation in the eastern portion and then gradually slopes up to an elevation of approximately 1,100 feet in the western portion. The Eastern Remediation Area is on mostly level land at an elevation of approximately 1,000 feet.

4.2 Hydrology

The Santa Margarita Ranch is located in the Salinas River watershed which empties into the Pacific Ocean at Monterey Bay. Drainages within or adjacent to the project area generally flow from south-to-north via two main drainages: Santa Margarita Creek which runs along the eastern boundary of the Eastern Remediation Area, and a significantly smaller, unnamed intermittent creek (locally known as "Little Tassajara Creek," that briefly runs west-to-east immediately north of the Western Remediation Area before flowing south-to-north before eventually draining into Santa Margarita Creek to the north of the project area (Figure 2; USGS map). Santa Margarita Creek, the primary on-site tributary, drains to the Salinas River approximately three miles north of the property. Both Little Tassajara Creek and Santa Margarita Creek are "waters"

of the United States and State subject to regulation pursuant to Sections 404 and 401 of the Clean Water Act, respectively.

4.3 Plant Communities and Associated Wildlife Habitats

A complete list of plant species observed in the project area is presented in Table 1. Nomenclature used for plant names follows *The Jepson Manual* Second Edition (Baldwin 2012) and changes made to this manual as published on the Jepson Interchange Project website (http://ucjeps.berkeley.edu/interchange/index.html). Table 2 is a list of wildlife species observed in the project area. Nomenclature for wildlife follows CDFW's *Complete list of amphibian, reptile, bird, and mammal species in California* (CDFW 2016) and any changes made to species nomenclature as published in scientific journals since the publication of CDFW's list.

Within the Western and Eastern Remediation Areas there are a total of six plant communities. These plant communities most readily fit into the Holland (1986) or Holland and Keil (1995) plant community classification systems, but where appropriate, M&A has also included the *Manual of California Vegetation* (Sawyer et al. 2009) "alliance" name under each plant community discussion where relevant.

4.3.1 Ruderal Herbaceous

Ruderal (weedy) herbaceous communities are assemblages of plants that thrive in waste areas, roadsides and other sites that have been disturbed by human activity. Typically, hardpacked soils of roadsides, parking lots, industrial areas and construction sites support communities of ruderal species. Ruderal vegetation is adapted to high levels of disturbance and persists almost indefinitely in areas with continuous disturbance. In the project area, ruderal herbaceous habitat is the dominant plant community in the Eastern Remediation area (see Figure 5). This habitat in the Eastern Remediation Area is either regularly disked, mowed, or disturbed by vehicles and supports common, weedy annual plant species such as the non-native foxtail barley (*Hordeum murinum* ssp. *leporinum*), cheeseweed (*Malva parviflora*), filarees (*Erodium botrys, E. moschatum, E. cicutarium*), mustard (*Sisymbrium altissimum*, *Hirschfelda incana*), green dock (*Rumex conglomeratus*), common groundsel (*Senecio vulgare*), and bur clover (*Medicago polymorpha*), among others.

Ruderal habitats typically provide suitable environments for common animals that are adapted to living in association with humans. Common wildlife species associated with ruderal communities include raccoon (*Procyon lotor*), Botta's pocket gopher (*Thomomys bottae*), black-tailed jackrabbit (*Lepus californicus*), western fence lizard (*Sceloporus occidentalis*), American crow (*Corvus brachyrhynchos*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and house finch (*Haemorhous mexicanus*).

4.3.2 Non-native Annual Grassland

Prior to the settlement of Europeans in California, the California landscape was dominated by native, perennial bunchgrasses. When the Europeans settled in California, a variety of Mediterranean grass and forb (broad-leaved plant) species were brought to California for use as crops or ornamentals, or inadvertently in the fur and digestive systems of livestock. Land use changes, such as domestic animal grazing, has resulted in highly palatable native plants being

reduced or eliminated. Introduced species tolerant of grazing pressure, particularly annual grasses of Eurasian ancestry, have displaced the native grasses, creating a new kind of grassland community. The majority of the project area is composed of non-native annual grassland. The project area has been an actively maintained ranch with cattle grazing since the mid-1700s. Grasslands within the project area are an example of how cattle grazing can greatly change the vegetative composition of the landscape.

At the time of M&A's January through March 2019 field visits, most grass species were dormant or only vegetatively visible and thus, it was not possible to tell what the dominant grass species were within the project area. Follow-up surveys in the project area in April, May, and July 2019 provided an opportunity to identify a few of the flowering grass species, but many were still not in flower or had been grazed too short to determine the genus and species. Cattle actively graze the project area, and wild pigs (*Sus scrofa*) root in the soil, making species identification, and in many cases, growth of the plants themselves, difficult. Grasses and forbs (broad-leaved plants) identified in the project area are non-native foxtail barley, foxtail chess (*Bromus madritensis rubens*), rip-gut brome (*Bromus diandrus*), Italian rye grass (*Festuca perennis*), wild oats (*Avena barbata*), six weeks fescue (*Festuca bromoides*), mustards (*Brassica nigra*, *Hirschfeldia incana, Sisymbrium altissimum)*, and thistles (*Cirsium vulgare, Carduus pycnocephala, Centaurea solstitalis*). Native species also occur in this plant community; however, their total percent cover is much lower than the non-native species. Native species found in non-native annual grassland include red maids (*Calandrinia ciliata*), variegated clover (*Trifolium variegatum* var. *major*), short-podded lotus (*Acmispon brachycarpus*), bicolored lupine (*Lupinus bicolor*), fiddleneck (*Amsinckia intermedia*), and rusty popcorn flower (*Plagiobothrys nothofulvus*).

The project area's grassland community provides foraging, denning, nesting, and migration habitat for a wide variety of common wildlife species. Representative wildlife species observed in the grassland community during M&A's Winter and early Spring 2019 site visits included savannah sparrow (*Passerculus sandwichensis*), golden-crowned sparrow (*Zonotrichia atricapilla*), white-crowned sparrow (*Zonotrichia leucophrys*), western bluebird (*Sialia mexicana*), western meadowlark (*Sturnella neglecta*), American pipit (*Anthus rubescens*), greater roadrunner (*Geococcyx californianus*), western fence lizard, gopher snake (*Pituophis melanoleucus*), Virginia opossum (*Didelphis virginiana*), Columbian black-tailed deer (*Odocoileus hemionus* ssp. *columbianus*), black-tailed jackrabbit, Botta's pocket gopher, California meadow vole (*Microtus californicus*), and American badger, a California "species of special concern." The American badger is discussed in the "Special-Status Species" section.

4.3.3 California Sycamore Woodland

California sycamore woodland fits the *Platanus racemosa* Woodland Alliance (Sawyer et al. 2009); this community is found along Santa Margarita Creek immediately east of the Eastern Remediation Area (Figure 5). This riparian plant community is called Central Coast Cottonwood-Sycamore Riparian Forest in Holland (1986) and is included in Valley and Foothill Riparian Woodland community in Holland and Keil (1995). CDFW has given this riparian woodland community a State Ranking of S3 – Vulnerable. This means this community is vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation in California (*In*: CDFW's California Sensitive Natural Communities, October 15, 2018). ***This plant***

community will not be impacted by the Remediation Project as it occurs outside the remediation project area (see Figure 5).

Co-dominants with the sycamores in this creek are willows (*Salix laevigata* and *S. lasiolepis*), valley oaks (*Quercus lobata*), and coast live oak trees (*Quercus agrifolia*). There are also some Fremont cottonwoods (*Populus fremontii*). The shrub layer is well-developed and consists of blue elderberry (*Sambucus nigra caerulea*), coffeeberry (*Frangula californica*), poison oak (*Toxicodendron diversilobum*), snowberry (*Symphoricarpos albus* var. *laevigatus*), mule fat (*Baccharis salicifolia* ssp. *salicifolia*), rose (*Rosa californica*)), and the non-native, sub-shrub Himalayan blackberry (*Rubus armeniacus*). California mugwort (*Artemisia douglasiana*) and herbaceous species common in the nearby grassland community comprise the understory. Vines growing on and over the shrubs include western clematis (*Clematis ligusticifolia*) and wild cucumber (*Marah fabacea*).

Wildlife associated with California sycamore woodland includes amphibians such as Sierran treefrog (*Pseudacris sierra*). Reptiles expected to occur within this riparian community include western terrestrial garter snake and California kingsnake (*Lampropeltis californiae*). Rodents include deer mouse *(Peromyscus maniculatus),* Botta's pocket gopher, and gray squirrel (*Sciurus griseus*). Common representative birds observed in the riparian woodlands adjacent to the Remediation Project Area include yellow-billed magpie (*Pica nuttalli*), hairy woodpecker (*Picoides villosus*), belted kingfisher (*Megaceryle alcyon*), bushtit (*Psaltriparus minimus*), yellow-rumped warbler (*Setophaga coronata*), and sharp-shinned hawk (*Accipiter striatus*). Some common mammals observed (directly or via indirect sign) in the riparian woodland include bobcat (*Lynx rufus*), raccoon, Columbian black-tailed deer, and wild pig. Wild pigs occur in large numbers and are extensively damaging the riparian woodland consuming any wildlife they can catch, invertebrates they root from the soil and from under debris, and consuming or damaging many native herbaceous plants. M&A observed two fresh litters of wild pigs living in Santa Margareta Creek during our surveys. Litters were 9 and 14 piglets.

4.3.4 VALLEY OAK WOODLAND

This plant community best fits the *Manual of California Vegetation* (Sawyer et al. 2009) *Quercus lobata* Woodland Alliance. Valley oak woodland (*Quercus lobata* Woodland Alliance) vegetation type is recognized as rare by the Natural Communities List (CDFW 2018), California Code 71.040.05, and has a California state ranking of S3 (vulnerable). ***This plant community will not be impacted by the Remediation Project as it occurs outside the Remediation Project Areas*** (see Figures 4 and 5). Oak woodlands are a characteristic vegetational cover in the foothills of the mountains of California. This plant community occurs at elevations from 30 to 5,000 feet where summers are warm and dry, and winters are mild. Oak woodlands are a transitional plant community between the grasslands of the hot dry valleys and the montane forests of moist cool uplands. In interior mountain ranges, oak woodlands grade into montane mixed coniferous forests. Oak woodlands are dominated by oaks (*Quercus* spp.). The most common woodland type consists of scattered trees and shrubs with an understory of grasses and forbs. The shrubs, often species that also occur in chaparral or coastal scrub communities, may grow both under and between the trees (Holland & Keil 1995).

Valley oak woodland in the project area is limited to the southwestern and northern edges of the Western Remediation Area (Figure 4). In the southwestern edge of the Western Remediation Area, valley oak trees grow in groupings or signally along the north-northeastern-facing hillslope and in clumps around rocky outcroppings. On the slope the valley oak woodland has an herbaceous understory, there is no shrub layer, and the herbaceous species are similar to the suite of herbaceous species found in the adjacent non-native, annual grassland community.

Within and adjacent to the Western Remediation Area, there are rock outcroppings mostly associated with the valley oak woodland. Within these rock outcrop areas there is a shrubby understory composed of poison oak, snowberry, coffeeberry, and blue elderberry. Also, there are several native herbaceous species growing at the rock outcrops such as hoary bowlesia (*Bowlesia incana*), goldenback fern (*Pentagramma triangularis*), woodland threadstem (*Pterostegia drymarioides*), and California figwort (*Scrophularia californica*). Non-native thistles (*Carduus pycnocephalus* ssp. *pycnocephalus*, *Silybum marianum*) and nettles (*Urtica urens*) are also growing among the rock outcrops.

Along the northern edge of the Western Remediation Area the valley oak woodland grows along Little Tassajara Creek, an intermittent tributary to Santa Margarita Creek that was mostly dry in January, and that flowed at 6 to 14 inches deep after large storm events through March. According to longtime residents of the Santa Margarita Ranch, this tributary dries in most years by May. There is a riparian tree canopy over some areas of this tributary that is open and comprised of mature valley oak trees, mature red willow, and sapling valley oaks. A few scattered California coffeeberry bushes also grow in the understory. Typically, its herbaceous understory is not remarkably different than the herbaceous grassland species found in the adjacent non-native grassland community.

Trees in the valley oak woodland plant community provide foraging, roosting and nesting habitat for a large variety of wildlife species, including raptors such as the great horned owl (*Bubo virginianus*), red shouldered hawk (*Buteo lineatus*), and red-tailed hawk (*Buteo jamaicensis*). Common birds identified in the oak woodlands include acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttallii*), northern flicker (*Colaptes auratus*), oak titmouse (*Baeolophus inornatus*), and California scrub jay (*Aphelocoma californica*). Mammals observed in the oak woodland in the project area included Columbian black-tailed deer and wild pig.

Other wildlife associated with the valley oak woodland along Little Tassajara Creek in the Western Remediation Area includes amphibians such as California toad (*Anaxyrus boreas halophilus*) and Sierran treefrog. Reptiles observed along this drainage included western fence lizard and gopher snake. Other reptiles that are expected within this community include western terrestrial garter snake (*Thamnophis elegans*) and northern alligator lizard (*Elgaria coerulea*). Representative common birds observed in this woodland include red-tailed hawk, northern flicker, Nuttall's woodpecker, California scrub jay, oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), and California towhee (*Pipilo crissalis*). Some common mammals that could be observed in the woodland include bobcat and raccoon.

4.3.5 RED WILLOW-BLACK WALNUT MIXED RIPARIAN WOODLAND

Red willow and black walnut (*Juglans hindsii*) trees grow along Little Tassajara Creek just outside the western boundary of the Eastern Remediation Area (Figure 5). A few mature Fremont cottonwood trees are also grouped together and mixed in with the tree canopy. Red willow thickets (*Salix laevigata* Woodland Alliance) are recognized by the Natural Communities List (CDFW 2018), California Code 61.205.01, and this community has a state ranking of S3. Black walnut stands are recognized by California Code 61.810.02, and this community has a state ranking of S1 (critically imperiled). Since the red willow-black walnut mixed riparian woodland is just outside the project area boundaries, with just a minimal extent of aerial canopy cover extending into the project area boundaries, these trees and associated canopy will remain unaffected as no remediation is proposed near this tributary. Rather only a construction trailer(s) will be parked in an already hard-packed/graveled use area of the ranch outside the dripline. All driplines will be buffered/fenced off from project activities. ***Accordingly, no impacts to this plant community are expected from the Remediation Project.***

Red willow-black walnut mixed riparian woodland fits the Valley and Foothill Riparian classification system described in Holland and Keil (1995). It also fits Holland's Black Walnut Woodland, and red willow thickets also fall into Holland's Central Coast Riparian Scrub community, among others. This riparian community in the project area has a sub-shrub understory comprised of Himalayan blackberry and poison hemlock (*Conium maculatum*), and an herbaceous layer consisting primarily of green dock. Little Tassajara Creek is an intermittent stream that is fast flowing in the winter months after major storm events, and typically dries in May or June. As a result, this tributary supports no aquatic and little aquatic emergent vegetation. A small patch of spike rush (*Eleocharis macrostachya*) was the only aquatic emergent vegetation observed along this reach of channel during the special-status plant surveys conducted in 2019.

The red willow-black walnut riparian woodland provides foraging opportunities for a myriad of song birds that will seek out the insects that thrive on the willow leaves and sap. Warblers such as orange-crowned warbler (*Oreothlypis celata*), yellow warbler (*Setophaga petechia*), and Wilson's warbler (*Cardellina pusilla*) are just a few of the warbler species that can be found foraging in these trees. While gray squirrels, California scrub jays, northern mockingbirds (*Mimus polyglottos*), and a variety of other common song birds can be found foraging in the walnut trees. While Little Tassajara Creek dries in the early summer months, there was a steady flow of water in this drainage during the month of April. During diurnal amphibian surveys conducted from March 12 – 14, 2019, juvenile American bullfrogs (*Lithobates catesbeiana*) were observed in this tributary. American bullfrogs require perennial water to successfully reproduce. Accordingly, the juvenile American bullfrogs were dispersing up or down this tributary in search of perennial water where they would then establish or add to an existing breeding population.

4.3.6 SEASONAL WETLANDS

Seasonal wetlands are habitats that may appear dry in the summer and fall months, but by the first winter rains become inundated and hold water for a period of several weeks to months at a time. Seasonal wetlands are able to hold water for long-duration typically due to the presence of impervious soils and/or confining topography such as topographic low areas. Hydric soils are

soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic (absence of free oxygen) conditions within the upper part of the soil profile. Owing to soils with high clay content or that otherwise are mostly or partially impervious, any time depressional topography occurs or is created through human activities, such areas often trap seasonal rainfall over short to long durations of the winter and spring. Such areas eventually are dominated by seasonal wetland plants and otherwise persist as seasonal wetlands.

In both the Western and Eastern project areas (but not within the limits of the Remediation Project work areas), seasonal wetlands are scattered sporadically within the grassland community (Figures 4 and 5). Seasonal wetlands occur within the ruderal grassland community adjacent to the both Remediation Areas, but the Remediation Project will avoid all impacts to seasonal wetlands, and best management practices will be installed where necessary to protect seasonal wetlands. ***Accordingly, no impacts will occur to seasonal wetlands from implementation of the Remediation Project.***

Immediately adjacent to and outside of the Eastern Remediation Area there are small seasonal wetlands adjacent to a corral where cattle loading activities have compacted soils and where rainfall coalesces in a swale depression. In these areas the compacted soils support popcorn flower (*Plagiobothrys bracteatus*) and toad rush (*Juncus bufonius*). Within the Eastern Remediation Area, in the ruderal herbaceous community outside the dig area, the seasonal wetlands are dominated by brown-headed rush (*Juncus phaeocephalus*), Italian rye grass, popcorn flower (*Plagiobothrys stipitatus micranthus*), and lesser amounts of meadow foam (*Limnanthes douglasii* ssp. *nivea*), timwort (*Cicendia quadrangularis*), and hyssop loose strife (*Lythrum hyssopifolia*). ***These wetlands will not be impacted by the Remediation Project.***

Immediately adjacent to Western Remediation Area there are also seasonal wetlands that are scattered through the non-native annual grassland. The project will not impact these wetlands (Figure 4). These herbaceous wetlands are dominated by brown-headed rush, toad rush, variegated clover (*Trifolium variegatum* var. *major*), Mediterranean barley, Italian rye grass, and creeping wild rye grass (*Elymus triticoides*).

Seasonal wetlands provide wildlife with a seasonal water source that allows animals to drink and forage in the water during the winter and spring months. Grasses/forbs typically remain greener longer when associated with seasonal wetlands and thus, provide extended wildlife/cattle foraging opportunities extending into the summer months when summer heat desiccates the adjacent annual grassland community. Amphibians such as the Sierran tree frog and the California toad lay their eggs in deeper pools (that can be as deep as 6 to 8 inches deep in the Western Remediation Area) within seasonal wetland habitats and complete their life cycle in such wetlands. Invertebrates such as mayflies (Ephemeroptera), damselflies (Odonata), and predaceous diving beetles (Dytiscidae) are commonly associated with inundated seasonal wetland habitats and complete their life cycle in the wetlands. Wildlife observed in these wetlands during site surveys included killdeer (*Charadrius vociferus*) and Say's phoebe (*Sayornis saya*).

4.3.7 GUM PLANT PATCHES (*GRINDELIA CAMPORUM*)

The CDFW has recognized *Grindelia camporum* gum plant patches (Provisional Herbaceous Alliance) vegetation type as a California Sensitive Natural Community (CDFW 2018), CA Code 52.206.01, and has given this community a California State ranking of S2 (imperiled). Sawyer et al. (2009) does not have a specific *Grindelia camporum* provisional herbaceous alliance but rather has a "*Grindelia* (*stricta*) provisional herbaceous alliance" for *Grindelia stricta* "or another *Grindelia* species that is dominant in the herbaceous layer with salt grass (*Distichlis spicata*), alkali heath (*Frankenia salina*), fleshy jaumea (*Jaumea carnosa*)," and other salt marsh species, including pickleweed (*Sarcocornia pacifica*). *Grindelia camporum* patches occur in the Western Remediation Area in upland, non-native annual grassland in association with filarees, clovers, and non-native annual grasses (Figure 4); thus, it does not occur with halophytic vegetation as does the alliance described by Sawyer et al. ***Regardless, since CDFW has recognized Grindelia camporum gum plant patches as a sensitive natural community, impacts to this community are significant pursuant to CEQA***. Mitigation will be implemented that reduces impacts to levels less than significant. Please see the Impacts and Mitigations section for details.

4.4 Wildlife Corridors

Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development. Wildlife corridors have several functions: 1) they provide avenues along which wide-ranging animals can travel, migrate, and breed, allowing genetic interchange to occur; 2) populations can move in response to environmental changes and natural disasters; and 3) individuals can recolonize habitats from which populations have been locally extirpated (Beier and Loe 1992). All three of these functions can be met if both regional and local wildlife corridors are accessible to wildlife. Regional wildlife corridors provide foraging, breeding, and retreat areas for migrating, dispersing, immigrating, and emigrating wildlife populations. Typically impacts to regionally recognized wildlife corridor could be regarded as significant pursuant to the CEQA. In California regionally important wildlife corridors are usually recognized by CDFW and typically include known migration corridors used seasonally by named deer herds, elk, or other gregarious mammalian species. Local wildlife corridors also provide access routes to food, cover, and water resources but are typically used by local, common resident species. Impacts to local wildlife corridors are not significant pursuant to the CEQA.

Little Tassajara Creek, a tributary to Santa Margarita Creek occurs immediately north of the Western Remediation Area and provides a local wildlife corridor for common mammals that hunt up and down tributaries, obtain drinking water from such tributaries, and move from one area of their home range to another. **The Remediation Project will *not* affect this drainage or its associated riparian vegetation**. Additionally, since the excavation portion of the remediation work would take place during the dry season, there will not be an impact on downstream receiving waters. The Western Remediation Area will be set back from both the north and south top-of-bank of Little Tassajara Creek or outside of its associated riparian vegetation, whichever provides the greatest creek buffer. Thus, the value of this wildlife corridor will remain unaffected as the Remediation Project will not block or otherwise impact the drainage during or after the

Remediation Project is completed. Its wildlife corridor value will thus remain unaffected by the Remediation Project.

Santa Margarita Creek runs south-to-north along the eastern boundary of the Eastern Remediation Area; this intermittent drainage provides a local wildlife corridor. **The Remediation Project will *not* affect this drainage, its wildlife corridor, or its associated riparian vegetation.** The Eastern Remediation Area occurs approximately 25 – 30 feet higher than that of the eastern side of the creek. Thus, remediation work would take place well above Santa Margarita Creek and will also be outside of its associated riparian vegetation. Thus, this local wildlife corridor will remain unaffected as the Remediation Project and project work will not block or otherwise impact the creek channel. Similarly, all remediation work near Little Tassajara Creek will occur above the top-of-banks and outside of this creek's associated riparian vegetation. Again, the Remediation Project and project work will not block or otherwise impact the creek channel.

No regionally recognized or local wildlife corridor will be impacted by the Remediation Project. Regardless, as the applicant is particularly sensitive to protection of wildlife, the applicant will voluntarily install temporary wildlife exclusion fencing prior to initiating the remediation work. As Little Tassajara and Santa Margarita Creeks may support local wildlife corridors for common species, the applicant will install a robust wildlife exclusion fence enclosing the remediation areas as shown on AECOM's grading plans. "ERTEC" wildlife exclusion fencing, with an incorporated sediment control panel on the bottom one-foot, will be installed per the manufacturer's installation instructions around the Remediation areas. This fence will keep small to medium-sized terrestrial wildlife species such as snakes, raccoons, opossums, meadow voles, and rabbits, for example, out of the active project area which will also ensure that such species are not inadvertently impacted by the Remediation Project. The ERTEC will be landscape stapled to the ground so animals cannot go under it.

ERTEC is a very effective wildlife barrier for small and medium-sized wildlife species that may move across the landscape: it is known to be an effective reptile and amphibian barrier and also is a significant barrier to small mammals. It should be noted that small to medium mammals do not climb this fence, nor do amphibians and most snakes, so fence climbing is not anticipated to be a problem keeping all but larger mammals out of Remediation areas. To be certain that animals cannot successfully climb this fencing, the ERTEC fence will be recurved along the top edge outwards away from the Remediation site so that in the even an animal does climb the fence, it will not be able to get over the top of the fence.

Typically, shyer mammals such as gray and red fox, and larger mammals such as Columbian black-tailed deer, would not be expected to visit areas that are actively under construction. In working on pipeline repair and remediation sites for many years where ERTEC fence is installed around work sites, M&A biologist Mr. G. Monk has never observed any animals getting into work areas except smaller, subterranean rodents such as pocket gophers and ground squirrel species. Regarding the Remediation Areas, no special-status burrowing rodents have been observed or are anticipated as being in the vicinity of Santa Margarita.

All wildlife exclusion fencing (ERTEC with a sediment control panel) will be maintained in good condition through completion of all earth-moving activities. A biologist will inspect this fence every other week from installation through completion of all earth-moving on the Remediation Project site. Additionally, the biologist will train the field manager in this fence inspection role so that he/she can inspect the fence daily when the biologist is not onsite. The wildlife exclusion fencing will be removed upon completion of all remediation work activities. Pursuant to the CEQA, ***no significant impacts will occur to wildlife corridor habitat.***

4.5 Special-Status Species Definitions

For purposes of this analysis, special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the CNPS). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq*.; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the CEQA (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;

- Plants occurring on Ranks 1A, 1B, 2A, 2B, 3, and 4 of CNPS' electronic *Inventory* (CNPS 2001). The CDFW recognizes that Ranks 1A, 1B, 2A and 2B of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and CDFW requests their inclusion in EIRs. Plants occurring on CNPS Ranks 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information (more on CNPS Rank species below);

- migratory nongame birds of management concern listed by USFWS (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- animals that are designated as "species of special concern" by CDFW (2018);

- animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

- Bat Species that are designated on the Western Bat Working Group's (WBWG) Regional Bat Species Priority Matrix as: "RED OR HIGH." This priority is justified by the WBWG as follows: "Based on available information on distribution, status, ecology, and known threats, this designation should result in these bat species being considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment."

In the paragraphs below, we provide further definitions of legal status as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. A species listed as Endangered or Threatened under the FESA is protected from unauthorized "take" (that is, harass, harm, pursue, hunt, shoot, trap) of that species. If it is necessary to take a federally-listed Endangered or Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the "take."

State Threatened Species. A species listed as Threatened under the CESA (§2050 of California Fish and Game Code) is protected from unauthorized "take" (that is, harass, pursue, hunt, shoot, trap) of that species. If it is necessary to "take" a state-listed Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from CDFW prior to initiating the "take."

California Species of Special Concern. These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some "species of special concern" could be considered "rare." Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a "significant effect on the environment" (§15382). Thus, "species of special concern" must be considered in any project that will undergo, or is currently undergoing, CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

CNPS Rank Species. The CNPS maintains an "Inventory" of special-status plant species. This inventory has four lists of plants with varying rarity. These lists are: Rank 1, Rank 2, Rank 3, and Rank 4. Although plants on these lists have no formal legal protection (unless they are also state or federally-listed species), CDFW requests the inclusion of Rank 1 species in environmental documents. In addition, other state and local agencies may request the inclusion of species on other lists as well. The Rank 1 and 2 species are defined below:

- Rank 1A: Presumed extinct in California;
- Rank 1B: Rare, threatened, or endangered in California and elsewhere;
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere;
- Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere.

All of the plants constituting Rank 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA) of the Fish and Game Code and are eligible for state listing (CNPS 2001). Rank 2 species are rare in California, but more common elsewhere. Ranks 3 and 4 contain species about which there is some concern and are reviewed by CDFW and maintained on "watch lists."

Additionally, in 2006 CNPS updated their lists to include "threat code extensions" for each list. For example, Rank 1B species would now be categorized as Rank 1B.1, Rank 1B.2, or Rank 1B.3. These threat codes are defined as follows:

- .1 is considered "seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)";
- .2 is "fairly endangered in California (20-80% of occurrences threatened)";
- .3 is "not very endangered in California (less than 20% of occurrences threatened or no current threats known)."

Under the CEQA review process only CNPS Rank 1 and 2 species are considered since these are the only CNPS species that meet CEQA's definition of "rare" or "endangered." Impacts to Rank 3 and 4 species are not regarded as significant pursuant to CEQA.

Fully Protected Birds. Fully protected birds, such as the white-tailed kite and golden eagle, are protected under California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time.

4.6 Potential Special-Status Plants in the Project Area

Figure 6a provides a graphical illustration of the closest known records for special-status plant species within five miles of the project area and helps readers visually understand the number of sensitive species that occur within five miles of the Remediation Project area. In addition to the five-mile search of the CNDDB, M&A also completed a nine quadrangle search; however, due to the large number of special-status species records that are generated in a nine quadrangle search, which is an area of approximately 22 by 25 square miles, not all special-status plants can be shown graphically on Figure 6a. That said, while not explicitly shown in Figure 6a, all special-status species identified in the nine quad search are addressed in Table 3 (attached to this report).

The project area has a long history of cattle grazing and also a large wild pig population that has been decimating riparian and oak woodland habitats in the project area. Wild pigs are extremely damaging to bulbiferous and tuberous plants as they dig them up and devour them. Cattle grazing keeps the grasses and wild flower stalks trimmed short and thus, sometimes the plants do not flower. According to the CDFW's CNDDB, no special-status plants have been mapped on or adjacent the project area. However, a total of 44 special-status plant species are known to occur within a nine quadrangle search (Table 3). Most of these plants occur in specialized habitats or substrates such as ultramafic soils (serpentinite), decomposed granite, or decomposed carbonate, or in plant communities not present in the project area such as coniferous forest, coastal scrub, and chaparral. Thus, of the 44 special-status plant species mapped within the nine quadrangle search of the project area, only 11 have *any* potential to occur in the project area based on habitat

conditions present onsite. For species where suitable habitat does not occur, these species are summarily dismissed in Table 3.

Given that there is marginal to suitable habitat for special-status plants present in the project area, the presence of special-status plants could not be dismissed from consideration without conducting formal surveys to prove their absence. Special-status plant surveys were conducted by M&A qualified botanists Ms. Owens and Ms. Lynch on the following dates: March 12, 13, and 14, April 22 and 23, May 13 and 14, and July 18 and 19, 2019. ***No special-status plant species were found within the Remediation Project site during appropriately-timed surveys. As such, there would be <u>no impacts</u> to special-status plants from implementation of the Remediation Project.***

One special-status plant species found just outside the Remediation Project site boundaries, and that would be unaffected by the Remediation Project, is further discussed below. We also discuss Northern California black walnut which is located within the Remediation Project Area but outside of the project area "work areas" (see Exhibits A and B for the designated work areas). This tree is given a special-status by CNPS but recent research shows it likely doesn't warrant a special status and that this special-status designation will be removed from CNPS' list shortly; a status review is currently underway (emails from D. Hickson, CDFW Native Plant Program, Sacramento with S. Lynch of M&A).

4.6.1 NORTHERN CALIFORNIA BLACK WALNUT

Northern California black walnut (*Juglans hindsii*) is currently a CNPS Rank 1B.1 species; however, once staffing allows, this ranking will be removed from CNPS' list as recent research has proven that this native tree is not in need of protection (Email from A. Sims, Rare Plant Botanist, CNPS, as forwarded from D. Hickson of CDFW to S. Lynch of M&A; May 6, 2019). This plant has no federal or state status.

Although there is no question that *J. hindsii* is native to California, there is considerable confusion and controversy over its indigenous range and conservation status. In addition to extensive plantings in urban areas and orchards, trees that match *J. hindsii* morphologically occur widely in unmanaged habitats, especially riparian areas, in central and northern California, where they are generally considered "naturalized." Nonetheless, the species has been given rarity status by the CNPS and CDFW, and although it is not currently officially listed by either the State or Federal Endangered Species Acts (ESA), some California counties require mitigation for removal of individuals of this species, especially older trees. Furthermore, under the CEQA, species that are not currently officially listed under either the State or Federal Endangered Species Acts still require actions during pre-project review, including surveys, disclosure of what is present and its significance, and proposed mitigation for any significant losses incurred during Remediation Project implementation. The designation of conservation status for *J. hindsii* rests on the fact that, despite its current widespread distribution, there are only three (Smith 1909, Smith et al. 1912 *In* Potter 2018), or possibly four (Jepson 1917 *In* Potter 2018) sites in Contra Costa, Sacramento, and Napa Counties where the species was confirmed to have occurred prior to extensive settlement of California by Europeans in the mid-19th century. These have generally been accepted as the only sites where the species should be considered indigenous, rather than having been planted intentionally or escaped from intentional plantings and naturalized.

According to CNPS, only one of these sites is considered viable and the species is threatened by changes in land use and by hybridization with *J. regia*. These assertions have led to widespread concern among individuals and agencies in northern California that trees occurring in other places may not be genetically pure *J. hindsii*, but instead be descended from lineages that experienced past gene flow from one or more other *Juglans* species.

A recent genetic study published by Potter et.al. (2018) revealed that at least 71.5% of the putatively wild *J. hindsii* represent genetically pure members of that species. Potter et al.'s study also states that the widespread occurrence of genetically pure *J. hindsii* suggests that the reduced genetic diversity has not, to date, impeded the persistence and spread of this species and that the CNPS rare plant rank of 1B.1 is not warranted. Thus, CNPS is in the process of removing this tree from its 1B.1 Rank list, as stated above.

J. hindsii trees are present in the red willow-black walnut mixed riparian woodland community adjacent to the project area. This tree is also present in the sycamore riparian woodland in the Eastern Remediation Area. ***The J. hindsii trees are located outside the project area as shown on Exhibits A and B and Figures 4 and 5, and will not be impacted by the Remediation Project.***

4.6.2 La Panza mariposa lily

La Panza mariposa lily (*Calochortus simulans*) is a CNPS Rank 1B.3 species. It has no state or federal status. CNPS Rank 1B.3 species meet the definition of "rare" under CEQA. La Panza mariposa lily is found in chaparral, cismontane woodland, and valley and foothill grassland, often on decomposed granite. It flowers between April and May. The closest known occurrence of this plant to the project area is 1.5 miles to the southeast where it was last recorded in 2016 (CNDDB Occurrence No. 87). One individual of this species was identified just outside the project area boundary during the May 2019 special-status plant survey (Figure 4) (At the time of the survey, M&A biologists were unaware they had wandered just over the project area boundary line when they observed this white flowering lily). It is likely that this plant's population has been decimated by the local wild pig population. ***Since this plant was found outside the Remediation project area, no impact to this species is expected from project implementation.***

The Remediation Project would not impact any special-status plant species.

4.7 Potential Special-Status Animals in the Project Area

Figure 6b provides a graphical illustration of the closest known records for special-status species within five miles of the project area and helps readers visually understand the number of sensitive species that occur in the vicinity of the project area. No special-status animals have ever been recorded in the CDFW's CNDDB on or adjacent to the project area. In addition to the five mile search of the CNDDB, M&A also completed a nine quadrangle search. A total of 29 special-status animal species are known to occur within a nine quadrangle search of the project area which is an area of approximately 22 by 25 square miles (Table 4). Due to the number of special-status species records that are generated in a nine quadrangle search, not all special-status species can be shown graphically on Figure 6b and are only discussed in Table 4 (attached to this report).

Of the species in Table 4, the American badger, a CDFW-designated "species of special concern," has been observed by M&A biologists in the project area. Three other special-status wildlife species are recorded in the CNDDB on the Santa Margarita Ranch (outside the project area boundaries). These species are the western pond turtle (CNDDB Occurrence No. 1136), grasshopper sparrow (*Ammodramus savannarum*) (CNDDB Occurrence No. 11), and Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) (CNDDB Occurrence No. 119). There are no CNDDB records for any special-status species previously recorded on the Santa Margarita Ranch within or adjacent to the project area.

In addition, there are seven other regionally known special-status species that have not been recorded on the Santa Margarita Ranch but that are recorded in the CNDDB within five miles of the project area. These include: Coast Range newt (*Taricha torosa torosa*), western spadefoot, California red-legged frog, foothill yellow-legged frog, Northern California legless lizard (*Anniella pulchra*), white-tailed kite (*Elanus leucurus*), and pallid bat (*Antrozous pallidus*). All special-status animal species that are known to occur on or within five miles of the project area are discussed below; this includes the bald eagle and the golden eagle as they both have been observed during M&A's surveys.

4.7.1 Coast Range Newt

The Coast Range newt is a California designated "species of special concern." It has no special federal status. California Coast Range newts can be found in coastal areas and coastal range mountains in oak forests, woodlands, or rolling grasslands. In the terrestrial phase they live in moist to dry habitats under woody or leafy debris, in rock crevices, or in animal burrows. In the aquatic phase they are found in ponds, reservoirs, lakes, and slow-moving streams (Stebbins 2003). California newts migrate to water during the first fall rains, breeding from December to May.

The nearest CNDDB record for this species is located three miles south of the project area (Occurrence No. 9). This 2003 record is from an unnamed tributary to Santa Margarita Creek. The project area's rolling grassland and woodland provides suitable habitat for this species while in its terrestrial phase. Santa Margarita Creek provides suitable habitat for this newt in its aquatic phase. In additional to terrestrial surveys of the project area, M&A conducted diurnal and nocturnal surveys of the project area's creeks in February and March 2019, at a time when, if this newt was present, it would have been easily identified. M&A's biologists also worked on preparation of a formal wetland delineation in the project area in March and April 2019. Certified wildlife biologists (Ms. Sarah Lynch and/or Mr. Geoff Monk) participated in this wetland delineation work which occurred independent of formal amphibian surveys that were also conducted in 2019. There are no persistent, open water, seasonal wetlands anywhere in the project area that would provide suitable breeding habitat for this species. ***The Coast Range newt has not been identified in the project area and M&A concludes it is unlikely to be present in the Remediation Project area. Accordingly, no impacts are expected to occur to this species.***

4.7.2 WESTERN SPADEFOOT

The western spadefoot toad is a California designated "species of special concern." While the state designation "species of special concern" does not provide any legally mandated protection, "species of special concern" must be considered in any project undergoing review pursuant to the CEQA. It has no federal status.

This toad is found primarily in grassland habitats but may occur in valley and foothill woodlands. It is almost completely terrestrial, entering water only to breed (Jennings & Hayes 1994). For breeding and egg laying it requires persistent vernal pools, persistent seasonal wetlands, or stock ponds. Sometimes eggs are laid in pools within slow moving ephemeral streams. Eggs are typically laid in March, depending on temperature regime and annual rainfall. Oviposition (egg laying) does not occur until temperatures permit some warming of rain pools in late winter (op. cit.). They hatch in late-March through May, again depending on temperature and rainfall. Larvae undergo a dramatically rapid metamorphosis to juvenile toads. This rapid metamorphosis allows this toad to use highly ephemeral bodies of water, such as vernal pools, to reproduce.

The nearest CNDDB record for this species is located 0.7-mile northeast of the project area (Occurrence No. 260). This 2003 record is from a seasonal wetland along El Camino Real. While suitable upland habitat consisting of valley and foothill grassland and woodland is present in the Remediation project area, aquatic habitat such as stock ponds and seasonal wetlands with open water habitat that persists past mid-April is not present. In additional to terrestrial surveys of the project area, M&A conducted diurnal and nocturnal surveys of the project area's creeks and wetlands in February and March 2019, at a time, if this toad was present, it would have been easily identified. None were observed. M&A's biologists also worked on preparation of a formal wetland delineation in the Remediation Project area in March and April 2019. Certified wildlife biologists (Ms. Lynch and/or Mr. Monk) participated in this wetland delineation work outside of other dates when formal amphibian surveys were conducted in 2019. No western spadefoots were observed during the course of the wetland delineation. There are no persistent, open water, seasonal wetlands anywhere near the project area that would provide suitable breeding habitat for this species. ***The western spadefoot toad was not identified during any survey in the project area and M&A concludes it is unlikely to be present in the Remediation Project area. Accordingly, no impacts are expected to occur to this species.***

4.7.3 CALIFORNIA RED-LEGGED FROG

The California red-legged frog was federally-listed as threatened on May 23, 1996 (Federal Register 61: 25813-25833) and as such is protected pursuant to the FESA. On March 16, 2010, the USFWS issued the final designation for California red-legged frog Critical Habitat (USFWS 2010). ***The project area does not fall within mapped critical habitat*** (Figure 7). The California red-legged frog is also a California designated "species of special concern."

The California red-legged frog is typically found in ponds, slow-flowing portions of perennial and intermittent streams that maintain water in the summer months. This frog is also found in hillside seeps that maintain pool environments or saturated soils throughout the summer months. Populations probably cannot be maintained if all surface water disappears (i.e., no available

surface water for egg laying and larval development habitat). Larval California red-legged frogs require 11-20 weeks of permanent water to reach metamorphosis (i.e., to change from a tadpole into a frog), in water depths of 10 to 20 inches (USFWS 2002).

Riparian vegetation such as willows and emergent vegetation such as cattails are preferred red-legged frog habitats, though not necessary for this species to be present. Populations of California red-legged frog will be reduced in size or eliminated from ponds supporting non-native species such as bullfrog, Centrarchid fish species (such as sunfish, bluegill, or large-mouth bass), and signal and red swamp crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*, respectively), all of which are known California red-legged frog predators. However, the presence of these non-native species does not preclude the presence of the California red-legged frog.

The USFWS *Recovery Plan for the California Red-Legged Frog* states that populations are "most likely to persist where multiple breeding areas are embedded within a matrix of habitats used for dispersal." "The primary constituent elements for California red-legged frogs are aquatic and upland areas where suitable breeding and non-breeding habitat is interspersed throughout the landscape and is interconnected by unfragmented dispersal habitat" (USFWS 2002).

M&A biologists have worked with many populations of the California red-legged frog and have been directly responsible for assisting with acquisition and preservation of over 1,000 acres of California red-legged frog preserves in the last 20 years. M&A has also constructed many California red-legged frog breeding ponds on many conservation sites/habitat preserves. M&A biologist, Mr. Geoff Monk, is a federally permitted 10(A)(1)(a) California red-legged frog biologist who has been working with this frog species since long before it was federally listed as a threatened species under the FESA. Mr. G. Monk evaluated the aquatic conditions of Santa Margarita Creek and Little Tassajara Creek, and all other aquatic habitats within 0.5-mile of the Remediation Project site to determine if the California red-legged frog could be impacted from implementation of the Remediation Project.

The project area is a seasonally dry habitat with no perennial water on or close to the Remediation work areas (see Exhibits A and B for the work areas). Santa Margarita Creek and Little Tassajara Creek, the only tributaries in or adjacent to the project area, are both intermittent creeks that are dry typically by June (pers. comm. between G. Monk and Mr. R. Rossi, owner of Santa Margarita Ranch). Examining the Google Earth aerial photograph record back to 1994, both creeks are consistently dry over most of the summer and fall months. In 2017, a year punctuated with late and significant rainfall in the spring months, the Google Earth images indicate that Santa Margarita Creek still had water in it in June, but was dry in July. Both Santa Margarita Creek and Little Tassajara Creek are cobbly, typically shallow, clear water streams that support very little aquatic or emergent wetland vegetation. M&A determined that site conditions are not consistent with typical saturated or inundated areas that support California red-legged frogs. M&A noted that Santa Margarita Creek and Little Tassajara Creek are flashy, flowing vigorously after very large storm events, but both exhibit dramatic subsidence shortly after these storm events. No perennial pools occur in these creeks. Also, and most importantly, the creeks offer no escape cover for frogs. Typically, thick aquatic vegetation or emergent

vegetation, in combination with muddy stream bottoms, are essential elements offering escape habitat for California red-legged frogs. In some instances, very deep (greater than 3 feet) pools can offer escape cover if other escape cover attributes are absent. While M&A did find a single, deeper bedrock pool approximately 600-700 feet upstream of the Eastern Remediation Area, regardless it similarly dries by the end of June.

Because the creeks in the project area run shallow and lack cover, amphibians residing in these creeks are highly susceptible to predation by raccoons and on the Santa Margarita Ranch in particular, by wild pigs. M&A noted that both Santa Margarita Creek and Little Tassajara Creek provide enough cover to support a local population of wild pigs, and as there is no hunting allowed on the ranch, M&A biologists observed wild pigs every time we conducted field surveys of the project area. Total numbers exceed 30 resident pigs in Santa Margarita Creek. As both Santa Margarita Creek and Little Tassajara Creek are frequented by large numbers of pigs, which are voracious predators of amphibians, that could be one of the main reasons why M&A found almost no amphibian life on Santa Margarita Ranch in or near these two creeks.

As both creeks in the Remediation Project Area are typically dry in May or June, and as California red-legged frog breeding pools must hold water until August to allow time for larvae to successfully metamorphose, these creeks do not constitute suitable breeding habitat for this frog species.

Figure 8 shows all known California red-legged frog locations within 5 miles of the project area. The nearest CNDDB record for this species is located 0.80-mile southeast of the project area (Occurrence No. 494). This 2002 record is from Yerba Buena Creek east of central Santa Margarita. Yerba Buena Creek eventually connects with Santa Margarita Creek approximately two miles to the north. Occurrence No. 494 states that" habitat consists of narrow channel (steep bank with flat top) and pond up to 6 feet deep. Barren soil with emergent vegetation (tules etc.) surrounds the pond." It is unclear if this pond is associated with Yerba Buena creek itself or if this is a separate feature in the community park where this occurrence is recorded. M&A visited the record location as mapped by the CNDDB and did not find a pond and wonder if the observer actually was talking about a deep water pool in the creek itself. Regardless, the sighting of four adult frogs at a perennially wet habitat condition such as what is indicated in this CNDDB record is very similar to where M&A has found this frog over many years of working at extant California red-legged sites. No follow up occurrences are noted in the CNDDB at this record location.

CNDDB record No. 741 is a 2003 record that is also in Yerba Buena Creek; it is located approximately 0.50-mile south and east of the town of Santa Margarita. This sighting is 1.0+ miles from the project area. This record noted that larvae were found in a fast drying pond (which means they likely perished). No follow up occurrences are noted. Another CNDDB record (Record No. 395) is located approximately 3 miles southwest of the project area, over two major ridge systems from the project area. This record location is in a spring box. The spring provides the perennial water source/moisture required to sustain these frogs.

M&A also reviewed the City of Atascadero Specific Plan (SP) Environmental Impact Report (EIR) prepared for the Eagle Ranch Study Area that indicates that California red-legged frogs

were found within a pond in the SP Area. This SP area is west of Highway 101 while the Remediation Project is east of Highway 101. While the SP EIR reports that California red-legged frogs were found in a pond in the Eagle Ranch Study Area, it failed to specify where in the SP Area that the frogs were found. Examining the "Jurisdictional Waters and Wetlands Map" prepared for that SP EIR, and the Google Earth images, the closest perennially wet pond within the SP EIR Study Area, which is where this frog would be most likely to be found breeding/residing, is 1.5 miles to the northwest of the Eastern Remediation Area and 1.75 miles to the northwest of the Western Remediation Area. Highway 101 runs north/south approximately mid-way between all ponds in the SP EIR Study Area and the Remediation Project site (Figure 8). This freeway, which supports very heavy vehicular traffic night and day, is regarded as a significant geographic barrier to any California red-legged frogs that might attempt to migrate eastward from any pond in the SP EIR Study Area.

On November 4, 2019, Ms. Sarah Lynch of M&A received an email from Ms. Brooke Langle, the biologist who is under contract to San Luis Obispo County and who peer reviewed M&A's Biological Resources Analysis for the Remediation Project. Ms. Langle provided M&A with an undocumented California red-legged frog sighting from 2011, which is not in the CNDDB. This undocumented record is attributed to a Garcia & Associates' 2011 California red-legged frog sighting; one California red-legged frog was identified on the Santa Margarita Ranch property by Garcia & Associates in September 2011 (B. Langle, Terra Verde, email to S. Lynch of M&A). The location of this sighting was approximately 1,904 feet south of the closest part of the Western Remediation Area; this is the closest known sighting of the frog to either of the remediation areas.

The record location is associated with a seasonally wet meadow with an adjacent drainage that has perennially wet areas. Below these perennially wet areas the drainage is intermittent and likely flows in wet winters to Santa Margarita Creek. In many years it may not flow at all outside of the perennially wet areas, which are well upstream (greater than 700 feet as the crow flies) of Santa Margarita Creek as observed by M&A in November 2019.

The one adult California red-legged frog observed in September 2011 likely was associated with small, localized pools along the intermittent drainage. M&A concludes that any red-legged frogs found in the wet meadow, the unnamed tributary to Santa Margarita Creek, or any other creek on the ranch property, for that matter, would not be impacted in any way by the Remediation Project as no work would occur in or around these areas.

The excavation portion of the remediation work would be conducted in the dry season when California red-legged frogs would be unlikely to venture far from perennially wet areas. Tatarian (2005) studied an inland population of California red-legged frogs in eastern Contra Costa County where the climate is drier than the coastal environment, similar to the Remediation Project site, and found that all movements of these frogs started after the first 0.5-cm of rain in the fall. Tatarian (op. cit.) also found that California red-legged frogs moved greater average distances aquatically (84.6 m) than terrestrially (27.7 m). Greater terrestrial distances occurred in the pre-breeding season (35.2 m) than in the breeding season (15.5 m) or post-breeding season (16.3 m). The majority of frogs (57%) were position faithful within a pool, indicating they did not migrate at all. These data suggest that longer forays across the landscape in drier climates

such as the Remediation Project site are unlikely. Rather these frogs can be expected to remain within aquatic or perennially wet areas.

Since the closest part of the Remediation Project site is 1,904 feet (580.34 meters) from the undocumented 2011 California red-legged frog record, M&A concludes that there will be no impacts to any frog at the undocumented record location. Additionally, frogs are not expected to migrate to the Remediation project area from the record location, especially in regard of the fact that the excavation portion of the Remediation Project will be implemented in the dry months of the year when data indicate that red-legged frogs do not move or only move very short distances from perennial water. Accordingly, there is no expectation that California red-legged frogs would migrate across a very dry landscape to the Remediation Project area.

In conclusion, due to the distance of the record from the Remediation Areas, the absence of perennial water near or within the Remediation Areas, the times of year in which the Remediation Project work activities will take place, and the fact that M&A did not observe any California red-legged frogs within the Remediation Project Areas' creeks during the nocturnal and diurnal surveys conducted in the winter of 2018-2019, M&A concludes that this red-legged frog(s), should it still be present at the 2011 record location, would not be impacted in any way by the Remediation Project.

It was determined that the Remediation Project will not impact waters of the U.S. subject to the jurisdiction of the U.S. Army Corps of Engineers. Similarly, that there will be no other federal permit required for the Remediation Project. Accordingly, the federal guidance for conducting surveys for California red-legged frogs that require diurnal and nocturnal surveys over a minimum of 7 to 9 months is not applicable to the Remediation Project. Indeed, owing to the intermittent conditions of Santa Margarita Creek and Little Tassajara Creek, both of which are typically dry by May or June, the federal guidance, which requires surveys during the winter, spring, and summer months, would require that some of these surveys occur after these creeks are dry when there would be a very low expectation of finding any frog species.

M&A nonetheless did conduct formal surveys for the California red-legged frog that meet the standards of care required by the CEQA. Mr. G. Monk and other assisting biologists with extensive experience with this frog conducted five surveys for the California red-legged frog in the project area and within 0.50-mile of the project area that included two nocturnal and three diurnal surveys conducted over a 3-month period. These surveys were conducted in the months of January, February, and March 2019, which are good months for detecting active, vocal, breeding California red-legged frogs. No California red-legged frogs, their eggs, or larvae were identified in the project area, or in Little Tassajara Creek or Santa Margarita Creek adjacent to the project area during any of these surveys. Additionally, M&A did not find California red-legged frogs at the undocumented 2011 location in February and March 2019, or in November 2019 or January 2020, when M&A federally permitted biologist Ms. Sarah Lynch resurveyed the undocumented 2011 California red-legged frog location. While water was detected along much of this unnamed drainage and in the adjacent wetlands at the time of the November 2019 and January 2020 survey, no California red-legged frogs were observed.

During M&A's surveys we found an abundant Sierran treefrog (*Pseudacris sierra*) breeding population in seasonal wetlands and creeks near the Remediation Project site. M&A also found three juvenile bullfrogs (*Lithobates catesbeiana*) in Little Tassajara Creek and California toad larvae in Santa Margarita Creek.

Adult bullfrogs are noted predators of the California red-legged frog. While M&A has observed both species of frogs co-existing in creeks and perennial ponds, M&A has also observed that within 5 years the California red-legged frogs in these ponds are extirpated by the bullfrogs. Thus, M&A does not believe that the California red-legged frog occurs in the pond near Highway 101.

The level of effort expended by M&A to identify potential impacts to the California red-legged frog certainly meets the standards of care required by the CEQA to assess if there could be significant impacts to this federally-listed threatened frog species. M&A's surveys on the Santa Margarita Ranch for California red-legged frogs within 0.50-mile of the Remediation Project sites demonstrate that this frog was not in either Santa Margarita Creek or in Little Tassajara Creek, or other aquatic habitats within 0.50-mile of the Remediation Project site at the time of the surveys. Record locations for California red-legged frogs that are in both CDFW's CNDDB and as otherwise reported by the County's peer reviewing biologist would not be impacted by the Remediation Project. Similarly, California red-legged frogs are not expected to migrate from record locations to the Remediation Project site where they could be impacted.

The Remediation Project will not impact the California red-legged frog or habitat that supports this frog species. Pursuant to the CEQA, the Remediation Project will not result in potentially significant impacts or significant impacts to the California red-legged frog.

It should be noted that the Remediation Project includes the installation of wildlife exclusion fencing prior to any project disturbance. This wildlife fencing will enclose the Remediation work areas (Exhibits A and B). This fencing will prevent any possibility of small terrestrial species including reptiles, amphibians, and small mammals that may be migrating in creek corridors from leaving these creek corridors to enter project areas where harm could occur to wildlife species.

4.7.4 FOOTHILL YELLOW-LEGGED FROG

On December 11, 2019, the California Fish and Game Commission approved California Endangered Species Act (CESA) protections for five of six populations of the foothill yellow-legged frog; the project area is within the range of the endangered Central Coast population. The foothill yellow-legged frog has no federal status. The foothill yellow-legged frog is typically found in or near perennial, rocky streams in a variety of habitats, including valley-foothill woodlands and riparian habitats, mixed conifer, coastal scrub, mixed chaparral, and wet meadows. Mr. Monk is permitted by CDFW to conduct surveys for and work with this frog species. Mr. Monk studied this frog in northern Sonoma County over an 8-year period. At that study location (Patchett Creek) the foothill yellow-legged frog seasonally moved into portions of the stream that were wet in the winter but that dry in the summer. Prior to the stream drying this frog would move downstream into perennially wet areas of Patchett Creek. In all years of study, this frog was never found outside of the immediate prism of the inundated stream channel. As

this frog relies upon cryptic coloring and plunge pools to escape predators, it cannot survive for long outside of an inundated stream channel. In almost all cases this frog is found within the immediate stream zone environment (Zeiner et. al. 1988).

Adults eat invertebrates, both aquatic and terrestrial (Fitch 1936). Tadpoles are thought to eat algae and diatoms found along rocky stream bottoms. Adults often bask on exposed rocks near streams, and when disturbed, dive into the water and take refuge under submerged rocks or sediments. During periods of inactivity, such as during cold weather, individuals seek cover under rocks within the stream, or within a few meters of water (Nussbaum et al. 1983). Unlike most other California Ranid frog species, the foothill yellow-legged frog is rarely encountered more than a few meters from permanent water. Tadpoles require deeper water for approximately three to four months to metamorphose. The foothill yellow-legged frog coexists with the Cascades frog (*Rana cascadae)* and the red-legged frog at some localities; however, different microhabitat preferences likely reduce competition (Zeiner et. al. 1988).

Known foothill yellow-legged frog predators include North American bullfrogs, western aquatic garter snake (*Thamnophis couchii*), and Centrarchid fish species (such as sunfish, bluegill, or large-mouth bass) (Fitch 1941, Werschkul and Christensen 1977). Although the presence of these non-native species does not preclude the presence of the foothill yellow-legged frog, they are thought to contribute to the elimination of the foothill yellow-legged frog in streams where these predators are introduced.

The nearest CNDDB record for foothill yellow-legged frog is located approximately 0.50-mile southeast of the project area (Occurrence No. 825). This 1917 record is from what is now a residential community in central Santa Margarita. Expert opinion concludes that this species was likely extirpated from the area between 1975 and 1978 (see "Ecological Comments" section of CNDDB Occurrence No. 825). In addition, this 1917 record was not detected by independent research crews during surveys between 1981-1993, 1988-1991, or 2011-2014. M&A conducted three diurnal surveys and two nocturnal survey for the foothill yellow-legged frog in the project area in the months of January, February, and March 2019. During these surveys, which were conducted at a suitable time of year to detect foothill yellow-legged frog, only Sierran treefrog, California toad, and American bullfrog were identified in or associated with the Santa Margarita Creek and Little Tassajara Creek. M&A's surveys were within 0.50-mile of the Remediation Project Areas, but regarding this frog, were focused on streams/drainages since these frogs are typically associated with perennial creeks/pools. It is Mr. Monk's experience with this frog that it will move up and downstream with the drying/hydration cycle of intermittent streams, but in over 20 years working with this frog, he has never observed a live foothill yellow-legged frog further than about 50 feet from inundated/flowing areas. No foothill yellow-legged frogs were observed during any survey.

M&A believes that the large wild pig population on the Santa Margarita Ranch, and in particular in Santa Margarita Creek, would have eradicated most amphibians from this ranch. After conducting surveys, all that were negative for foothill yellow-legged frogs, and in consideration of the very large wild pig population that would be expected to predate most amphibians, ***M&A does not believe the foothill yellow-legged frog is present and that this frog will not be impacted from implementation of the Remediation Project.*** *No potentially significant or*

significant impacts will occur to foothill yellow-legged frogs from implementation of the Remediation Project.

4.7.5 WESTERN POND TURTLE

The western pond turtle is a California designated "species of special concern." In April of 2015, the USFWS issued a 90-day finding on a petition to list this species under FESA. In September 2016, M&A spoke with USFWS' Sacramento Field Office and was told that they "hope to finish a 12-month finding in the fiscal year of 2021" (G. Tarr, USFWS, Sacramento Field Office, pers. comm. with S. Lynch of M&A, September 21, 2016). Until the western pond turtle is formally listed it is not afforded the protections of FESA.

The western pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to about 4,500 feet above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. This turtle is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter. Recent field work has demonstrated that western pond turtles may overwinter on land or in water or may remain active in water during the winter season; this pattern may vary considerably with latitude, water temperature, and habitat type and remains poorly understood (Jennings and Hayes 1994).

The pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 52 feet to 1,219 feet from watercourses (Jennings and Hayes 1992); however, most pond turtles nest in uplands within 250 meters of water (Bury, unpublished). Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat (op. cit.). Eggs are typically laid from March to August (Zeiner et. al. 1988), with most eggs being laid in May and June. Hatchlings will stay in the nest until the following April (Bury, unpublished). Predators of juvenile pond turtles include the non-native bullfrog and Centrarchid fish (sunfish). This turtle is most visible between April and July when it can be observed basking in the sun. In areas where the water is very warm during these months, however, it will bask in the warm water and will be more difficult to observe. It eats plants, insects, worms, fish and carrion (Stebbins 2003).

The closest CNDDB record for western pond turtle is a 2002 record located 0.20-mile south and east of the project area in Santa Margarita Creek (CNDDB Occurrence No. 1136) (Figure 6B). Because of the ephemeral nature of both Santa Margarita Creek and Little Tassajara Creek, the western pond turtle is unlikely to be found in these creeks after these creeks dry, typically in May or June. The CNDDB record indicates that up to 10 of these turtles were in a single bedrock pool in Santa Margarita Creek. M&A examined/surveyed this pool on four different dates and found no turtles. This accumulation of turtles most likely occurred when the creek was drying down in the spring, which has the effect of pushing western pond turtles up/downstream in search of long-term inundated habitats. Because Santa Margarita Creek dries in May or June in most years, the 10 western pond turtles recorded in a single pool is likely because this pool was the only deeper water pool remaining in this creek on the Santa Margarita Ranch during the time the record was recorded.

The western pond turtle has not been observed in the project area during six upland and aquatic surveys conducted by M&A in 2019. However, due to the proximity of the known record to the project area and the suitable habitat conditions of both Santa Margarita Creek and its immediate upland environs where this turtle could nest, ***impacts to western pond turtle are regarded as potentially significant pursuant to the CEQA.*** Mitigation shall be implemented to reduce these impacts to a level regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

4.7.6 NORTHERN CALIFORNIA LEGLESS LIZARD

The Northern California legless lizard is a California designated "species of special concern." It has no federal status. This small, slender limbless lizard has a shovel-shaped snout, smooth, shiny scales, and a blunt tail (Stebbins 2003). Dorsal coloration is highly variable, ranging from metallic silver, to beige, to dark brown, to jet black. Legless lizards are fossorial animals that construct burrows in loose soil with a high sand content (Miller 1944). Soil moisture is essential for this species.

The legless lizard occurs in moist, warm, loose soil with plant cover. Moisture is essential. The species occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat. Often the species can be found under surface objects such as rocks, boards, driftwood, and logs. It can also be found by gently raking leaf litter under bushes and trees. It is sometimes found in suburban gardens in Southern California. The Northern California legless lizard occurs from the southern edge of the San Joaquin River in northern Contra Costa County south to Ventura County, from sea level to around nearly 6,000 feet in elevation.

The closest record for Northern California legless lizard occurs 0.3-mile west of the project area (CNDDB Occurrence No. 163). This 1960 record was mapped non-specifically approximately seven miles south of Atascadero along what is now Highway 101. A second record from 1959 occurs 1.7 miles east of the project area near the intersection of Pozo Road, Highway 58, and Trout Creek; there are sandy substrates in this vicinity. These records are approximately 60 years old. No newer records occur. The project area does not support deep leaf litter or uncompacted loose soils, or any other habitat component that could be considered habitat that would support the Northern California legless lizard. While some soils in the Western Remediation Area have sandy inclusions, these soils are dry most of year, do not support a thick organic layer or a leaf litter that could provide conditions suitable for this lizard. Most importantly, these soils are compacted from years of cattle grazing, and thus, the friable soils typically associated with occupied Northern California legless lizard habitats do not occur in the project area. M&A spent considerable time looking for extruded soil lines indicating the presence of this lizard and found none. ***M&A concludes that the Northern California legless lizard will not be impacted by the Remediation Project.***

4.7.7 BALD EAGLE

The bald eagle is found only on the North American continent. This eagle was designated as federally threatened in the conterminous (lower 48) states of the United States on March 11, 1967 (Federal Register 32:4001). It was listed as a federally endangered species on February 14, 1978 in 43 of the contiguous States, and federally threatened in the States of Michigan, Minnesota, Wisconsin, Oregon and Washington (Federal Register: 43 6230). The bald eagle's status was down-listed to threatened by the USFWS on August 11, 1995. On July 06, 1999, the USFWS proposed to delist the bald eagle in the entire range (Federal Register 64: 36453 36464) because reclassification goals for recovery of this species have been met and exceeded. On July 9, 2007, the USFWS delisted the bald eagle effective as of August 8, 2007 (Federal Register 72: 37345 37372). The USFWS has drafted a post de-listing monitoring plan and proposed information collection for this species (Federal Register 72: 37373 37374). It continues to be federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Critical habitat has not been designated for the bald eagle. This species is listed as endangered by CDFW.

The bald eagle is one of North America's largest birds, weighing up to 14 pounds with a wingspan of 6½ to 8 feet. Adults obtain their well know plumage of a dark brown body with a pure white head and tail at 4 or 5 years of age. Bald eagles are distributed across North America, from Alaska, Canada, the lower 48 states, and northwest Mexico. Bald eagles in winter may be found throughout most of California at lakes, reservoirs, rivers, and some rangelands and coastal wetlands. The State's breeding habitats are mainly in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers. Most breeding territories are in northern California, but the eagles also nest in scattered locations in the central and southern Sierra Nevada mountains and foothills, in several locations from the central coast range to inland southern California, and on Santa Catalina Island.

Bald eagles normally build large stick nests in the upper canopy of the tallest trees in the area. They may repair the same nest annually, which increases its size over time, or they may build a new nest in their territory or repair one they had used formerly. In many cases, the territory of a pair of eagles may include several nests in addition to the one they most recently used. In most of California, the breeding season lasts from about January through July or August. California's resident breeding pairs remain in California during winter, typically in the vicinity of their nesting areas, except when winter conditions are too severe, and they must move to lower elevations. Hundreds of migratory bald eagles from nesting areas in northwestern states and provinces spend the winter in California, arriving during fall and early winter. These wintering birds may remain until February or March, or even into April.

There are no CNDDB records for this species within five miles of the project area (Figure 6B); however, an immature bald eagle (estimated 2 years old) was observed flying over the project area toward the northwest both in February and in early March 2019, and adult was observed in March. An adult bald eagle was also observed flying over the project area towards the east in November 2019. The project area’s grassland, Santa Margarita Creek, and a large pond located approximately 0.50-mile northwest of the project area provide suitable hunting habitat for bald

eagles. That said, no bald eagles were found nesting on or near the project area in successive surveys conducted in late-March, April, and May 2019.

M&A biologists conducted two systematic nesting surveys in March 2019 looking for nesting bald eagles within one mile of the project area. While there are residential neighborhoods that occur in this one-mile radius from the project area that were gated or otherwise inaccessible, M&A effectively surveyed within 0.50-mile of the project area during these two surveys examining all trees with stature significant enough to support a bald eagle nest. No bald eagles were found nesting on the project area or within a zone of influence of the project area. During the April and May surveys, M&A looked offsite in the directions that we had observed bald eagle flights (to the north and northeast). No bald eagle nest was found during the April and May surveys.

In discussing bald eagles with a construction crew that M&A came across during our surveys, M&A was able to determine that in 2015, there was a confirmed active bald eagle nest 2.12 miles northeast-east of the Eastern Remediation Area (M&A viewed a photograph that clearly showed the eagle nest – and in discussion with the observer, there was no doubt it was a bald eagle nest). As the nest location is on private property, M&A did not confirm that nest was active in 2019, but M&A believes it likely was based on M&A's bald eagle observations in 2019. In March 2019, M&A observed a bald eagle flying over the Santa Margarita Ranch to the approximate record location during a time when eagles would normally be nesting.

Based on activity-specific guidelines found in the USFWS' 2007 Bald Eagle Management Guidelines[1] on the USFWS' webpage regarding recommended eagle nest non-disturbance buffers at: https://www.fws.gov/birds/management/managed-species/eagle-management.php there are no anticipated impacts that would occur to nesting bald eagles from implementation of the Remediation Project. The USFWS recommends "adherence to these guidelines to ensure that bald and golden eagle populations will continue to be sustained." Under these Guidelines, the Remediation Project site falls outside of all recommended buffers for nesting bald eagles.

M&A concludes that the Remediation Project will not result in impacts to nesting bald eagles. Similarly, there are many 1000s of acres of suitable foraging habitat for bald eagles in the region of the project area, the temporary impacts to grasslands from the Remediation Project would not in any way impair bald eagles from foraging for prey in the vicinity or region of the Remediation Project.

General nesting bird surveys should be conducted again in February/March of the year that the Remediation Project commences to ensure that no eagles move into and nest within a zone of influence of the Remediation Project. See Impacts and Mitigation Section below for potential impacts on nesting special-status bird species and nesting common bird species.

4.7.8 GOLDEN EAGLE

The golden eagle is designated as a California "species of special concern" and is fully protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) and the Migratory Bird

[1] US Fish and Wildlife Service. 2007. National bald eagle management guidelines. Department of Interior, US Fish and Wildlife Service, Washington, DC, USA.

Treaty Act. Additionally, its nest, eggs, and young are protected from direct "take" under the California Fish and Game Code (Sections 3503, 3503.5, and 3800).

Golden eagles are found breeding throughout western North America in remote open habitats. Typical habitats in North America include savannah woodland habitats, grasslands, aspen parkland, high and low deserts, and in taiga and zone habitats. Golden eagles feed on fresh carrion or take live prey ranging in size from small rodents to as large as new born fawns. More typical prey includes rabbits and waterfowl. Golden eagles build nests in large trees, often in eucalyptus, oaks, or conifers, or frequently nest on large vertical cliffs. On rare occasions nests are found on the ground, especially in expansive prairie habitats where cliffs and/or trees are scarce. Often this species will return each year to the same nest stacking new sticks on the existing nest structure. Over time, nests can become piled so high with sticks that they topple over leaving huge debris piles beneath trees or at the base of cliffs. In northern California, golden eagles typically begin nest building in January, lay eggs in February or early March, and fledge young, typically one eaglet in mid to late June. One to four eggs are laid, most commonly two. Incubation lasts 44 to 45 days. Usually, one or two eaglets hatch, and one eaglet fledges the nest. Fledged young may remain around the nest site for a month or longer after fledging. Family groups usually remain in undisturbed habitats until late summer. These birds can be very sensitive to disturbance near the nest site, particularly in remote regions where human activities are minimal. In areas where there is continual activity by man, golden eagles also acclimate to these activities and will continue to nest in in relatively close proximity to actively disturbed habitats.

There are no CNDDB records for this species within three miles of the project area; however, multiple individuals have been observed flying over the project area during M&A's spring 2019 surveys. The project area's open grassland community provides suitable hunting grounds for golden eagles and the trees along Santa Margarita Creek and along an unnamed, intermittent tributary to Santa Margarita Creek provide potentially suitable nesting habitat. M&A biologists conducted two raptor nesting surveys in March 2019 that included concerted efforts to locate nesting eagles. No eagles (bald or golden eagles) were found nesting in the project area or within 0.5-mile and more distant of the project area. ***The Remediation Project is not expected to result in impacts to golden eagles.*** However, general nesting bird surveys shall be conducted again in February/March of the year that the Remediation Project commences to ensure that no eagles move into the Remediation Project area within a zone of influence of the Remediation Project. See Impacts and Mitigation Section below for potential impacts on nesting special-status bird species and nesting common bird species.

4.7.9 WHITE-TAILED KITE

The white-tailed kite is a "Fully Protected" species under the California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time. It is also protected under the Federal Migratory Bird Treaty Act (50 CFR 10.13). The white-tailed kite is typically found foraging in grassland, marsh, or cultivated fields where there are dense-topped trees or shrubs for nesting and perching. They nest in a wide variety of trees of moderate height and sometimes in tall bushes, such as coyote bush (*Baccharis pilularis*). Native trees used are live and deciduous oaks (*Quercus* spp.), willows (*Salix* spp.), cottonwoods (*Populus* spp.), sycamores (*Platanus* spp.), maples (*Acer* spp.), toyon (*Heteromeles arbutifolia*), and Monterey cypress (*Cupressus macrocarpa*). Although the surrounding terrain may be

semiarid, kites often reside near water sources, where prey is more abundant. The particular characteristics of the nesting site do not appear to be as important as its proximity to a suitable food source (Shuford 1993). Kites primarily hunt small mammals, with California meadow voles (*Microtus californicus*) accounting from between 50-100% of their diet (Shuford 1993).

The nearest CNDDB record for this species is located 1.4 miles southeast of the project area (Occurrence No. 73) and dates to 2003. A pair of white-tailed kites was observed by M&A on multiple occasions in February and March in the Eastern Remediation Site (Figure 3). They were not observed again after March and after M&A conducted focused raptor nesting surveys in March and April, were determined not to be nesting within 0.5-mile of the project area. The project area's open grassland community provides suitable hunting grounds for white-tailed kites, and the trees along Santa Margarita Creek and along an unnamed, intermittent tributary to Santa Margarita Creek provide potentially suitable nesting habitat. ***Accordingly, impacts to white-tailed kite are potentially significant pursuant to CEQA***. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

4.7.10 GRASSHOPPER SPARROW

The grasshopper sparrow is a California designated "species of special concern." The CDFW is primarily concerned with protecting this species nesting habitat. It is also protected under the Federal Migratory Bird Treaty Act (50 CFR 10.13) and California Fish and Game Code Sections 3503 and 3800 that protect nesting birds, their eggs and young. Grasshopper sparrows occur in grasslands, prairies, hayfields, and open pastures with little to no scrub cover and often with some bare ground. They nest on the ground, often at the base of a clump of grass within an extensive patch of tall grasses or sedges and eat grasshoppers in summer, though they will take other prey including beetles, caterpillars, bugs, and spiders. They eat mostly seeds in winter, which they glean exclusively from the ground. Exposed bare ground is critical for effective foraging.

M&A did not detect grasshopper sparrow in the project area. The nearest CNDDB record for this species is located 0.1-mile north of the project area (Occurrence No. 11) but dates from 2003. At this occurrence, a singing male was heard within an agricultural field adjacent to Santa Margarita Ranch Headquarters, in open grassland with riparian corridor nearby. The valley and foothill grasslands in the project area provide suitable nesting habitat for this species. ***Accordingly, impacts to grasshopper sparrow are potentially significant pursuant to CEQA.*** Mitigation that includes preconstruction nesting surveys shall be implemented to ensure that not impacts will occur to any nesting birds. ***Thus, with mitigation impacts can be reduced to levels less than significant pursuant to CEQA***. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

4.7.11 TOWNSEND'S BIG-EARED BAT

Townsend's big-eared bat is a California designated "species of special concern." It has no federal status. The "species of special concern" status designation does not provide any special legally mandated protection for this bat species. However, this status designation likely meets the definition of "rare" pursuant to the CEQA (14 CCR §15380(2)(A)). As such, potential impacts to

this bat species should be considered during any CEQA review. Any unmitigated impacts to this species would likely be regarded by the State resource agency (the CDFW) as a significant adverse impact pursuant to CEQA (§21068).

Once considered common in California, this species is found in all but subalpine and alpine habitats. Although these bats eat a variety of beetles and other soft-bodied insects, small moths make up the principle food source for this species. It is believed that roosting sites are the most important limited resource for Townsend's big-eared bat. This species requires caves, mines, tunnels, high buildings, or other human-made structures for roosting and for maternity sites, potentially using separate sites for day, night, hibernation, or maternity roosts. Although this species shows high site fidelity if undisturbed, it is extremely sensitive to disturbance of roosting sites (a single visit may result in abandonment of the roost).

The nearest CNDDB record for Townsend's big-eared bat is located 0.10-mile north of the project area (Occurrence No. 119). This 2002 record is from the historic barn located on the Santa Margarita Ranch. Although this species typically uses mines, caves, and buildings for roosting, none of which exist within the Remediation Areas, potentially suitable roosting habitat is present in basal cavities and within loose bark of large valley oak trees in the project area. As there will be heavy equipment/grading equipment used adjacent to large valley oak trees that provide cavities that could be used by special-status bats, this extensive disturbance could impact Townsend's big-eared bats that might be using these hollows. ***Accordingly, impacts to Townsend's big-eared bat are potentially significant pursuant to CEQA.*** Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

4.7.12 PALLID BAT

The pallid bat is a California designated "species of special concern." It has no federal status. The "species of special concern" status designation does not provide any special legally mandated protection for this bat species. However, this status designation likely meets the definition of "rare" pursuant to the CEQA (14 CCR §15380(2)(A)). As such, potential impacts to this bat species should be considered during any CEQA review. Any unmitigated impacts to this species would likely be regarded as a significant adverse impact pursuant to CEQA (§21068).

This bat is a locally common species of low elevations in California. It occurs throughout California except for the high Sierra Nevada from Shasta to Kern counties, and the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino County. It occurs in a wide variety of habitats. It is most common in open, dry habitats with rocky areas for roosting. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Roost must protect bats from high temperatures. Night roosts may be in more open sites such as porches and open buildings. A social bat, it roosts in groups of 20 or more.

The nearest CNDDB record for this species is located 1.10 miles southwest of the project area (Occurrence No. 76). This 2002 record is from a night roost within a bridge along Highway 101. Potentially suitable roosting habitat is present in basal cavities and within loose bark of large valley oak trees in the project area. As there will be heavy equipment/grading equipment used

adjacent to large valley oak trees that provide cavities that could be used by special-status bats, this extensive disturbance could impact pallid bats that might be using these hollows. ***Accordingly, impacts to pallid bat are potentially significant pursuant to CEQA.*** Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

4.7.13 AMERICAN BADGER

The American badger is a California designated "species of special concern." This mammal has no federal status. It is found in a variety of habitats, especially in open habitats such as oak-savannah and grasslands where its presence is typically identified by its distinctive, large underground dens (burrows) excavated in friable (loose) soils. This nocturnal mammal is rarely observed. In the region, this animal is uncommon. When present, this animal would be expected to prey upon Botta's pocket gopher, California ground squirrel (*Otospermophilus beechyi*), and several species of mice common in the area. Except during breeding, badgers are typically highly solitary and have vast home ranges.

An American badger was identified multiple times in the project area during M&A's 2019 surveys. It was always observed immediately north of the Western Remediation Area where it could be observed hunting and moving in-between several California ground squirrel burrows and possible den sites. It was originally observed using/digging out burrows on northeast of the Western Remediation Area. A few months later this same badger had moved and was digging out prey northwest of the Western Remediation Area. Badgers have large territories and hunt in particular areas while prey is abundant and can be readily dug out of their burrows. Badgers move opportunistically to find prey or to establish maternity burrows. They do not show long-term faithfulness to particular dens except reproductive dens until young disperse. Badgers observed in one area in one year may not be present in following years. Because badgers are known to be present on the Santa Margarita Ranch, badgers potentially could be present in burrows when the Remediation Project commences. Grading could entrap badgers in their burrows if they were present when excavation commences. ***Accordingly, impacts to American badger are potentially significant pursuant to CEQA.*** Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

5. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. Under each law we discuss its relevance to the Remediation Project.

5.1 Federal Endangered Species Act

The FESA forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, they are as follows:

Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.

Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.

Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.

Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the NMFS. The USFWS enforces all other cases. Below, Sections 9, 7, and 10 of FESA are discussed since they are the sections most relevant to the Remediation Project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). A December 2001 decision by the 9th Circuit Court of Appeals (*Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity*) ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by Remediation Project activities. According to this ruling, the USFWS can no longer require mitigation based on the probability that the species could use the site. Rather they must show that it is actually present.

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need to obtain an "incidental take permit" either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal

agency such as the Corps), or through Section 10 of FESA which requires preparation of a Habitat Conservation Plan (HCP) (for state and local agencies, or individuals, and projects without a federal "nexus"; for example, projects that do not need a Corps permit).

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species. Critical habitat designations mean: (1) specific areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process only applies to actions taken by federal agencies that are considering authorizing discretionary projects. Section 7 is by and between the NMFS and/or the USFWS and the federal agency contemplating a discretionary approval (that is, the "federal nexus agency," for example, the Corps or the Federal Highway Administration). Private parties, cities, counties, etc. (i.e., applicants) may participate in the Section 7 consultation *at the discretion of the federal agencies conducting the Section 7 consultation*. The Section 7 consultation process is triggered by a determination of the "action agency" – that is, the federal agency that is carrying out, funding, or approving a project - that the Remediation Project "may affect" a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation between the nexus agency and the USFWS/NMFS is required. As part of the formal consultation, the USFWS/NMFS may resolve any issues informally with the nexus agency or may prepare a formal Biological Opinion assessing whether the proposed action would be likely to result in "jeopardy" to a listed species or if it could adversely modify designated critical habitat. If the USFWS/NMFS prepares a Biological Opinion, it will contain either a "jeopardy" or "non-jeopardy" decision. If the USFWS/NMFS concludes that a proposed project would result in adverse modification of critical habitat or would jeopardize the continued existence of a federally-listed species (that is, it will issue a jeopardy decision), the nexus federal agency would be most unlikely to authorize its discretionary permit. If the USFWS/NMFS prepares a "non-jeopardy" Biological Opinion, the nexus federal agency may authorize the discretionary permit making all conditions of the Biological Opinion conditions of its discretionary permit. A non-jeopardy Biological Opinion constitutes an "incidental take" permit that allows applicants to "take" federally-listed species while otherwise carrying out legally sanctioned projects.

For non-federal entities, for example private parties, cities, counties that are considering a discretionary permit, Section 10 provides the mechanism for obtaining take authorization. Under Section 10 of FESA, for the applicant to obtain an "incidental take permit," the applicant is required to submit a "conservation plan" to the USFWS or NMFS that specifies the impacts that are likely to result to federally-listed species, and the measures the applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B)

permit are used interchangeably by the USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

5.1.1 Responsible Agency

FESA gives regulatory authority to the USFWS for federally-listed terrestrial species and non-anadromous fish. The NMFS has regulatory authority over federally-listed marine mammals and anadromous fish.

5.1.2 Applicability to the Remediation Project

In 2005, NMFS designated Santa Margarita Creek adjacent to the Eastern Remediation Area as Steelhead Critical Habitat (Figure 7). The normal flow pattern of Santa Margarita Creek is approximately 80 to 90 feet east of the Eastern Remediation Area. There is well developed riparian tree canopy along the creek. Impacts to Santa Margarita Creek, including its associated riparian vegetation will be avoided by the Remediation Project. The project includes the use of BMPs (that is, ERTEC wildlife exclusion fencing with a sediment control panel) that will be installed around the perimeter of each Remediation Area and above the top-of-bank and outside any associated riparian vegetation. Thus, grading/fill activities will not inadvertently impact Santa Margarita Creek or its associated riparian vegetation. Similarly, there will be no discharges of any kind into the Santa Margarita Creek channel. ***Accordingly, no fisheries habitat would be impacted by the Remediation Project.***

No federally-listed plant species are known to occur in the vicinity of the project area, and none were found in the project area during appropriately-timed surveys conducted in 2019. No federally-listed wildlife species have been reported to the CNDDB as occurring within the Remediation Project Areas and none have been observed in the project area. However, there is an undocumented record (that is, not in the CNDDB) for one adult California red-legged frog on the ranch property approximately 1,904 feet outside the western-most Remediation Area boundary. M&A's nocturnal and diurnal surveys during the wet months of the year did not identify this federally-listed frog within the Remediation Areas or within a 0.50-mile surrounding area. Since the excavation portion of the remediation work would take place during the dry months of the year when amphibians would not be dispersing, and wildlife exclusion fencing would be installed around the perimeter of each Remediation Project area prior to initiating remediation work activities, there would be no impacts to any federally listed wildlife (see Species Accounts above). ***The Remediation Project would not impact federally-listed wildlife or plant species*** (Tables 3 and 4).

5.2 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Executive Order 13186 for conservation of migratory birds (January 11, 2001) requires that any project with federal involvement address impacts of federal actions on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to take migratory birds. The order also requires federal agencies to work with the USFWS to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through the following means:

- avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- restore and enhance habitat of migratory birds, as practicable; and prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

5.2.1 APPLICABILITY TO THE REMEDIATION PROJECT

Birds of prey such as the white-tailed kite, red-tailed hawk, red-shouldered hawk, golden eagle, and bald eagle are all known to nest in the region of the project area. Similarly, many common passerine bird species could nest in the project area. All raptors (birds of prey) are subject to the Migratory Bird Treaty Act. Also, the common songbirds and wading birds are also protected pursuant to this Act. As long as there is no direct mortality of species protected pursuant to this Act caused by remediation of the site, there should be no constraints to remediation of the site. While adult birds can typically fly out of harm's way, nesting birds, their eggs and young are much more prone to being impacted by construction projects. To comply with the Migratory Bird Treaty Act, all active nest sites would have to be avoided while birds were nesting. Upon completion of nesting, the Remediation Project could commence as otherwise planned. Please review specific requirements for avoidance of nest sites for potentially occurring nesting birds in the Impacts and Mitigations section below.

5.3 Bald Eagle and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

"Disturb" means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that

interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

A violation of the Act can result in a fine of $100,000 ($200,000 for organizations), imprisonment for one year, or both, for a first offense. Penalties increase substantially for additional offenses, and a second violation of this Act is a felony.

5.3.1 APPLICABILITY TO THE REMEDIATION PROJECT

While there are no CNDDB records for bald or golden eagles nesting within five miles of the project area, and there are no other known records for such nests, the eBird data files (a biodiversity-related, citizen science project) managed by Cornell Laboratory of Ornithology indicates that in 2019 there have been multiple bald eagle sightings on the Santa Margarita Ranch within 0.50-mile of the project area. M&A has observed both bald and golden eagles flying over the project area in multiple 2019 surveys.

To comply with the Bald and Golden Eagle Protection Act, any active nest site would have to be avoided while eagles were nesting. While no eagle nests are known to occur within a zone of influence of the Remediation Project Areas, it nonetheless is informative to understand USFWS' recommended nest protection buffers to gain understanding of how far from a project site surveys should be conducted for nesting eagles. Protective nesting buffer "Guidelines" were originally published by the USFWS in 2007 (USFWS 2007). In that Guidance, the USFWS recommended that impacts to nesting eagles should be assessed within one mile of an active eagle nest site. Per the Guidance, protective nest site buffers are then to be established dependent upon the presence and extent of human based activities that occur or do not occur within one mile of the active nest. Recommended buffers extend as far as one mile to as small as 330 feet from active nests. In January 2017, the USFWS published *Recommended Buffer Zones for Human Activities around Nesting Sites of Bald Eagles in California* (USFWS 2017). These recommendations supersede the USFWS' 2007 Guidelines for establishing nesting buffers for bald eagles. Under the 2017 Guidance, if a bald eagle were to be found nesting near the Remediation Area, required nesting buffers would best fall into Guidance Category H, which is for projects with blasting or *other loud intermittent noises*. Category H requires 0.5-mile protection buffers while eagles are nesting. That said, the Remediation Project does not fall neatly into any of the listed Guidance Categories. Regarding Category H, the Remediation Project will not require any blasting, however, there could be loud intermittent noises. Guidance Categories C and D are also poor fits for the Remediation Project and are regarding off road vehicle use and timber harvesting. Recommended protection buffers for these activities are 660 feet from between the active bald eagle nest and the activities. For the Remediation Project, it is likely that a 660-foot nesting buffer would be deemed adequate, but under all circumstances, project activities would not negatively affect nesting eagles. Mitigation measures presented in this document provide for monitoring when/if project activities potentially disturb nesting eagles.

Guidance for nesting golden eagles falls back on the 2007 Guidance. Under these Guidelines, provided the activities are not visible from the nest, a 660-foot nesting buffer is recommended. While no bald or golden eagle nest sites are known to occur on the Santa Margarita Ranch near the project area, owing to the number of sightings of bald eagles on the ranch within 0.5-mile of the Remediation Areas as reported by eBird, and M&A's bald and golden eagle sightings,

M&A's principal biologist, Geoff Monk, a qualified raptor biologist, conducted systematic eagle nesting surveys within one mile of the Remediation Areas in March, April, and May 2019. Surveys were modified to less than one mile where properties were not accessible without trespassing. Minimum survey distances were 2,000 feet from remediation impact areas. No nesting eagles were found and Mr. Monk does not believe there are active or inactive alternate bald or golden eagle nests within 2,000 feet of Remediation Project Areas.

In conducting further research regarding the potential presence of nesting bald eagles in the Santa Margarita area, M&A determined that in 2015 there was a known active bald eagle nest 2.12 miles northeast/east of the Eastern Remediation Area. This eagle nesting territory is in a different watershed than the Santa Margarita Creek watershed, which is the watershed the Remediation Project is within. The nesting location is also sufficiently distant so that M&A did not investigate this nesting location any further. The known nesting territory east of the Remediation Project area is likely still active in 2019 and would be the source of the numerous eagle sightings in the Santa Margarita area. A flight distance of 2.2 miles from nest sites would be routine for eagles which typically forage at distances far greater than 2 miles. For example, in 1989, in southern Oregon, while in a helicopter conducting nesting surveys, Mr. Monk observed a bald eagle capture a fish on a small lake. This bald eagle then circled up in elevation about 1,000 feet and then flew straight to its active nest 14 miles east of the lake. Similarly, last January 2019, Mr. Monk watched a bald eagle fly over the Western Remediation Area, then fly north for more than 2 miles before Mr. Monk lost site of the eagle. Accordingly, the closest known nesting territory that is over 2 miles north-northeast of the Remediation Project is the likely source of the eagle sightings near the Remediation Project.

No impacts are expected to occur to nesting bald or golden eagles from implementation of the Remediation Project. Please review specific requirements for avoidance of nest sites for potentially occurring eagles in the Impacts and Mitigations section below.

5.4 California Endangered Species Act

5.4.1 Section 2081 of the California Endangered Species Act

In 1984, the state legislated the CESA (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would impact threatened or endangered species if reasonable and prudent alternatives are available. Because CESA does not have a provision for "harm" (see discussion of FESA, above), CDFW considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If CDFW determines that a proposed project could impact a state-listed threatened or endangered species, CDFW will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the Remediation Project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be impacts to threatened or endangered species, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from

CDFW and/or USFWS (if it is a federally-listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State-listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a Federal incidental take permit for federally-listed species). CDFW will issue an incidental take permit only if:

1) The authorized take is incidental to an otherwise lawful activity;
2) the impacts of the authorized take are minimized and fully mitigated;
3) measures required to minimize and fully mitigate the impacts of the authorized take:
    a) are roughly proportional in extent to the impact of the taking on the species;
    b) maintain the applicant's Remediation Project objectives to the greatest extent possible; and,
    c) capable of successful implementation; and,
4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing an HCP as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve CDFW staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the Remediation Project pursuant to Section 7 of the FESA, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." *See* Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the Remediation Project to avoid all take.

Fish and Game Code §2080.1 allows an applicant who has obtained a "non-jeopardy" federal Biological Opinion pursuant to Section 7 of the FESA, or who has received a federal 10(a) permit (federal incidental take permit) pursuant to the FESA, to submit the federal opinion or permit to CDFW for a determination as to whether the federal document is "consistent" with CESA. If after 30 days CDFW determines that the federal incidental take permit is consistent with state law, and that all state-listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the Remediation Project. However, if CDFW determines that the federal opinion or permit is not consistent with CESA, or that there are state-listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a state CESA permit under Section 2081(b). Section 2081(b) is of no use if an affected species is state-listed, but not federally-listed.

State and federal incidental take permits are issued on a discretionary basis and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under

review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

5.4.2 APPLICABILITY TO THE REMEDIATION PROJECT

The foothill yellow-legged frog is state-listed species on the Central Coast and is protected pursuant to CESA; however, the Remediation Project will not result in direct take of this species. There are no other state-listed species or species proposed for state listing occurring in the project area. *Consequently, the Remediation Project should not be required to obtain an Incidental Take Permit (ITP) from the State of California.*

5.5 California Fish and Game Code § 3503, 3503.5, 3511, and 3513

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite and golden eagle, are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

5.5.1 APPLICABILITY TO THE REMEDIATION PROJECT

Raptors that are known to nest in the region of the project area and for which suitable nesting habitat is provided by the project area include white-tailed kite, red-tailed hawk, red-shouldered hawk, bald eagle, and golden eagle. Many common passerine birds also could nest in the project area. Preconstruction nesting surveys would have to be conducted for nesting birds to ensure that there is no direct take of these birds including their eggs, or young, during implementation of the Remediation Project. Any active nests that are found during preconstruction surveys would have to be avoided by the Remediation Project. Suitable non-disturbance buffers shall be established around active nests until the nesting cycle is complete. More specifics on nesting bird surveys and protection buffers are provided below in the Impacts and Mitigations section.

5.6 County of San Luis Obispo General Plan

The County of San Luis Obispo General Plan Conservation and Open Space Element, published in May 2010, has multiple goals and policies that pertain to the protection of biological resources (County of San Luis Obispo 2010). Below we list goals and policies that pertain specifically to the plant communities and wildlife habitats present in the project area and discuss these elements in the "Applicability" section.

5.6.1 GOAL 1: NATIVE HABITAT AND BIODIVERSITY WILL BE PROTECTED, RESTORED, AND ENHANCED

Policy BR 1.1 Protect Sensitive Biological Resources.

Protect sensitive biological resources such as, wetlands, migratory species of the Pacific flyway, and wildlife movement corridors through:

1) environmental review of proposed development applications, including consideration of cumulative impacts,
2) participation in comprehensive habitat management programs with other local and resource agencies, and
3) acquisition and management of open space lands that provide for permanent protection of important natural habitats.

Applicability to the Remediation Project

The Remediation Project is being reviewed pursuant to CEQA and, as such, potential impacts to sensitive and significant biological resources are addressed within this document and mitigation measures are prescribed to offset the Remediation Project's potential impacts.

Policy BR 1.10 Identify and Protect Ecologically Sensitive Areas: Protect and enable management of ecologically sensitive areas to the maximum extent feasible.

Applicability to the Remediation Project

This policy would be met by the Remediation Project. The project includes the use of BMPs (that is, ERTEC wildlife exclusion fencing with a sediment control panel) that will be installed around each Remediation Area to prevent impacts not only to local wildlife moving through the area but also to offsite waters. Additionally, trucks and equipment will have to drive on existing ranch roads that pass close to nearby wetlands. These wetlands will be protected by orange construction fencing staked at their outside, upland edge (see AECOM's grading plans). Thus, adjacent areas will not be impacted by the Remediation Project. As such, earth-movement (excavation) and fill activities will not inadvertently impact wetlands, other waters, creek corridors, or sensitive plant communities adjacent to designated work areas.

Policy BR 1.11 Protect Wildlife Nursery Areas and Movement Corridors

Identify, protect, and enable the management of connected habitat areas for wildlife movement. Features of particular importance to wildlife for movement may include, but are not limited to, riparian corridors, shorelines of the coast and bay, and ridgelines. Identification and designation of wildlife corridors will not interfere with agricultural uses on private lands.

Applicability to the Remediation Project

The Remediation Project would only temporarily impact local wildlife corridors and wildlife would be able to move around the work areas without too much disruption to their movements. There are no major deer herd migration corridors or other terrestrial migrating mammal corridors in the project area that would be affected by the Remediation Project. Impacts would be limited to non-native annual grasslands and ruderal herbaceous habitats. No ridgelines, coasts, bays, stream channels, or riparian corridors would be impacted by the Remediation Project.

Policy BR 1.12 Development Impacts to Corridors

Ensure that important corridors for wildlife movement and dispersal are protected as a condition of discretionary permits. Provide linkages and corridors as needed to connect sensitive habitat areas such as woodlands, forests, and wetlands.

Applicability to the Remediation Project

There are no regional or significant wildlife corridors in the project area. Within the Remediation Area, there are no obvious corridors whatsoever. Thus, the Remediation Project would simply inconvenience local wildlife associated with the Santa Margarita Ranch. Santa Margarita Creek and Little Tassajara Creeks provide local wildlife corridors. Local wildlife corridors provide foraging opportunities for local mammals and the ability to move between areas with escape cover. Creeks will not be impacted by the Remediation Project; thus, wildlife will be able to continue to use associated riparian habitat for cover and foraging. While there could be a temporary disruption in local movements through annual grassland habitats where the Remediation Project will be implemented, these disruptions are not significant. Wildlife will simply move around designated work areas since they are not otherwise limited geographically from simply choosing different routes. After remediation work is completed, the ground cover would be restored/seeded, and any local wildlife corridor that is disrupted would again be fully functional.

Policy BR 1.15 Restrict Disturbance in Sensitive Habitat during Nesting Season

Avoid impacts to sensitive riparian corridors, wetlands, and coastal areas to protect bird-nesting activities.

Applicability to the Remediation Project

The Remediation Project is being reviewed pursuant to CEQA and, as such, potential impacts to sensitive and significant biological resources are addressed within this document and mitigation measures are prescribed to offset the Remediation Project's potential impacts. Thus, the Remediation Project's potential impacts to nesting birds and seasonal wetlands is addressed. There would be no impacts to riparian corridors or stream channels.

5.6.2 GOAL 2: THREATENED, RARE, ENDANGERED, AND SENSITIVE SPECIES WILL BE PROTECTED

Policy BR 2.2 Promote Early Consultation with Other Agencies

Require applicants to consult with all agencies with review and/or permit authority for projects in areas supporting wetlands and special-status species at the earliest opportunity.

Applicability to the Remediation Project

Any impacts to waters of the United States and/or State would be addressed through a permit application to the Corps and/or the RWQCB, as necessary. At this time, there are no plans for the Remediation Project to result in any impacts to waters of the United States/State. The project does not propose to impact any state or federally-listed species; thus, consultation with the State and federal agencies is not necessary for this project and this environmental review pursuant to CEQA is sufficient.

Policy BR 2.6 Development Impacts to Listed Species

Ensure that potential adverse impacts to threatened, rare, and endangered species from development are avoided or minimized through project siting and design. Ensure that proposed development (activity) avoids significant disturbance of sensitive natural plant communities that contain special-status plant species or provide critical habitat to special-status animal species. When avoidance is not feasible, require no net loss of sensitive natural plant communities and critical habitat areas.

Applicability to the Remediation Project

The Remediation Project is not a planned development but rather an existing pipeline Remediation Project. The location of the pipeline cannot be re-sited or moved to avoid existing sensitive resources; rather, care will be taken while completing remediation work to ensure that impacts to surrounding sensitive resources are minimized to the extent practicable. Where significant impacts to sensitive and significant biological resources cannot be avoided, mitigation will be implemented as detailed in the Mitigation Measures section.

Policy BR 2.8 Invasive Plant Species

Promote and support efforts to reduce the effects of noxious weeds on natural habitats. The County will work with local resource and land management agencies to develop a comprehensive approach to controlling the spread of non-native invasive species and reducing their extent on both public and private land.

Applicability to the Remediation Project

Site restoration after remediation work is completed will include seeding with salvaged topsoils ("seed bank") that are re-spread over the restored area and use of a native seed mix as opposed to a non-native seed mix. No non-native or invasive species would be intentionally spread in the project area.

5.6.3 GOAL 3: MAINTAIN THE ACREAGE OF NATIVE WOODLANDS, FORESTS, AND TREES AT 2008 LEVELS

Policy BR 3.1 Native Tree Protection

Protect native and biologically valuable trees, oak woodlands, trees with historical significance, and forest habitats to the maximum extent feasible.

Applicability to the Remediation Project

The Remediation Project would not require removing any native trees or trees with historical significance. All remediation work would take place in herbaceous habitats.

Policy BR 3.2 Protection of Native Trees in New Development

Require proposed discretionary development and land divisions to avoid damage to native trees (e.g., Monterey Pines, oaks) through setbacks, clustering, or other appropriate measures. When avoidance is not feasible, require mitigation measures.

Applicability to the Remediation Project

This is not a development project so there will be nothing built that would infringe upon the oak woodlands or any other native tree habitat. Additionally, equipment brought into the project area for the pipeline remediation work would follow existing ranch roads so there would be no impacts to trees or tree limbs by equipment. As an extra precaution, all oak trees within 10 feet of the ranch roads would be encircled with orange construction fencing at the tree's dripline and/or trunk protection would be installed at the base of the tree.

Policy BR 3.3 Oak Woodland Preservation

Maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat.

Applicability to the Remediation Project

The existing oak woodland habitat would not be affected by the project and would be maintained.

Policy BR 3.5 Non-native Trees

Protect healthy and non-hazardous, non-native trees (e.g., eucalyptus groves) and forests that provide raptor nesting or roosting sites or support colonies of monarch butterflies.

Applicability to the Remediation Project

No impacts would occur to trees that could provide nesting or roosting sites. Accordingly, this policy would be met by the Remediation Project.

5.6.4 GOAL 4: THE NATURAL STRUCTURE AND FUNCTION OF STREAMS AND RIPARIAN HABITAT WILL BE PROTECTED AND RESTORED

Policy BR 4.1 Protect Stream Resources

Protect streams and riparian vegetation to preserve water quality and flood control functions and associated fish and wildlife habitat.

Applicability to the Remediation Project

The riparian vegetation along Santa Margarita Creek and the unnamed, intermittent tributary would not be impacted by the Remediation Project. Similarly, the water quality and flood control functions of the creek and the unnamed tributary will not be affected since the pipeline remediation work will take place *outside of the creek channels*. There would be no impacts to any creek or drainage from the Remediation Project.

Policy BR 4.2 Minimize Impacts from Development

Minimize the impacts of public and private development on streams and associated riparian vegetation due to construction, grading, resource extraction, and development near streams. [This policy and the following implementation strategy do not apply 1) within the coastal zone, because the Local Coastal Program already includes detailed policies and standards to protect streams and riparian vegetation, and 2) on private lands designated Agriculture in the Land Use Element and on other lands used for production agriculture; for those lands, refer to Policy AGP 26 in the Agriculture Element.]

Applicability to the Remediation Project

The pipeline remediation work would not impact any stream in the project area or any riparian vegetation.

5.6.5 GOAL 5: WETLANDS WILL BE PRESERVED, ENHANCED, AND RESTORED

Policy BR 5.1 Protect Wetlands

Require development to avoid wetlands and provide upland buffers.

Applicability to the Remediation Project

In an abundance of caution, since trucks and equipment will have to drive on existing ranch roads that pass close to nearby wetlands, these wetlands will be protected by orange construction fencing staked at their outside, upland edge. While not anticipated, in the unlikely event impacts occur to wetlands as necessary to complete the remediation work, all appropriate agency permits would be obtained, mitigation would be implemented as required, and wetlands would be restored.

Policy BR 5.2 No Net Loss of Wetlands

Ensure that all public and private projects avoid impacts to wetlands if feasible. If avoidance is not feasible, ensure no net loss of wetlands, consistent with state and federal regulations and this Element.

Applicability to the Remediation Project

In an abundance of caution, since trucks and equipment will have to drive on existing ranch roads that pass close to nearby wetlands, these wetlands will be protected by orange construction fencing staked at their outside, upland edge. While not anticipated, in the unlikely event impacts occur to wetlands as necessary to complete the remediation work, all appropriate agency permits would be obtained, mitigation would be implemented as required and wetlands would be restored.

Policy BR 5.4 Wetlands on Agricultural Lands

Support use of best management practices and proper range uses to minimize impacts to wetlands on agricultural lands.

Applicability to the Remediation Project

This policy would be met by the Remediation Project. The project includes the use of BMPs (that is, ERTEC wildlife exclusion fencing with a sediment control panel) that will be installed around each Remediation Area, and adjacent areas will not be impacted by the Remediation Project. Thus, grading/fill activities will not inadvertently impact wetlands/other waters, creek corridors, or sensitive plant communities adjacent to designated work areas.

5.6.6 Goal 6: The County's Fisheries And Aquatic Habitats Will Be Preserved And Improved

Policy BR 6.1 Avoid Impacts to Fisheries

Require all proposed discretionary land use projects and land divisions to avoid impacts to freshwater and saltwater fisheries and wildlife habitat to the maximum extent feasible. When avoidance is not feasible, offset potential losses of fisheries and wildlife.

Applicability to the Remediation Project

Critical Fish Habitat for steelhead is designated by National Marine Fisheries Service in Santa Margarita Creek (Figure 7). Impacts to Santa Margarita Creek, including its associated riparian vegetation will be avoided by the Remediation Project. The project includes the use of BMPs (that is, ERTEC wildlife exclusion fencing with a sediment control panel) that will be installed around each Remediation Area and outside any associated riparian vegetation. Thus, all earthwork and related construction will be fully contained and grading/fill activities will not inadvertently impact Little Tassajara Creek, Santa Margarita Creek or the associated riparian vegetation. Similarly, there will be no discharges of any kind into the creek channels. Accordingly, no fisheries habitat would be impacted by the Remediation Project.

5.7 San Luis Obispo County Oak Woodland Ordinance

In 2017, the County of San Luis Obispo added a new section to Title 22 – Land Use Ordinance, 22.58 – Oak Woodland Ordinance. The measures in this ordinance apply to circumstances where one acre or greater of oak woodland is being removed or when a heritage oak tree (48-inch diameter at breast height or greater) is impacted.

5.7.1 Applicability to the Remediation Project

Since the Remediation Project will not result in tree removal or impacts within the dripline of mature oaks or riparian corridor, this ordinance is not applicable.

6. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the Corps, the RWQCB, the State Water Resources Control Board (SWRCB), and the CDFW to determine those areas within a project area that would be subject to their regulation.

6.1 U.S. Army Corps of Engineers Jurisdiction and Permitting

6.1.1 Section 404 of the Clean Water Act

Congress enacted the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. §1251(a)). Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the Corps regulates the disposal of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States.

In the Federal Register "waters of the United States" are defined as, "...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." (33 CFR Section 328.3).

Limits of Corps' jurisdiction:

(a) Territorial Seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

(b) Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:

(1) Extends to the high tide line, or
(2) When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

(c) Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:

(1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or

(2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
(3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the ordinary high-water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is:

- the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]).

Wetlands are defined as: "...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions" (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the Clean Water Act.

6.1.1.1 Permitting Corps Jurisdictional Areas

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting waters of the United States. In many cases, the Corps must visit a proposed project area (to conduct a "jurisdictional determination") to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to "waters of the United States."

Pursuant to Section 404, the Corps normally provides two alternatives for permitting impacts to the type of waters of the United States found in the Remediation Project area. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an "alternatives analysis" that is prepared pursuant to Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). The alternatives analysis is also typically reviewed by the EPA and thus brings another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the Remediation Project if there would be impacts to waters of the United States, and the proposed permitted action is not a water dependent project (e.g., a pier or a dredging project). Alternative analyses therefore must provide convincing reasons that the proposed

permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under NWP, if certain conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 27 general nationwide permit conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or modifications to NWPs that could have relevance to individual proposed projects. Finally, pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must, request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (*i.e.,* must receive "verification" from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of "no net loss" of wetlands (waters of the United States) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (*i.e.,* impacts would be mitigated). Typically, the Corps requires mitigation to be "in-kind" (i.e., seasonal wetlands would be filled, mitigation would include seasonal wetland mitigation), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction there of recreated for each acre or fraction thereof lost). Often a 2:1 replacement ratio is required if the Permittee is responsible for the mitigation. In some cases, the Corps allows "out-of-kind" mitigation if the compensation site has greater value than the impacted site. Finally, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet mitigation compensation requirements. Mitigation banks have defined service areas and the Corps may only allow their use when a project would have minimal impacts to wetlands.

6.1.2 APPLICABILITY TO THE REMEDIATION PROJECT

M&A conducted a formal wetland delineation of the project area and vicinity using criteria prescribed in the Corps' 1987 Wetland Delineation Manual (Corps 1987) and the Corps' Regional Supplement for the Arid West Region (Corps 2008). Only the Corps can determine the extent of its jurisdiction, while qualified consultants like M&A estimate Corps' jurisdictional areas. Ultimately the Corps has to confirm the extent of its Clean Water Act jurisdiction. A draft Aquatic Resources Map (i.e., a wetland delineation map) was submitted to the Corps along with a request for a Jurisdictional Determination. Corps San Francisco District personnel met with M&A in the project area in September 2019, and a confirmed, stamped map and Preliminary Jurisdictional Determination letter were obtained on November 1, 2019.

Sheets 1 and 2 (Attachment B) define the boundary for the wetland delineation "study area," as referenced in the Corps' confirmed map (Attachment B). The study area as indicated on Sheets 1 and 2 is defined to facilitate both the Corps analysis of cultural resources and as necessary for the Corps to define an extent in area where this agency will define its Clean Water Act jurisdictional limits. Generally, the Corps' jurisdictional map extends outside the Remediation Project work areas (Figures 4 and 5) to adjacent areas that, although not anticipated, perhaps might need to be

affected by the Remediation Project. Again, this is unlikely given the defined scope of the project. Any proposed impacts to Clean Water Act defined jurisdictional waters of the United States would require a permit from the Corps.

An intermittent, unnamed tributary to Santa Margarita Creek (Little Tassajara Creek) flows west-to-east immediately north of the Western Remediation Area. Santa Margarita Creek, which is a tributary to the Salinas River, a Traditional Navigable Water of the United States, flows south-to-north along the Eastern Remediation Area's eastern boundary (Figures 4 and 5; also see Exhibits A and B). Both Little Tassajara Creek and Santa Margarita Creek are "waters of the United States" pursuant to Section 404 of the Clean Water Act. In addition, areas surrounding the Western and Eastern Remediation Areas support seasonal wetlands which fall under the Corps' jurisdiction as waters of the United States (Figures 4 and 5; Sheets 1 and 2). *The Remediation Project will not impact or otherwise alter seasonal wetlands, Little Tassajara Creek, or Santa Margarita Creek which are all within the Corps' Clean Water Act jurisdiction. All wetlands and other waters that have been mapped by M&A wetland biologists and confirmed by the Corps will be avoided. As such, no Section 404 Clean Water Act permit is warranted from the Corps for the Remediation Project.*

If Corps jurisdictional areas cannot be avoided, then appropriate permitting would be completed prior to impacting any jurisdictional area. Even if jurisdictional impacts would occur, the Remediation Project would be highly likely to meet conditions for use of Nationwide Permits (NWPs) that are administered by the Corps pursuant to Section 404 of the Clean Water Act. The applicable NWPs are NWP 20 (Oil Spill Cleanup) and NWP 38 (Cleanup of Hazardous and Toxic Waste). A notification (i.e., known as a Preconstruction Notice) would have to be filed with the Corps' District Engineer to obtain authorization to use these NWPs. Since the Corps has a "no net loss" policy, mitigation for impacts to waters of the United States would be necessary.

6.2 California Regional Water Quality Control Board (RWQCB)

6.2.1 Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers a permitting program that authorizes impacts to waters of the United States, including wetlands and other waters, any Corps permit authorized for a proposed project would be inoperative unless it is an NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the permit (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the CEQA, the CESA, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification of water quality.

6.2.2 Applicability to the Remediation Project

While not anticipated, in the unlikely event impacts to Clean Water Act regulated waters of the U.S./State become necessary to complete the remediation work, appropriate Clean Water Act

permits shall be acquired prior to the time the impact occurs. Any impacts to seasonal wetlands that occurred from remediation work activities would be likely to be authorized under an NWP issued by the Corps. To become operative, the Corps' NWP authorization will require a water quality certification issued by the RWQCB pursuant to Section 401 of the Clean Water Act. Since the RWQCB does not have a formal method for technically defining what constitutes waters of the State, M&A expects that the RWQCB should remain consistent with the Corps' determination. Therefore, if the Corps determines there are a specified number of acres of wetland or other waters within the project area boundaries, the RWQCB will likely concur.

Any impacts to waters of the State would have to be mitigated to the satisfaction of the RWQCB prior to the time this resource agency would issue a permit for impacts to such features. The RWQCB requirements for issuance of a "401 Permit" typically parallel the Corps requirements for permitting impacts to Corps regulated areas pursuant to Section 404 of the Clean Water Act. Please refer to the Corps Applicability Section above for likely mitigation requirements for impacts to RWQCB regulated wetlands. Also, please refer to the applicability section of the Porter-Cologne Water Quality Control Act below for other applicable actions that may be imposed on the Remediation Project by the RWQCB prior to the time any certification of water quality is authorized for the Remediation Project. Please note that any isolated wetlands or other waters that are determined to be in the project area that are not regulated by the Corps pursuant to the SWANCC decision, would still be regulated by the RWQCB pursuant to the Porter-Cologne Water Quality Control Act (see below).

6.2.3 PORTER-COLOGNE WATER QUALITY CONTROL ACT

The uncontrolled discharge of pollutants into impaired water bodies is considered particularly detrimental. According to the EPA, *sediment is one of the most widespread pollutants contaminating United States rivers and streams.* Sediment runoff from construction sites is 10 to 20 times greater than from agricultural lands and 1,000 to 2,000 times greater than from forest lands. Consequently, the discharge of stormwater from large construction sites is regulated by the RWQCB under the federal Clean Water Act and California's Porter-Cologne Water Quality Control Act.

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the state (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction pursuant to the SWANCC decision (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the State by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

The RWQCB requires complete pre- and post-construction BMP Plans of any portion of the project area that is developed. This means that a water quality treatment plan for the pre- and post-developed project area must be prepared and implemented. Preconstruction requirements must be consistent with the requirements of the NPDES. That is, a SWPPP must be developed prior to the time that a site is graded (see Section 9.1 below).

6.2.4 Applicability to The Remediation Project

The Corps has determined that there are waters of the United States in the vicinity of the project area; these features would also be regarded as waters of the State. The RWQCB would have regulatory authority over these areas pursuant to Section 401 of the Clean Water Act. There are no "isolated waters" in the vicinity of the project area that are not within federal jurisdiction. Since any "threat" to water quality could conceivably be regulated pursuant to the Porter-Cologne Water Quality Control Act, pre- and post-construction BMPs will be incorporated into the Remediation Project implementation plans.

6.3 California Department of Fish and Wildlife Protections

6.3.1 Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code: "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless all of the following occur:

(1) CDFW receives written notification regarding the activity in the manner prescribed by CDFW. The notification shall include, but is not limited to, all of the following:
   (A) A detailed description of the Remediation Project's location and a map.
   (B) The name, if any, of the river, stream, or lake affected.
   (C) A detailed project description, including, but not limited to, construction plans and drawings, if applicable.
   (D) A copy of any document prepared pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.
   (E) A copy of any other applicable local, state, or federal permit or agreement already issued.
   (F) Any other information required by the CDFW (Fish & Game Code 2019).

Please see Section 1602 of the current California Fish and Game Code for further details.

Please also note that while not stated in the regulations above, CDFW typically considers its jurisdiction to include riparian vegetation (that is, the trees and bushes growing along the stream). Thus, any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, including its riparian vegetation, would require entering into a Streambed Alteration Agreement (SBAA) with CDFW prior to commencing with work in the stream. However, prior to authorizing such permits, CDFW typically reviews an analysis of the

expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

6.3.2 APPLICABILITY TO THE REMEDIATION PROJECT

The Remediation Project will avoid all impacts to creeks or drainages. Top-of-banks and outside drip lines of any associated riparian vegetation (e.g., trees and shrubs), which taken together define the limits of CDFW's 1602 jurisdiction, are shown in Figures 4 and 5. These limits were flagged in the field by M&A biologists and were then field surveyed by AECOM surveyors such that all likely CDFW 1602 jurisdictional drainages and the limits of these drainages could be transposed on to the engineer's remediation plans. Pin flags were field surveyed by an AECOM licensed survey crew on both sides of Little Tassajara Creek, an ephemeral/intermittent creek that flows in the winter through the Western Remediation Area (Figure 4), and along the west bank of Santa Margarita Creek, an intermittent creek located immediately east of the Eastern Remediation Area (Figure 5). The top-of-banks or outside edges of riparian vegetation, whichever provided the greatest protective creek buffer, were both field surveyed and also GPSed. These drainages and any associated riparian vegetation are completely avoided by the Remediation Project. In addition, a minimum 5-foot protection buffer off of top-of-banks or outside edge of riparian driplines, whichever distance provides the greatest protection to the creeks nearest the Remediation Project, would also be established as part of the Remediation Project. Please also review the next section below regarding tributary protections. Accordingly, all CDFW Section 1602 jurisdictional areas are avoided by the Remediation Project. *Thus, a CDFW Section 1602 Streambed Alteration Permit is not warranted for the Remediation Project.*

7. TRIBUTARY PROTECTION BUFFERS AND BEST MANAGEMENT PRACTICES

The edge of riparian and/or top-of-banks are shown on Figures 4 and 5 (attached). Santa Margarita Creek, an intermittent creek that flows south to north east of the Eastern Remediation Area, and Little Tassajara Creek, an intermittent creek that flows west to east through the Western Remediation Area, will be avoided by the Remediation Project (Figures 4 and 5).

Impacted soil excavation and replacement with clean, locally sourced soils would only occur outside the top-of-banks and outside any riparian vegetation associated with these two intermittent creeks. In addition, the remediation work activities would be outside a minimum 5-foot protective buffer that will be established outside of the top-of-banks and/or riparian vegetation, whichever provides the greatest protection to creeks. In consideration that impacted soils must be removed, the minimum 5-foot protective buffer outside of riparian drip lines or top-of-banks, whichever provides the greatest creek projection, is more than adequate to fully protect the integrity of adjacent creeks and their associated riparian/wildlife habitats.

The excavation required for all remediation work activities will not require work within riparian tree or shrub driplines. Trucks and equipment will have to travel underneath the riparian tree canopy to reach the Western Remediation area; however, the riparian canopy will not be impacted by this activity. Similarly, trucks and equipment will have to drive on existing ranch roads that pass close to nearby wetlands. These wetlands will be protected by orange construction fencing staked at their outside, upland edge. Only non-native annual grassland and ruderal habitats would be impacted by the remediation work. Also, all excavation areas will be

restored to natural contours with locally sourced clean fill and reseeded with California native herbaceous species. These temporary impacts outside of Santa Margarita Creek and Little Tassajara Creek are not regarded as significant adverse impacts to these creeks. These creeks and their resource values will be maintained and protected by the Remediation Project.

Setbacks from Little Tassajara Creek will also be established where an existing parking/trailer area will be used as an equipment staging/parking area for the Remediation Project just south-southeast of Little Tassajara Creek in the Eastern Remediation Area (Figure 5). This existing impacted area is already hard-packed, graveled parking area that has been in use by the Santa Margarita Ranch for decades. No new impacts to natural(ized) habitats are anticipated from continued use of this area for the Remediation Project. Regardless, all storage, equipment and trailer parking will occur a minimum of 5 feet set back from the riparian vegetation growing within and adjacent to Little Tassajara Creek at this location (shown on Figure 5). This protection buffer is more than adequate to protect Little Tassajara Creek and its associated wildlife habitat especially in consideration that this parking area has been actively used for decades for ranch equipment and for event parking for the nearby horse arena and railroad center maintained and operated by the Santa Margarita Ranch.

Since the Remediation Areas will be enclosed with ERTEC fencing that includes a one-foot high sediment control panel, creek protection buffers will be observed by all construction personnel and no work will be allowed outside of the ERTEC enclosed area. If deemed necessary, wildlife friendly (that is, no monofilament netting) straw wattles would also be installed along the portion of the ERTEC that runs closest to the creek(s). The field manager will inspect these fences daily to ensure that they are maintained in good condition, and to ensure that under all circumstances the Remediation Project maintains these protection areas. A biologist will also make biweekly visits to the project area to ensure that all protections are in place.

8. COUNTY HABITAT CONSERVATION PLANS – NATURAL COMMUNITY CONSERVATION PLANS NCCP

Habitat Conservation and Natural Community Conservation Plans (HCP/NCCPs) are prepared by Counties, Cities, and smaller local agencies to streamline environmental regulatory agencies permitting processes for impacts on FESA/CESA listed (protected) species. HCP/NCCPs provide local agencies more control over local land use decisions while providing comprehensive species, wetlands, and ecosystem conservation that also contributes to the recovery of CESA/FESA listed species. HCP/NCCPs are prepared with trustee agencies including the CDFW, USFWS, Corps and other regulatory agencies. Once approved by these agencies, HCP/NCCPs are typically then adopted by Counties, Cities, and smaller local agencies, who thereafter administer the adopted HCP/NCCP. ***San Luis Obispo County does not have an HCP/NCCP.***

9. FEMA

Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 100-707, signed into law November 23, 1988; amended the Disaster Relief Act of 1974, Public Law 93-288. It created the system in place today by which a presidential disaster declaration of an emergency triggers financial and physical assistance through the Federal Emergency Management Agency

(FEMA). The Act gives FEMA the responsibility for coordinating government-wide relief efforts. It is designed to bring an orderly and systemic means of federal natural disaster assistance for state and local governments in carrying out their responsibilities to aid citizens.

9.1 Applicability to the Remediation Project

FEMA defines the 100-year floodplain as the land that is predicted to flood during a 100-year storm, which has a 1% chance of occurring in any given year. To determine if the Remediation Project would encroach into the FEMA's 100-year floodplain, AECOM Engineers overlaid FEMA's 100-year floodplain map over a GIS rectified aerial photograph that also projected the remediation work areas. Regarding the Western Remediation Area, the closest designated FEMA 100-year floodplain is greater than 500 feet east of this Remediation Area, well outside all proposed areas of disturbance.

Regarding the Eastern Remediation Area, the FEMA has designated a 100-year floodplain along Santa Margarita Creek immediately east of the proposed areas of disturbance. To determine if there could be encroachment into the FEMA 100-year flood plain, M&A required assistance from AECOM Engineers. M&A biologists flagged the outside edge of riparian vegetation associated with Santa Margarita Creek immediately east of the Eastern Remediation Area. All riparian vegetation was flagged at tree/shrub driplines along the west side of this creek adjacent to the Eastern Remediation Area. AECOM Engineers then field surveyed in this drip line so that its location could be accurately portrayed in relation to the Remediation Project. The closest proposed remediation disturbance to this surveyed riparian drip line is 5 feet to the west of the dripline, or further from the creek and its associated riparian vegetation.

As determined by AECOM Engineers, the highest riparian drip line elevation (i.e., furthest from the creek) in the direction of the Eastern Remediation Area, is on average 998 feet above sea level (ASL). It was also determined by AECOM Engineers (pers. comm. via email with G. Monk of M&A) that the FEMA floodplain elevation nearest the Eastern Remediation Area on average is approximately 991 feet ASL, or the FEMA 100-year flood plain elevation difference is, on average, 7 vertical feet *lower than the elevation of the riparian setback line*.

There is also a 5-foot setback from the closest remediation disturbance to the riparian line that would be implemented by the Remediation Project. No remediation work would occur in this 5-foot setback. Within this 5-foot setback there is another approximately one foot of elevation gain to the closest remediation disturbance area. Thus, on average there is a total of 8 vertical feet of elevation difference between the closest Remediation Area and the FEMA floodplain. Accordingly, the surface elevations of the eastern remediation work area are well above the FEMA 100-year floodplain.

AECOM Engineers determined that the closest horizontal distance to the FEMA 100-year floodplain to the Eastern Remediation Area is 60 feet. This is calculated as the 100-year floodplain that is 50-feet off of the riparian setback line and the additional 5 feet that remediation excavation will remain setback from the riparian setback line. Thus, the closest excavation area is a total of 60 feet from the outside edge of the FEMA 100-year floodplain.

As a matter of record, M&A notes that the mapped riparian line is approximately 30 vertical feet higher in elevation than the eastern top-of-bank of Santa Margarita Creek (i.e., the opposite side of the creek from the Eastern Remediation Area). Accordingly, floodwaters would expand eastward away from the Remediation Project eastward through the town of Santa Margarita before ever reaching the surface elevation of the Eastern Remediation Area. Accordingly, the Remediation Project will not impact the FEMA 100-year floodplain since the closest part of the Remediation Project is approximately 60 horizontal feet east of this floodplain and 8 vertical feet higher than this floodplain.

10. STATE WATER RESOURCES CONTROL BOARD (SWRCB)/RWQCB – STORMWATER MANAGEMENT

10.1 Construction General Permit

While federal Clean Water Act NPDES regulations allow two permitting options for construction related stormwater discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide Construction General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans).

The Construction General Permit requires all dischargers where construction activity disturbs greater than one acre of land or those sites less than one acre that are part of a common plan of development or sale that disturbs more than one acre of land surface to:

1. Develop and implement a SWPPP which specifies BMPs that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters.

2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation. Achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the Remediation Project's projected risk level.

3. Perform inspections of all BMPs.

This Construction General Permit is implemented and enforced by the nine RWQCBs. It is also enforceable through citizens' suits and represents a dramatic shift in the SWRCB's approach to regulating new and redevelopment sites, imposing new affirmative duties and fixed standards on builders and developers.

<u>Types of Construction Activity Covered by the Construction General Permit</u>

- clearing,
- grading,
- disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre or more of total land area.

Construction activity that results in soil disturbances to a smaller area would still be subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses greater than one acre of soil disturbance, or if there is significant water quality impairment resulting from the activity.

Construction activity does not include:

- routine maintenance to maintain original line and grade,
- hydraulic capacity, or original purpose of the facility,
- nor does it include emergency construction activities required to protect public health and safety.

Pursuant to the Clean Water Act, the RWQCB regulates construction discharges under the National Pollutant Discharge Elimination System (NPDES). The project sponsor of construction or other activities that disturb more than one acre of land must obtain coverage under NPDES Construction General Permit Order 2009-0009-DWQ, administered by the RWQCB[2].

10.1.1 APPLICABILITY TO THE REMEDIATION PROJECT

To obtain coverage under the SWRCB administered Construction General Permit, the applicant (typically through its civil engineer) must electronically file a number of permit-related compliance documents (Permit Registration Documents (PRDs), including a Notice of Intent (NOI), a risk assessment, site map, signed certification, SWPPP, Notice of Termination (NOT), NAL exceedance reports, and other site-specific PRDs that may be required. The PRDs must be prepared by a Qualified SWPPP Practitioner (QSP) or Qualified SWPPP Developer (QSD) and filed by a Legally Responsible Person (LRP) on the RWQCB's Stormwater Multi-Application Report Tracking System (SMARTS). (QSDs are typically civil engineers, professional hydrologists, engineering geologists, or landscape architects.) Once filed, these documents become immediately available to the public for review and comment. At a minimum, the SWPPP shall identify BMPs for implementation during project construction that are in accordance with the applicable guidance and procedures contained in the California Stormwater Quality Association's *California Stormwater Best Management Practices Handbook* (2015). It is also the applicant's responsibility to ensure that the Remediation Project's civil engineer prepares all required Stormwater Planning documents for submittal to the SWRCB and the County of San Luis Obispo so that the Remediation Project remains in compliance with the Clean Water Act NPDES requirements.

11. CALIFORNIA ENVIRONMENTAL QUALITY ACT REGULATIONS

A CEQA lead agency must determine if a proposed activity constitutes a project requiring further review pursuant to the CEQA. Pursuant to CEQA, a lead agency would have to determine if

[2] CGP Order 2009-0009-DWQ remains in effect but has been amended by CGP Order 2009-0014-DWQ, effective February 14, 2011, and CGP Order 2009-0016-DWQ, effective July 17, 2012. The first amendment merely provided additional clarification to Order 2009-0009-DWQ, while Order 2009-0016-DWQ eliminated numeric effluent limits on pH and turbidity (except in the case of active treatment systems), in response to a legal challenge to the original order.

there could be significant adverse impacts to the environment from a proposed project. Typically, if within the city limits, the city would be the CEQA lead agency. If a discretionary permit (i.e., conditional use permit) would be required for a project, the lead agency typically must determine if there could be significant environmental impacts. This is usually accomplished by an "Initial Study." If there could be significant environmental impacts, the lead agency must determine an appropriate level of environmental review prior to approving and/or otherwise permitting the impacts. In some cases, there are "Categorical Exemptions" that apply to the proposed activity; thus, the activity is exempt from CEQA. The Categorical Exemptions are provided in CEQA. There are also Statutory Exemptions in CEQA that must be investigated for any proposed project. If the Remediation Project is not exempt from CEQA, the lowest level of review typically reserved for projects with no significant effects on the environment would be for the lead agency to prepare a "Negative Declaration." If a proposed project could have significant impacts that can be mitigated to a level of less than significant pursuant to the CEQA, then a "Mitigated Negative Declaration" (MND) is typically prepared by the lead agency. Finally, those projects that may have significant effects on the environment, or that have impacts that can't be mitigated to a level considered less than significant pursuant to the CEQA, typically must be reviewed via an Environmental Impact Report (EIR). All CEQA review documents are subject to public circulation, and comment periods.

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

11.1.1 APPLICABILITY TO THE REMEDIATION PROJECT

This report has been prepared as a Biology section that is suitable for incorporation by the CEQA lead agency (in this case San Luis Obispo County) into a CEQA review document such as an MND or an EIR. This document addresses potential impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA.

12. IMPACTS ANALYSIS

Below the criteria used in assessing impacts to Biological Resources is presented.

12.1 Significance Criteria

A significant impact is determined using CEQA and CEQA Guidelines. Pursuant to CEQA §21068, a significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment. Pursuant to CEQA Guideline §15382, a significant effect on the environment is further defined as a substantial, or potentially substantial, adverse change in

any of the physical conditions within the area affected by the Remediation Project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. Other Federal, State, and local agencies' considerations and regulations are also used in the evaluation of significance of proposed actions.

Direct and indirect adverse impacts to biological resources are classified as "significant," "potentially significant," or "less than significant." Biological resources are broken down into four categories: vegetation, wildlife, threatened and endangered species, and regulated "waters of the United States" and/or stream channels.

12.1.1 THRESHOLDS OF SIGNIFICANCE

12.1.1.1 Plants, Wildlife, Waters

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the Remediation Project would have a significant biological impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.

- Have a substantial adverse effect on federally protected "wetlands" as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

12.1.1.2 Waters of the United States and State.

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the Corps regulates the discharge of dredged or fill material into waters of the United States, which includes wetlands, as discussed in the bulleted item above, and also includes "other waters" (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the Clean Water Act, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates

impacts to waters of the State. Thus, substantial impacts to RWQCB regulated areas on a project site would also be considered a significant adverse impact.

12.1.1.3 Stream Channels

Pursuant to Section 1602 of the California Fish and Game Code, the CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which the CDFW typically considers to include riparian vegetation. Any proposed activity that would result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

13. IMPACT ASSESSMENT AND PROPOSED MITIGATION

In this section we discuss potential impacts to sensitive biological resources including special-status animal species. We follow each impact with a mitigation prescription that when implemented would reduce impacts to the greatest extent possible.

13.1 Impact BIO-1. Implementation of the Remediation Project Will Have a Significant Impact on Gum Plant Patches (*Grindelia camporum*) (Significant)

The CDFW has recognized *Grindelia camporum* gum plant patches (Provisional Herbaceous Alliance) vegetation type as a California Sensitive Natural Community (CDFW 2018), California Code 52.206.01, and has given this community a California State ranking of S2 (imperiled). Equipment staging and temporary topsoil storage in the Western Remediation Area will result in a significant impact to several small colonies of *Grindelia camporum*.

This impact could be mitigated to a level considered less than significant pursuant to CEQA.

13.2 Mitigation Measure BIO-1. Mitigation for Potential Impacts to Gum Plant Patches (*Grindelia Camporum*)

Prior to any equipment staging, remediation work activities, or other activities occurring within the gum plant patch locations (Figure 4), gum plant seeds will be collected at the appropriate time from the plants located in these areas and properly stored for future seeding in the project area after the remediation work activities are completed. Additionally, after gumplant seeds are collected the top 6 inches of the soil profile where the plants occur, the "seed bank," shall be salvaged and moved to a designated seed bank stockpile location. The salvaged soil stockpile shall be staked with orange spray-painted lath or other suitable staking, and labeled so that it is apparent the scalped soils are required to be preserved until original site contours are restored at the end of the Remediation Project. After completion of the remediation work the seed bank shall then be spread back over the area where they were originally collected and finally, this area will be seeded with any collected gum plant seeds.

This mitigation measure would reduce impacts to gum plant patches to a level considered less than significant pursuant to CEQA.

13.3 Impact BIO-2. Implementation of the Remediation Project May Have a Potentially Significant Adverse Impact on Western Pond Turtle (Potentially Significant)

The closest CNDDB record for western pond turtle is located 0.20-mile south and east of the project area (CNDDB Occurrence No. 1136). This 2002 record is from Santa Margarita Creek adjacent and upstream of the project area (Figure 6B for this location). The CNDDB record indicates that up to 10 of these turtles were in a single bedrock pool in Santa Margarita Creek. M&A examined/surveyed this pool on four different dates and found no turtles. This accumulation of turtles most likely occurred when the creek was drying down in the spring, turtles that were migrating up/downstream, accumulated in the only deeper water pool remaining in this creek on the Santa Margarita Ranch.

The western pond turtle has not been observed in the project area during six surveys (upland and aquatic surveys) conducted by M&A in January, February, March, April, May and July 2019. However, due to the proximity of the known record to the project area and the suitable migratory habitat provided by Santa Margarita Creek and the suitable upland nesting habitat surrounding this creek within the project area, ***impacts to western pond turtle are regarded as potentially significant pursuant to the CEQA.***

Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

13.4 Mitigation Measure BIO-2. Mitigation for Potential Impacts to Western Pond Turtle

A qualified biologist shall conduct a preconstruction survey of the ERTEC-fence enclosed Eastern and Western Remediation Areas within 24 hours of any activities being conducted in those areas. If a western pond turtle is identified within the ERTEC enclosed Remediation Areas, or up against the fencing on the outside of the Remediation Areas, the turtle shall be captured and immediately relocated to suitable habitat in Santa Margarita Creek. Thereafter, the designated biological monitor and/or trained field manager shall survey the ERTEC enclosed areas for turtles prior to work each day.

During the spring and/or summer months, preconstruction surveys for turtle nest sites in uplands adjacent to suitable aquatic habitat shall be conducted within the 30-day period prior to beginning any work activities. If no nests are found, no further consideration for western pond turtle nests shall be required. If nest sites are located during preconstruction surveys within or adjacent to the proposed work areas, the nest site plus a 50-foot buffer around the nest site shall be fenced with orange construction fence until eggs hatch and young turtles disperse to the adjacent creeks. In addition, if nest(s) are located during surveys, moth balls (naphthalene) shall be sprinkled around the vicinity of the nest (no closer than 5 feet) to mask human scent and discourage predators. Remediation grading within the 50-foot buffer area shall be delayed until the young leave the nest or as otherwise advised and directed by the CDFW, the agency responsible for overseeing the protection of the pond turtle. If the CDFW allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of the CDFW.

Implementation of these mitigation measures would reduce impacts to western pond turtle to a level regarded as less than significant pursuant to CEQA.

13.5 Impact BIO-3. Implementation of the Remediation Project May Have a Potentially Significant Adverse Impact on Special-Status Bats (Potentially Significant)

The Townsend's big-eared bat and pallid bat are both California "species of special concern." The large valley oak trees in the project area provide potential maternity and roosting habitat for these species. Noise and grading disturbance adjacent to potential maternity and roosting habitat could impact bats. Impacts to Townsend's big-eared bat and pallid bat are regarded as potentially significant pursuant to the CEQA.

These impacts could be mitigated to levels considered less than significant pursuant to CEQA.

13.6 Mitigation Measure BIO-3. Mitigation for Potential Impacts to Special-Status Bats

In order to avoid impacts to roosting special-status bats, a tree survey shall be conducted no more than 15 days prior to commencement of remediation work activities. Tree cavities and exfoliated bark that could provide roosting or maternity habitat shall be examined for evidence of use by bats. All bat surveys shall be conducted by a biologist with known experience surveying for bats. If roosts are found, a determination should be made whether there are young. If a maternity site is found, impacts to that tree will be avoided by establishment of a 50-foot non-disturbance buffer until the young have reached independence. If roost sites are found it is likely that no action is warranted. Eviction is unnecessary as valley oak trees will not be directly impacted by the Remediation Project. Remediation near oak trees may scare bats from roost sites if they are uncomfortable with those activities. Under this circumstance no harm would come to the roosting bats. They will remain or will simply relocate to other suitable roosting sites.

Implementation of this mitigation measure would reduce impacts to Townsend's big-eared bat and pallid bat to a level considered less than significant pursuant to CEQA.

13.7 Impact BIO-4. Implementation of the Remediation Project May Have a Potentially Significant Adverse Impact on American Badger (Potentially Significant)

An American badger was identified multiple times in the Western Remediation Area north of Little Tassajara Creek during 2019 surveys. Because badgers are known to be present on the Santa Margarita Ranch, badgers potentially could be present in burrows when the Remediation Project commences. Grading could entrap badgers in their burrows if they were present when excavation commences. ***Accordingly, impacts to American badger are regarded as potentially significant pursuant to the CEQA.***

Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

13.8 Mitigation Measure BIO-4. Mitigation for Potential Impacts to American Badger

To ensure there are not direct impacts to American badger, a qualified biologist would conduct a preconstruction den survey no more than 21 days prior to site grading. If a potential den is located, infrared camera stations will be set up and maintained for three (3) consecutive nights at

the potential den openings prior to initiation of grading/work activities to determine the status of the potential dens. If American badger is not found to be using the den, the burrow it will be filled, and site grading may proceed in the vicinity of this burrow(s) unhindered. However, if American badger is found using a den site within the area of proposed grading, provided it is not a natal den, the badger will be passively and humanely evicted from its den if it could be impacted by grading or other remediation work activities. If a natal den is found, then an eviction plan will be prepared and submitted to CDFW for discussion and approval. Evictions shall not occur until CDFW approves the passive eviction plan.

Implementation of these mitigation measures would reduce impacts to American badger to a level considered less than significant pursuant to CEQA.

13.9 Impact BIO-5. Implementation of the Remediation Project May Result in Adverse Impacts to Nesting Special-Status Bird Species and Nesting Common Bird Species (Potentially Significant)

Red-tailed hawk, sharp-shinned hawk, Cooper's hawk (*Accipiter cooperii*), white-tailed kite, red-shouldered hawk, bald eagle, and golden eagle are all known from the area and potentially nest on or within a zone of influence of the project area. Common song birds (passerine birds) could also nest in the project area. All of these birds including their eggs and young are protected under the Migratory Bird Treaty Act (50 CFR 10.13). Similarly, birds and their eggs and young are also protected pursuant to California Fish and Game Code Sections 3503, 3503.5. Bald eagle and golden eagle are also fully protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). Any project-related impacts to these species, their eggs or young would be considered a significant adverse impact. Potential impacts to these species from the Remediation Project include "take" (to kill) or disturbance to nesting birds that results in inattentiveness or abandonment of nests, either that can cause egg failure or the death of nestlings. In the absence of surveys conducted the year that the Remediation Project would commence, impacts to nesting raptors and song birds from the Remediation Project are regarded as potentially significant pursuant to CEQA.

This impact could be mitigated to a level considered less than significant pursuant to CEQA.

13.10 Mitigation Measure BIO-5. Mitigation for Potential Impacts to Nesting Birds

To avoid impacts to most nesting birds known from the region, nesting surveys shall be conducted no more than 30 days and again no more than 15 days prior to commencing with project activities if this work would commence between February 1 and August 31. The nesting survey shall include an examination of all trees within the Remediation Project site and within 500 feet of the project area (i.e., within a zone of influence of nesting birds). The zone of influence includes those areas outside the project area where birds could be disturbed by earth-moving vibrations and/or other construction-related noise. The Bald and Golden Eagle Protection Act has special provisions for nesting eagles. As these eagles start nest construction or reconstruction in December/January, a survey for nesting bald and golden eagles should be completed in February, and again in March. The survey area (i.e., zone of influence) should be extended to 1 mile from project area boundaries to the extent that this is practical or possible (private properties may preclude surveys on these properties).

The USFWS's 2017 *Recommended Buffer Zones for Ground-based Human Activities around Nesting Sites of Golden Eagles in California and Nevada* recommends that non-disturbance buffers for projects of similar magnitude of the Remediation Project as 660 feet from active bald eagle nests.

Other guidance from the USFWS that is based on activity-specific guidelines are published in the 2007 Bald and Golden Eagle Management Guidelines found on the USFWS' webpage regarding recommended eagle nest non-disturbance buffers at: https://www.fws.gov/birds/management/managed-species/eagle-management.php. The USFWS recommends "adherence to these guidelines to ensure that bald and golden eagle populations will continue to be sustained." Buffers than are recommended in areas that have similar activities as the Remediation Project are approximately 660 feet in diameter from active eagle nests. If any eagle nest is discovered within one mile of the Remediation Project, a qualified raptor biologist with known experience working with eagles shall recommend a buffer of appropriate dimensions that are based upon the geographic position of the nest site in relation to the Remediation Project. For example, hills create geographic barriers when between an eagle's nest and the job site, a barrier that would shield nesting eagles from disturbance that could otherwise occur in straight lines to the eagle nest. Other ameliorating circumstances also would allow for smaller nest protection buffers, but under all circumstances the buffer would be no smaller than 660 feet from any active eagle nest. This buffer would be maintained until eaglets fledge the nest and are independent of the nest, or until the nesting attempt is otherwise completed.

If other bird species are identified nesting on or within the zone of influence of the Remediation Project, a qualified biologist with extensive experience establishing effective nesting buffers shall prescribe a temporary protective nest buffer around the active nest(s). The nest buffer shall be staked with orange construction fencing where the buffer(s) extend into the project area. Typically, adequate nesting buffers are 75 feet from the nest site or nest tree dripline for small birds (passerines) and 300 to 500 feet for sensitive nesting birds that include several raptor species known the region of the project area.

Following completion of nesting surveys, if nesting birds are identified on or within a zone of influence of the remediation areas, a qualified ornithologist/biologist that frequently works with nesting birds shall prescribe adequate nesting buffers to protect the nesting birds from harm while the Remediation Project is constructed. No remediation or earth-moving activity shall occur within any established nest protection buffer prior to September 1 unless it is determined by the qualified ornithologist/biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed. In the region of the project area, most species complete nesting by mid-July. This date can be significantly earlier or later and would have to be determined by the qualified biologist. At the end of the nesting cycle, when fledging young are independent of the nest (i.e., do not return to the nest at night) as determined by a qualified biologist, the temporary nesting buffers may be removed, and construction may commence in the nesting buffers without further regard for the nest site.

Implementation of these mitigation measures would reduce impacts to nesting birds to a level regarded as less than significant pursuant to CEQA.

14. REFERENCES

Baldwin D.H, Goldman D.H., Keil D.J., Patterson R, Rosatti T.J., Wilken D.H. (ed.). 2012. The Jepson Manual Vascular Plants of California: Second Edition. University of California Press, Berkeley. 1568 pps.

Beier, P. and S. Loe. 1992. "In my experience." a checklist for evaluating impacts to wildlife movement corridors. Wildlife Society Bulletin Vol. 20(4): 6.

Bulger, J.B., N.J. Scott, Jr., R.B. Seymour. 2003. Terrestrial activity and conservation of adult California red-legged frogs *Rana aurora draytonii* in coastal forests and grasslands. Biological Conservation. Vol. 110. Issue 1. March 2003. pps. 85-95.

Bury, B. 2005. Unpublished presentation given at the Pacific pond turtle workshop. Presented by the SF Bay Area Chapter of The Wildlife Society. April 16, 2005.

CDFW (California Department of Fish and Wildlife). 2016. Complete list of amphibian, reptile, bird and mammal species in California. Published September 2008; updated May 2016.

CDFW (California Department of Fish and Wildlife). 2018. California Sensitive Natural Communities List. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline October 15, 2018.

CDFW. 2018. Protocols for surveying and evaluating impacts to special-status native plant populations and sensitive natural communities. State of California. California Natural Resources Agency. Department of Fish and Wildlife. March 20, 2018. 12 pps.

CDFW. 2018. California Sensitive Natural Communities List. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline October 15, 2018.

CNDDB (California Natural Diversity Data Base). 2019. RareFind 5. Computer printout for special-status species within a nine-quad search of the project area. California Natural Heritage Division, California Department of Fish and Wildlife, Sacramento, CA.

CNPS (California Native Plant Society). 2001. Inventory of rare and endangered plants of California (sixth edition). Rare plant scientific advisory committee, David P. Tibor, convening editor. California Native Plant Society. Sacramento, CA. x+338 pps.

Corps (U.S. Army Corps of Engineers). 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report, Y-87-1. US Army Engineer Waterways Experiment Station. Vicksburg, Mississippi. 100 pp.

Corps (U.S. Army Corps of Engineers). 2008. Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2). Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center. September 2008.

Corps (U.S. Army Corps of Engineers) and the U.S. Environmental Protection Agency. 2015. Clean Water Rule: Definition of ‘‘Waters of the United States’’; Final Rule. Federal Register / Vol. 80, No. 124/ June 29, 2015.

County of San Luis Obispo 2010. County of San Luis Obispo General Plan Conservation and Open Space Element. May. Available online at: https://www.slocounty.ca.gov/getattachment/ba01754b-50ac-4c13-ba16-1a9eb9d56a01/Conservation-and-Open-Space-Element.aspx.

County of San Luis Obispo 2016. *Guidelines for Biological Resource Assessments – Guidelines for Biological Consultants*. Planning & Building Department, County of San Luis Obispo, 976 Osos Street, Room 200, San Luis Obispo, California 93408

Environmental Laboratory. 1987. U.S. Army Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, MS.

Fitch, H. S. 1936. Amphibians and reptiles of the Rogue River Basin, Oregon. Am. Midl. Nat. 17:634-652.

Fitch, H. S. 1941. The feeding habits of California garter snakes. Calif. Dept. Fish and Game 27:1-32.

Hickman, J. (ed.). 1993. The Jepson manual: higher plants of California. University of California Press, Berkeley. 1400 pp.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-heritage program, California Department of Fish and Game, Sacramento, CA., 156 pp.

Holland, V.L. & D.J. Keil. 1995. California vegetation. Kendall/Hunt Publishing Company.

Jennings, M.R., M.P. Hayes, and D.C. Holland. 1992. A petition to the U.S. Fish and Wildlife Service to place the California red-legged frog (*Rana aurora draytonii*) and the western pond turtle (*Clemmys marmorata*) on the list of endangered and threatened wildlife and plants. 21 pp.

Jennings, M.R., M.P. Hayes, and Research Section, Animal Management Division, Metro Washington Park Zoo. 1994. Amphibian and Reptile Species of Special Concern in California. Final Report Submitted to the California Department of Fish & Game, Inland Fisheries Division. Rancho Cordova, CA. 255 pp. November 1.

Fellers, Gary M. and Patrick M. Kleeman. 2007. California Red-Legged Frog *(Rana draytonii)* Movement and Habitat Use: Implications for Conservation. *Western Ecological Research Center, USGS, Point Reyes National Seashore, Point Reyes, California* 94956 *USA.*

Journal of Herpetology. Vol. 31, No. 2, Pages 276-286, 2007. Copyright 2007 Society for the Study of Amphibian and Reptiles.

Miller, M. R. 1944. Ecologic relations and adaptations of the limbless lizards of the genus Anniella. Ecological Monographs 14(3):271–289.

Nussbaum, R. A., E. D. Brodie, Jr., and R. M. Storm. 1983. Amphibians and reptiles of the Pacific Northwest. Univ. Press of Idaho. 332 pp.

Potter, D., H. Bartosh, G. Dangl, et.al. July 2018. *Clarifying the Conservation Status of Northern California Black Walnut (*Juglans hindsii*) Using Microsatellite Markers.* Accessed online at https://bioone.org/journals/Madro%C3%B1o/volume-65/issue-3/0024-9637-65.3.131/Clarifying-the-Conservation-Status-of-Northern-California-Black-Walnut-iJuglans/10.3120/0024-9637-65.3.131.full.

Rincon Consultants, Inc. 2008. Final Environmental Impact Report for the Santa Margarita Ranch Agricultural Residential Cluster Subdivision Project and Future Development Program. Prepared for the County of San Luis Obispo Department of Planning and Permitting. July. State Clearinghouse No. 2004111112

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evans. 2009. A manual of California vegetation. Second edition. Published by the California Native Plant Society. 1300 pps.

Shuford, W.D. 1993. The Marin County breeding bird atlas: A distributional and natural history of coastal California birds. California Avifauna Series 1. Bushtit Books, Bolinas, California.

Stebbins, R.C. 2003. Western reptiles and amphibians. Third edition. Houghton Mifflin Company, New York, NY. 533 pps.

Tatarian, P. J. 2005. Movement Patterns of the California Red-legged Frogs (*Rana Aurora Draytonii*) in an Inland California Environment (Master's Thesis, Sonoma State University).

USFWS (U.S. Fish & Wildlife Service). 1992. Endangered and threatened wildlife and plants; commencement of status review for a petition to list the western pond turtle and California red-legged frog. Federal Register, Vol. 57, No. 193, pp. 45761-45762.

USFWS (U.S. Fish & Wildlife Service). 2000. Guidelines for conducting and reporting botanical inventories for federally-listed proposed and candidate plants. January 2000.

USFWS (U.S. Fish & Wildlife Service). 2002. Recovery plan for the California red-legged frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon. Viii + 173 pps.

USFWS (U.S. Fish & Wildlife Service). 2007. National bald eagle management guidelines. Department of Interior, US Fish and Wildlife Service, Washington, DC, USA.

USFWS (U.S. Fish & Wildlife Service). 2017. Recommended buffer zones for ground-based human activities around nesting sites of golden eagles in California and Nevada national bald eagle management guidelines. U.S. Fish and Wildlife Service, Pacific Southwest Region, Migratory Birds Program. December 2017.

USFWS (U.S. Fish & Wildlife Service). 2007. National Bald Eagle Management Guidelines. Department of Interior, US Fish and Wildlife Service, Washington, DC, USA.

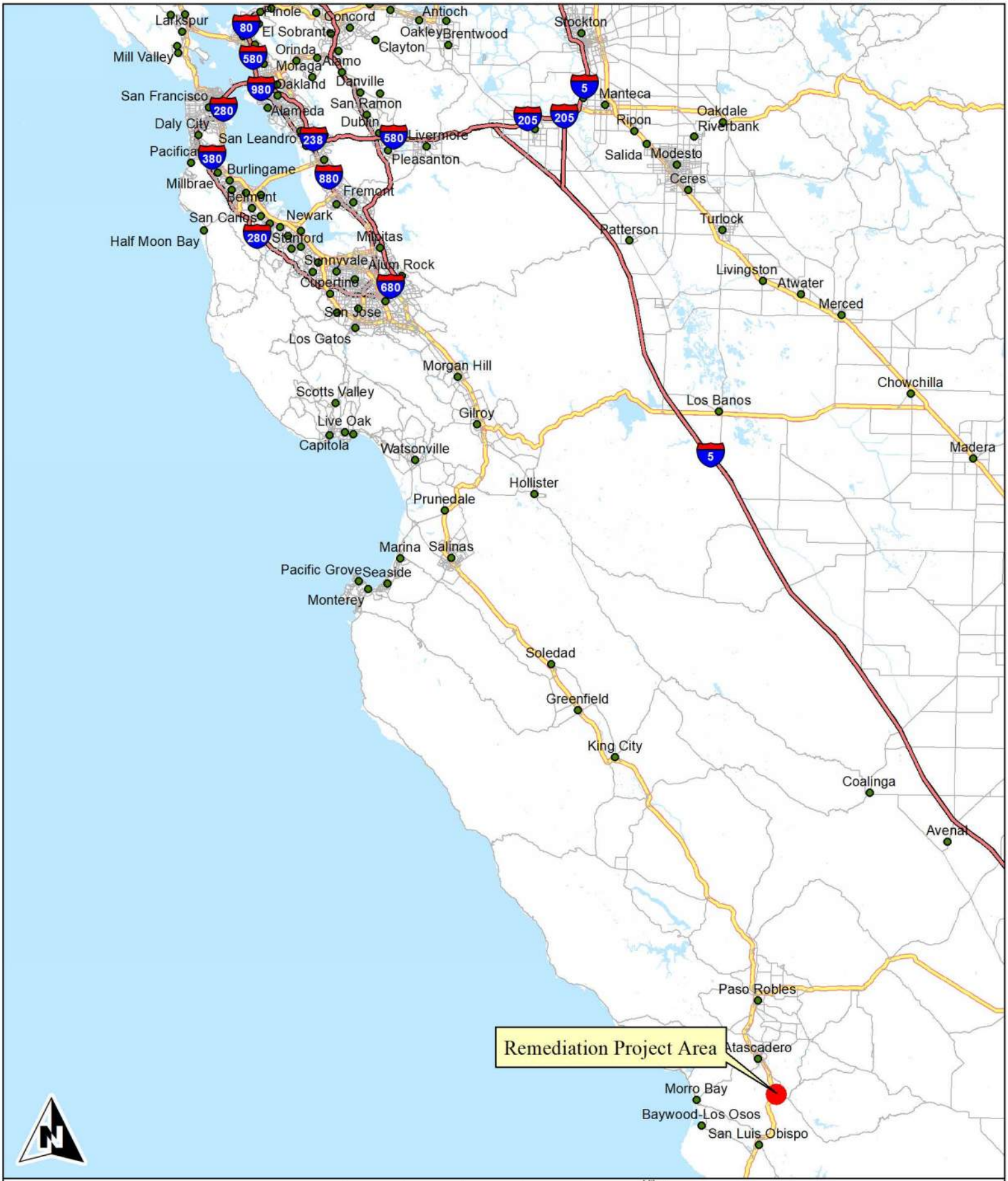
USFWS (U.S. Fish & Wildlife Service). 2017. U.S. Fish and Wildlife Service Pacific Southwest Region. Migratory Birds Program. *Recommended Buffer Zones for Human Activities around Nesting Sites of Bald Eagles in California and Nevada*. December 2017.

Werschkul, D. F., and M. T. Christensen. 1977. Differential predation by *Lepomis macrochirus* on the eggs and tadpoles of *Rana*. Herpetologica 33:237-241.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988. California's Wildlife. Vol. I-III. California Department of Fish and Game, Sacramento, California. Updated by California Wildlife Habitat Relationships System Program Staff, January 2000.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1990a. California's wildlife, volume II, birds. State of California, the Resources Agency, Department of Fish and Game, Sacramento, California.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1990b. California's wildlife, volume III, mammals. State of California, the Resources Agency, Department of Fish and Game, Sacramento, California.



Miles
0 5 10 20 30 40 50

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

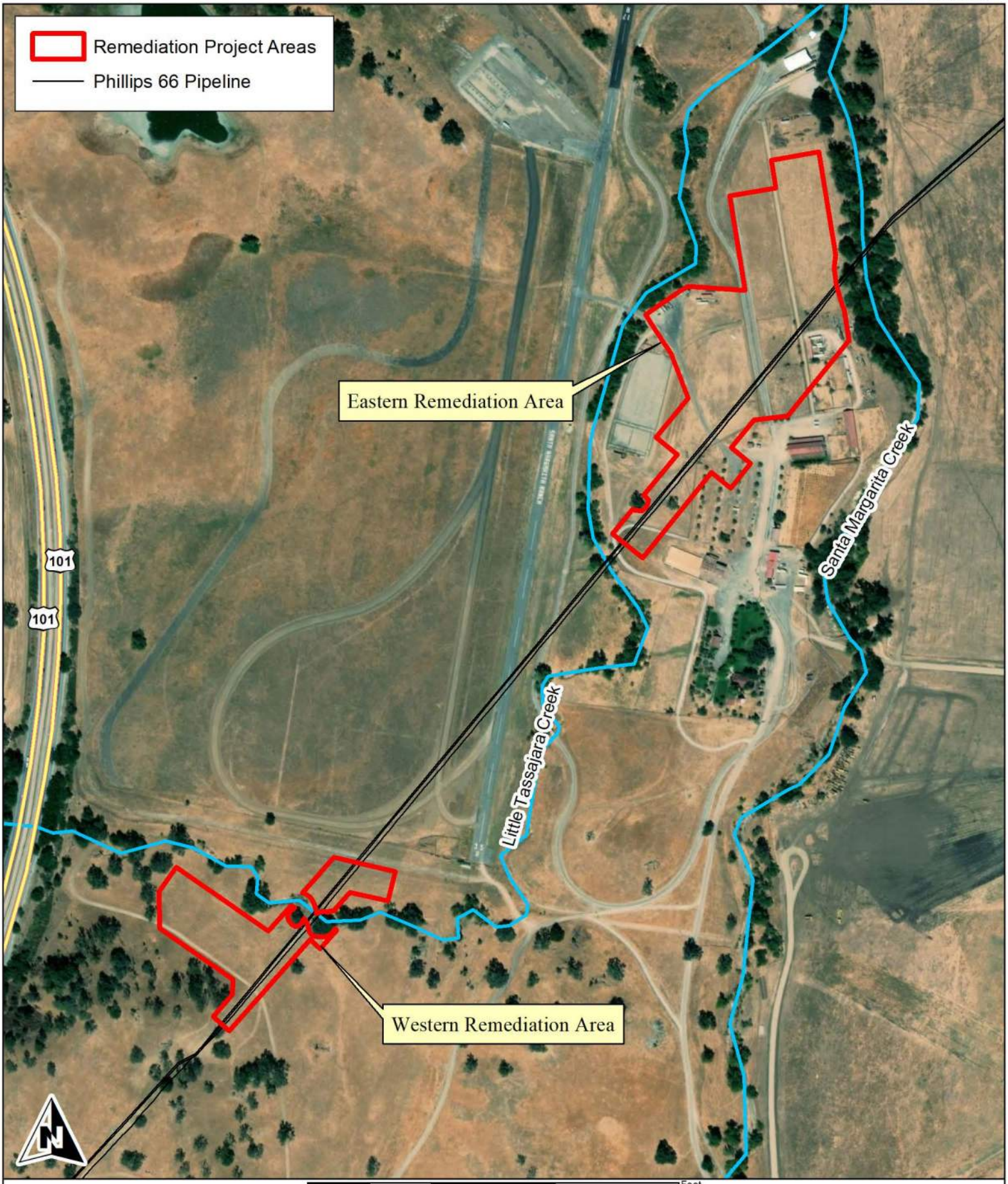
Figure 1. Santa Margarita Remediation Project Area
Regional Map
Santa Margarita, California

County: San Luis Obispo
Map Preparation Date: February 14, 2020

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 2. Santa Margarita Remediation Project Areas Location Map
Santa Margarita, California

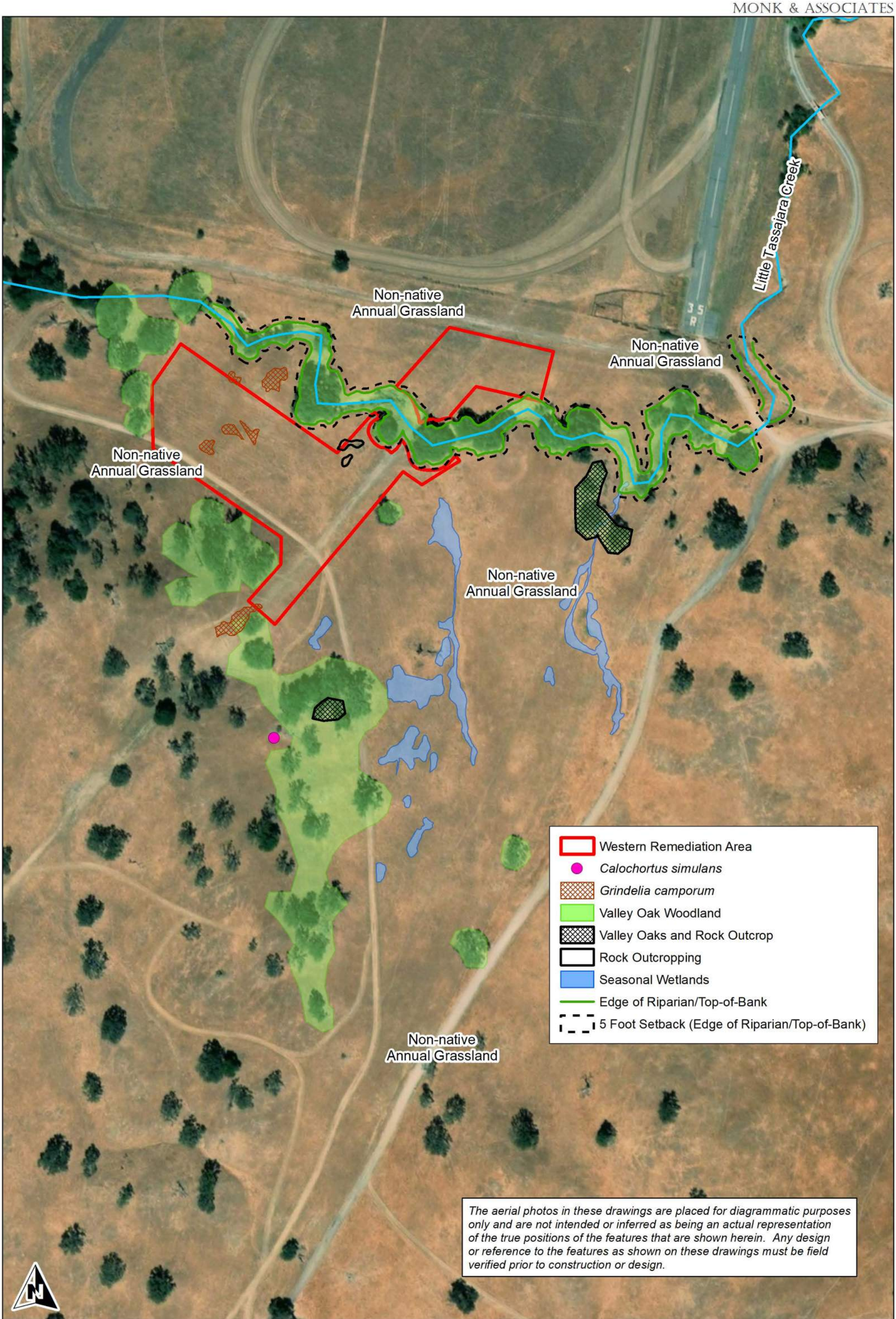
35.398614 -120.615695
Land Grant
7.5-Minute Santa Margarita quadrangle
Aerial Photograph Source: ESRI
Map Preparation Date: February 14, 2020



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 3. Aerial Photograph of the
Santa Margarita Remediation Project Areas
Santa Margarita, California

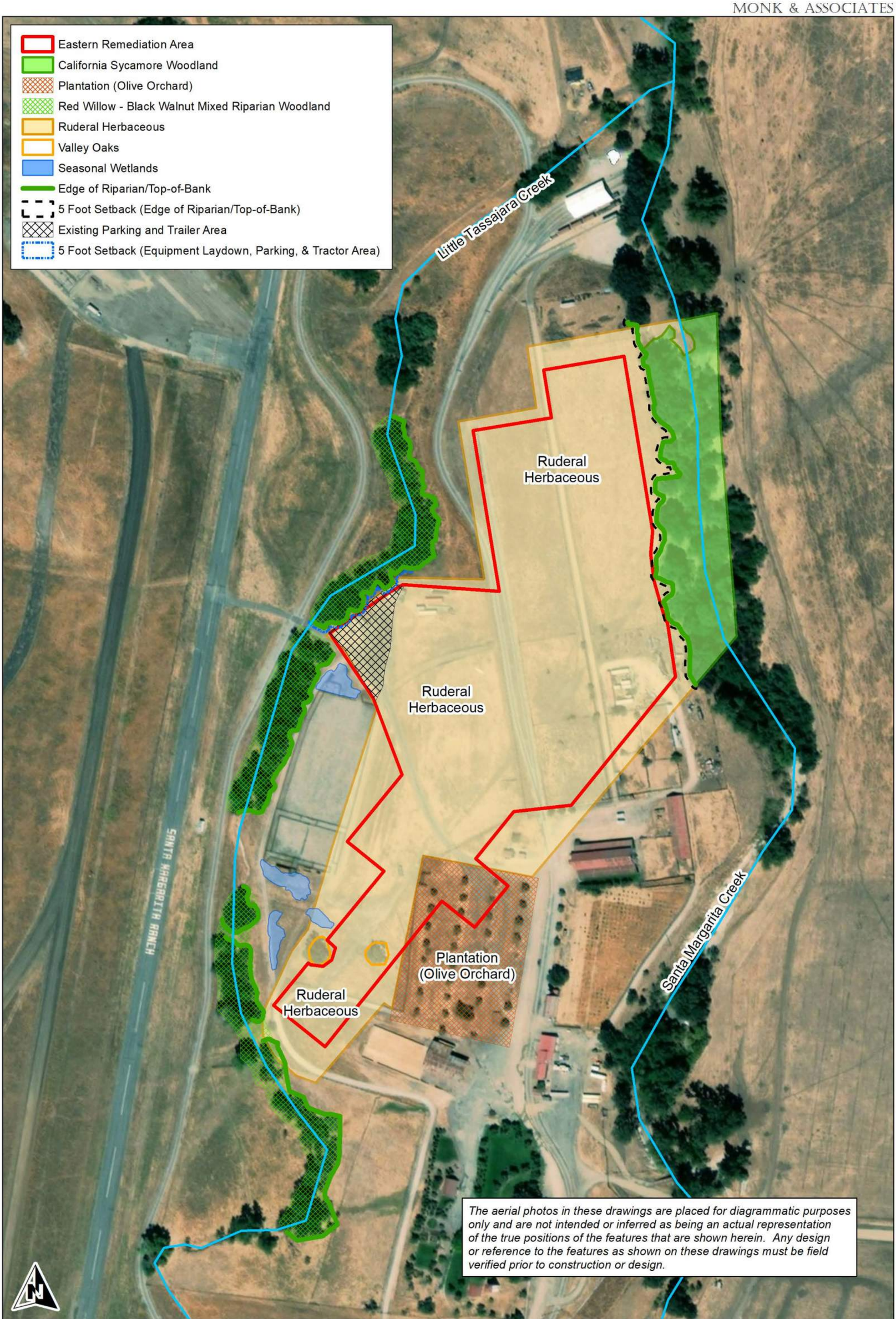
Aerial Photograph Source: ESRI
Map Preparation Date: February 14, 2020



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 4. Vegetation Communities Within the Western Remediation Work Area
Santa Margarita Project Area
Santa Margarita, California

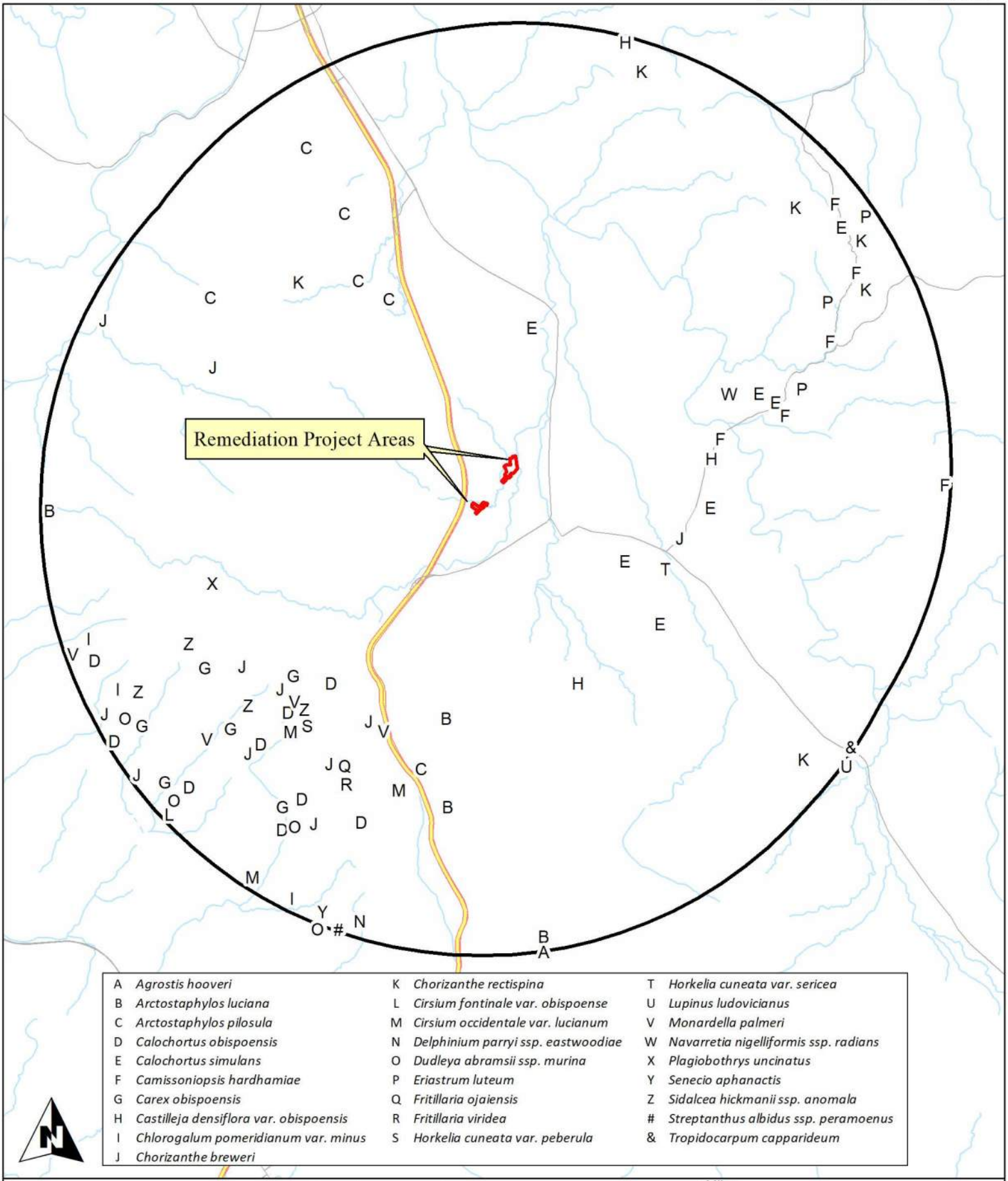
Aerial Photograph Source: ESRI
Map Preparation Date: April 2, 2020



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 5. Vegetation Communities Within the Eastern Remediation Work Area
Santa Margarita Project Area
Santa Margarita, California

Aerial Photograph Source: ESRI
Map Preparation Date: April 2, 2020



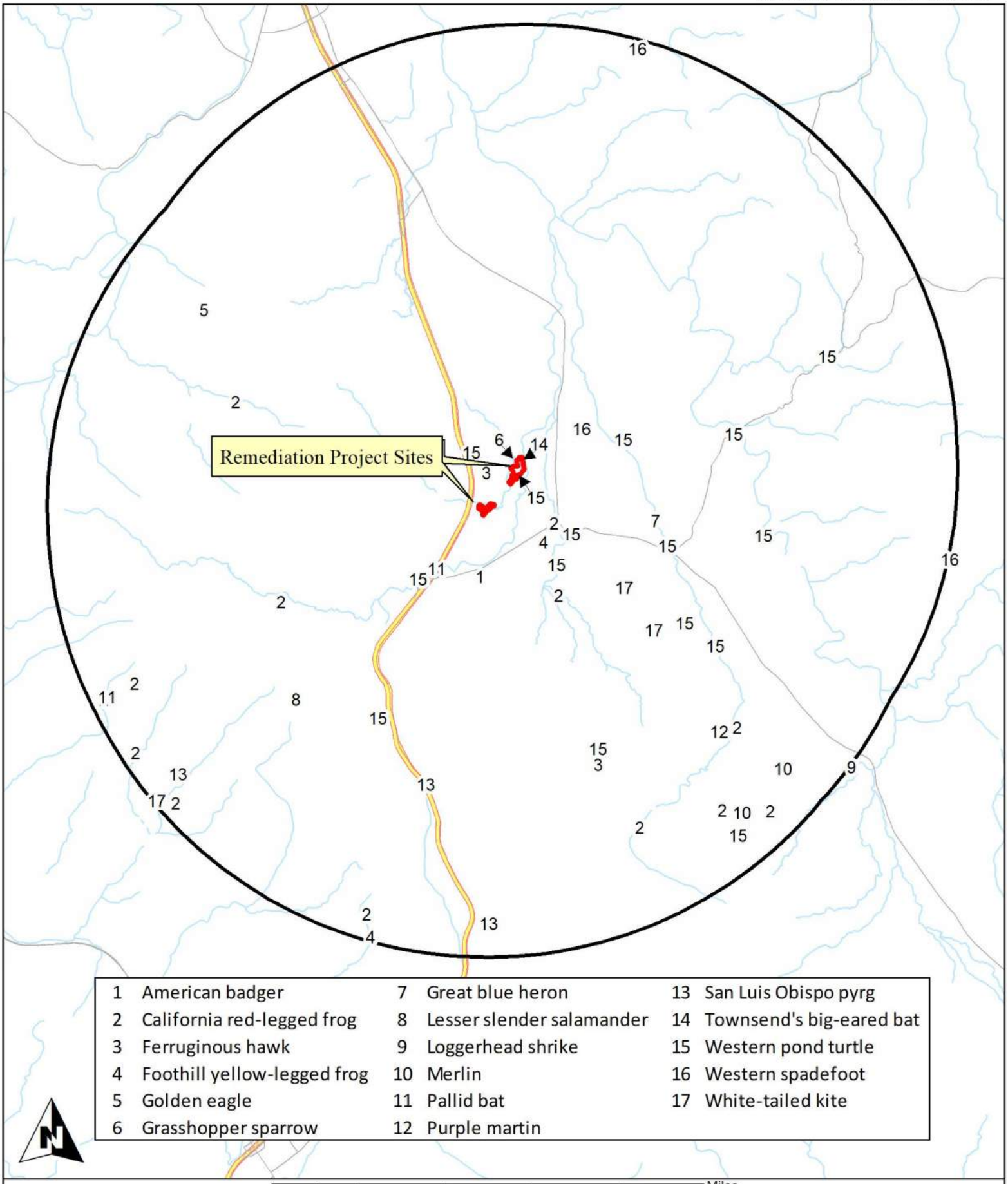
A	*Agrostis hooveri*	K	*Chorizanthe rectispina*	T	*Horkelia cuneata var. sericea*
B	*Arctostaphylos luciana*	L	*Cirsium fontinale var. obispoense*	U	*Lupinus ludovicianus*
C	*Arctostaphylos pilosula*	M	*Cirsium occidentale var. lucianum*	V	*Monardella palmeri*
D	*Calochortus obispoensis*	N	*Delphinium parryi ssp. eastwoodiae*	W	*Navarretia nigelliformis ssp. radians*
E	*Calochortus simulans*	O	*Dudleya abramsii ssp. murina*	X	*Plagiobothrys uncinatus*
F	*Camissoniopsis hardhamiae*	P	*Eriastrum luteum*	Y	*Senecio aphanactis*
G	*Carex obispoensis*	Q	*Fritillaria ojaiensis*	Z	*Sidalcea hickmanii ssp. anomala*
H	*Castilleja densiflora var. obispoensis*	R	*Fritillaria viridea*	#	*Streptanthus albidus ssp. peramoenus*
I	*Chlorogalum pomeridianum var. minus*	S	*Horkelia cuneata var. peberula*	&	*Tropidocarpum capparideum*
J	*Chorizanthe breweri*				

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Miles
0 0.5 1 2 3 4 5

Figure 6a. Closest Known Records for Special-Status Plants Within 5 Miles of the Santa Margarita Remediation Project Area.

Map Preparation Date: February 14, 2020
5-Mile Radius
Source: CDFW, California Natural Diversity Data Base, 2020



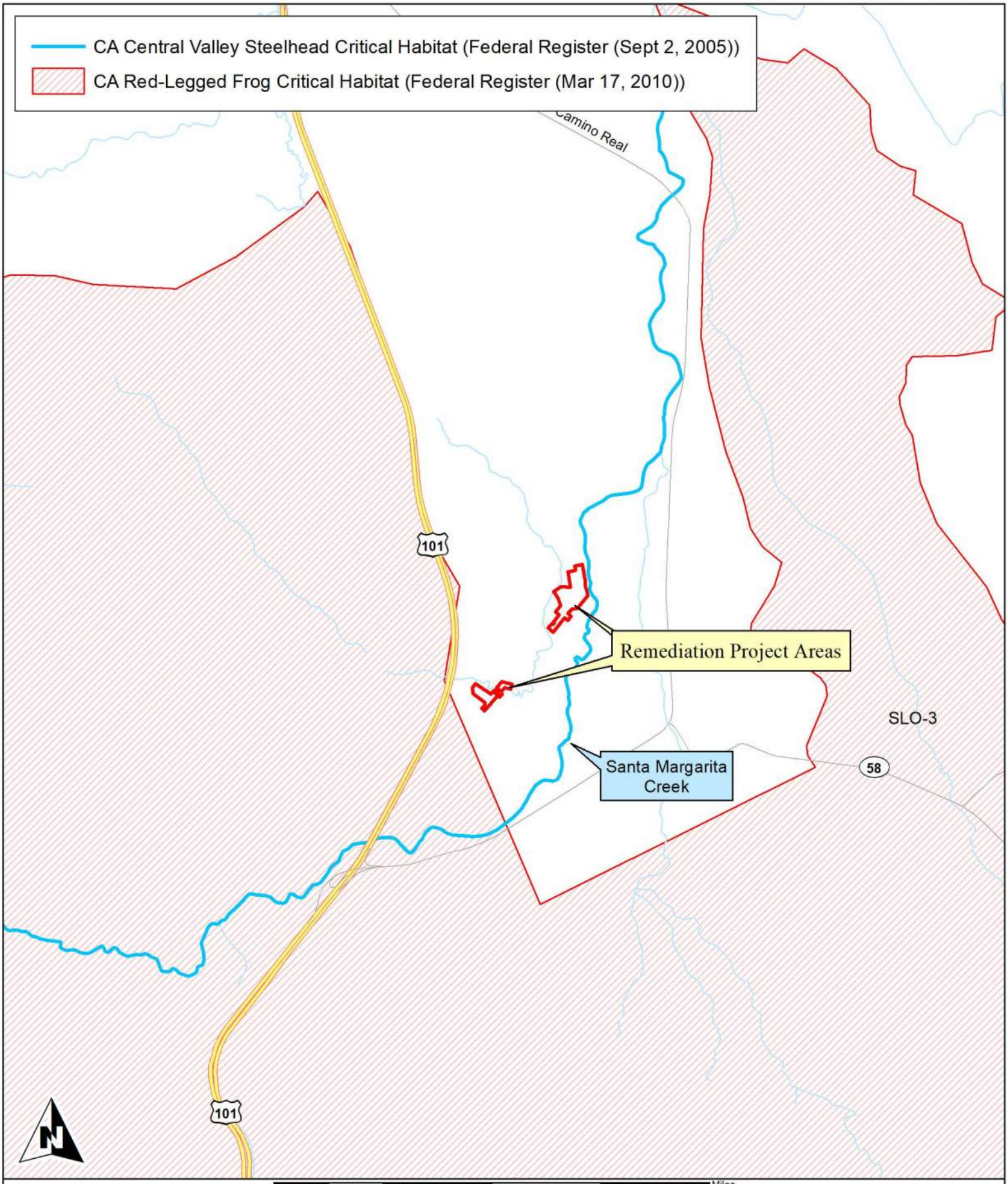
1	American badger	7	Great blue heron	13	San Luis Obispo pyrg
2	California red-legged frog	8	Lesser slender salamander	14	Townsend's big-eared bat
3	Ferruginous hawk	9	Loggerhead shrike	15	Western pond turtle
4	Foothill yellow-legged frog	10	Merlin	16	Western spadefoot
5	Golden eagle	11	Pallid bat	17	White-tailed kite
6	Grasshopper sparrow	12	Purple martin		

Miles
0 0.5 1 2 3 4 5

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 6b. Closest Known Records for Special-Status Animals Within 5 Miles of the Santa Margarita Remediation Project Area

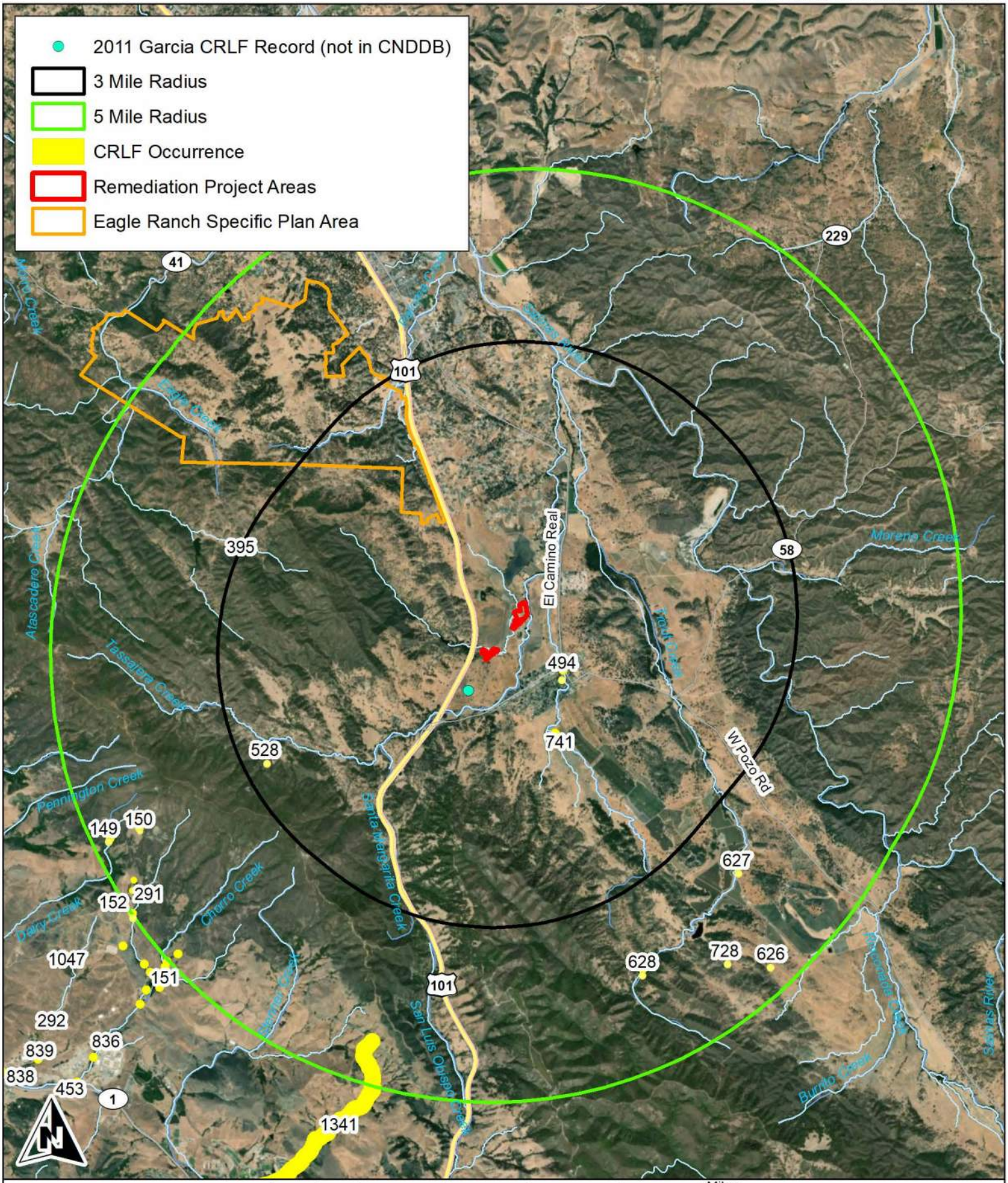
Map Preparation Date: February 14, 2020
5-Mile Radius
Source: CDFW, California Natural Diversity Data Base, 2020



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 7. USFWS Critical Habitat in the Vicinity of the Santa Margarita Remediation Project Areas

Source: USFWS
County: San Luis Obispo
Map Preparation Date: February 14, 2020

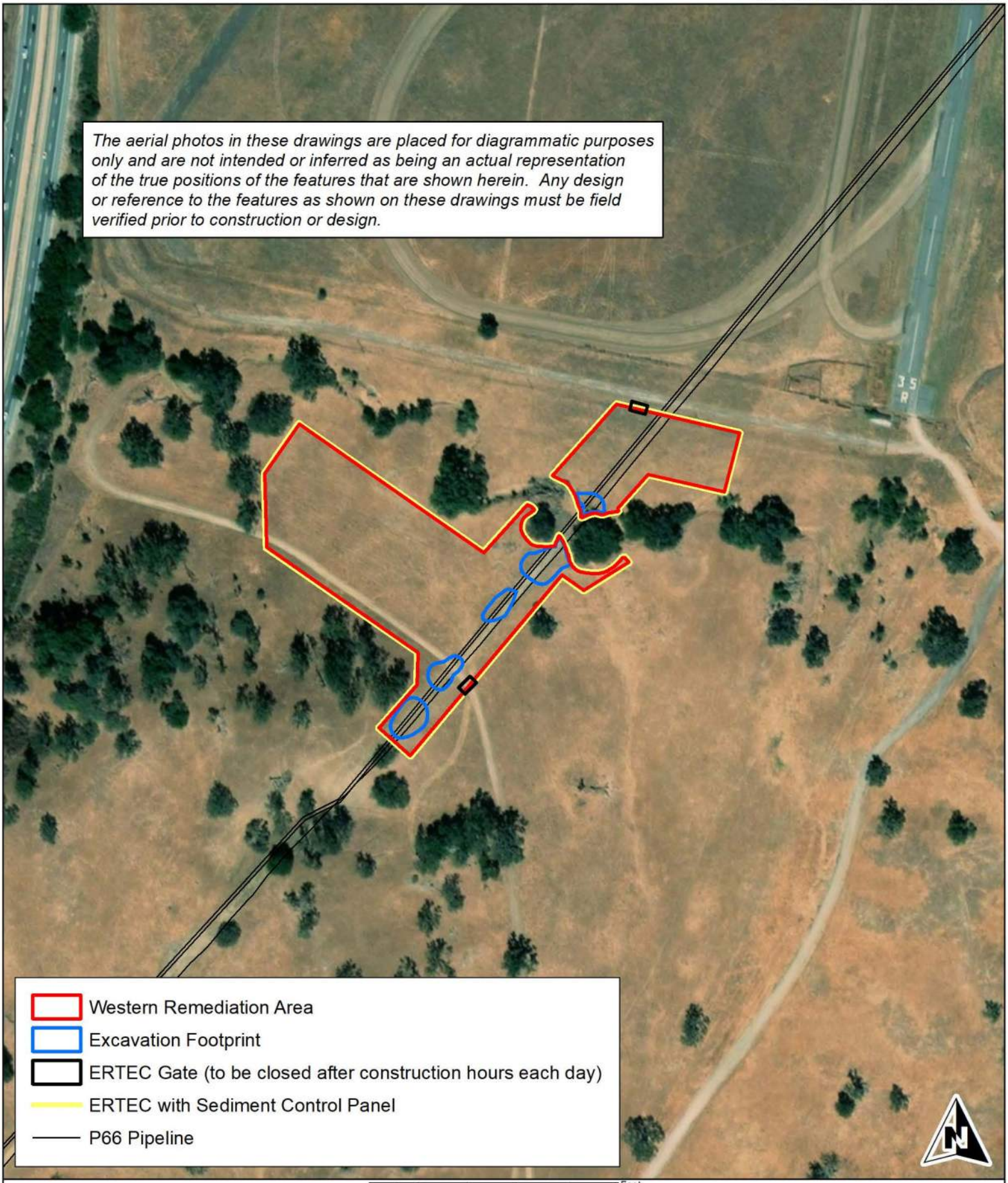


Miles
0 0.5 1 2 3 4 5

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 8. Known CRLF CNDDB Species Records Within 5 Miles of the Santa Margarita Remediation Project Areas

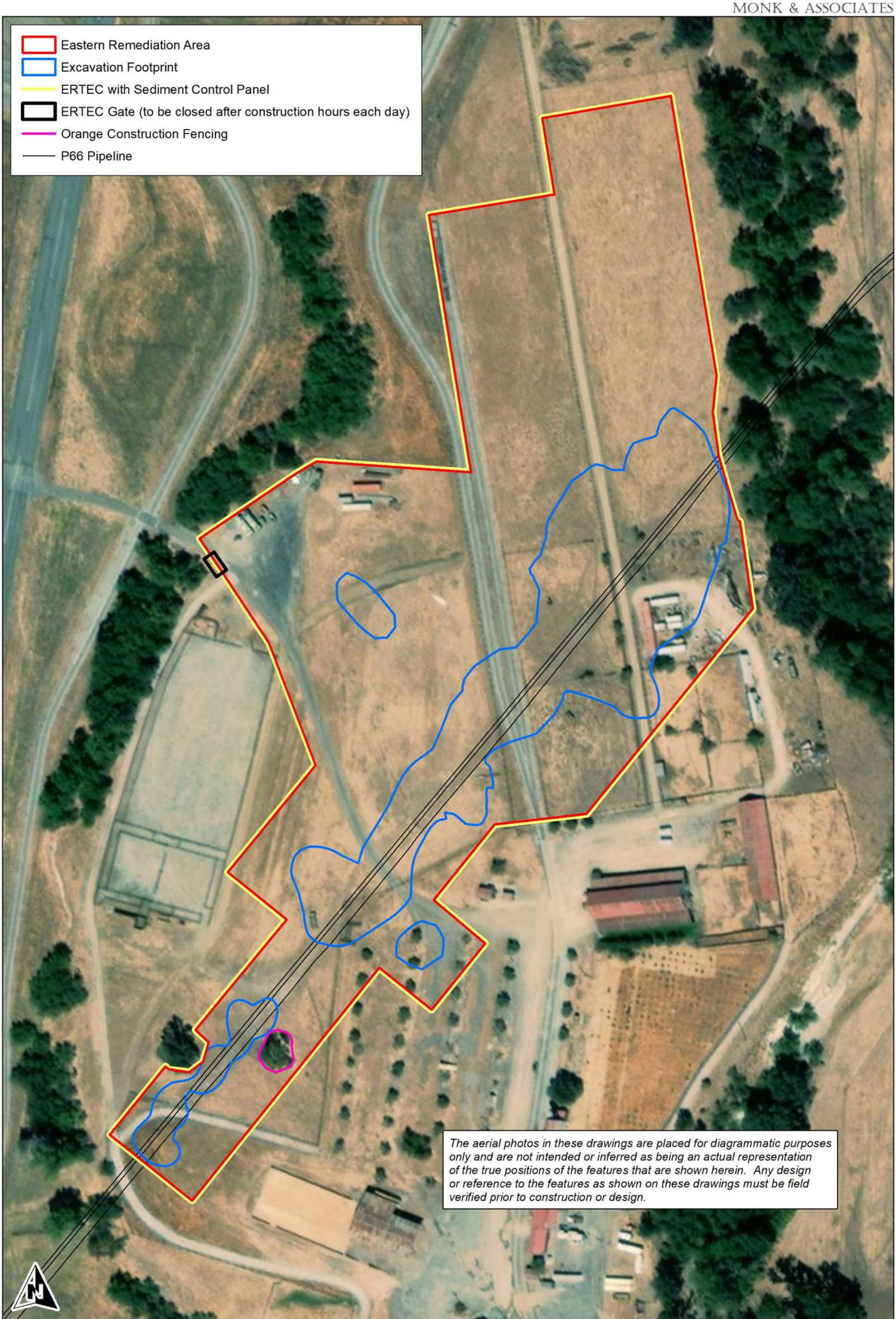
Map Preparation Date:
February 14, 2020
Source: CDFW, California Natural Diversity Data Base, 2020



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Exhibit A. Western Remediation Area
Santa Margarita Project Area
Santa Margarita, California

Aerial Photograph Source: ESRI
Map Preparation Date: April 2, 2020



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Exhibit B. Eastern Remediation Area
Santa Margarita Project Site
Santa Margarita, California

Aerial Photograph Source: ESRI
Map Preparation Date: April 2, 2020

Table 1

Plant Species Observed on the Phillips 66 Santa Margarita Remediation Project Area

Ferns and Allies

Equisetaceae

Equisetum sp.	Horsetail

Pteridaceae

Pentagramma triangularis	Goldenback fern

Angiosperms - Dicots

Amaranthaceae

**Amaranthus albus*	Tumble pigweed

Anacardiaceae

Toxicodendron diversilobum	Poison-oak

Apiaceae

**Anthriscus caucalis*	Bur-chervil
Bowlesia incana	Hoary bowlesia
**Conium maculatum*	Poison hemlock
**Scandix pecten-veneris*	Venus' needle

Apocynaceae

Asclepias eriocarpa	Indian milkweed
Asclepias fascicularis	Narrow-leaf milkweed

Asteraceae

Achillea millefolium	Common yarrow
Achyrachaena mollis	Blow-wives
Ambrosia psilostachya	Western ragweed
**Anthemis cotula*	Mayweed
Artemisia douglasiana	California mugwort
Baccharis pilularis subsp. consanguinea	Coyote brush
Baccharis salicifolia subsp. salicifolia	Mule fat
**Carduus pycnocephalus subsp. pycnocephalus*	Italian thistle
**Centaurea melitensis*	Tocalote
**Centaurea solstitialis*	Yellow starthistle
**Cichorium intybus*	Chicory
**Cirsium vulgare*	Bull thistle
Deinandra pentactis	Salinas River tarplant
Erigeron canadensis	Horseweed
Grindelia camporum	Great Valley gumplant
Hemizonia congesta subsp. luzulifolia	White hayfield tarweed
**Lactuca serriola*	Prickly lettuce
Lagophylla ramosissima	Lagophylla
Lasthenia gracilis	Common goldfields
Lasthenia minor	Coast goldfields
**Logfia gallica*	Narrowleaf cottonrose
Madia sativa	Coast tarweed
**Matricaria discoidea*	Pineapple-weed

Table 1

Plant Species Observed on the Phillips 66 Santa Margarita Remediation Project Area

Microseris douglasii subsp. tenella	Tender silverpuffs
**Pseudognaphalium luteoalbum*	Everlasting cudweed
Psilocarphus tenellus	Slender woolly-marbles
**Senecio vulgaris*	Common groundsel
**Silybum marianum*	Milk thistle
**Soliva sessilis*	Field burrweed
**Sonchus asper subsp. asper*	Prickly sow-thistle
Xanthium strumarium	Cocklebur
Boraginaceae	
Amsinckia intermedia	Common fiddleneck
Amsinckia menziesii	Common fiddleneck
Heliotropium curassavicum var. oculatum	Heliotrope
Plagiobothrys bracteatus	Bracted popcornflower
Plagiobothrys nothofulvus	Rusty popcornflower
Plagiobothrys stipitatus var. micranthus	Great Valley popcornflower
Plagiobothrys trachycarpus	Rough-fruit popcornflower
Brassicaceae	
**Capsella bursa-pastoris*	Shepherd's purse
Cardamine oligosperma	Few-seed bittercress
**Hirschfeldia incana*	Short-podded mustard
**Lepidium campestre*	Field pepperweed
Lepidium dictyotum	Sharp-podded peppergrass
Lepidium nitidum	Shining peppergrass
**Sinapis arvensis*	Wild mustard
**Sisymbrium altissimum*	Tumble mustard
Caprifoliaceae	
Symphoricarpos albus var. laevigatus	Common snowberry
Caryophyllaceae	
**Cerastium glomeratum*	Mouse-ear chickweed
**Silene gallica*	Windmill-pink
**Spergularia rubra*	Ruby sand-spurrey
**Stellaria media*	Common chickweed
Chenopodiaceae	
**Chenopodium sp.*	Goosefoot
**Chenopodium vulvaria*	Goosefoot
Convolvulaceae	
Cuscuta californica var. californica	Dodder
Cornaceae	
Cornus glabrata	Brown dogwood
Crassulaceae	
Crassula aquatica	Water pygmy-weed
Crassula connata	Sandy pygmy-weed
**Crassula tillaea*	Mossy pygmy-weed

* Indicates a non-native species

Table 1

Plant Species Observed on the Phillips 66 Santa Margarita Remediation Project Area

Cucurbitaceae	
Marah fabacea	Wild cucumber
Euphorbiaceae	
Croton setiger	Turkey mullein
Fabaceae	
Acmispon americanus var. americanus	Spanish-clover
Acmispon brachycarpus	Short podded lotus
Acmispon wrangelianus	Common trefoil
Lupinus bicolor	Bicolored lupine
Lupinus nanus	Sky lupine
**Medicago polymorpha*	California burclover
**Melilotus indicus*	Annual yellow sweetclover
Trifolium ciliolatum	Foothill clover
Trifolium depauperatum var. amplectens	Pale sack clover
**Trifolium dubium*	Little hop clover
**Trifolium hirtum*	Rose clover
Trifolium microcephalum	Small-headed clover
**Trifolium repens*	White clover
Trifolium variegatum var. major	Large variegated clover
**Vicia sativa*	Common vetch
Fagaceae	
Quercus agrifolia var. agrifolia	Coast live oak
Quercus lobata	Valley oak
Gentianaceae	
Cicendia quadrangularis	Timwort
Zeltnera davyi	Davy's Centaury
Geraniaceae	
**Erodium botrys*	Broad-leaf filaree
**Erodium cicutarium*	Red-stem filaree
**Erodium moschatum*	White-stem filaree
**Geranium dissectum*	Cut-leaf geranium
Juglandaceae	
Juglans hindsii	Northern California black walnut
Lamiaceae	
**Lamium amplexicaule*	Deadnettle
**Marrubium vulgare*	Horehound
**Mentha spicata*	Spearmint
Stachys ajugoides	Bugle hedge-nettle
Trichostema lanceolatum	Vinegar weed
Limnanthaceae	
Limnanthes douglasii subsp. nivea	Douglas' meadowfoam
Lythraceae	
Lythrum californicum	California loosestrife

* Indicates a non-native species

Table 1

Plant Species Observed on the Phillips 66 Santa Margarita Remediation Project Area

**Lythrum hyssopifolia*	Hyssop loosestrife
Malvaceae	
**Malva parviflora*	Cheeseweed
Montiaceae	
Calandrinia menziesii	Red maids
Claytonia perfoliata	Miner's lettuce
Montia fontana	Blinks
Myrsinaceae	
**Lysimachia arvensis*	Scarlet pimpernel
Onagraceae	
Clarkia affinis	Clarkia
Clarkia purpurea subsp. quadrivulnera	Four spot
Epilobium brachycarpum	Summer cottonweed
Epilobium ciliatum	Hairy willow-herb
Orobanchaceae	
Castilleja exserta	Purple Owl's Clover
Triphysaria pusilla	Owl's-clover
Phrymaceae	
Mimulus guttatus	Seep monkeyflower
Plantaginaceae	
Callitriche marginata	Winged water-starwort
Collinsia heterophylla var. heterophylla	Chinese houses
**Kickxia spuria*	Round-leaved toadflax
**Plantago lanceolata*	English plantain
**Plantago major*	Common plantain
**Veronica anagallis-aquatica*	Water speedwell
Veronica peregrina subsp. xalapensis	Purslane speedwell
**Veronica persica*	Persian speedwell
Platanaceae	
Platanus racemosa	Western sycamore
Polemoniaceae	
Navarretia mitracarpa	Paso Robles navarretia
Polygonaceae	
**Polygonum aviculare*	Common knotweed
Pterostegia drymarioides	Woodland threadstem
**Rumex acetosella*	Sheep sorrel
**Rumex conglomeratus*	Green dock
**Rumex crispus*	Curly dock
**Rumex pulcher*	Fiddle dock
Ranunculaceae	
Clematis ligusticifolia	Western clematis
Delphinium variegatum subsp. variegatum	Royal larkspur
**Ranunculus muricatus*	Spiny-fruit buttercup

* Indicates a non-native species

Table 1

Plant Species Observed on the Phillips 66 Santa Margarita Remediation Project Area

Rhamnaceae	
Frangula californica subsp. californica	California coffeeberry
Rhamnus ilicifolia	Hollyleaf redberry
Rosaceae	
Aphanes occidentalis	Western lady's-mantle
Cercocarpus betuloides var. betuloides	Birch-leaf mountain mahogany
Rosa californica	California rose
**Rubus armeniacus*	Himalayan blackberry
Rubiaceae	
Galium aparine	Goose grass
**Galium murale*	Tiny bedstraw
Galium porrigens var. tenue	Climbing bedstraw
Salicaceae	
Populus fremontii subsp. fremontii	Fremont cottonwood
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Saxifragaceae	
Lithophragma sp.	Woodland star
Scrophulariaceae	
Scrophularia californica	California figwort
Urticaceae	
Urtica dioica subsp. holosericea	Hoary nettle
**Urtica urens*	Dwarf nettle
Verbenaceae	
Phyla nodiflora	Common frog-fruit
Verbena lasiostachys var. lasiostachys	Western verbena
Violaceae	
Viola pedunculata	Johnny-jump-up
Vitaceae	
Vitis californica	California wild grape
Angiosperms -Monocots	
Agavaceae	
Chlorogalum pomeridianum var. pomeridianum	Soap plant
Araceae	
Lemna sp.	Duckweed
Cyperaceae	
Eleocharis macrostachya	Creeping spikerush
Iridaceae	
Sisyrinchium bellum	Western blue-eyed grass

* Indicates a non-native species

Table 1

Plant Species Observed on the Phillips 66 Santa Margarita Remediation Project Area

Juncaceae	
Juncus balticus subsp. ater	Baltic rush
Juncus bufonius	Toad rush
Juncus occidentalis	Slender rush
Juncus patens	Spreading rush
Juncus phaeocephalus	Brown-headed rush
Juncus phaeocephalus var. phaeocephalus	Brownheaded rush
Juncus tenuis	Slender rush
Juncus xiphioides	Iris-leaved rush
Liliaceae	
Calochortus simulans	La Panza mariposa lily
Poaceae	
**Avena barbata*	Slender wild oat
**Briza minor*	Small quaking grass
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Bromus madritensis subsp. madritensis*	Foxtail chess
**Bromus madritensis subsp. rubens*	Red brome
Danthonia californica	California oatgrass
**Festuca bromoides*	Brome fescue
**Festuca perennis*	perennial ryegrass
Hordeum brachyantherum	Meadow barley
**Hordeum marinum subsp. gussoneanum*	Mediterranean barley
**Hordeum murinum subsp. leporinum*	Hare barley
Phalaris lemmonii	Lemmon's canary grass
**Poa annua*	Annual bluegrass
**Poa bulbosa subsp. vivipara*	Bulbous bluegrass
Poa secunda	Secund bluegrass
Stipa pulchra	Purple needlegrass
Themidaceae	
Brodiaea terrestris subsp. terrestris	Dwarf brodiaea
Zannichelliaceae	
Zannichellia palustris	Horned pondweed

* Indicates a non-native species

Table 2
Wildlife Species observed on Phillips 66 Santa Margarita Remediation Project Area

Amphibians	
Sierran treefrog	*Pseudacris sierra*
American bullfrog	*Lithobates catesbeiana*
Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Pacific gopher snake	*Pituophis catenifer catenifer*
Birds	
Northern flicker	*Colaptes auratus*
Turkey vulture	*Cathartes aura*
Canada goose	*Branta canadensis*
Wood duck	*Aix sponsa*
Mallard	*Anas platyrhynchos*
Bufflehead	*Bucephala albeola*
White-tailed kite	*Elanus leucurus*
Bald eagle	*Haliaeetus leucocephalus*
Sharp-shinned hawk	*Accipiter striatus*
Cooper's hawk	*Accipiter cooperii*
Red-shouldered hawk	*Buteo lineatus*
Red-tailed hawk	*Buteo jamaicensis*
Golden eagle	*Aquila chrysaetos*
American kestrel	*Falco sparverius*
California quail	*Callipepla californica*
Killdeer	*Charadrius vociferus*
Rock pigeon	*Columba livia*
Eurasian collared-dove	*Streptopelia decaocto*
Mourning dove	*Zenaida macroura*
Greater roadrunner	*Geococcyx californianus*
Anna's hummingbird	*Calypte anna*
Rufous hummingbird	*Selasphorus rufus*
Belted kingfisher	*Megaceryle alcyon*
Acorn woodpecker	*Melanerpes formicivorus*
Red-breasted sapsucker	*Sphyrapicus ruber*
Nuttall's woodpecker	*Picoides nuttallii*
Hairy woodpecker	*Picoides villosus*
Western wood-pewee	*Contopus sordidulus*
Black phoebe	*Sayornis nigricans*
Say's phoebe	*Sayornis saya*
Loggerhead shrike	*Lanius ludovicianus*
California scrub jay	*Aphelocoma californica*
Yellow-billed magpie	*Pica nuttalli*
American crow	*Corvus brachyrhynchos*
Common raven	*Corvus corax*
Tree swallow	*Tachycineta bicolor*
Cliff swallow	*Petrochelidon pyrrhonota*
Chestnut-backed chickadee	*Poecile rufescens*

Table 2

Wildlife Species observed on Phillips 66 Santa Margarita Remediation Project Area

Oak titmouse	*Baeolophus inornatus*
Bushtit	*Psaltriparus minimus*
White-breasted nuthatch	*Sitta carolinensis*
Bewick's wren	*Thryomanes bewickii*
Ruby-crowned kinglet	*Regulus calendula*
Western bluebird	*Sialia mexicana*
American robin	*Turdus migratorius*
Northern mockingbird	*Mimus polyglottos*
European starling	*Sturnus vulgaris*
American pipit	*Anthus rubescens*
Yellow-rumped warbler	*Setophaga coronata*
California towhee	*Pipilo crissalis*
Lark sparrow	*Chondestes grammacus*
Savannah sparrow	*Passerculus sandwichensis*
White-crowned sparrow	*Zonotrichia leucophrys*
Golden-crowned sparrow	*Zonotrichia atricapilla*
Dark-eyed junco	*Junco hyemalis*
Red-winged blackbird	*Agelaius phoeniceus*
Western meadowlark	*Sturnella neglecta*
Brewer's blackbird	*Euphagus cyanocephalus*
Brown-headed cowbird	*Molothrus ater*
Bullock's oriole	*Icterus bullockii*
House finch	*Haemorhous mexicanus*
Lesser goldfinch	*Spinus psaltria*

Mammals

Western gray squirrel	*Sciurus griseus*
Brush rabbit	*Sylvilagus bachmani*
Audubon's cottontail	*Sylvilagus audubonii*
Black-tailed jackrabbit	*Lepus californicus*
California ground squirrel	*Otospermophilus beecheyi*
Botta's pocket gopher	*Thomomys bottae*
Columbian black-tailed deer	*Odocoileus hemionus ssp. columbianus*
California meadow vole	*Microtus californicus*
Raccoon	*Procyon lotor*
American badger	*Taxidea taxus*
Striped skunk	*Mephitis mephitis*
Wild pig	*Sus scrofa*

Table 3

Special-Status Plants Known to Occur Within a 9-Quad Search of the Santa Margarita Remediation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Agavaceae					
Chlorogalum pomeridianum minus Dwarf soaproot	Fed: - State: - CNPS: Rank 1B.2	May-August	Chaparral (serpentinite).	9 Quad Search - Closest record located 5.0 miles southwest of project site (Occurrence No. 21).	None. No suitable habitat. Not observed during appropriately timed surveys. No impact expected.
Apiaceae					
Eryngium aristulatum hooveri Hoover's button-celery	Fed: - State: - CNPS: Rank 1B.1	July-July	Vernal pools.	9 Quad Search - Closest record located 9.9 miles southwest of project site (Occurrence No. 1).	None. No Eryngiums observed onsite during appropriately timed surveys. No impact expected.
Sanicula maritima Adobe sanicle	Fed: - State: CR CNPS: Rank 1B.1	February-May	Chaparral; coastal prairie; meadows; valley and foothill grassland; [clay and serpentine].	9 Quad Search - Closest record located 8.3 miles southwest of project site (Occurrence No. 1).	None. Not observed during appropriately timed surveys. No impact expected.
Asteraceae					
Calycadenia villosa Dwarf calycadenia	Fed: - State: - CNPS: Rank 1B.1	May-October	Chaparral; cismontane woodland; meadows; valley and foothill grassland; [rocky].	9 Quad Search - Closest record located 10.5 miles northeast of project site (Occurrence No. 11).	None. Not observed during appropriately timed surveys. No impact expected.
Centromadia parryi congdonii Congdon's tarplant	Fed: - State: - CNPS: Rank 1B.2	May-November	Valley and foothill grassland (alkaline).	9 Quad Search - Closest record located 7.1 miles southwest of project site (Occurrence No. 77).	None. No alkaline habitats. Not observed during appropriately timed surveys. No impact expected.
Cirsium fontinale obispoense Chorro Creek bog thistle	Fed: FPE State: CE CNPS: Rank 1B.2	February-July	Chaparral; cismontane woodland; [serpentinite seeps].	9 Quad Search - Closest record located 5.5 miles southwest of project site (Occurrence No. 3).	None. No serpentinite. Not observed during appropriately timed surveys. No impact expected.

Table 3

Special-Status Plants Known to Occur Within a 9-Quad Search of the Santa Margarita Remediation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Cirsium occidentale lucianum Cuesta Ridge thistle	Fed: - State: - CNPS: Rank 1B.2	April-June	Chaparral (serpentinite; rocky slopes and roadsides)	Closest record located 2.9 miles southwest of the site (Occurrence No. 4)	None. No serpentinite or chaparral. All known occurrences from serpentinite on Cuesta Ridge. Not observed during appropriately timed plant surveys. No impact expected.
Layia heterotricha Pale-yellow layia	Fed: - State: - CNPS: Rank 1B.1	March-June	Cismontane woodland; pinion juniper woodland; valley and foothill grassland; [alkaline or clay].	9 Quad Search - Closest record located 8.8 miles east of project site (Occurrence No. 84).	None. Not observed during appropriately-timed plant surveys. No impact expected.
Layia jonesii Jones' layia	Fed: - State: - CNPS: Rank 1B.2	March-May	Chaparral; valley and foothill grassland; [clay or serpentinite].	9 Quad Search - Closest record located 5.2 miles southwest of project site (Occurrence No. 14).	None. No serpentinite onsite. Not observed during appropriately-timed plant surveys. No impact expected.
Senecio aphanactis Chaparral ragwort	Fed: - State: - CNPS: Rank 2B.2	January-April	Foothill woodland; coastal scrub; (alkaline).	9 Quad Search - Closest record located 5.7 miles southwest of project site (Occurrence No. 35).	None. No suitable habitat present. Not observed in March or April. No impact expected.
Boraginaceae					
Plagiobothrys uncinatus Hooked popcornflower	Fed: - State: - CNPS: Rank 1B.2	May-May	Chaparral (sandy); cismontane woodland; valley and foothill grassland.	Closest known occurrence is 1990 record located 2.6 miles southwest of the site (Occurrence No. 16)	None. Not observed during appropriately timed plant surveys. No impact expected.
Brassicaceae					
Caulanthus lemmonii Jewelflower	Fed: - State: - CNPS: Rank 1B.2	March-May	Pinyon and juniper woodland; Valley and foothill grassland with rocky slopes (shale, granite, exposed talus).	9 Quad Search - Closest record located 12.5 miles northeast of project site (Occurrence No. 38).	None. No suitable habitat. Not observed during appropriately-timed plant surveys. No impact expected.

Table 3

Special-Status Plants Known to Occur Within a 9-Quad Search of the Santa Margarita Remediation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Streptanthus albidus peramoenus Uncommon jewelflower	Fed: - State: - CNPS: Rank 1B.2	April-June	Chaparral; valley and foothill grassland; [serpentinite].	9 Quad Search - Closest record located 5.7 miles southwest of project site (Occurrence No. 59).	None. No serpentinite or chaparral. Not observed during appropriately-timed plant surveys. No impact expected.
Tropidocarpum capparideum Caper-fruited tropidocarpum	Fed: - State: - CNPS: Rank 1B.1	March-April	Valley and foothill grassland (alkaline hills).	9 Quad Search - Closest record located 5.0 miles southeast of project site (Occurrence No. 21).	None. Not observed during appropriately-timed plant surveys. No impact expected.
Crassulaceae					
Dudleya abramsii bettinae San Luis Obispo serpentine dudylea	Fed: - State: - CNPS: Rank 1B.2	May-July	Chaparral; coastal scrub; valley and foothill grassland; [serpentinite].	9 Quad Search - Closest record located 8.9 miles southwest of project site (Occurrence No. 8).	None. No serpentinite present. Not observed during appropriately-timed plant surveys. No impact expected.
Dudleya abramsii murina San Luis Obispo dudleya	Fed: - State: - CNPS: Rank 1B.3	May-June	Chaparral; cismontane woodland; [serpentinite].	9 Quad Search - Closest record located 4.2 miles southwest of project site (Occurrence No. 16).	None. No serpentinite present. Not observed during appropriately-timed plant surveys. No impact expected.
Dudleya blochmaniae blochmaniae Blochman's dudleya	Fed: - State: - CNPS: Rank 1B.1	April-June	Coastal bluff scrub; coastal scrub; valley and foothill grassland; [rocky, often clay or serpentinite].	9 Quad Search - Closest record located 6.3 miles southwest of project site (Occurrence No. 64).	None. No suitable habitat present. Not observed during appropriately-timed plant surveys. No impact expected.
Cyperaceae					
Carex obispoensis San Luis Obispo sedge	Fed: - State: - CNPS: Rank 1B.2	April-June	Closed-cone coniferous forest; chaparral; coastal prairie; coastal scrub; valley and foothill grassland; [often serpentinite].	Closest record located 2.9 miles southwest of the site (Occurrence No. 10)	None. No sedges observed onsite during appropriately-timed plant surveys. No impact expected.

Table 3

Special-Status Plants Known to Occur Within a 9-Quad Search of the Santa Margarita Remediation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Ericaceae					
Arctostaphylos luciana Santa Lucia manzanita	Fed: - State: - CNPS: Rank 1B.2	February-March	Chaparral (shale).	Closest record located 2.2 miles south of the site (Occurrence No. 8)	None. No manzanitas present on the project site. No impact expected.
Arctostaphylos pechoensis Pecho manzanita	Fed: - State: - CNPS: Rank 1B.2	January-December	Closed-cone coniferous forest; chaparral; coastal scrub; [siliceous shale].	9 Quad Search - Closest record located 5.0 miles south of project site (Occurrence No. 13).	None. No manzanitas present on project site. No impact expected.
Arctostaphylos pilosula Santa Margarita manzanita	Fed: - State: - CNPS: Rank 1B.2	December-Mar-	Closed-cone coniferous forest; chaparral; [shale].	Closest record located 2.1 miles south of the site (Occurrence No. 51)	None. No manzanitas present on the project site. No impact expected.
Fabaceae					
Astragalus didymocarpus milesianus Two-seeded milkvetch	Fed: - State: - CNPS: Rank 1B.2	March-June	Coastal scrub (clay)	9 Quad Search - Closest record located 6.0 miles west of project site (Occurrence No. 9).	None. No suitable habitat. Not observed during appropriately timed surveys. No impact expected.
Lupinus ludovicianus San Luis Obispo County lupine	Fed: - State: - CNPS: Rank 1B.2	April-July	Chaparral; cismontane woodland; [carbonate].	9 Quad Search - Closest record located 5.8 miles southeast of project site (Occurrence No. 24).	None. No suitable habitat. Not observed during appropriately timed surveys. No impact expected.
Trifolium hydrophilum Saline clover	Fed: - State: - CNPS: Rank 1B.2	April-June	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools. 0-300 m.	9 Quad Search - Closest record located 9.3 miles southwest of project site (Occurrence No. 1).	None. Not observed during appropriately timed surveys. No impact expected.

Table 3

Special-Status Plants Known to Occur Within a 9-Quad Search of the Santa Margarita Remediation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Juncaceae					
Juncus luciensis Santa Lucia dwarf rush	Fed: - State: - CNPS: Rank 1B.2	April-July	Chaparral. Great Basin scrub, Lower montane coniferous forest, Meadows and seeps, Vernal pools	9 Quad Search - Closest record located 7.1 miles west of project site (Occurrence No. 51).	None. Not observed during appropriately-timed plant surveys. No impact expected.
Lamiaceae					
Monardella palmeri Palmer's monardella	Fed: - State: - CNPS: Rank 1B.2	June-August	Chaparral; cismontane woodland; [serpentinite].	Closest record located 2.6 miles south of the site (Occurrence No. 3)	None. Not observed during appropriately timed plant surveys. No impact expected.
Liliaceae					
Calochortus obispoensis San Luis mariposa lily	Fed: - State: - CNPS: Rank 1B.2	May-July	Chaparral; coastal scrub; valley and foothill grassland; [often serpentinite].	Closest record is a 2013 occurrence located 2.5 miles southwest of the site (Occurrence No. 1)	None. No serpentinite onsite. Not observed during appropriately timed plant surveys. No impact expected.
Calochortus simulans La Panza mariposa lily	Fed: - State: - CNPS: Rank 1B.3	April-May	Chaparral; cismontane woodland; valley and foothill grassland; [decomposed granite].	Closest record is a 2016 occurrence located 1.5 miles southeast of the site (Occurrence No. 87)	Low. Found just outside the project area (APE) during appropriately timed plant surveys but none found within the APE. No impacts expected from the proposed project. See text.
Fritillaria ojaiensis Ojai fritillary	Fed: - State: - CNPS: Rank 1B.2	March-May	Broad-leaved upland forest (mesic); chaparral; lower montane coniferous forest; [rocky].	Closest known occurrence is a 1925 record located 2.4 miles south of the site (Occurrence No. 32)	None. Not observed during appropriately timed plant surveys. Record in the area is historic. No impact expected.
Fritillaria viridea San Benito fritillary	Fed: - State: - CNPS: Rank 1B.2	March-May	Chaparral (serpentinite).	Closest record located 2.4 miles southwest of the site (Occurrence No. 5)	None. No chaparral or serpentinite present. Not observed during appropriately-timed plant surveys. No impact expected.

Table 3

Special-Status Plants Known to Occur Within a 9-Quad Search of the Santa Margarita Remediation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Malvaceae					
Sidalcea hickmanii anomala Cuesta Pass checkerbloom	Fed: - State: CR CNPS: Rank 1B.2	May-May	Closed-cone coniferous forest (serpentinite).	Closest record located 2.9 miles southwest of the site (Occurrence No. 2)	None. No serpentinite or coniferous forest present. No impact expected.
Onagraceae					
Camissoniopsis hardhamiae Hardam's evening primrose	Fed: - State: - CNPS: Rank 1B.2	May-May	Chaparral; cismontane woodland; [decomposed carbonate].	Closest record located 2.1 miles east of the site (Occurrence No. 3). This sighting is on sandy soil in oak woodland.	None. No sandy or decomposed carbonate or similar substrate on the project site. Not observed during appropriately timed plant surveys. No impact expected.
Orobanchaceae					
Castilleja densiflora obispoensis San Luis Obispo owl's-clover	Fed: - State: - CNPS: Rank 1B.2	March-May	Sometimes serpentinite. Meadows and seeps. Valley and foothill grassland	Closest record from 1971 located 2.1 miles east of project site (Occurrence No. 63).	None. No serpentinite onsite. Not observed during appropriately-timed plant surveys. No impact expected.
Poaceae					
Agrostis hooveri Hoover's bent grass	Fed: - State: - CNPS: Rank 1B.2	June-June	Chaparral; cismontane woodland; valley and foothill grassland [sandy].	9 Quad Search - Closest record located 4.8 miles south of project site (Occurrence No. 22).	None. No Agrostis observed during May and July surveys. No sandy soils. No impact expected.
Polemoniaceae					
Eriastrum luteum Yellow-flowered woollystar	Fed: - State: - CNPS: Rank 1B.2	May-June	Broad-leaved upland forest; chaparral; cismontane woodland.	Closest record located 2.8 miles east of the site (Occurrence No. 26)	None. Not observed during appropriately timed plant surveys. No impact expected.

Table 3

Special-Status Plants Known to Occur Within a 9-Quad Search of the Santa Margarita Remediation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Navarretia fossalis Morgan's nosegay	Fed: FT State: - CNPS: Rank 1B.1	April-June	Chenopod scrub, marshes and swamps, playas and vernal pools	9 Quad Search - Closest record located 9.9 miles northeast of project site (Occurrence No. 70).	None. Not observed during appropriately-timed plant surveys. No impact expected.
Navarretia nigelliformis radians Shining navarretia	Fed: - State: - CNPS: Rank 1B.2	May-June	Cismontane woodland; valley and foothill grassland; slightly mesic depressions.	Closest record located 2.6 miles northeast of the site (Occurrence No. 75)	None. Not observed during appropriately timed plant surveys. No impact expected.
Polygonaceae					
Chorizanthe aphanantha Irish Hills spineflower	Fed: - State: - CNPS: Rank 1B.1	April-May	Serpentinite scrub and chaparral; 100- 370 M	9 Quad Search - Closest record located 11.3 miles southwest of project site (Occurrence No. 3).	None. No suitable habitat. Not observed during appropriately-timed plant surveys. No impact expected.
Chorizanthe breweri Brewer's spineflower	Fed: - State: - CNPS: Rank 1B.3	May-June	Closed-cone coniferous forest; chaparral; cismontane woodland; coastal scrub; [serpentinite].	Closest known occurrence is a 1938 record located 1.9 miles east of the site (Occurrence No. 48)	None. No scrub or serpentinite onsite; not observed during appropriately timed plant surveys. No impact expected.
Chorizanthe rectispina Straight-awned spineflower	Fed: - State: - CNPS: Rank 1B.3	June-July	Chaparral; cismontane woodland; coastal scrub.	Closest known occurrence is a 1959 record located 2.4 miles northwest of the site (Occurrence No. 9)	None. No chaparral or coastal scrub but suitable woodland habitat present onsite. Not observed during appropriately timed plant surveys. No impact expected.
Ranunculaceae					
Delphinium parryi eastwoodiae Eastwood's larkspur	Fed: - State: - CNPS: Rank 1B.2	April-May	Serpentinite, coastal. Chaparral (openings). Valley and foothill grassland	9 Quad Search - Closest record located 5.8 miles southwest of project site (Occurrence No. 10).	None. No suitable habitat. Not observed during appropriately-timed plant surveys. No impact expected.

Table 3

Special-Status Plants Known to Occur Within a 9-Quad Search of the Santa Margarita Remediation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Delphinium umbraculorum Umbrella larkspur	Fed: - State: - CNPS: Rank 1B.3	May-June	Cismontane woodland (mesic).	9 Quad Search - Closest record located 12.5 miles southeast of project site (Occurrence No. 21).	None. Not observed during appropriately-timed plant surveys. No impact expected.
Rosaceae					
Horkelia cuneata puberula Mesa horkelia	Fed: - State: - CNPS: Rank 1B.1	February-July	Sandy or gravelly. Chaparral (maritime). Cismontane woodland. Coastal scrub	9 Quad Search - Closest record located 3.3 miles southwest of project site (Occurrence No. 51).	None. No suitable habitat present. Not observed during appropriately-timed plant surveys. No impact expected.
Horkelia cuneata sericea Kellogg's horkelia	Fed: - State: - CNPS: Rank 1B.1	April-September	Closed-cone coniferous forest; coastal scrub.	Closest record located 1.8 miles southeast of the site (Occurrence No. 54)	None. No habitat present. No impact expected.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
Rank 1A - Presumed extinct in California
Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
Rank 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)
Rank 1B.2 - Fairly endangered in California (20-80% occurrences threatened)
Rank 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:
Rank 2 - Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 2A - Extirpated in California, common elsewhere
Rank 2B.1 - Seriously endangered in California, but more common elsewhere
Rank 2B.2 - Fairly endangered in California, but more common elsewhere
Rank 2B.3 - Not very endangered in California, but more common elsewhere
Rank 3 - Plants about which we need more information (Review List)
Rank 3.1 - Plants about which we need more information (Review List) Seriously endangered in California
Rank 3.2 - Plants about which we need more information (Review List) Fairly endangered in California
Rank 4 - Plants of limited distribution - a watch list

Table 4

Special-Status Animals Known to Occur Within 9-Quad Search of the Santa Margarita Remediation Project Area

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Invertebrates				
Morro shoulderband (snail) *Helminthoglypta walkeriana*	Fed: FE State: - Other:	Restricted to the coastal sage scrub habitats in the immediate vicinity of Morro Bay. Inhabits the duff beneath Haplopappus, Salvia, Dudleya, and Mesembryanthemum.	Not within 9 quadrangle search. Mapped Critical Habitat around Morro Bay and in the Carizzo Plain. Range is Los Osos area of western SLO County and Carizzo Plain.	None. In western SLO County found in coast bay dune scrub and maritime chaparral. In dense, shrubby, or prostrate vegetation with ground contact. Open non-native annual grasslands of the project site not suitable. No impact expected.
Vernal pool fairy shrimp *Branchinecta lynchi*	Fed: FT State: - Other:	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains. Inhabit static rain-filled/vernal pools, small, clear water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression	9 Quad Search - Located 9.9 miles south of project site. (Occurrence No. 360)	None. No suitable habitat. Wetlands in Remediation Work areas are heavily vegetated swales. No wetlands would be impacted by project.
Insects				
Atascadero June beetle *Polyphylla nubila*	Fed: -- State: - Other:	Known only from sand dunes in Atascadero and San Luis Obispo, San Luis Obispo County.	9 Quad Search - Located 6.8 miles northwest of project site. (Occurrence No. 2)	None. No suitable habitat on site. No impact expected.
Monarch butterfly *Danaus plexippus*	Fed: - State: - Other:	Winters in tall trees along the coast. Prefers eucalyptus, Monterey pine, and Monterey cypress.	2013 record located 7.0 miles south of the site (Occurrence No. 406).	None. No bivouacs known from the area of the Remediation Project. Biologists did not find any bivouacs and ranch personnel do not know of any such important overwintering locations.
Fish				
Steelhead - South Central California Coast E *Oncorhynchus mykiss*	Fed: FT State: CSC Other:	Occupies rivers from Pajaro River, south to the Santa Maria River, including the Carmel River and Salinas River watersheds. Sites must have cool, clear water with at least 18 cm of water for spawning.	9 Quad Search - Located 5.7 miles southwest of project site. (Occurrence No. 21)	Low. There is the possibility Santa Margarita Creek may be used in winter months for migration but creeks dry during summer. No impacts to creek from remediation project.

Table 4

Special-Status Animals Known to Occur Within 9-Quad Search of the Santa Margarita Remediation Project Area

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Amphibians				
Lesser slender salamander *Batrachoseps minor*	Fed: State: Other: CSC	Inhabits moist locations in forests of mixed oak, tanbark oak, sycamore, and laurel above 1,300 ft. Endemic to California. Found only in a small area in the southern Santa Lucia Mountains of San Luis Obispo County.	1977 record located 3 miles southwest of the site (Occurrence No. 8).	None. Inhabits locations above 1,300 feet which is a higher elevation than the project site provides. Not seen during surveys. No impact expected.
Coast Range newt *Taricha torosa torosa*	Fed: State: CSC Other:	Coastal ranges from Mendocino County to San Diego County. Lives in terrestrial habitats and will migrate over 1 km to breed in ponds, reservoirs and slow moving streams.	2003 record located 3 miles south of the site (Occurrence No. 9).	None. Surveys conducted; negative findings. No impact expected. See text.
Western spadefoot *Spea hammondii*	Fed: -- State: CSC Other:	Found primarily in grassland habitats, but may occur in valley and foothill woodlands. Requires vernal pools, seasonal wetlands, or stock ponds for breeding and egg laying. Eggs are typically laid in March. Eggs hatch and larval metamorphose quickly.	2003 record located 0.7-mile northeast of the site (Occurrence No. 260).	None. Surveys conducted; negative findings. No impact expected. See text.
California red-legged frog *Rana draytonii*	Fed: FT State: CSC Other:	Occurs in lowlands and foothills in deeper pools and streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	2002 record located 0.8-mile southeast of the site (Occurrence No. 494) in Yerba Buena Creek in central Santa Margarita. 2011sighting of 1 adult on the ranch by Garcia & Associates - not in CNDDB.	None. Surveys conducted; negative findings. No impacts expected. See text.
Foothill yellow-legged frog ** *Rana boylii*	Fed: -- State: CE Other:	Found in partially shaded, shallow streams with rocky substrates. Requires perenial pools or flowing water. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	1917 record located 0.5-mile southeast of the site (Occurrence No. 825) in what is now a residential community in central Santa Margarita.	None. Surveys conducted; negative findings. See text. No impacts expected.

Table 4

Special-Status Animals Known to Occur Within 9-Quad Search of the Santa Margarita Remediation Project Area

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Reptiles				
California glossy snake *Arizona elegans occidentalis*	Fed: State: CSC Other:	Found at elevations from sea level to 6000 ft. Nocturnal. Lives in burrows. Habitats: barren desert, creosote flats, sagebrush flats, coastal sage, chaparral, grasslands, oak or pine woodlands. Generally prefers open areas with soft or loamy soil.	9 Quad Search - Located 8.5 miles northeast of project site. (Occurrence No. 42)	Low. No suitable habitat onsite. Regardless, fencing and biological monitoring wil be used to ensure no impacts.
Western pond turtle *Emys marmorata*	Fed: - State: CSC Other:	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying. Occurs in the Central Valley and Contra Costa County.	2002 record located 0.1-mile east of the site (Occurrence No. 1136) in Santa Margarita Creek.	Low. Known from Santa Margarita Creek. Creek will not be affected by remediation project. See Impacts and Mitigation section.
Coast horned lizard *Phrynosoma blainvillii*	Fed: -- State: CSC Other:	Range extends from Northern California to southern San Diego County, California. It frequents areas with abundant, open vegetation such as chaparral or coastal sage scrub with sandy substrates.	9 Quad Search - Located 7.3 miles southwest of project site. (Occurrence No. 583)	Low to none. No suitable habitat or substrate. Not expected to occur. No impact expected.
Northern California legless lizard *Anniella pulchra*	Fed: - State: CSC Other:	Occurs from the southern edge of the San Joaquin River in northern Contra Costa County south to Ventura County. Inhabit sandy soil/dune area with bush lupine and mock heather as dominant plants. Moist soil is essential.	1960 record located 0.3-mile west of the site (Occurrence No. 163). Mapped non-specifically approximately 7 miles south of Atascadero along Highway 101.	None. No suitable habitat onsite. See text. No impact expected.
Birds				
California condor *Gymnogyps californianus*	Fed: FE State: CE Other:	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	9 Quad Search Located 12.9 miles southeast of project site. (Occurrence No. 3)	None. No suitable habitat. Widespread foraging habitat throughout region. No impact expected.

Table 4

Special-Status Animals Known to Occur Within 9-Quad Search of the Santa Margarita Remediation Project Area

Species	*Status	Habitat	Closest Locations	Probability on Project Site
White-tailed kite *Elanus leucurus*	Fed: State: FP Other:	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	2003 record located 1.4 miles southeast of the site (Occurrence No. 73).	Moderate. Potential nesting habitat present. See nesting bird Impacts and Mitigation section.
Golden eagle *Aquila chrysaetos*	Fed: - State: FP Other:	Found in rolling foothill grassland with scattered trees. Nests on cliffs and in large trees in open areas.	9 Quad Search - Located 3.8 miles northwest of project site. (Occurrence No. 141)	Moderate. Potential nesting habitat present. See impact and mitigation section.
Western burrowing owl *Athene cunicularia hypugaea*	Fed: -- State: CSC Other:	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	9 Quad Search - Located 6.3 miles southwest of project site. (Occurrence No. 573)	Low. Not observed during multiple surveys. Surveys would still be necessary. See text.
Least Bell's vireo *Vireo bellii pusillus*	Fed: FE State: CE Other:	Summer resident of southern California. Inhabits low riparian growth in vicinity of water or in dry river bottoms below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	9 Quad Search - Located 15.5 miles west of project site. (Occurrence No. 127)	Low. Potential nesting habitat present. See nesting Impacts and Mitigation section.
Purple martin *Progne subis*	Fed: State: CSC Other:	Inhabits woodlands, low elevation coniferous forest of Douglas fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly, also in human made structures. May avoid heavily grazed areas.	9 Quad Search - Located 3.3 miles southeast of project site. (Occurrence No. 15)	Low. Potential nesting habitat present. See nesting Impacts and Mitigation section.
Grasshopper sparrow *Ammodramus savannarum*	Fed: -- State: CSC Other:	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	2003 record located 0.1-mile north of the site (Occurrence No. 11).	Low. Potential nesting habitat present. See nesting bird Impacts and Mitigation section.

Table 4

Special-Status Animals Known to Occur Within 9-Quad Search of the Santa Margarita Remediation Project Area

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Tricolored blackbird *Agelaius tricolor*	Fed: - State: CC Other: CSC	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	9 Quad Search - Located 5.5 miles southwest of project site. (Occurrence No. 331)	Low. Potential nesting habitat present. See nesting bird Impacts and Mitigation section.
Mammals				
Western red bat *Lasiurus blossevillii*	Fed: State: CSC Other:	Prefers riparian areas where they roost in tree foliage. This bat is occasionally captured in riparian habitats dominated by cottonwoods, oaks, sycamores, and walnuts and is rarely found in desert habitats.	9 Quad Search - Located 14.6 miles southeast of project site. (Occurrence No. 15)	Moderate. See Impacts and Mitigation section in CEQA.
Townsend's big-eared bat *Corynorhinus townsendii townsendii*	Fed: -- State: CSC Other: -	Occurs in humid coastal regions of northern and central California. Roosts in limestone caves, lava tubes, mines, and buildings. Extremely sensitive to disturbance.	2002 record located 0.1-mile north of the site (Occurrence No. 119).	Moderate. See Impacts and Mitigation section in CEQA.
Pallid bat *Antrozous pallidus*	Fed: - State: CSC Other:	Occurs in deserts, grasslands, shrublands, woodlands, and forests. Most common in dry habitats with rocky areas for roosting. Roosts in caves, crevices, mines, and occasionally hollow trees. Night roosts in open areas such as porches and open buildings.	2002 record located 1.1 miles southwest of the site (Occurrence No. 76).	Moderate. See Impacts and Mitigation section in CEQA.
Greater western mastiff bat *Eumops perotis californicus*	Fed: -- State: CSC Other:	Inhabits open habitats including conifer and broad-leaved woodlands, coastal scrub, chaparral, and grassland. Roosts in crevices, high buildings, trees, and tunnels.	9 Quad Search - Located 7.5 miles south of project site. (Occurrence No. 180)	Moderate. See impacts and mitigation section in CEQA.
San Joaquin pocket mouse *Perognathus inornatus inornatus*	Fed: -- State: - Other:	Found in grasslands and open blue oak woodlands. Needs friable soils.	9 Quad Search Located 13.7 miles northeast of project site. (Occurrence No. 35)	None. Recent genetic work has found this mouse has a limited range. No impact expected.

Table 4

Special-Status Animals Known to Occur Within 9-Quad Search of the Santa Margarita Remediation Project Area

Species	*Status	Habitat	Closest Locations	Probability on Project Site
San Joaquin kit fox *Vulpes macrotis mutica*	Fed: FE State: CT Other:	Inhabits open grasslands with scattered shrubs. Needs loose-textured sand soils for burrowing.	1972 record located 11.3 miles northeast of the site (Occurrence No. 984).	None. Project site not in SLO County Standard Mitigation Ratio Area. Overall general region of project site supports oak woodland, which normally is not regarded as San Joaquin kit fox habitat.
American badger *Taxidea taxus*	Fed: - State: CSC Other:	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Need sufficient food, friable soils & open, uncultivated ground. Prey on burrowing rodents. Dig burrows.	Observed on the project site during 2019 site surveys. 2003 record located 0.6-mile south of the site (Occurrence No. 29).	Observed during 2019 site surveys. See Impacts and Mitigation section in CEQA.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FPD - Federally Proposed for delisting

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern
FP - Fully Protected
WL - Watch List. Not protected pursuant to CEQA

** This frog is listed as “endangered” in the Southern Sierra, central, and southern California coasts and “threatened” in the Northern Sierra and Feather River. This frog is not protected pursuant to CESA on the northern coast of California.

Preliminary Jurisdictional Determination
SPN-2005-299560S
Santa Margarita Ranch Remediation Project
Santa Margarita, San Luis Obispo, California
(Eastern Area lat: 35.402016, long: -120.612931)
(Western Area lat: 35.394949, long: -120.591769)

US Army Corps of Engineers

Study Area Boundary

Aquatic features accurate as shown in legend. Waters identified within the Study Area Boundary may be jurisdictional pursuant to Section 404 of the Clean Water Act of 1972.

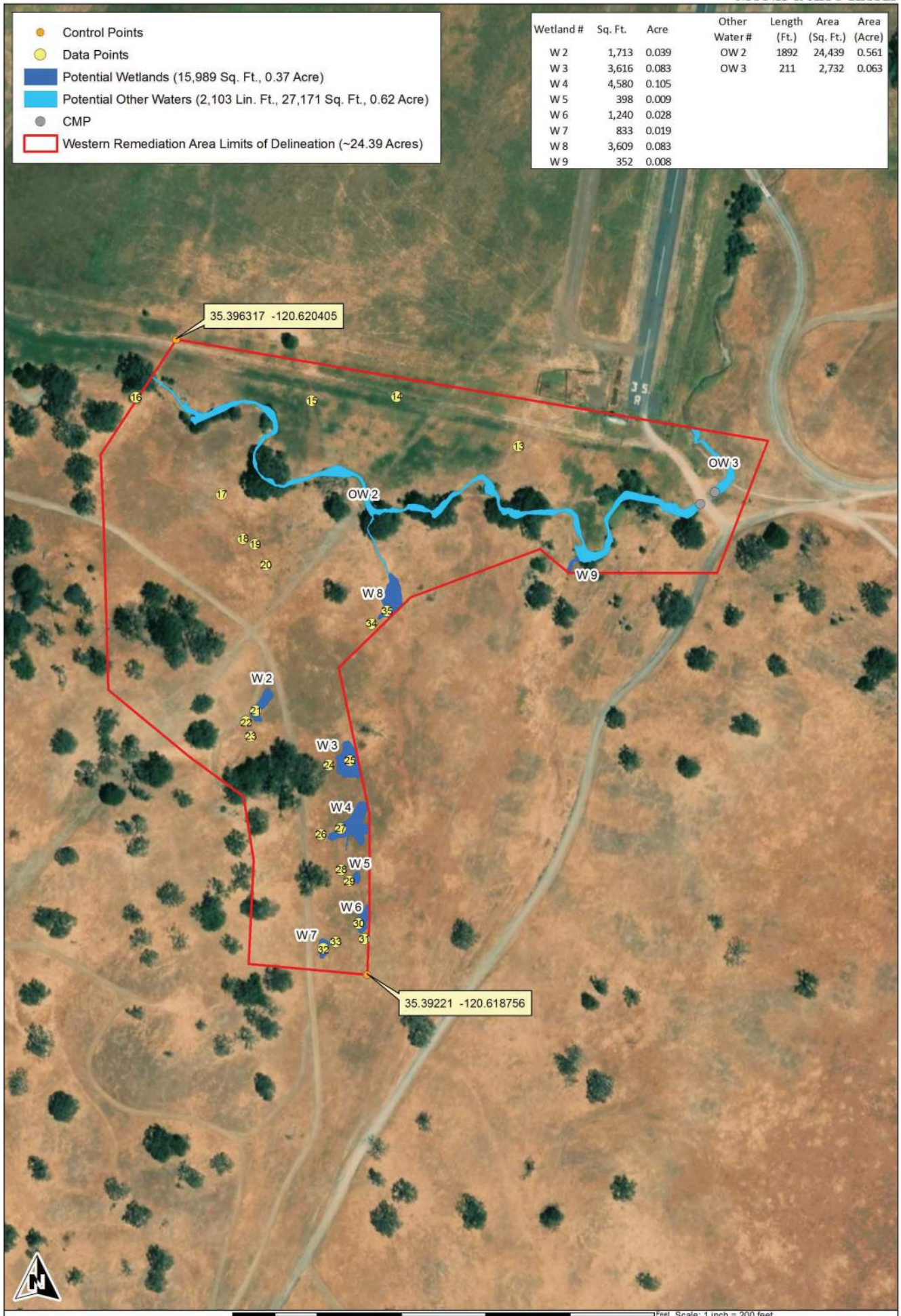
2 Sheets **Date: 1 November 2019**

Wetland #	Sq. Ft.	Acre	Other Water #	Length (Ft.)	Area (Sq. Ft.)	Area (Acre)
W 1	1,704	0.04	OW 1	810	30,773	0.71

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Sheet 1. Draft Aquatic Resources Delineation Map
Eastern Remediation Area Limits of Delineation
Santa Margarita Ranch Project Site

Delineation Date: March 13, 2019
Delineation Conducted by: Geoff Monk & Sarah Lynch
Aerial Photograph Source: ESRI
Map Preparation Date: June 18, 2019



Wetland #	Sq. Ft.	Acre
W 2	1,713	0.039
W 3	3,616	0.083
W 4	4,580	0.105
W 5	398	0.009
W 6	1,240	0.028
W 7	833	0.019
W 8	3,609	0.083
W 9	352	0.008

Other Water #	Length (Ft.)	Area (Sq. Ft.)	Area (Acre)
OW 2	1892	24,439	0.561
OW 3	211	2,732	0.063

0 100 200 400 600 800 1,000 Feet Scale: 1 inch = 200 feet

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Sheet 2. Draft Aquatic Resources Delineation Map
Western Remediation Area Limits of Delineation
Santa Margarita Ranch Project Site

Delineation Date: March 13, 2019
Delineation Conducted by: Geoff Monk & Sarah Lynch
Aerial Photograph Source: ESRI
Map Preparation Date: June 18, 2019

ATTACHMENT

MONK & ASSOCIATES, INC.
RESUMES OF PROJECT PERSONNEL

J. GEOFF MONK
ENVIRONMENTAL BIOLOGIST

Mr. Monk has over 30 years of experience as a wildlife/environmental biologist in California, with additional experience in Idaho, Washington, Oregon, and Nevada. His technical expertise includes: design and implementation of rare and endangered species population studies; quantitative wildlife and vegetation analysis; multiparameter wetlands assessments; design and implementation of wetlands mitigation projects; mitigation monitoring; biological constraints analysis; and impact analysis pursuant to NEPA and CEQA. Mr. Monk has extensive experience with wetlands planning and permitting pursuant to Sections 401 and 404 of the Clean Water Act, and Section 10 of the Rivers and Harbors Act (as administered by the California Regional Water Quality Control Board and the U.S. Army Corps of Engineers). He also has extensive experience assisting applicants with the preparation of endangered species "incidental take permits" pursuant to Section 7 and 10 of the Federal Endangered Species Act and pursuant to Section 2081 of the California Endangered Species Act. Mr. Monk prepares Streambed Alteration Agreements pursuant to Sections 1602 of the California Fish and Game Code (as administered by the California Department of Fish and Game). Finally, Mr. Monk is recognized as an expert with many special-status animal and plant species, and holds numerous permits/authorizations to conduct presence/absence surveys for these species.

EDUCATION

M.S., Wildland Resource Science, University of California, Berkeley, 1981
B.S., Wildlife Management, Humboldt State University, Arcata, California, 1977

EMPLOYMENT HISTORY

1992 - Present:	Monk & Associates, Environmental Biologist/Principal.
1989 -1992:	Harding Lawson Associates, Senior Biologist.
1986-1989:	University of California, Santa Cruz, Federal and State Birds of Prey Monitoring Team Coordinator/ Data Base Manager (Research Associate).
1984 - 1986:	Monk & Associates, Wildlife Biologist/Principal
1981 - 1983:	U.S. Fish and Wildlife Service, Wildlife Biologist. Sacramento Endangered Species Office.
1976-1980:	U.S. Bureau of Land Management, Wildlife Biologist, Washington (Spokane), Nevada (Ely), and California Districts (Sacramento, Ukiah).

CERTIFICATIONS

Certified Wildlife Biologist - Certification from The Wildlife Society, Washington, D.C. 1993.

GEOFF MONK
Biologist

REPRESENTATIVE EXPERIENCE (Full Environmental Permitting and Mitigation Implementation Projects and/or Environmental Impact Report Biology Section Preparation, or as otherwise specified)

- Burlington Northern Santa Fe Railway Intermodal Facility, San Joaquin County, California
- Shea Homes LaVigne Development, City of American Canyon, California
- Ghisletta Project, City of American Canyon, California
- Blue Rock Country Club, City of Hayward, California
- Stonechase Housing Development, Livermore, Alameda County, California
- Highland View Development, El Dorado County, California.
- UNOCAL Ecological Risk Assessment, San Luis Obispo County, California
- Oak Manor Housing Development, Alameda County, California.
- Keller Canyon Sanitary Landfill, Contra Costa County, California.
- TMD-Brown Development, Sonoma County, California.
- PGT Coyote Springs and Medford Lateral Pipelines.
- Bennett Consolidated Commercial Development, Sonoma County, California.
- Granite Construction Company, Vernalis Project, Stanislaus County, California.
- Redwood Sanitary Landfill Salt Marsh Harvest Mouse Survey, Marin County, California.
- Lambie Ranch Development, Solano County, California.
- Manzanar Four Lane Project, Inyo County California.
- Vasco Road Sanitary Landfill, Alameda County, California.
- Pacific Gas & Electric, Pacific Gas Transmission - Natural Gas Pipeline Expansion Project.
- PGT/PG&E Pipeline Expansion Project from Central California to Kingsgate B.C, Canada.
- Port of Oakland Inner Harbor Deep Draft Navigation Improvement Project, Oakland, California. Lakeborough Community Development, Stanislaus County, California.
- Highway 89 improvements, Tahoe City, California.
- PG&E coal fired power plant siting studies, northern California
- Completed helicopter surveys in Oregon for nesting peregrine falcons, ospreys, and bald eagles on contract to the Oregon Department of Fish and Wildlife.
- Annual raptor surveys, California for BLM and USFWS.
- Completed wildlife/vegetation characterization studies in eastern Nevada and northern California. Projects included vegetation mapping, Emlin bird transects, rodent snap trapping, and carnivore live trapping. Employer: U.S. Bureau of Land Management.
- Ecological preserve suitability study, Yakima Canyon, Washington. Employer: U.S. Bureau of Land Management.
- Raptor banding studies, Alberta, Canada - Adult raptors were trapped and banded at the nest site. Nestlings were also banded. Species included the ferruginous hawk, Swainson's hawk, red-tailed hawk, Cooper's hawk, merlin, prairie falcon, and golden eagle. Employer: Canadian Wildlife Service.

TECHNICAL REVIEW COMMITTEES

Invited member of the Amphibian, Reptile, and Mammal Focus Team for the Regional Wetland Monitoring Program sponsored by the California Regional Water Quality Control Board and other local and State agencies.

Invited member of the Contra Costa County Biological Technical Review Committee for the Alameda-Contra Costa Biodiversity Study.

GEOFF MONK
Biologist

Invited Participating Scientific Review Member of U.S. Fish and Wildlife Service California Tiger Salamander Recovery Team.

AWARDS

U.S. Bureau of Land Management Special Achievement Award, California State Honors.
U.S. Fish and Wildlife Service Special Achievement Award, Western Regional Honors.

SARAH M. LYNCH
SENIOR ASSOCIATE BIOLOGIST

Ms. Lynch is a biologist experienced in the fields of wildlife biology, botany, wetlands ecology and delineation, and threatened and endangered species surveys. She has worked as a biological consultant for over 25 years. Her passion for both wildlife and plants, and her strong education in both technical disciplines, has resulted in developing her expertise in both fields, wildlife and botany, with years of experience working with both. Her technical expertise includes: amphibian and fairy shrimp surveys; rare plant surveys; bird censusing; small mammal trapping; multiparameter wetland assessments; mitigation monitoring; biological constraints analysis and impact analysis pursuant to CEQA. She holds permits to work with several federal and state listed threatened and endangered species. Ms. Lynch also prepares permitting packages for submittal to local, state, and federal resource agencies. She has extensive experience conducting surveys for special-status animal and plant species, and has worked on small and large survey projects, either independently or as part of a large survey team.

EDUCATION

B.S., Environmental and Systematic Biology
California Polytechnic State University, San Luis Obispo 1990

CERTIFICATIONS

Certified Wildlife Biologist - Certification from The Wildlife Society, Washington, D.C.

PERMITS/AGENCY AUTHORIZATIONS

Authorized by the U.S. Fish and Wildlife Service as an Independent Researcher on a federal 10(a)(1)(A) Recovery Permit to survey for and handle the federally listed California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*) (all Distinct Population Segments), vernal pool Branchiopods (*Branchinecta* spps. and *Lepidurus packardi*), and the salt marsh harvest mouse (*Reithrodontomys raviventris*).

Authorized by the California Department of Fish and Wildlife under a Memorandum of Understanding (MOU) to survey for and handle the California tiger salamander, foothill yellow-legged frog (*Rana boylii*), and the salt marsh harvest mouse.

Authorized by the California Department of Fish and Wildlife under a Plant Voucher Collecting Permit to collect voucher specimens of Stat- listed plant species for accession to an herbarium.

EMPLOYMENT HISTORY

1994 - Present:	Monk & Associates, Senior Associate Biologist
1992 - 1994:	Western Ecological Services Company, Inc., Biologist
1990 - 1992:	Harding Lawson Associates, Staff Biologist

Sarah M. Lynch
Senior Associate Biologist

1989 - 1990:	San Luis Obispo County, Planning Department, Energy Division, Environmental Intern
1989:	San Luis Obispo County, Environmental Coordinator's Office, Environmental Intern
1988:	The Peregrine Fund Inc., Boise, Idaho Hack Site Attendant

REPRESENTATIVE EXPERIENCE

Botanical and Wildlife Studies

Habitat Monitoring and Special-status Amphibian and Vernal Pool Branchiopod Surveys for the East Contra Costa Habitat Conservancy. Since 2006, Ms. Lynch has been providing biological survey support for the East Contra Costa Habitat Conservancy on their acquired land preserves. This survey support includes monitoring created seasonal wetland and restored creek habitats for special-status amphibians, surveying for listed vernal pool branchiopods, surveying for special-status plant species, and monitoring the overall condition of the plant communities and wildlife habitats to see if any remedial efforts are necessary (for example, invasive weed eradication).

Special-Status Amphibian Surveys. 1991-Present. Authorized under a federal permit and State MOU (and Scientific Collector's Permit) to conduct surveys for federally listed and state listed amphibians. Conducted diurnal (daytime) surveys and nocturnal (night time) surveys for special-status amphibian species including the California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylii*), and spadefoot toad (*Spea hammondii*). Both larval surveys and pitfall trapping surveys conducted. Surveys followed California Department of Fish and Wildlife and U.S. Fish and Wildlife Service protocols.

Rare Plant Surveys. 1991-Present. Conducted systematic transect surveys in a variety of plant communities in northern and central California, including coastal dune scrub, coastal salt marsh, chaparral, oak woodland, redwood forest, and vernal pools in the Santa Rosa Plain of Sonoma County and California's Central Valley. All surveys followed California Department of Fish and Wildlife and U.S. Fish and Wildlife Service recommended guidelines and survey protocols.

Biological Constraints Analysis and Special-Status Plant and Wildlife Surveys, Doolan Ranch Preserve, Alameda County, California. Completed a biological constraints analysis of this approximately 1,200-acre rural project site located in the hills east of Livermore. This constraints analysis provided the project proponent with information on the biological resources found on the project site and how these resources could pose a constraint to development. Following preparation of the constraints analysis, M&A completed four months of special-status plant surveys on the project site following California Department of Fish and Wildlife and the California Native Plant Society's "Rare Plant Survey Guidelines," as well as protocol level surveys for vernal pool Branchiopods and the California tiger salamander. Findings: two special-status plants, the California red-legged frog, and the California tiger salamander were identified on the project site.

Sarah M. Lynch
Senior Associate Biologist

Biological Support and Peer Review Services, Contra Costa County, Community Development Department, Martinez, CA. 2002 – Ongoing. On-call services. Since 2002 have been assisting the County of Contra Costa, Community Development Department, with the peer review of biological constraints analysis reports and special-status species survey reports prepared for proposed development projects in the County. Assist Community Development Department personnel in the preparation of Initial Studies and the Biological Resource sections of Mitigated Negative Declarations for proposed projects. Assist Community Development Department staff in identifying project impacts to biological resources and crafting adequate mitigation measures to offset the impact to a less than significant level pursuant to CEQA.

Environmental Permitting, Safe Routes to School Program, Town of Fairfax, Marin County, CA. Assisted Moffatt & Nichol Engineering and the Town of Fairfax with environmental permit applications for the repair and reconstruction of a bridge over Fairfax Creek in the Town of Fairfax. Met with California Department of Fish and Wildlife personnel on the project site and acquired a streambed alteration agreement from Fish and Wildlife in accordance with Section 1602 of California Fish and Game Code. Client: Moffatt & Nichol Engineering, Walnut Creek, CA.

Burrowing Owl, California Red-Legged Frog, California Tiger Salamander, and Rare Plant Surveys. Martinelli Ranch, Petaluma, CA. Conducted focused surveys on 600 acres for special-status animals and plants in order to comply with a State Water Resources Control Board requirement for a pending Water Rights Permit application. Focused surveys were conducted on portions of the ranch proposed for water diversion and place of use (vineyard planting). Ms. Lynch prepared several reports for the State Water Board to assist them with their water rights application. A California red-legged frog and burrowing owl survey report was prepared, a special-status plant survey report was prepared, and a California tiger salamander larval survey report was prepared. Client: Mr. Dave Martinelli.

California Red-Legged Frog Surveys. Charles Krug's Willow Lake Ranch, Napa, CA. Charles Krug received a Water Rights Permit from the State Water Resources Control Board for the enlargement of two existing ponds (reservoirs) and creation of a third off-stream reservoir on their Willow Lake Ranch site. One of the Water Rights Permit conditions was for a biologist to conduct California red-legged frog surveys prior to enlargement of the existing reservoirs and construction of a third reservoir. Ms. Lynch participated in the focused surveys for this Federal listed frog species. These surveys followed the U.S. Fish and Wildlife Service's survey protocol. No California red-legged frogs were identified in the existing ponds. A report with these findings was prepared and submitted to the U.S. Fish and Wildlife Service, and no further survey work or mitigation was required. Client: Charles Krug Winery, Peter Mondavi Family.

California Department of Fish and Game monitor for all biological surveys conducted along a 100-mile spread of the PGT/PG&E pipeline expansion project in Shasta, Siskiyou, and Modoc Counties, California. Responsibilities included monitoring activities of consulting biologists conducting special-status raptor surveys along the pipeline, monitoring construction activities, attending interagency meetings, and reviewing all biological survey status reports and mitigation plans. Client: Michael Sotak & Associates

Raptor (birds of prey) nesting/occurrence surveys. Conducted nesting/occurrence surveys for golden eagle, Cooper's hawk, sharp-shinned hawk, white-tailed kite, and burrowing owl for proposed developments in the San Francisco Bay Area and the Central Valley. Clients: Various.

Conducted kit fox den surveys along a 60-mile spread of the Westley-Tracy transmission line project in San Joaquin County, California. Surveys were conducted in order to determine alternative routes for the transmission line. Client: Transmission Agency of Northern California.

Environmental and Regulatory

Biological Resources Analysis, Santa Rosa Rancheria, Kings County, California. Conducted field surveys to document baseline biological conditions on three parcels proposed for development: a 20-acre, 200-acre, and a 400-acre parcel. Prepared a biological resources analysis for the 200-acre parcel. This biological resources analysis was incorporated into a National Environmental Policy Act (NEPA) Environmental Assessment. Currently working on reports for the 20 and 400-acre parcels. Each report documents existing conditions on the parcel, discusses potential special-status species and "waters of the United States" issues, summarizes potential project-related impacts to biological resources, and suggests mitigation measures to minimize these impacts.

Biological Resources Analysis for inclusion in an Environmental Impact Report, Gillrie Property, Alameda County, CA. Completed a wildlife inventory, rare plant surveys, a wetland delineation, and protocol California red-legged frog surveys on this 78-acre property proposed for residential development. Prepared a biological resources setting, impacts, and mitigations section for Alameda County Planning Department for incorporation into the Environmental Impact Report being prepared for the project. Client: Alameda County Planning Department.

Oak Manor Development, Alameda County, California - Environmental permitting. Secured permits for impacts to U.S. Army Corps of Engineers jurisdictional “waters of the United States” pursuant to Section 404 of the Clean Water Act, and obtained a waiver of water quality from the California Regional Water Quality Control Board (pursuant to Section 401 of the Clean Water Act). Also, obtained a Streambed Alteration Agreement, pursuant to Section 1603 of California Fish and Game Code, for proposed impacts to intermittent creeks from construction of the housing development. Prepared an oak tree management plan for distribution to new home owners to assist them with the care and maintenance of native oak trees on their property. Client: Branaugh Excavating, Inc., Livermore, California.

Castlewood Water and Sewer System Rehabilitation Project, Alameda County, California. Prepared a biological constraints analysis for the proposed rehabilitation of an existing water and sewer system in the Castlewood County Service Area. Also conducted surveys for special-status plants within the proposed water and sewer easements area. Client: Alameda County Planning Department, Alameda County, California.

Delineated over 30 vernal pools and swales on a 110-acre site proposed for landfill expansion in Merced County, California. Prepared a report for submittal to the U.S. Army Corps of Engineers and obtained a U.S. Army Corps of Engineers jurisdictional determination for the delineation. Arranged mitigation for proposed impacts to vernal pools and habitat for the Federally listed threatened vernal pool fairy shrimp (*Branchinecta lynchi*).

CHRISTINA OWENS
PROJECT BIOLOGIST II/BOTANIST

Ms. Owens has experience conducting and writing botanical surveys, biological resource analyses, wetland delineations, special-status plant mitigation and monitoring plans, weed management plans, mitigation monitoring and biological constraints analyses. Ms. Owens work focused on the flora of constructed and natural vernal pools, specifically on the distribution of plant communities within those pools. She has more than 5 years of environmental consulting experience doing special-status species surveys (including California red-legged frog), vegetation mapping, wetland delineations and biological resource evaluations for environmental impact assessment. She has done extensive fieldwork in the Central Valley's ephemeral wetlands and in most of the major habitat types in northern California. Ms. Owens also has experience conducting site assessments and drafting permit applications for submittal to the Army Corps of Engineers, the Regional Water Quality Control Board, the California Department of Fish and Wildlife and the United States Fish and Wildlife Service.

EDUCATION

M.A. University of California, Davis, in Plant Ecology, 2008
B.S. University of California, Davis, in Environmental Horticulture and Urban Forestry, 2001

EMPLOYMENT HISTORY

2012 – Present: Monk & Associates, Project Biologist II

2010 – 2012: ICF International, Sacramento, CA, Botanist

2010: University of California at Davis, Davis, CA, Botanist

2009 – 2010: Ecohydrology Research, Inc., Davis, CA, Botanist

RELEVANT EXPERIENCE

Special-Status Plant Surveys. 2012-Ongoing at M&A. Conduct surveys for special-status (that is, threatened, endangered, rare) plants in a variety of habitats including vernal pools, seasonal wetlands, chaparral, coastal scrub, salt bush scrub, and foothill woodland for proposed development and mitigation projects. Systematic sampling methodology to ensure thorough site coverage. Surveys conducted throughout the Bay Area and the Central Valley of California. Clients: Various.

Assisted senior biologists with adult and larval surveys for California red-legged frogs at the CRLF Preserve in American Canyon, CA. Observed 15-20 sub-adult and adult CRLFs, as well as approximately 10 larvae. Trained on identification of adult and larval CRLF by Mr. Geoff Monk (10(a)(1)(A) permittee).

Construction monitoring experience at several sites in East Contra Costa County and provided environmental training for species including San Joaquin kit fox, California tiger salamander, California tiger salamander and western burrowing owl.

Approved by USFWS for construction monitoring at site in Livermore with potential for CRLF to occur.

Trained on identification of adult and larval California Tiger Salamander by Mr. Geoff Monk and Ms. Sarah Lynch (10(a)(1)(A) permittee). Assisted senior biologists with larval surveys for CTS.

Surveyed for presence of burrowing owls under supervision of senior staff Ms. Hope Kingma and Ms. Sarah Lynch in Antioch. Provided construction monitoring in Brentwood at site Western burrowing owl occupied burrows to ensure construction activities did not disturb multiple nesting pairs.

Monitored wells and mapped wetland features to provide a baseline pattern of inundation and dry-down of mitigation and impacted wetlands in Willits, CA. Assessed mitigation wetlands in Willits, CA using the California Rapid Assessment Method (CRAM) and conducted population-level data collection for rare species

Collaborated with hydrologist to create experimental design for research contracts. Prepared written documentation for Demonstration Plans, CWA Section 404 and 401 permits and Biological Assessments for Section 7 consultation for research contracts.

Conducted botanical surveys in Creosote scrub and near the Carrizo Plain in southern California

Conducted ground truthing of GIS data for both physical and vegetation community features as well as an informal survey of late-season rare plants and wildlife in the San Joaquin valley

Mapped the 2010 extent of the invasive plant red sesbania (*Sesbania punicea*) in California using existing information from multiple sources to identify gaps in previous surveys and identify areas of population spread. Recorded population and ecological data for all sitings including associate taxa. Assisted with post-processing of data and analysis using a weed prioritization model to select weed population targets for successful eradication

Assisted with plant identification of vernal pool and grassland specimens collected during fieldwork and editing of field data sheets for vernal pool classification. Entered biotic and abiotic data and reviewed for quality control. Conducted botanical fieldwork for grant data collection in constructed and natural vernal pools.

FIELD EXPERIENCE

Knowledge of major California plant communities and the plant taxa

Extensive field work and data collection in vernal pool, annual grassland, coastal and saltbush scrub, wet meadow, riparian woodland, foothill woodland and riparian corridor habitats

Habitat/plant association surveying and mapping experience for rare plant surveys and biological inventories

PROFESSIONAL SKILLS

Wetland delineation using the USACOE 1987 Manual and the Arid West Manual and wetland assessment using the California Rapid Assessment Method (CRAM)

Experience with CEQA/NEPA, EIR process and permitting processes (CCWA Section 404 and 401 and Section 7 consultation)

CERTIFICATIONS

Basic Wetland Delineation: Wetland Training Institute, Inc. – April 2009
California Rapid Assessment Method (CRAM) Certification – March 2011

PUBLICATIONS

Co-authored manuscript for publication. Robison, R., N. Barve, C. Owens, G. Skurka Darin and J. DiTomaso. "Prioritization of red sesbania (*Sesbania punicea*) populations for eradication." Accepted with revisions by the Journal of Environmental Management.

JESSE REEBS
PROJECT BIOLOGIST II

Mr. Reebs has over 10 years of experience in various biological disciplines, including herpetology, ornithology, botany, and habitat restoration. He holds a USFWS 10(a)(1)(A) Recovery Permit and CDFW Memorandum of Understanding for the California tiger salamander (Central DPS), Alameda whipsnake, San Francisco garter snake, and California Ridgway's rail. As a biologist he performs research, impact analyses, staff coordination, and report preparation in support of both small and large-scale projects. In the field, he performs environmental inspection and monitoring duties, including environmental awareness training, pre-construction clearance surveys, construction monitoring, and reporting for project compliance with multiple state and federal permits. Mr. Reebs has participated in hundreds of surveys and habitat assessments for state and federally-listed species and several special-status species, including for the California tiger salamander, San Francisco garter snake, Alameda whipsnake, giant garter snake, California red-legged frog, foothill yellow-legged frog, western pond turtle, San Francisco dusky-footed woodrat, salt marsh harvest mouse, San Joaquin kit fox, western burrowing owl, California black rail, and California Ridgway's rail. In addition, he has conducted fish and amphibian salvage during in-water work on multiple projects. Mr. Reebs is currently working for Monk & Associates as a Project Biologist II.

EDUCATION

B.S. 2002, Environmental Science
Evergreen State College – Olympia, Washington

EMPLOYMENT HISTORY

February 2016 – Present: Monk & Associates, Inc. – Project Biologist II

May 2014 – January 2016: Olofson Environmental Oakland, CA. – Biologist

January 2013 – May 2014: Insignia Environmental, Palo Alto, CA. – Associate Biologist

September 2012 – January 2013: LSA Associates, Point Richmond, CA. – Field Biologist

June 2012 – October 2012: The Shaw Group, San Mateo, CA. – Specialty Environmental Monitor, Lead Biologist

Nov 2007 – May 2008; May 2010-June 2012: West Coast Wildlands, South San Francisco, CA. – Habitat Restoration Technician

May 2008 – February 2010: Swaim Biological, Hayward, CA. – Wildlife Biologist

May 2006 – September 2006: U.S. Forest Service, Yellow Pine, ID – Wildlife Technician

May 2005 – September 2005: U.S. Forest Service, Yellow Pine, ID – Wildlife Technician

April 2004 – September 2004: U.S. Forest Service, Juneau, AK – Biological Technician

June 2001 – October 2001: U.S. Forest Service, Randal, WA – Biological Technician

RELEVANT EXPERIENCE

Conducted nesting bird and raptor surveys on numerous project sites throughout Northern California, Washington, and Idaho. Conducted surveys for California special-status species including western burrowing owl (*Athene cunicularia hypugaea*), golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), Swainson's hawk (*Buteo swainsoni*), California Ridgway's rail (*Rallus obsoletus obsoletus*), and California black rail (*Laterallus jamaicensis coturniculus*). Located active nests, established protection buffers, and monitored nests throughout all phases of construction. Performed point count surveys for passerine species in Idaho and Alaska. Performed mist-netting and banding in The Yukon and Costa Rica.

Conducted multiple salt marsh harvest mouse (*Reithrodontomys raviventris*) trapping surveys in Alameda County at Don Edwards San Francisco Bay National Wildlife Refuge in Newark, California. Trained by U.S. Fish and Wildlife Services staff to trap and process the species. Performed pre-construction surveys, environmental awareness trainings, and biological monitoring for protection of salt marsh harvest mouse and compliance with permits on multiple projects throughout the San Francisco Bay.

Performed diurnal and nocturnal surveys for California red-legged frog (*Rana draytonii*), including seining and dipnetting for larvae and spotlight surveys spotlight surveys for adults. Performed trapping studies, pre-construction surveys, environmental awareness trainings, and biological monitoring during construction for the species on numerous projects. Under supervision of a permitted biologist, surveyed for, handled, and/or processed over 100 adults, 40 juveniles, 25 larvae, and 32 egg masses in Alameda, Contra Costa, Napa, San Mateo, and Sonoma counties. Trained and proficient in identification of chytrid fungus. Approximately 1,200 total survey hours.

Conducted California tiger salamander (*Ambystoma californiense*) trapping and relocation surveys on large-scale salvage project in Solano County. Conducted surveys using drift fencing and pitfall traps. Performed habitat and pre-construction surveys, environmental awareness trainings, and biological monitoring on multiple projects in Sonoma, Marin, Alameda, Solano, and Contra Costa Counties. Authorized to conduct California tiger salamander surveys for the Central Valley distinct population segment under a Federal 10(a)(1)(A) recovery permit and California Department of Fish and Wildlife Memorandum of Understanding. Approximately 200 total survey hours.

Conducted biological monitoring and performed preconstruction wildlife surveys for foothill yellow-legged frog (*Rana boylii*), California red-legged frog, and western pond turtle (*Emys marmorata*) on the Calaveras County's Railroad Flats Bridge Replacement Project. Routinely detected both foothill yellow-legged frog and western pond turtle within the vicinity of the project along Esperanza Creek; ensured that project personnel were appropriately trained on species identification and avoidance and that wildlife fencing excluded species from work area.

Conducted USFWS protocol-level surveys for San Joaquin kit fox (*Vulpes macrotis mutica*), including den-dusting, spot-lighting, and remote camera surveys. Potential burrows and dens were mapped for avoidance, or excavated as authorized by the USFWS. Conducted preliminary desktop analyses, reconnaissance surveys, and assessed habitat suitability and potential utilization at multiple sites in Contra Costa, San Benito, and Santa Clara counties.

Conducted CDFW protocol-level surveys for western burrowing owl. Performed habitat assessments, pre-construction surveys, environmental awareness trainings, and biological monitoring for western burrowing owl at multiple sites throughout Alameda, Contra Costa Counties, San Benito, and Santa Clara counties.

Performed long-term trapping study for Alameda whipsnake (*Masticophis lateralis euryxanthus*) in the East Bay Hills. Collected morphological and genetic data from captured Alameda whipsnakes, as well as clipped and PIT-tagged individuals. Performed habitat assessments and analyzed potential to occur based on desktop analyses and site suitability, and performed environmental awareness trainings and biological monitoring of construction activities. Authorized to conduct Alameda whipsnake surveys under a Federal 10(a)(1)(A) recovery permit and California Department of Fish and Wildlife Memorandum of Understanding. Approximately 280 total survey hours.

Performed numerous USFWS protocol-level surveys for California Ridgway's rail throughout the San Francisco Bay Area for California State Coastal Conservancy's Ridgway's Rail Monitoring Program, as part of the Invasive Spartina Project. Acquired necessary prerequisite experience to be included on 10(a)(1)(A) List of Authorized Individuals to independently conduct protocol-level surveys for the species. Additionally, performed surveys to detect California black rail, yellow rail, and Virginia rail.

Performed pre-construction surveys, construction monitoring, and trapping studies for San Francisco garter snake throughout San Mateo and San Francisco counties. Trained and proficient in trapping and handling techniques; processed, including mark/recapture and PIT tag for juvenile, sub-adult, and adult individuals. Authorized to conduct San Francisco garter snake surveys under a Federal 10(a)(1)(A) recovery permit and California Department of Fish and Wildlife Memorandum of Understanding. Approximately 1,060 total survey hours.

Surveyed, monitored, and trapped for San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) throughout the Bay Area. Located nests, cleared vegetation around middens, operated live traps, and safely captured and relocated dusky-footed woodrat individuals.

Developed environmental training materials and led awareness training programs for sensitive resources and special-status species, logged daily inspection reports, monitored construction sites, and coordinated daily with junior biologists, construction staff, and agency personnel.

Restored and helped create enhanced habitats for native plant species, including critical habitat for endangered and threatened butterflies, throughout the San Francisco Bay Area. Performed short and long-term vegetation monitoring.

Conducted fish and amphibian salvage during in-water work on multiple projects in Alameda, Napa, and Sonoma counties. Monitored dewatering activities along freshwater and brackish creeks and performed successful capture and relocation of species using waders and dipnets. Representative projects performing in-water salvage duties include Sonoma Marin Area Rail Transit Project, Bioregional Habitat Restoration Program (as part of the SFPUC's Water System Improvement Program), and Geary Road Bridge Replacement projects.

Performed western pond turtle surveys on numerous projects in California and detected the species on multiple projects including the San Francisco Public Utilities Commission's Geary Road Bridge Replacement Project, Sonoma-Marin Area Rail Transit Project, Pacific Gas & Electric's Transition Cluster-Network Upgrades, Calaveras County's Railroad Flats Bridge Replacement Project, and Dublin Preserve Conservation Bank 2016 spring larval surveys.

Performed wetland delineations of U.S. Army Corps of Engineers jurisdictional areas, including historic diked baylands, seasonal wetlands, ephemeral drainages, and creeks. Prepared graphics and maps illustrating jurisdictional areas. Prepared permit applications, including Mitigation and Monitoring Plans and Biological Assessments for Section 7 consultation. Other wetland permitting experience includes

preparing applications for the California Department of Fish and Wildlife, Regional Water Quality Control Board, and Army Corps of Engineers.

Performed mitigation monitoring in wetland creation and restoration sites to ensure compliance with regulatory agency permit conditions and requirements. Conducted re-vegetation surveys, monitored planting survival, and mapped rare plant populations in vernal pools. Documented wildlife utilization at restoration sites. Measured groundwater levels, rates of sedimentation/ erosion, and surveyed channel cross-sections.

CERTIFICATIONS/AUTHORIZATIONS

- United States Fish and Wildlife Service 10(a)(1)(a) Permit for Alameda whipsnake, San Francisco garter snake, California tiger salamander, and California Ridgway's rail—Central DPS (TE-01769B-3)
- California Department of Fish and Wildlife Memorandum of Understanding for Alameda whipsnake, San Francisco garter snake, California tiger salamander, and California Ridgway's rail—Central DPS (SC-10272)
- California Department of Fish and Wildlife Scientific Collecting Permit (SC-10272)
- Desert Tortoise Council's Handling Workshop Certification
- Occupational Safety and Health Administration Hazardous Waste Operations and Emergency Response Certification (40 hour) (Certificate Number 121111171178)

TRAINING

- Workshop on the Biology & Management of the California Red-Legged Frog. Presented by Patricia and Greg Tatarian at the Alameda County Conservation Partnership Martinelli Center in Livermore, California. • 2014
- A/E/C Industry Project Management Bootcamp. Presented by PSMJ Resources Inc. at the Insignia Environmental office in Palo Alto, California. • 2014
- Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop. 22nd Annual Desert Tortoise Council Fall Workshop in Ridgecrest, California. • 2013
- United States Forest Service Salt Marsh Harvest Mouse Trapping. Volunteered with Rachel Tertes and Howard Shellhammer in trapping and processing salt marsh harvest mouse during 2 days in the 2013 trapping season at Don Edwards San Francisco Bay National Wildlife Refuge in Newark, California. • 2013
- Alameda Whipsnake Workshop. Presented by Karen Swaim and Swaim Biological staff at the Alameda County Conservation Partnership Martinelli Center in Livermore, California. • 2009
- Invasive Plant Identification and Management Workshop. Sponsored by Acterra at the Pearson-Arastradero Preserve in Palo Alto, California. • 2009
- Trained in electrofishing techniques and salmonid identifications during 3 days of work with San Francisco Public Utilities Commission biologists in the Crystal Springs watershed, California. • 2009

ZACHERY STRATTON
STAFF BIOLOGIST

Mr. Stratton is a wildlife biologist with experience in various biological disciplines, including ornithology, herpetology, ichthyology, botany, resource management, and conservation biology. He has experience performing plant and wildlife surveys in a variety of habitats in California and Louisiana. In the field, Mr. Stratton has performed avian mist-netting and banding, deer trapping, seining/dipnetting, electrofishing and tagging, vegetation monitoring, GIS mapping, and radio telemetry. He is an avid outdoorsman with excellent field identification skills and is proficient in California plant and wildlife species identification. Mr. Stratton is currently working for Monk & Associates as a Staff Biologist.

EDUCATION

Bachelor of Science, Natural Resource Ecology and Management: Wildlife Ecology
Louisiana State University, 2017

EMPLOYMENT HISTORY

August 2017-Present: Monk & Associates, Inc., Walnut Creek, CA: Staff Biologist

August 2016-August 2017: Louisiana State University, Baton Rouge, LA, Renewable Natural Resources: Student Research Assistant

April 2016-August 2016: Louisiana State University, Baton Rouge, LA, University Recreation: Field Maintenance Technician/Sports Program Supervisor

Summer 2014/2015: California Waterfowl Association, Roseville, CA, Waterfowl Banding Technician

May 2010-August 2013: MS Construction, Pleasant Hill, CA, Construction Assistant

VOLUNTEER EXPERIENCE

August 2013-June 2017: Louisiana Department of Wildlife and Fisheries, Waterfowl Banding Program: Volunteer Assistant

August 2014-Present: Ducks Unlimited Tiger Chapter: Board Member

RELEVANT EXPERIENCE

Attended the California Tiger Salamander Terrestrial Ecology Workshop Series at the Laguna de Santa Rosa Foundation on March 23, 2018 in Santa Rosa, California. Lectures focused on California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), Sierran treefrog (*Pseudacris sierra*), and western pond turtle (*Emys marmorata*). Field trip included a visit to tiger salamander breeding habitat, upland habitat, and inspection of tunnel systems. The field trip also included installation of pitfall traps and fencing arrays.

As approved by Mr. Ryan Olah of the U.S. Fish and Wildlife Service (USFWS) and Ms. Melanie Day of the California Department of Fish and Wildlife (CDFW), performed environmental awareness training, construction monitoring, and daily site inspections that included monitoring of wildlife-exclusion fencing for California tiger salamander on the Southwest Estates Project in Santa Rosa, California.

Zachery Stratton
Staff Biologist

As approved by Mr. Olah of the USFWS and Ms. Melissa Farinha and Ms. Andrea Boertien of the CDFW, performed environmental awareness training, construction monitoring, and daily site inspections that included monitoring of nearly two miles of wildlife-exclusion fencing and cover boards for California tiger salamander on the Aviano Development Project and Vineyards at Sand Creek Project in Antioch, California.

Conducted habitat assessments, preconstruction surveys (presence/absence) and biological monitoring for multiple projects in Contra Costa, Alameda, Napa and Solano counties. Biological monitoring duties included coordination with contractors, biological presence/absence surveys, ensuring project compliance with permit conditions, construction monitoring and reporting. Special-status species include California tiger salamander, California red-legged frog, western burrowing owl (*Athene cunicularia hypugaea*), San Joaquin kit fox (*Vulpes macrotis mutica*), and foothill yellow-legged frog (*Rana boylii*) among others.

Conducted biological monitoring and performed preconstruction wildlife surveys for foothill yellow-legged frog, California red-legged frog, and western pond turtle on the Calaveras County's Railroad Flats Bridge Replacement Project. Routinely detected both foothill yellow-legged frog and western pond turtle within the vicinity of the project along Esperanza Creek at the known CNDDB record location; ensured that project personnel were appropriately trained on species identification and avoidance and that wildlife fencing excluded species from work area.

Conducted CDFW protocol-level surveys for western burrowing owl. Performed habitat assessments, preconstruction surveys, environmental awareness trainings, and biological monitoring for western burrowing owl at multiple sites throughout Alameda and Contra Costa Counties.

Conducted protocol-level California red-legged frog surveys under the supervision of and with extensive training from Mr. Geoff Monk, a (10(a)1(A)) permitted biologist.

Conducted biological monitoring for Philips 66 Line 200 Remediation site on the Concord Naval Weapons Station. Duties included coordination with contractors, biological presence/absence surveys, monitoring and assisting wetland creation, ensuring project compliance with permit conditions, construction monitoring, and reporting.

Performed habitat assessments, preconstruction surveys (presence/absence), environmental awareness trainings, biological monitoring, and passive eviction for western burrowing owl at multiple sites throughout Contra Costa and Alameda counties.

Conducted nesting bird surveys, including for golden eagle and Swainson's hawk, at several locations in Contra Costa, Almeda, and San Luis Obispo counties.

Performed hydrology and vegetation monitoring on long-term wetland creation and mitigation project in Contra Costa County.

Participated in population genetics course at Louisiana State University taught by Sabrina Taylor with some focus on the California tiger salamander examining habitat loss and fragmentation, population genetics, and conservation strategy.

Conducted habitat assessment and protocol-level surveys for desert gopher tortoise (*Gopherus polyphemus*) and Louisiana pine snake (*Pituophis ruthveni*) in collaboration with ongoing research study in northern Louisiana.

Zachery Stratton
Staff Biologist

Performed avian capture and banding, primarily of summer-breeding mallards (*Anas platyrhynchos*) as banding technician for California Waterfowl in both the Suisun Marsh and Sacramento-San Joaquin Delta.

Performed species surveys and vegetation sampling/monitoring in support of study on the wild turkey (*Meleagris gallopavo*) and American woodcock (*Scolopax minor*) throughout the state of Louisiana.

Assisted on marine research study off the coast of Mozambique focused on the presence and impacts of domoic acid. Duties included: marine mammal and fish identification, development and implementation of research methods and hypotheses for a supplemental project focused of effects of human disturbance on reef recover after major disturbance.

Assisted with deer trapping (drop-net) study in southeast Louisiana.

SKILLS/ QUALIFICATIONS

- Wildlife and plant identification in the field
- Knowledge of major California plant communities and their respective plant taxon (Jepson Manual)
- Surveying and monitoring wildlife/plants in wetland, grassland, beach, and woodland/forest habitats
- Aquatic sampling in vernal pools, ponds, lakes, streams, and bays using dip nets, seines, and electrofishing
- Avian nest monitoring using direct and remote techniques in California and Louisiana
- Mist-netting and handling (songbird, duck, and raptor)
- Proficient with Microsoft Word, Excel, Access, PowerPoint, and ArcMap
- GPS mapping techniques
- Image processing and analysis

TRAINING

- First Aid/CPR
- Firearm safety and hunter safety certified
- ATV and boat operation
- Attended a California Tiger Salamander Terrestrial Ecology Workshop Series offered by the Laguna de Santa Rosa Foundation, Spring 2018.

Attachment H

Geotechnical Memorandum – 01, Geotechnical Input for Remediation Design, Phillips 66 Santa Margarita Ranch Remediation Project

AECOM
300 Lakeside Drive
Suite 400
Oakland, CA 94612
www.aecom.com

510 893 3600 tel
510 874 3268 fax

Memorandum

To	Mark Riley, PE, AECOM	Project Number: 60592267
Subject	Geotechnical Memorandum - 01 Geotechnical Input for Remediation Design Phillips 66 Santa Margarita Ranch Remediation Project APN 070-091-036	
From	Stan Kline, PE, GE, AECOM	Signature
Date	June 19, 2019	

REGISTERED PROFESSIONAL ENGINEER
STANLEY H. KLINE
No. 477
Exp. 3/31/20
GEOTECHNICAL
STATE OF CALIFORNIA

PURPOSE

The purpose of this technical memorandum is to provide geotechnical oriented input to support the excavation and backfill remediation plans associated with the Phillips 66 Santa Margarita Ranch Remediation Project on a portion of the Santa Margarita Ranch in Santa Margarita, California. Geotechnical field and laboratory investigation was carried out to support geotechnical oriented input and recommendations. The primary objective of the investigation has been to evaluate the suitability of clean potential replacement backfill materials generated from the clean overburden from the remedial excavation and other potential onsite borrow sources. Other geotechnical considerations, including excavation slopes and backfill construction methods, are addressed.

BACKGROUND

Hydrocarbon-impacted soils will be excavated from beneath and around two Phillips 66 crude oil pipelines and one Phillips 66 natural gas pipeline that cross the Santa Margarita Ranch (**Figure 1**) per the requirements of the Corrective Action Plan, dated March 7, 2019, and Corrective Action Plan Addendum 01, pending finalization, for the Santa Margarita Ranch Pipeline Site, Santa Margarita, California.

The excavation is divided into two primary areas, a Western Excavation Area and Eastern Excavation Area along the pipelines. The remediation depth of excavation varies from 6 feet below ground surface (bgs) to 20 feet bgs in the Eastern Excavation Area. The remediation depth of excavation varies from 6 feet bgs to 10 feet bgs in the Western Excavation Area. The impacted soil will be excavated from beneath 430 linear feet of pipeline alignment distributed over five smaller excavations in the Western Excavation Area and beneath 1,200 linear feet of pipeline alignment distributed over two larger excavations in the Eastern Excavation Area. A slot trenching method has been selected for excavating the impacted soil beneath the pipelines in an incremental fashion, minimizing exposure of pipelines in limited segments at any given time.

Geotechnical data was collected from a field drilling and sampling program and subsequent geotechnical laboratory testing program to support characterization of required excavation and potential borrow materials and allow assessment of geotechnical suitability for use as excavation backfill materials. Three exploration borings were drilled along the Eastern Excavation Area (Borings B-1, B-2, B-3 - **Figure 2**).

One exploration boring was drilled in the Western Excavation Area (Boring B-4 - **Figure 2**). An additional exploration boring was drilled at a potential borrow source location associated with a planned storage pond project further to the south (Boring B-5 - **Figure 3**). Geotechnical laboratory testing of selected samples retrieved from the field investigation drilling, consisting of index properties testing for basic material characteristics and selected engineering properties testing for desired material parameters, was performed to confirm field investigation visual observations and further support materials assessment.

GEOTECHNICAL SITE CONDITIONS AND MATERIAL PROPERTIES

The geotechnical field investigation included hollow stem auger (HSA) drilling and Modified California sampling to retrieve relatively undisturbed liner samples for testing. Bulk disturbed samples were retrieved from required hand augering in the upper 5 feet. The Modified California drive sampling provided 2.5-inch diameter by 6-inch liner samples for geotechnical testing of index and engineering properties. The Modified California sampling was fairly continuous throughout the exploration depth of the borings. The borings were advanced to depths ranging from 10 to 20 feet bgs.

Geotechnical samples retrieved from Borings B-1 through B-5 were tested for the following index and engineering properties:

- Moisture content by American Society for Testing and Materials (ASTM) D7263b;
- Particle size analysis by ASTM D422 and ASTM D1140;
- Atterberg limits (plasticity characteristics) by ASTM D4318;
- Consolidated drained direct shear strength by ASTM D3080; and
- Compaction by ASTM D1557.

Based on the four borings drilled in the remedial excavation areas and the additional boring drilled at the potential pond construction borrow area to the south and the associated logging, visual observations, and subsequent laboratory testing, the subsurface materials encountered at the locations explored can generally be described as follows:

- Ranging from sandy clay/sandy silt to clayey to silty sand.
- Bordering between a fine-grained and sand material classification with fines content ranging between 30 and 60 percent.
- Material with higher sand content encountered at greater depth.

Some index properties from the laboratory testing tend to indicate that the sandier materials (as logged in the field) have an actual higher fines content.

The results of the geotechnical index and engineering properties testing of samples retrieved from the field investigation borings are summarized as follows:

- Moisture content generally ranging from 14 to 23 percent, lower in the sandier materials and higher in the more fine-grained materials, based on 12 tests.
- Atterberg limits testing and visual observations indicating materials exhibiting low to moderate plasticity.
- Consolidated drained direct shear strength of the clayey sand to sandy clay materials encountered in Boring B-1 at depths of 6 and 11 feet bgs with cohesion ranging from 400 to 1,100 pounds per square foot (psf) and friction angle ranging from 35 to 19 degrees, respectively, based on two tests.

- Compaction testing of bulk samples of material from the upper 5 feet, collected at Borings B-1 and B-4, yielding results of 12 percent optimum moisture content and 126 pounds per cubic foot (pcf) to 122 pcf maximum dry density (ASTM D1557), respectively.

The above geotechnical test data and material characteristics are evaluated to provide the basis for geotechnical-oriented input to support project excavation and backfill design. Laboratory data are included as **Attachment A**. Logs of the geotechnical field investigation drilling and sampling are included as **Attachment B**.

CONCLUSIONS AND RECOMMENDATIONS

Material Suitability for Backfill

Based on the results of the geotechnical aspects of the field investigation and laboratory testing described above, materials encountered are considered suitable for reuse (clean overburden) or use (borrow materials) as remedial backfill material. The desired geotechnical characteristics that support this assessment are as follows:

- Material contains a desirable fines content, providing a binder and good workability for backfill construction.
- Material not highly plastic and not exhibiting undesirable expansive properties, also desired for workability and future low shrink/swell performance after construction.
- Material not pervious as recompacted backfill.

A few qualifying considerations need to be noted as follows:

- Comparison of in-situ moisture contents to compaction test optimum water contents indicates significant reduction of moisture required for proper compaction. However, material moisture at the time of sampling may be higher than typical, considering field exploration occurred after a wet winter season, and the process of excavation, stockpiling, and rework of the materials will promote some degree of drying.
- Assessment of materials from the proposed pond construction borrow area south of the remediation project area is based on very limited exploration and testing data (single Boring B-5).
- A prior evaluation of ranch property potential pond construction excavation spoils for reuse as backfill materials was made, associated with a GeoSolutions, Inc. 2008 report review, included as **Attachment C**.

Excavation Slopes

For the mass excavation for removal of contaminated materials, planned to be temporary unsupported slopes, it is desired to establish safe slopes for the excavation and operations. One source of input to this is Occupational Safety and Health Administration (OSHA) requirements and limitations.

For unsupported slopes and benched excavations, OSHA maximum allowable slopes are established based on defined soil type and groundwater seepage conditions, as follows:

- Type A soils are cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (tsf) or greater. Examples of Type A cohesive soils are often clay, silty clay, sandy clay, clay loam, and, in some cases, silty clay loam and sandy clay loam. No soil is Type A if it is fissured, is subject to vibration of any type, has previously been disturbed, is part of a sloped, layered system where the layers dip into the excavation on a slope of 4 horizontal to 1 vertical (4H:1V) or greater, or has seeping water.

- Type B soils are cohesive soils with an unconfined compressive strength greater than 0.5 tsf but less than 1.5 tsf. Examples of other Type B soils are angular gravel, silt, silt loam, previously disturbed soils unless classified as Type C, soils that meet the unconfined compressive strength or cementation requirements of Type A soils but are fissured or subject to vibration, dry unstable rock, and layered systems sloping into the trench at a slope less than 4H:1V (only if the material would be classified as a Type B soil).
- Type C soils are cohesive soils with an unconfined compressive strength of 0.5 tsf or less. Other Type C soils include granular soils such as gravel, sand and loamy sand, submerged soils, soils from which water is freely seeping, and submerged rock that is not stable. Also included in this classification is material in a sloped, layered system where the layers dip into the excavation or have a slope of 4H:1V or greater.

The OSHA maximum allowable slopes for excavations less than 20 feet deep are as follows:

- Type A soil - 0.75H:1V
- Type B soil - 1H:1V
- Type C soil - 1.5H:1V

The maximum anticipated excavation depth for the removal of contaminated materials is 20 feet bgs, with most areas 15 feet bgs and less. Based on the geotechnical site conditions assessed from the field investigation and geotechnical laboratory testing, the materials within the planned excavation depths are judged to be predominantly Type A to Type B soils per the above OSHA definition. This is predicated on no groundwater conditions within excavation depths or adequate groundwater control to prevent seeping water conditions.

Based on the above considerations and geotechnical engineering judgment, the maximum recommended mass excavation slope is 1H:1V. For any localized short term, temporary cuts steeper than 1H:1V, with no occupancy within the excavation, materials and equipment should be set back from the top of the excavation beyond where a 1H:1V cut slope would daylight. The excavation contractor should always be prepared and responsible for adjusting and flattening slopes to maintain stability and safety given actual field conditions encountered.

Groundwater

Based on various subsurface site investigation information dating back to 2017, groundwater has typically been encountered at depths below target remedial excavation levels. However, some groundwater levels have been measured a few feet above the deepest planned excavation depths, locally. These levels likely vary seasonally and as a function of rainfall magnitude.

In order to allow the excavation slopes discussed in the previous section and to be consistent with the associated OSHA soil type definition for allowance of such slope excavation geometry, groundwater conditions must be maintained a minimum of 2 feet below the excavation depths at all times along with the prevention of active seepage conditions from the excavation slopes and bottom.

Considering the above, it is important to institute groundwater level monitoring during remedial excavation to confirm requirements are being maintained and to require the excavation contractor to establish an approved groundwater control and monitoring plan with the ability to adjust and maintain the requirements with changing conditions.

Backfill Construction

It is understood that the remediation site, by removal and replacement of contaminated materials, will not have future development. Therefore, the mass excavation soil backfill will not require significant compaction such as would be required for structural or engineered fill. However, the remediated site will

have design grades and slopes such that future settlement or differential settlement that might adversely affect the final grading plan is not desired from a lack of adequate backfill placement methods. Considering these conditions and criteria, minimum recommended requirements for the remediation mass excavation backfill with soil materials are as follows:

- The final clean subgrade below remediation excavation should be scarified, brought to a moisture content within 2 percent of optimum moisture content, and compacted to a minimum of 90 percent of the laboratory maximum dry density, determined in accordance with ASTM D1557, latest edition.
- Subsequent mass excavation backfill replacement material should be a sandy, silty, clayey material with fines content of at least 20 percent. The material should not be highly plastic or have expansive properties, with a plasticity index no greater than 20.
- Mass excavation backfill replacement material should not contain organics and should not contain isolated particle sizes greater than 6 inches.
- The replacement soil backfill material should be properly moisture conditioned prior to placement into the remediation excavations to minimize final moisture adjustment prior to compaction.
- The soil backfill material should be placed in loose horizontal lifts not exceeding 12 inches.
- Prior to compaction, the soil backfill material should be within 2 percent of optimum moisture content.
- The soil backfill material should be compacted to a minimum of 90 percent of the laboratory maximum dry density, determined in accordance with ASTM D1557, latest edition.

List of Figures

List of Attachments

Figures

Last saved by: CONNELLYJ1(2019-06-06) Last Plotted: 2019-06-06
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\GEOTECH TM01\60592267-SMME GTTM-FIG01-SITE PLAN.DWG

ANSI B 11" x 17"

LEGEND

- PROPERTY LINE
- PHILLIPS 66 PIPELINES (3)
- LIMITS OF PROJECT WORK AREA
- EXISTING PROJECT ACCESS ROUTE

N

0 700' 1400'

1" = 700'

Santa Margarita Ranch Remediation Project
Geotechnical Memorandum No 1 - Geotechnical Input for Remediation Design
Phillips 66 - 76 Broadway - Sacramento, CA 95818
Project No.: 60592267 Date: June 2019

OVERALL SITE PLAN

AECOM

Figure: 1

Last saved by: CONNELLYJ1(2019-06-03) Last Plotted: 2019-06-06
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\GEOTECH TM01\60592267-SMME GTTM-FIG02-PROP BORS.DWG
ANSI B 11" x 17"

Santa Margarita Ranch Remediation Project
Geotechnical Memorandum No 1 - Geotechnical Input for Remediation Design
Phillips 66, 76 Broadway, Sacramento CA 95818
Project No.: 60592267 Date: June 2019

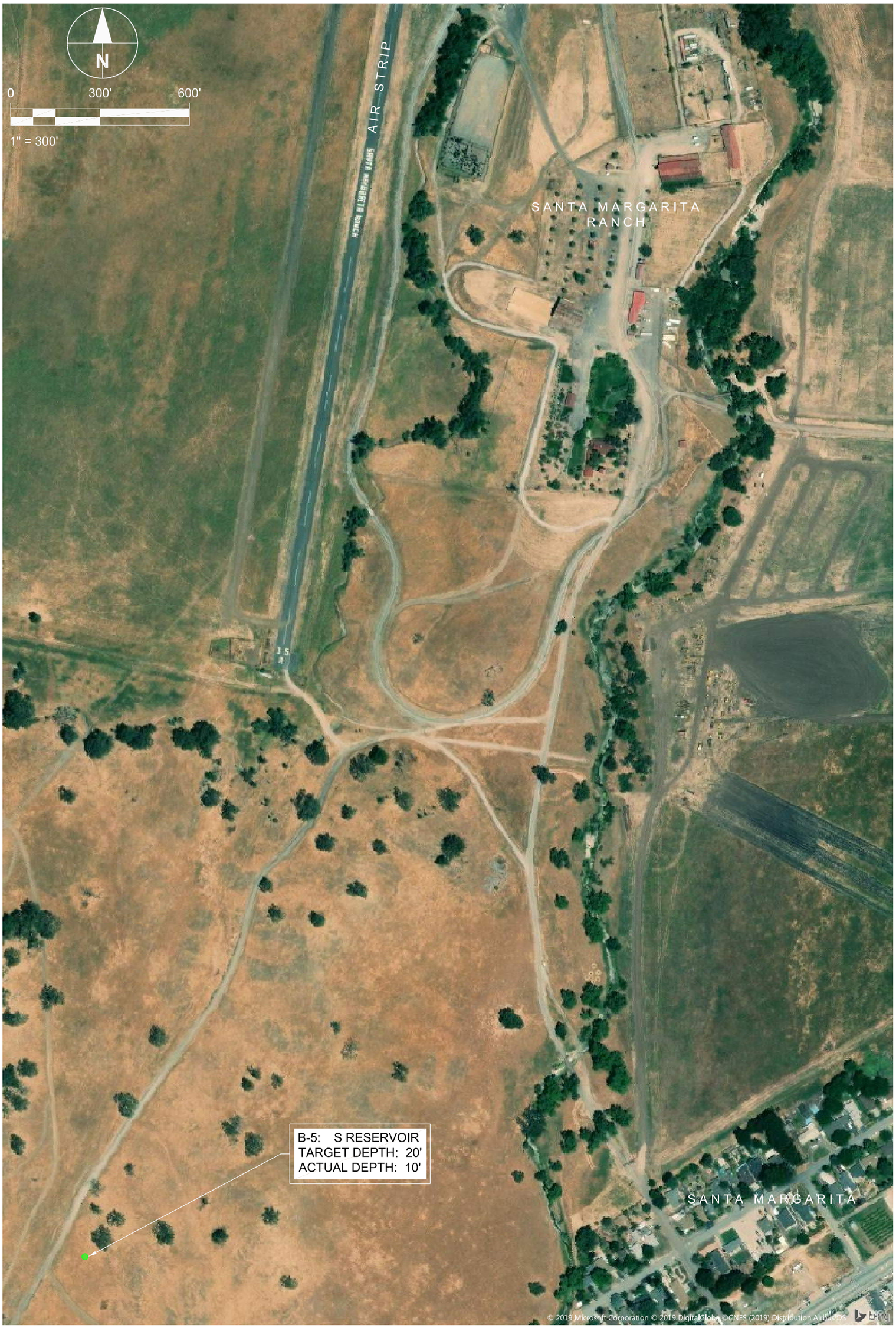
SOIL BORING LOCATIONS

AECOM

Figure: 2

Last saved by: CONNELLYJ1(2019-06-03) Last Plotted: 2019-06-06
Filename: E:\PROJECTS\60592267 - P66 SM MASS EXCAVATION\CADD\FIGURES\GEOTECH TM01\60592267-SMME GTTM-FIG03-PROP BORS.DWG

ANSI B 11" x 17"



Santa Margarita Ranch Remediation Project
Geotechnical Memorandum No 1 - Geotechnical Input for Remediation Design
Phillips 66, 76 Broadway, Sacramento CA 95818
Project No.: 60592267 Date: June 2019

SOIL BORING LOCATION

AECOM

Figure: 3

Attachment A

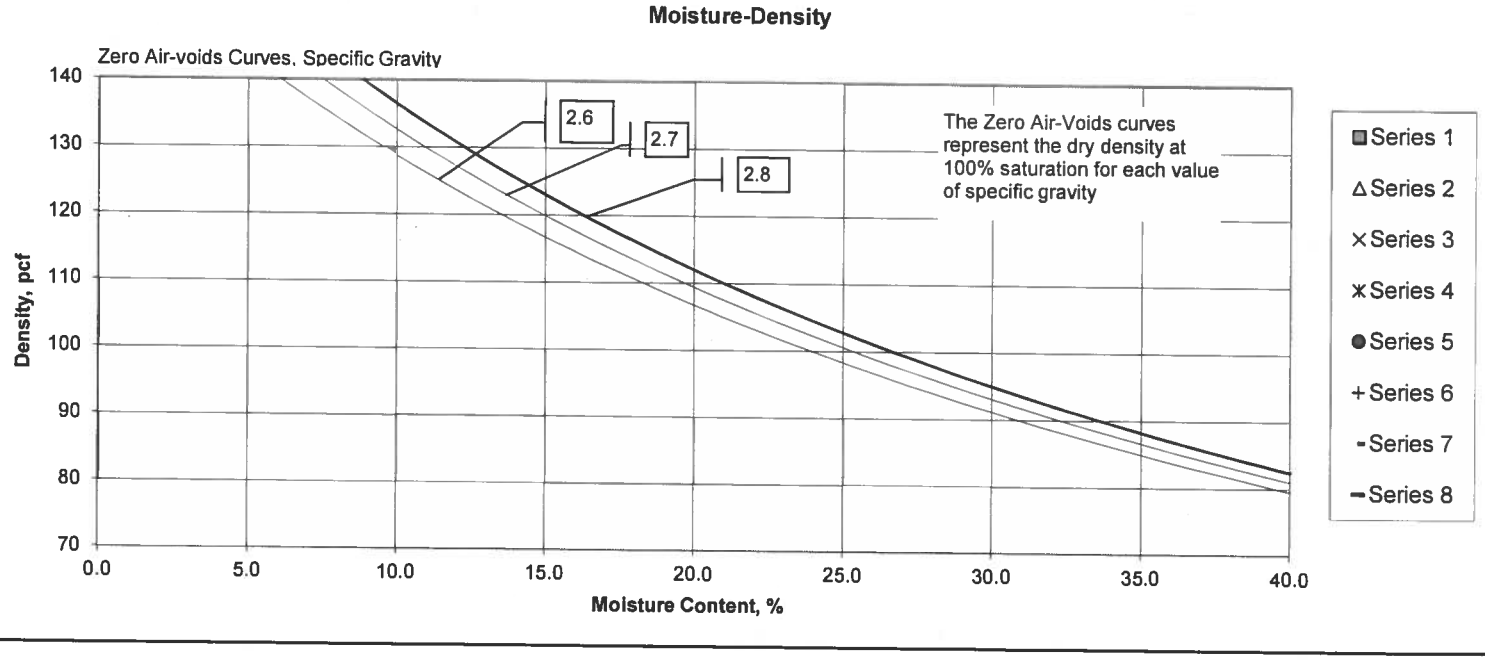
Geotechnical Laboratory Testing Data

Moisture-Density-Porosity Report
Cooper Testing Labs, Inc. (ASTM D7263b)

CTL Job No:	1081-001a	**Project No.**	19-11202	**By:**	RU
Client:	BC Labs	**Date:**	04/25/19		
Project Name:	Santa Margarita	**Remarks:**			

Boring:	B-1	B-1	B-2	B-2	B-2	B-3	B-4	B-4
Sample:	Bulk, Bucket		Bulk, Bucket				Bulk, Bucket	
Depth, ft:	0-5	12-12.5	0-5	7.5-8	10.5-11	7-7.5	0-5	6.5-7
Visual Description:	Reddish Brown Clayey SAND w/ Gravel	Greenish Gray Clayey SAND w/ Gravel	Reddish Brown Sandy CLAY	Olive Brown Silty SAND	Pale Olive Silty SAND	Light Gray Silty SAND	Reddish Brown Sandy SILT	Brown Sandy SILT
Actual G_s								
Assumed G_s								
Moisture, %	20.1	19.3	19.2	16.2	15.7	14.0	21.2	28.4
Wet Unit wt, pcf								
Dry Unit wt, pcf								
Dry Bulk Dens.ρb, (g/cc)								
Saturation, %								
Total Porosity, %								
Volumetric Water Cont,Θw,%								
Volumetric Air Cont., Θa,%								
Void Ratio								
Series	1	2	3	4	5	6	7	8

Note: All reported parameters are from the as-received sample condition unless otherwise noted. If an assumed specific gravity (Gs) was used then the saturation, porosities, and void ratio should be considered approximate.



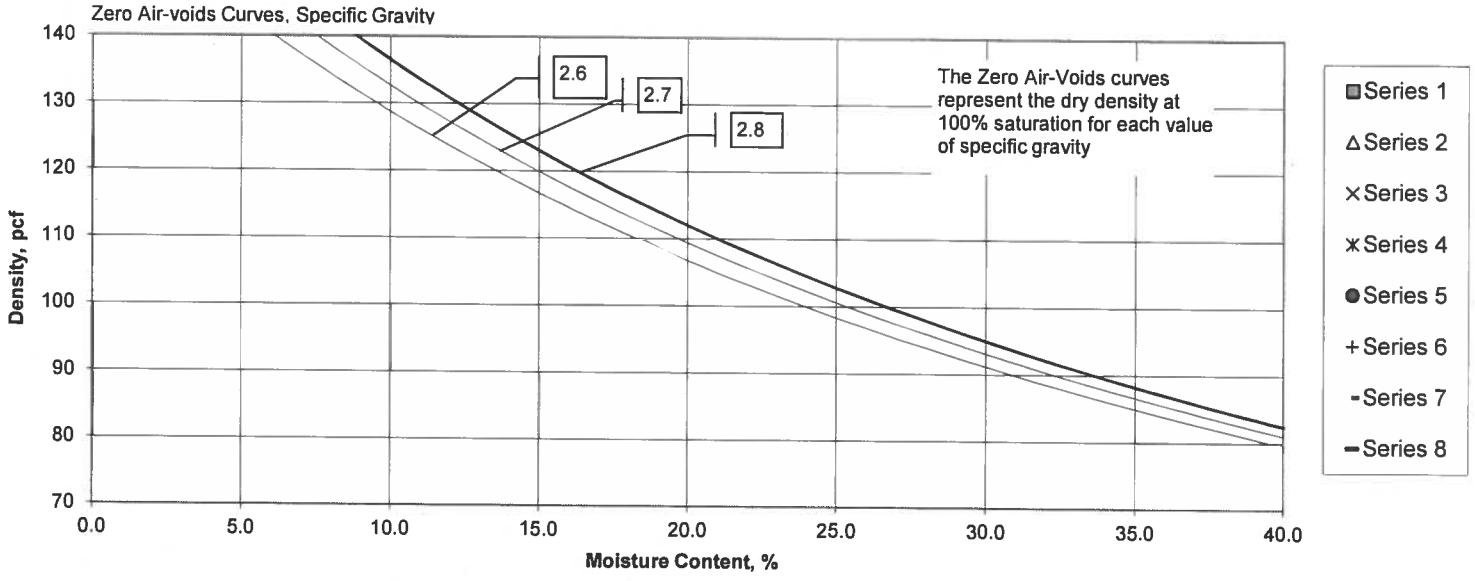
Moisture-Density-Porosity Report
Cooper Testing Labs, Inc. (ASTM D7263b)

CTL Job No:	1081-001b	**Project No.**	19-11202	**By:**	RU
Client:	BC Labs	**Date:**	04/25/19		
Project Name:	Santa Margarita	**Remarks:**			

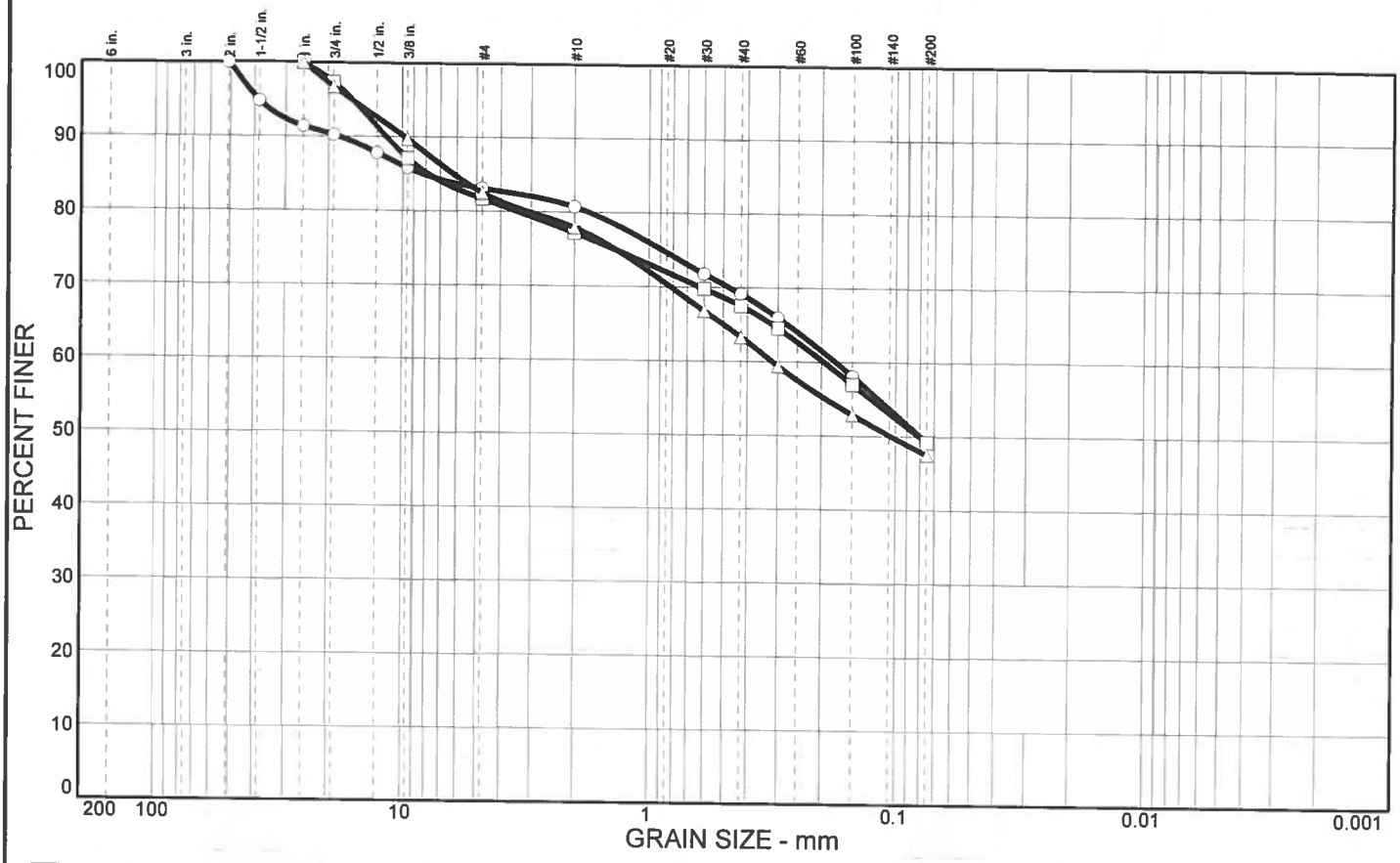
Boring:	B-4	B-5						
Sample:		Bulk, Bucket						
Depth, ft:	9-9.5	0-5						
Visual Description:	Dark Brown Silty SAND	Reddish Brown Sandy CLAY						
Actual G_s								
Assumed G_s								
Moisture, %	23.1	19.8						
Wet Unit wt, pcf								
Dry Unit wt, pcf								
Dry Bulk Dens.pb, (g/cc)								
Saturation, %								
Total Porosity, %								
Volumetric Water Cont,Θw,%								
Volumetric Air Cont., Θa,%								
Void Ratio								
Series	1	2	3	4	5	6	7	8

Note: All reported parameters are from the as-received sample condition unless otherwise noted. If an assumed specific gravity (Gs) was used then the saturation, porosities, and void ratio should be considered approximate.

Moisture-Density



Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		16.9	33.9	49.2					
□		18.3	32.5	49.2		SC		23	34
△		17.5	35.0	47.5					

SIEVE inches size	PERCENT FINER ○	□	△
2	100.0		
1.5"	94.8		
1"	91.4	100.0	100.0
3/4"	90.2	97.3	96.7
1/2"	87.8		
3/8"	85.8	87.1	89.7
	GRAIN SIZE		
D_{60}	0.176	0.196	0.317
D_{30}			
D_{10}			
	COEFFICIENTS		
C_C			
C_U			

SIEVE number size	PERCENT FINER ○	□	△
#4	83.1	81.7	82.5
#10	80.7	77.2	77.9
#30	71.8	69.8	66.8
#40	69.1	67.5	63.3
#50	65.9	64.5	59.4
#100	58.1	57.0	52.9
#200	49.2	49.2	47.5

SOIL DESCRIPTION

○ Reddish Brown Clayey SAND w/ Gravel

□ Dark Reddish Yellow Lean Clayey SAND w/ Gravel

△ Olive Clayey SAND w/ Gravel

REMARKS:

○

□ Due to the small sample size, relative to the largest particle size, this data should be considered to be approximate.

△ Due to the small sample size, relative to the largest particle size, this data should be considered to be approximate.

○ Source: B-1
□ Source: B-1
△ Source: B-1

Sample No.: Bulk_Bucket

Elev./Depth: 0-5'
Elev./Depth: 5.5-6.5'
Elev./Depth: 10-11'

COOPER TESTING LABORATORY

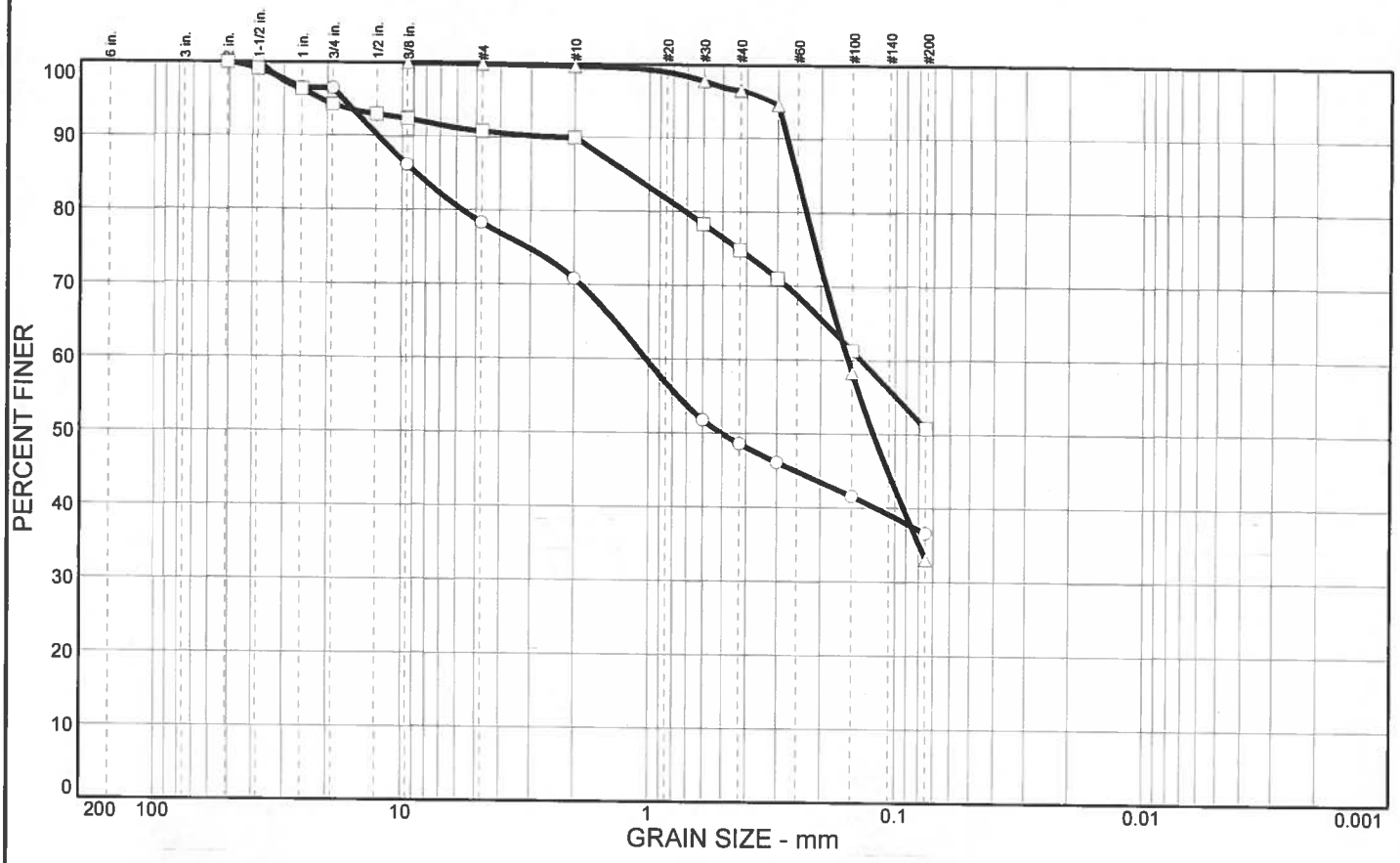
Client: BC Labs

Project: Santa Margarita - 19-11202

Project No.: 1081-001

Figure

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		21.7	41.7	36.6					
□		9.2	40.0	50.8					
△		0.1	66.8	33.1					

SIEVE inches size	PERCENT FINER ○	□	△
2		100.0	
1.5"	100.0	99.1	
1"	96.5	96.4	
3/4"	96.5	94.3	
1/2		93.0	
3/8"	86.1	92.4	100.0
	GRAIN SIZE		
D_{60}	1.02	0.138	0.156
D_{30}			
D_{10}			
	COEFFICIENTS		
C_C			
C_u			

SIEVE number size	PERCENT FINER ○	□	△
#4	78.3	90.8	99.9
#10	70.8	90.0	99.7
#30	51.8	78.3	97.8
#40	48.6	74.8	96.6
#50	46.1	71.0	94.6
#100	41.6	61.3	58.3
#200	36.6	50.8	33.1

SOIL DESCRIPTION

○ Greenish Gray Clayey SAND w/ Gravel

□ Reddish Brown Sandy CLAY

△ Olive Brown Silty SAND

REMARKS:

○ Due to the small sample size, relative to the largest particle size, this data should be considered to be approximate.

□

△

○ Source: B-1 Elev./Depth: 12-12.5'

□ Source: B-2 Sample No.: Bulk_Bucket Elev./Depth: 0-5'

△ Source: B-2 Elev./Depth: 7.5-8'

COOPER TESTING LABORATORY

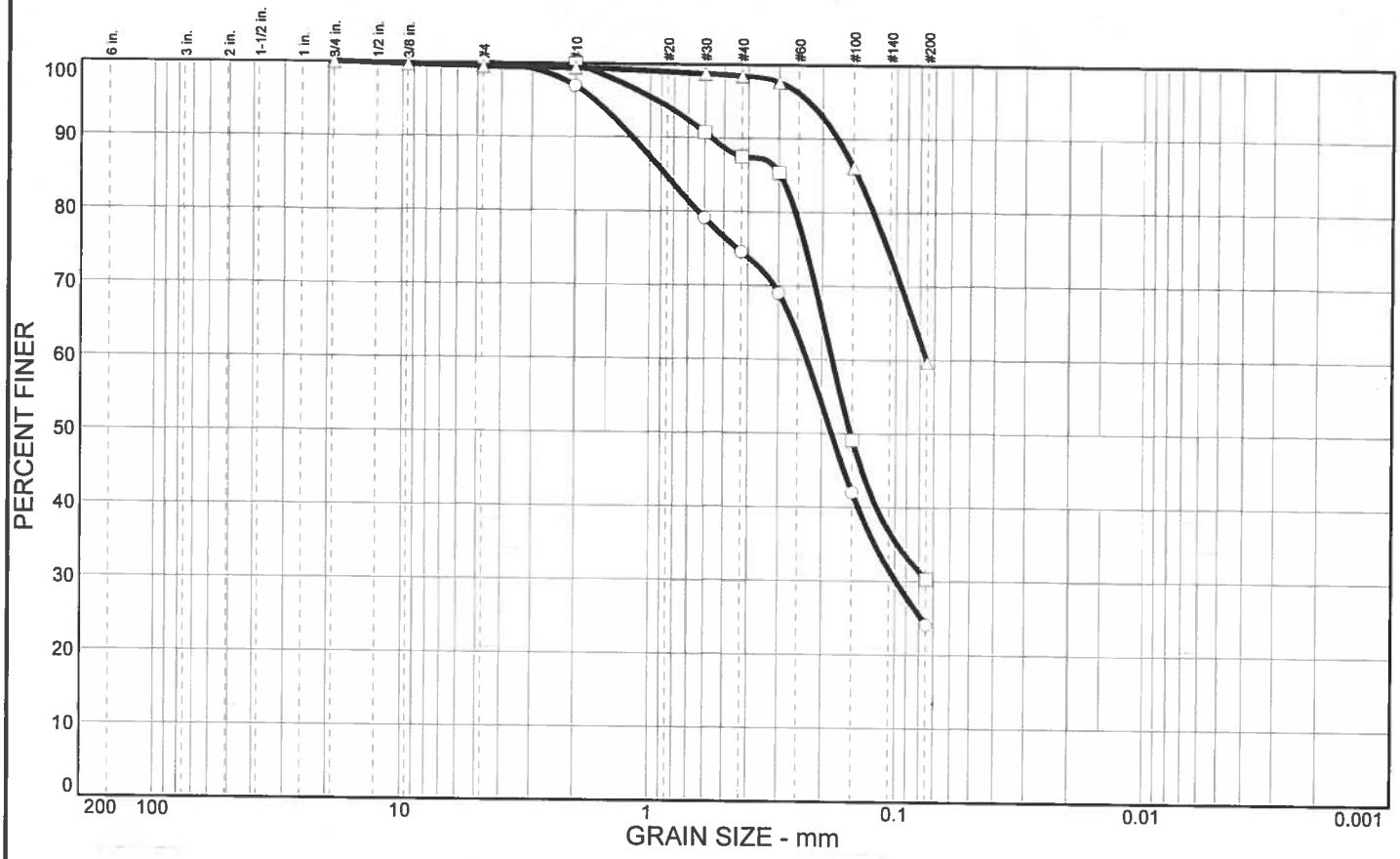
Client: BC Labs

Project: Santa Margarita - 19-11202

Project No.: 1081-001

Figure

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			75.9	24.1					
□			69.7	30.3					
△		0.5	39.8	59.7					

SIEVE inches size	PERCENT FINER ○	□	△
3/4"			100.0
3/8"			99.7
	GRAIN SIZE		
D_{60}	0.230	0.182	0.0755
D_{30}	0.0993		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○	□	△
#4	100.0		99.5
#10	96.9	100.0	99.4
#30	79.1	90.7	98.7
#40	74.5	87.5	98.4
#50	69.0	85.3	97.6
#100	42.0	49.1	86.1
#200	24.1	30.3	59.7

SOIL DESCRIPTION

○ Pale Olive Silty SAND

□ Light Gray Silty SAND

△ Brown Sandy SILT

REMARKS:

○

□

△

○ Source: B-2 Elev./Depth: 10.5-11'

□ Source: B-3 Elev./Depth: 7-7.5'

△ Source: B-4 Elev./Depth: 6.5-7'

COOPER TESTING LABORATORY

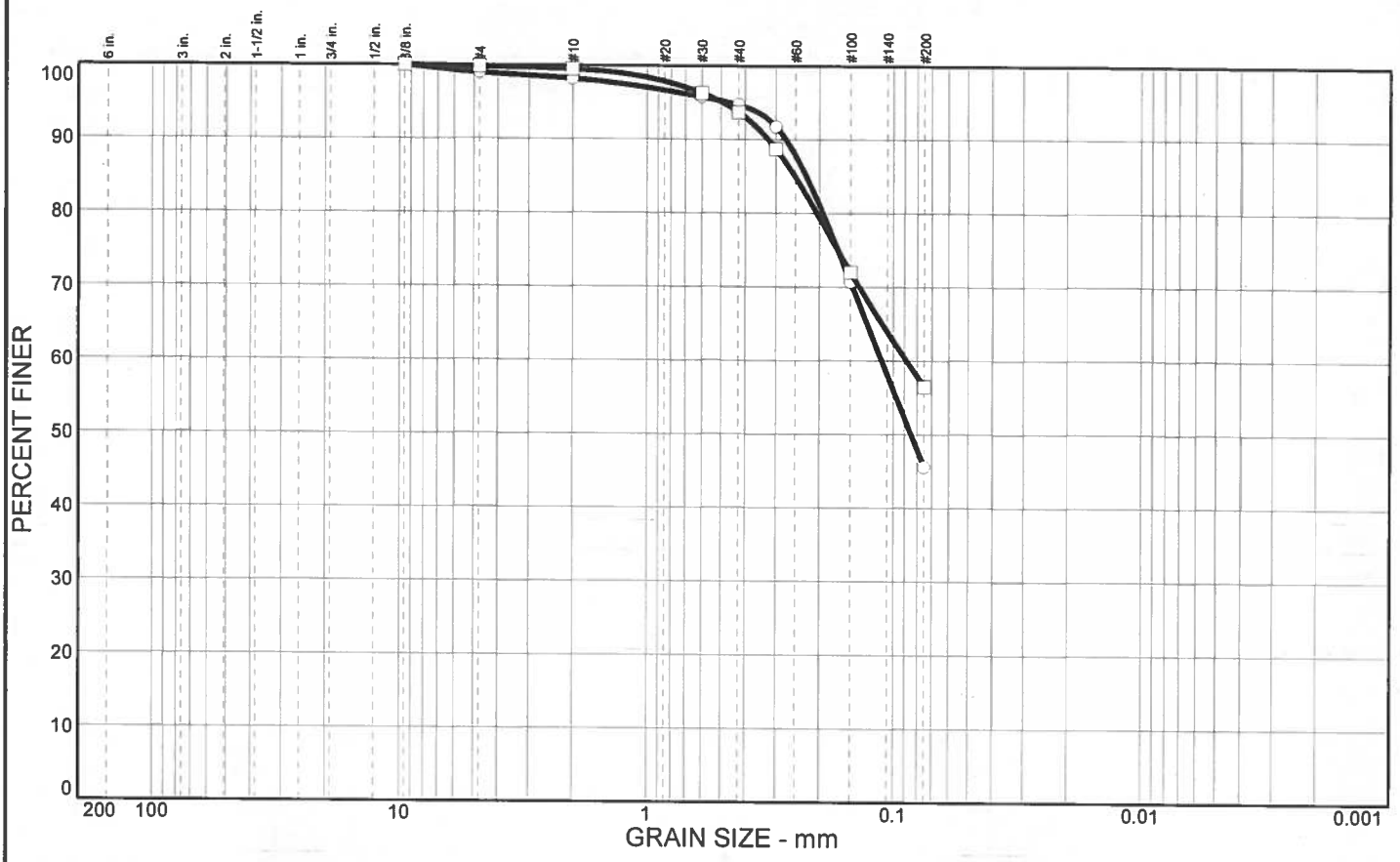
Client: BC Labs

Project: Santa Margarita - 19-11202

Project No.: 1081-001

Figure

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		1.0	53.4	45.6		SM		21	24
□		0.2	43.3	56.5					

SIEVE inches size	PERCENT FINER ○	PERCENT FINER □
3/8"	100.0	100.0
GRAIN SIZE		
D_{60}	0.112	0.0885
D_{30}		
D_{10}		
COEFFICIENTS		
C_c		
C_u		

SIEVE number size	PERCENT FINER ○	PERCENT FINER □
#4	99.0	99.8
#10	98.2	99.5
#30	95.8	96.3
#40	94.7	93.7
#50	91.7	88.7
#100	70.7	72.0
#200	45.6	56.5

SOIL DESCRIPTION

○ Dark Brown Silty SAND

□ Reddish Brown Sandy CLAY

REMARKS:

○

□

○ Source: B-4 Sample No.: Bulk_Bucket Elev./Depth: 9-9.5'

□ Source: B-5 Elev./Depth: 0-5'

COOPER TESTING LABORATORY

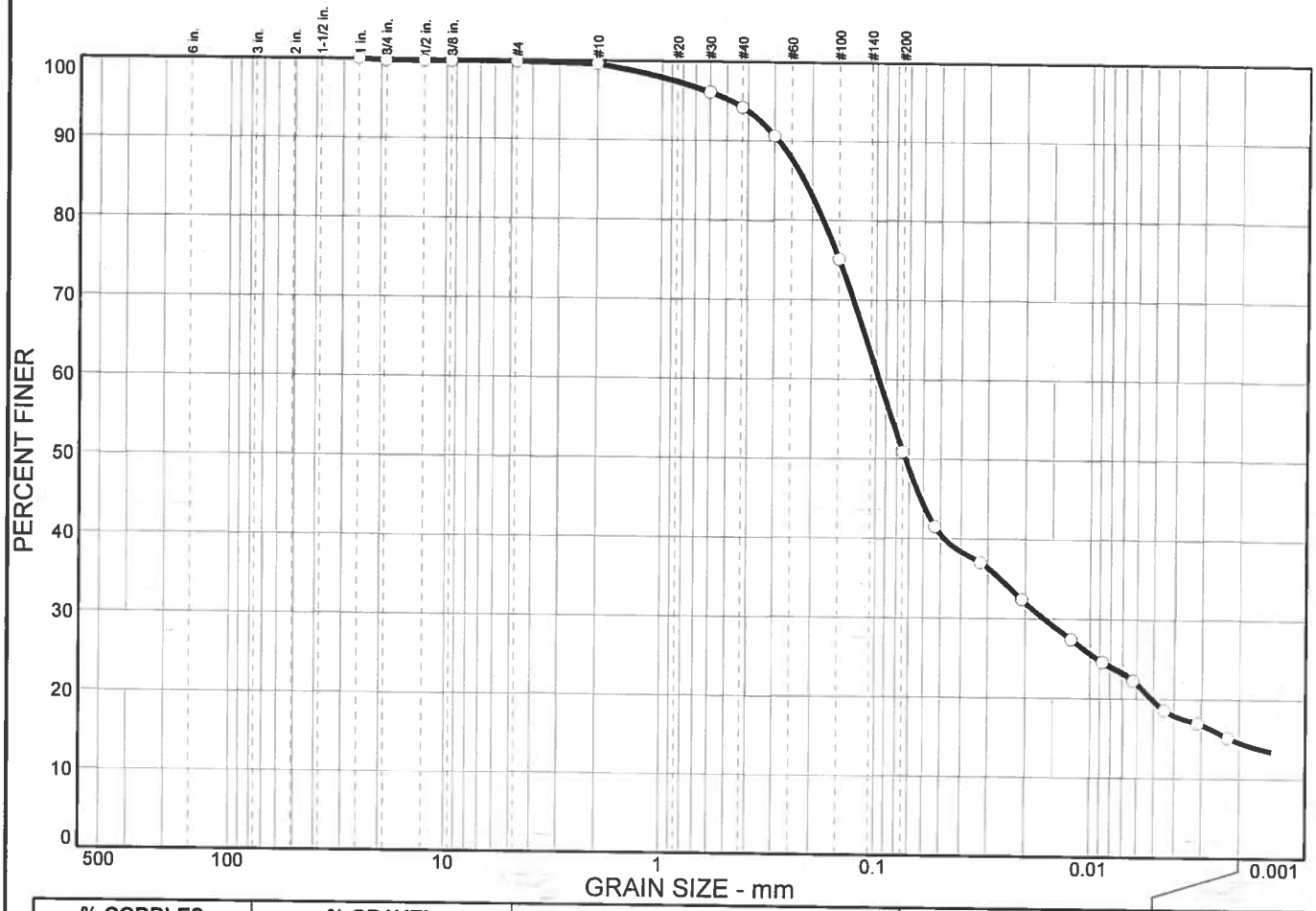
Client: BC Labs

Project: Santa Margarita - 19-11202

Project No.: 1081-001

Figure

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.2	48.9	36.3	14.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	99.8		
1/2 in.	99.8		
3/8 in.	99.8		
#4	99.8		
#10	99.6		
#30	96.1		
#40	94.2		
#50	90.6		
#100	75.1		
#200	50.9		
#270	41.5		
0.0324 mm.	37.0		
0.0208 mm.	32.4		
0.0122 mm.	27.4		
0.0087 mm.	24.6		
0.0062 mm.	22.3		
0.0045 mm.	18.6		
0.0031 mm.	17.0		
0.0023 mm.	15.2		
0.0013 mm.	13.3		

* (no specification provided)

Soil Description

Reddish Brown Sandy SILT

Atterberg Limits

PL= 22 LL= 23 PI= 1

Coefficients

D_{85}= 0.219 D_{60}= 0.0972 D_{50}= 0.0730
D_{30}= 0.0164 D_{15}= 0.0022 D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

Sample No.: Bulk, Bucket **Source of Sample:** B-4 **Date:** 4/30/19
Location: **Elev./Depth:** 0-5'

COOPER TESTING LABORATORY

Client: BC Labs
Project: Santa Margarita - 19-11202
Project No: 1081-001 **Figure**

COOPER TESTING LABORATORY

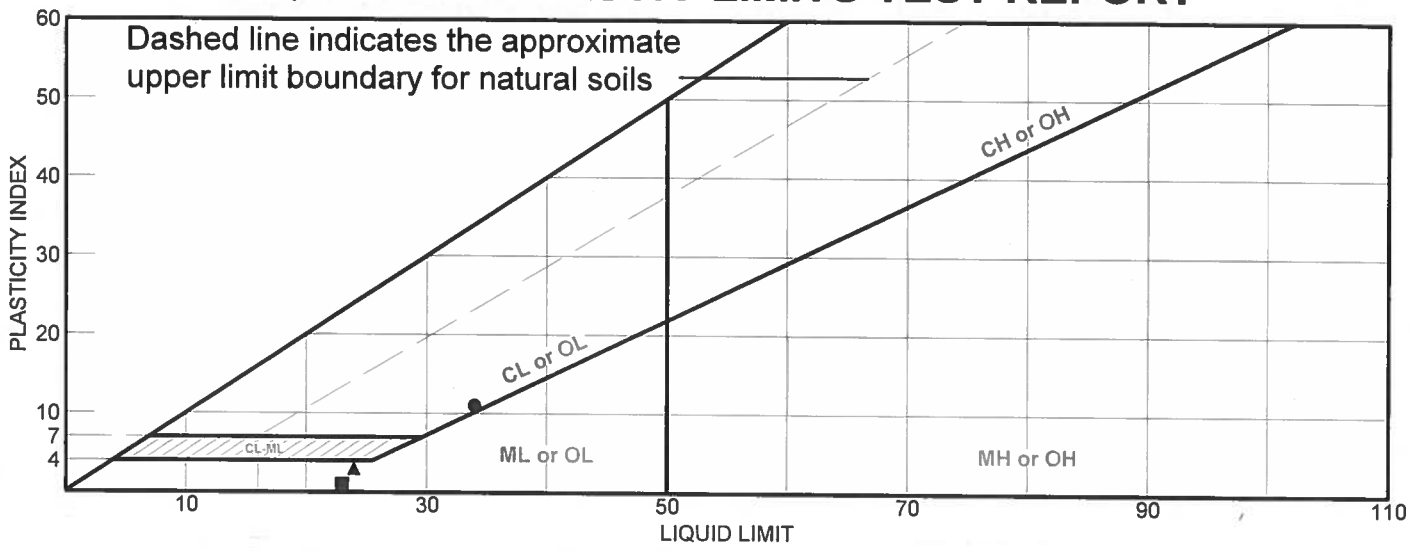
#200 Sieve Wash Analysis
ASTM D 1140

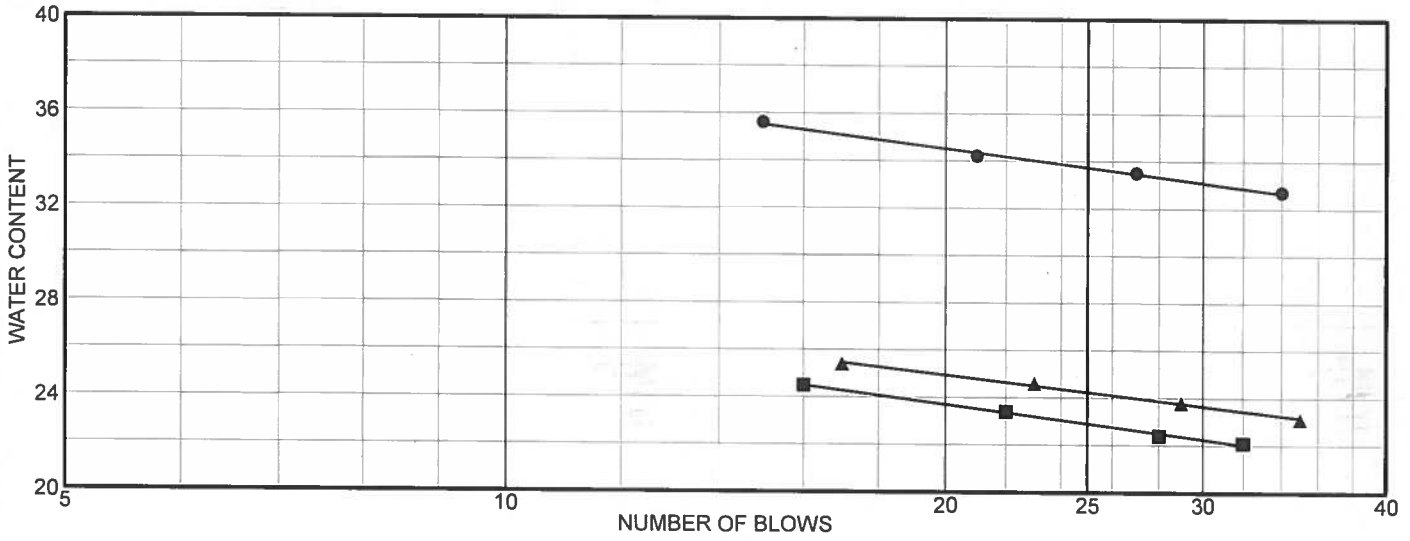
Job No.:	1081-001	**Project No.:**	19-11202	**Run By:**	MD
Client:	BC Labs	**Date:**	5/6/2019	**Checked By:**	DC
Project:	Santa Margarita				

Boring:	B-1							
Sample:								
Depth, ft.:	15.0-15.5							
Soil Type:	Gray Clayey SAND w/ Gravel							
Wt of Dish & Dry Soil, gm	897.2							
Weight of Dish, gm	173.3							
Weight of Dry Soil, gm	723.9							
Wt. Ret. on #4 Sieve, gm	197.4							
Wt. Ret. on #200 Sieve, gm	465.3							
% Gravel	**27.3**							
% Sand	**37.0**							
% Silt & Clay	**35.7**							

Remarks: As an added benefit to our clients, the gravel fraction may be included in this report. Whether or not it is included is dependent upon both the technician's time available and if there is a significant enough amount of gravel. The gravel is always included in the percent retained on the #200 sieve but may not be weighed separately to determine the percentage, especially if there is only a trace amount, (5% or less).

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Dark Reddish Yellow Lean Clayey SAND w/ Gravel	34	23	11	67.5	49.2	SC
■	Reddish Brown Sandy SILT	23	22	1	94.2	50.9	ML
▲	Dark Brown Silty SAND	24	21	3	94.7	45.6	SM

Project No. 1081-001 **Client:** BC Labs

Project: Santa Margarita - 19-11202

● **Source:** B-1 **Elev./Depth:** 5.5-6.5'

■ **Source:** B-4 **Sample No.:** Bulk, Bucket **Elev./Depth:** 0-5'

▲ **Source:** B-4 **Elev./Depth:** 9-9.5'

Remarks:

●

■

▲

LIQUID AND PLASTIC LIMITS TEST REPORT

COOPER TESTING LABORATORY

Figure

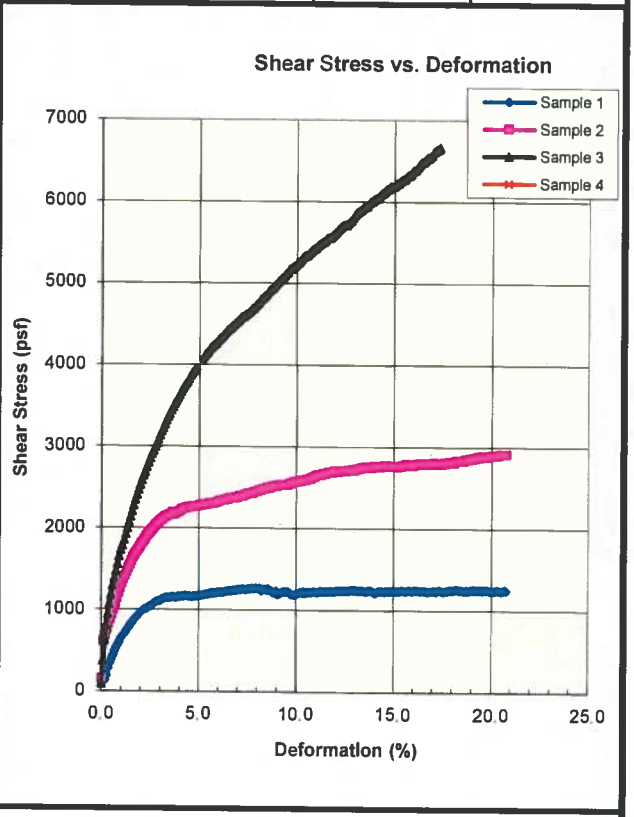
Consolidated Drained Direct Shear (ASTM D3080)

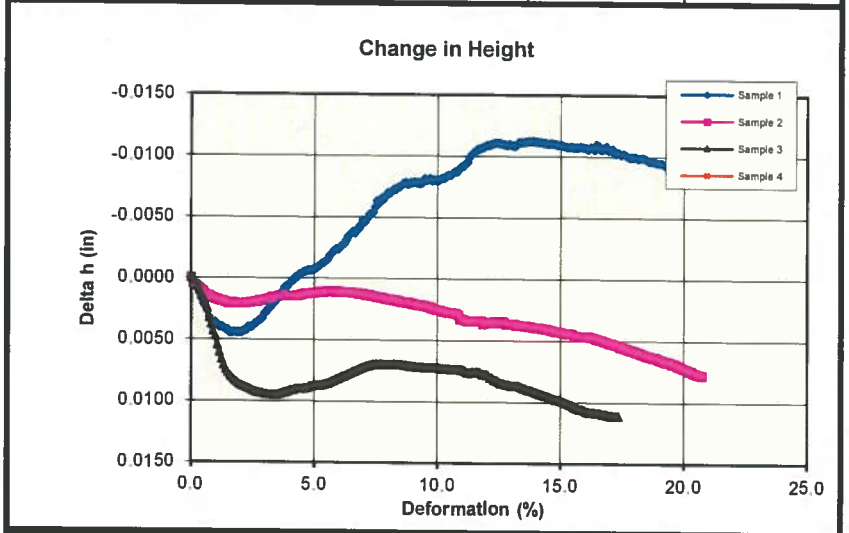
CTL Job #:	1081-001	Project #:	19-11202	By:	MD
Client:	BC Labs	Date:	4/25/2019	Checked:	PJ
Project Name:	Santa Margarita	Remolding Info:			

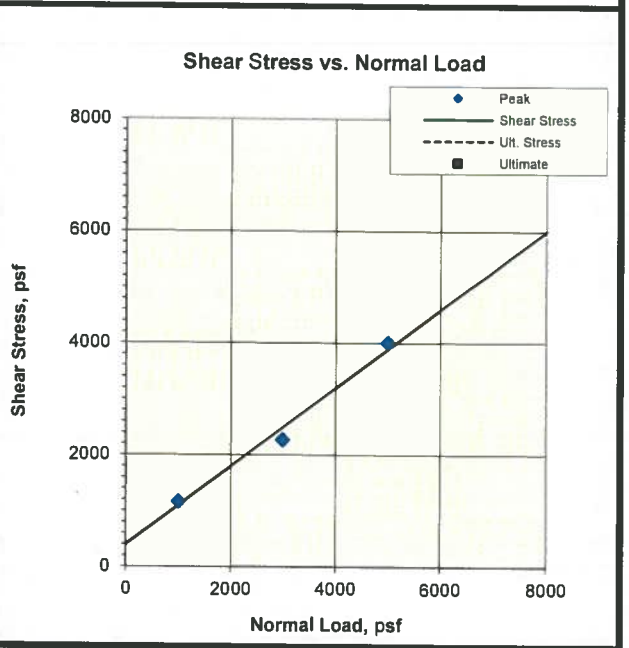
Phi (deg)	35.0	Ult. Phi (deg)	
Cohesion (psf)	400	Ult. Cohesion (psf)	

Specimen Data

	1	2	3	4
Boring:	B-1	B-1	B-1	
Sample:				
Depth (ft):	5.5-6.5	5.5-6.5	5.5-6.5	
Visual Description:	Dark Reddish Yellow Lean Clayey SAND w/ Gravel	Dark Reddish Yellow Lean Clayey SAND w/ Gravel	Dark Reddish Yellow Lean Clayey SAND w/ Gravel	
Normal Load (psf)	1000	3000	5000	
Dry Mass of Specimen (g)	129.3	125.5	129.1	
Initial Height (in)	1.02	1.00	1.01	
Initial Diameter (in)	2.41	2.41	2.41	
Initial Void Ratio	0.654	0.675	0.644	
Initial Moisture (%)	20.3	20.2	19.4	
Initial Wet Density (pcf)	127.1	125.4	126.9	
Initial Dry Density (pcf)	105.7	104.4	106.3	
Initial Saturation (%)	87.0	83.8	84.3	
ΔHeight Consol (in)	0.0283	0.0453	0.0619	
At Test Void Ratio	0.609	0.599	0.544	
At Test Moisture (%)	21.6	21.2	19.4	
At Test Wet Density (pcf)	132.1	132.5	135.2	
At Test Dry Density (pcf)	108.7	109.3	113.2	
At Test Saturation (%)	99.3	99.2	99.8	
Strain Rate (%/min)	0.01	0.01	0.01	
Strengths Picked at	5%	5%	5%	
Shear Stress (psf)	1165	2268	4008	
ΔHeight (in) at 5%	-0.0007	0.0012	0.0087	
Ultimate Stress (psf)				







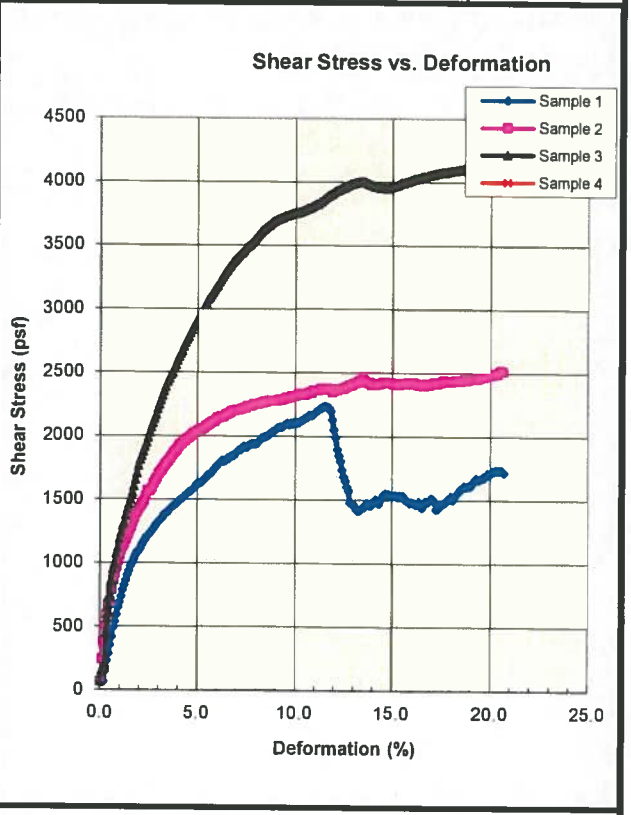
Remarks: Gravel in shear plane of all 3 samples may influence results.

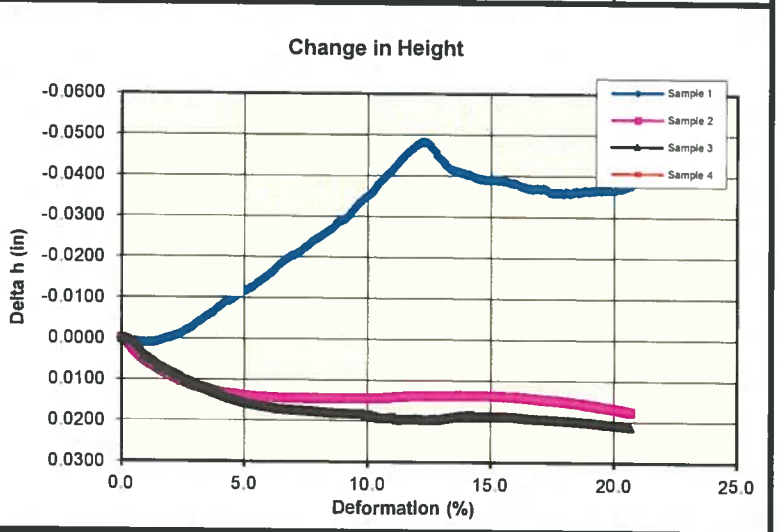
Consolidated Drained Direct Shear (ASTM D3080)

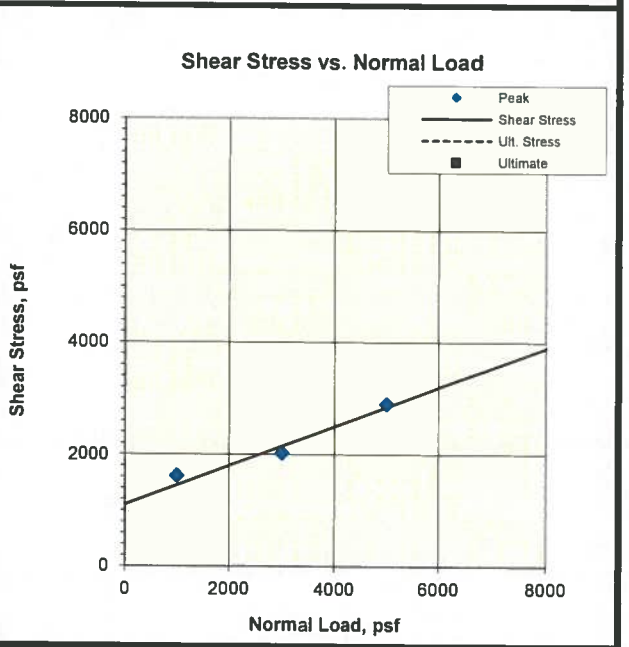
CTL Job #:	1081-001	Project #:	19-11202	By:	MD
Client:	BC Labs	Date:	5/1/2019	Checked:	PJ
Project Name:	Santa Margarita	Remolding Info:			

Specimen Data				
	1	2	3	4
Boring:	B-1	B-1	B-1	
Sample:				
Depth (ft):	10-11	10-11	10-11	
Visual Description:	Olive Clayey SAND w/ Gravel Intermingle w/ Brown Sandy CLAY	Olive Clayey SAND w/ Gravel Intermingle w/ Brown Sandy CLAY	Olive Clayey SAND w/ Gravel Intermingle w/ Brown Sandy CLAY	
Normal Load (psf)	1000	3000	5000	
Dry Mass of Specimen (g)	130.3	124.2	115.2	
Initial Height (in)	1.01	1.01	1.00	
Initial Diameter (in)	2.42	2.42	2.42	
Initial Void Ratio	0.609	0.684	0.804	
Initial Moisture (%)	17.9	19.3	21.2	
Initial Wet Density (pcf)	125.8	121.6	115.4	
Initial Dry Density (pcf)	106.7	102.0	95.2	
Initial Saturation (%)	80.9	77.6	72.7	
ΔHeight Consol (in)	0.0079	0.0267	0.0508	
At Test Void Ratio	0.597	0.639	0.712	
At Test Moisture (%)	21.0	23.1	25.7	
At Test Wet Density (pcf)	130.1	128.9	126.1	
At Test Dry Density (pcf)	107.5	104.7	100.3	
At Test Saturation (%)	96.7	99.3	99.4	
Strain Rate (%/min)	0.01	0.01	0.01	
Strengths Picked at	5%	5%	5%	
Shear Stress (psf)	1618	2025	2903	
ΔHeight (in) at 5%	-0.0115	0.0139	0.0155	
Ultimate Stress (psf)				

Phi (deg)	19.3	Ult. Phi (deg)	
Cohesion (psf)	1100	Ult. Cohesion (psf)	

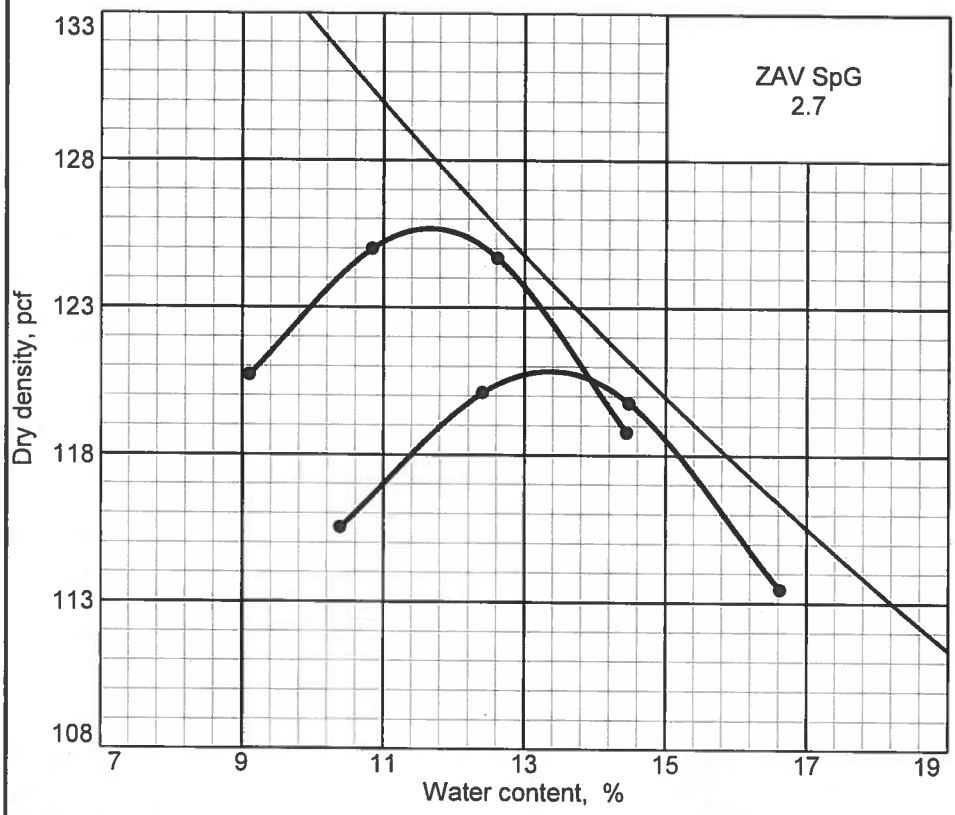






Remarks: Gravel in shear plane on all 3 points may influence results.

COMPACTION TEST REPORT



Curve No.

Test Specification:
ASTM D 1557-00 Method B Modified
Oversize correction applied to each point

Hammer Wt.: 10 lb.
Hammer Drop: 18 in.
Number of Layers: five
Blows per Layer: 25
Mold Size: .03333 cu.ft.

Test Performed on Material Passing 3/8 in. **Sieve**

Soil Data

NM _____ **Sp.G.** 2.7
LL _____ **PI** _____
%>3/8 in. 14.25 **%<#200** 49.2
USCS _____ **AASHTO** _____

TESTING DATA

	1	2	3	4	5	6
WM + WS	8.69	8.94	9.01	8.85		
WM	4.44	4.44	4.44	4.44		
WW + T #1	807.70	947.10	849.40	1066.30		
WD + T #1	762.00	875.30	783.40	960.90		
TARE #1	321.90	296.60	327.70	326.70		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	9.1	10.8	12.6	14.5		
DRY DENSITY	120.7	125.0	124.7	118.8		

ROCK CORRECTED TEST RESULTS	UNCORRECTED	Material Description
Maximum dry density = 125.7 pcf	120.8 pcf	Reddish Brown Clayey SAND w/ Gravel
Optimum moisture = 11.7 %	13.4 %	

Project No. 1081-001 **Client:** BC Labs
Project: Santa Margarita - 19-11202

● **Source:** B-1 **Sample No.:** Bulk_Bucke **Elev./Depth:** 0-5'

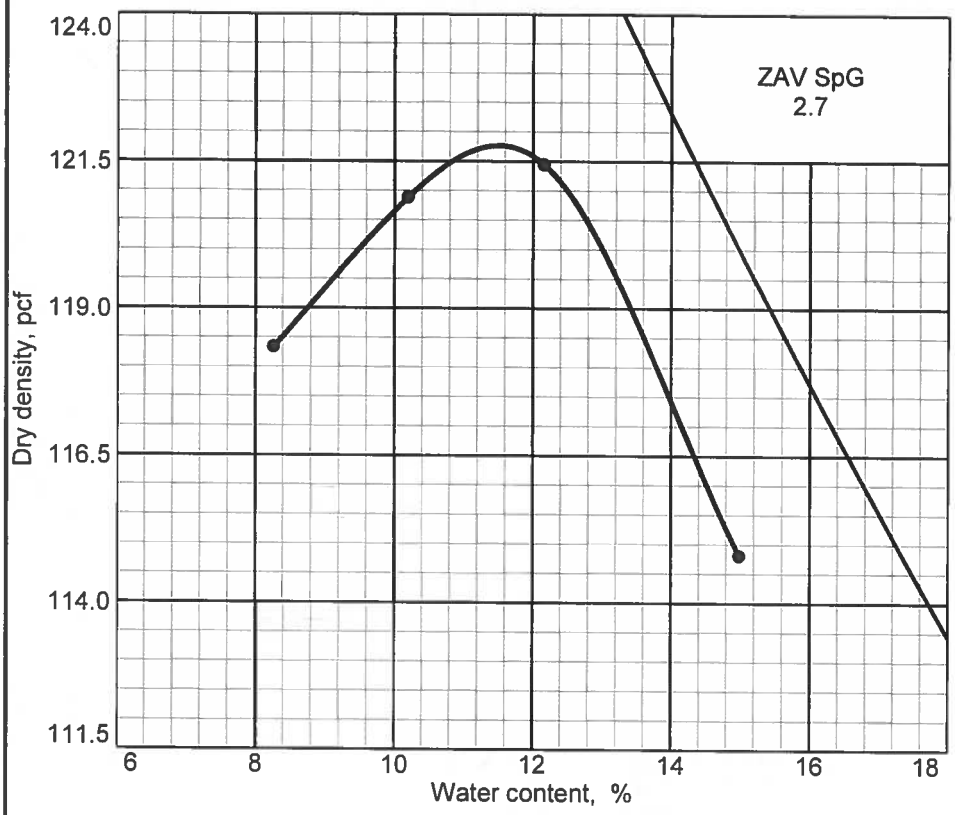
COMPACTION TEST REPORT

COOPER TESTING LABORATORY

Remarks:

Figure

COMPACTION TEST REPORT



Curve No.

Test Specification:
ASTM D 1557-00 Method A Modified

Hammer Wt.: 10 lb.
Hammer Drop: 18 in.
Number of Layers: five
Blows per Layer: 25
Mold Size: .03333 cu.ft.

Test Performed on Material Passing No.4 **Sieve**

Soil Data

NM _____ **Sp.G.** 2.7
LL 23 **PI** 1
%>No.4 0.2 **%<#200** 50.9
USCS ML **AASHTO** _____

TESTING DATA

	1	2	3	4	5	6
WM + WS	8.88	8.98	8.84	8.71		
WM	4.44	4.44	4.44	4.44		
WW + T #1	842.30	862.60	843.30	801.10		
WD + T #1	794.30	803.30	775.00	762.50		
TARE #1	323.60	315.60	319.30	295.30		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	10.2	12.2	15.0	8.3		
DRY DENSITY	120.9	121.4	114.8	118.3		

TEST RESULTS

Maximum dry density = 121.8 pcf

Optimum moisture = 11.5 %

Material Description

Reddish Brown Sandy SILT

Project No. 1081-001 **Client:** BC Labs
Project: Santa Margarita - 19-11202

● **Source:** B-4 **Sample No.:** Bulk, **Elev./Depth:** 0-5'

Remarks:

COMPACTION TEST REPORT

COOPER TESTING LABORATORY

Figure

Attachment B

Geotechnical Boring Logs

Boring/Well Log

Well Name: B-1

Project: **SMR Remediation Project**	**Boring Information**	**Survey Information**
Project #: **60592267**	Contractor: **S/G Drilling Company**	Ground Elevation: **-**
Location: **Santa Margarita Ranch**	Operator: **Timothy Blakeboro**	Datum: **-**
Client: **Phillips 66**	Drill Rig Type: **CME-75**	Northing: **-** Easting: **-**
Start Date: **03-28-19**	Method: **Hollow Stem Auger**	
Finish Date: **03-28-19**	Total Depth of Boring: **19.4 feet bgs**	
Logged By: **Jeff Gaines, P.G.**	Boring ID: **6"**	
Reviewed By: **Stan Kline, P.E.**		

Depth (ft bgs)	Well Log	Graphic	Group Symbol	Soil Description (Classification Scheme: USCS)	Sample Data: PID (ppm)	Blow Counts	Sample Interval	Sample Type	Analytical Sample ID
0	Cement-Bentonite Grout		CL	SANDY LEAN CLAY: dark brown (7.5YR 3/3); trace sandstone gravel and cobble near surface; 40% fine to coarse grained sand; 60% low plasticity fines; rapid to slow dilatancy; soft to firm consistency; roots; no hydrocarbon odor; moist.	0.0		HA	Grab	
					0.0		HA	Grab	
					0.0		HA	Grab	B-1-0-2-032819
					0.0		HA	Grab	
					0.0		HA	Grab	B-1-2-4-032819
					0.0		HA	Grab	
5				SANDY LEAN CLAY: strong brown (7.5YR 4/6); trace sandstone gravel and cobble; 40% fine to coarse grained sand; 60% low plasticity fines; soft to firm consistency; local oxidation; roots; no hydrocarbon odor; moist.	0.0	1 3	SS	Grab	Bulk 0-5', 5 gallon
					0.0	4			
						4	SS	Grab	
					0.0	18 31			
				SANDY LEAN CLAY: strong brown (7.5YR 4/6); trace sandstone gravel and cobble; 45% fine to coarse grained sand; 55% low to medium plasticity fines; soft to firm consistency; local oxidation; roots; no hydrocarbon odor; moist.	0.0	27 50/5"	SS	Grab	
					0.0				
10					0.0	2	SS	Grab	
				SANDY LEAN CLAY: strong brown (7.5YR 4/6); trace well rounded gravel, pea sized to 1 inch diameter; 45% fine to coarse grained sand; 55% low to medium plasticity fines; hard consistency; local oxidation; roots; hydrocarbon odor; moist.	51.7	19			
					48.1	35			
						10	SS	Grab	
				SANDY LEAN CLAY WITH GRAVEL: strong brown (7.5YR 4/6); 15% well rounded gravel, pea sized to 1 inch diameter; 40% fine to coarse grained sand; 45% low to medium plasticity fines; dense consistency; roots; hydrocarbon odor; moist.		20			
					146.1	24			
						6	SS	Grab	
						24			
					173.8	30			

Remarks:	**0-5 feet bgs hand augered for utility clearance**
	bgs = below ground surface
	Backfilled with cement-bentonite grout
	HA = hand auger; SS = split spoon

AECOM
3995 Via Oro Ave
Long Beach, CA 90810
(562) 420-2933
(562) 420-2915 Fax

AECOM

Boring/Well Log

Well Name: B-1

Project: **SMR Remediation Project**	**Boring Information**	**Survey Information**
Project #: **60592267**	Contractor: **S/G Drilling Company**	Ground Elevation: **-**
Location: **Santa Margarita Ranch**	Operator: **Timothy Blakeboro**	Datum: **-**
Client: **Phillips 66**	Drill Rig Type: **CME-75**	Northing: **-** Easting: **-**
Start Date: **03-28-19**	Method: **Hollow Stem Auger**	
Finish Date: **03-28-19**	Total Depth of Boring: **19.4 feet bgs**	
Logged By: **Jeff Gaines, P.G.**	Boring ID: **6"**	
Reviewed By: **Stan Kline, P.E.**		

Depth (ft bgs)	Well Log	Graphic	Group Symbol	Soil Description (Classification Scheme: USCS)	Sample Data: PID (ppm)	Blow Counts	Sample Interval	Sample Type	Analytical Sample ID
15			SP	POORLY GRADED SAND: pale green and greenish grey (GLEY1 6/5G and 5/10G); 10% well-rounded gravel up to 2.5 inch diameter; 90% fine to coarse grained sand; very dense consistency; chert and sandstone clasts; hydrocarbon odor; moist.	85.6	5	SS	Grab	
			CL	SANDY LEAN CLAY: strong brown (10YR 8/4); 35% fine to coarse grained sand; 65% medium plasticity fines; very hard consistency; hydrocarbon odor; moist.	152		SS	Grab	
			SC	CLAYEY SAND: pale green and greenish grey (GLEY1 6/5G and 5/10G); 10% well-rounded gravel up to 2.5 inch diameter; 55% fine to coarse grained sand; 35% fines; very dense consistency; chert and sandstone clasts; hydrocarbon odor; moist/wet from 19-19.4 feet bgs.	233.8	23 50/5"	SS	Grab	
					720	29 50/5"	SS	Grab	

Remarks:	**0-5 feet bgs hand augered for utility clearance**
	bgs = below ground surface
	Backfilled with cement-bentonite grout
	HA = hand auger; SS = split spoon

AECOM
3995 Via Oro Ave
Long Beach, CA 90810
(562) 420-2933
(562) 420-2915 Fax

AECOM

Boring/Well Log

Well Name: B-2

Project: SMR Remediation Project	Boring Information	Survey Information
Project #: 60592267	Contractor: S/G Drilling Company	Ground Elevation: -
Location: Santa Margarita Ranch	Operator: Randall Glaze	Datum: -
Client: Phillips 66	Drill Rig Type: CME-85	Northing: - Easting: -
Start Date: 03-20-19	Method: Hollow Stem Auger	
Finish Date: 03-20-19	Total Depth of Boring: 14.75 feet bgs	
Logged By: Jeff Gaines, P.G.	Boring ID: 6"	
Reviewed By: Stan Kline, P.E.		

Depth (ft bgs)	Well Log	Graphic	Group Symbol	Soil Description (Classification Scheme: USCS)	PID (ppm)	Blow Counts	Sample Interval	Sample Type	Analytical Sample ID
0			ML	SILT WITH SAND: dark brown (7.5YR 3/4); trace subrounded gravel up to 2 inches; 15% fine to coarse grained sand; 85% low plasticity fines; soft consistency; roots; no hydrocarbon odor; moist/wet.	0.0		HA	Grab	
					0.0		HA	Grab	B-2-0-2-032019
							HA	Grab	
			CL	LEAN CLAY WITH SAND: dark brown (7.5YR 3/3) 20% fine to coarse grained sand; 80% medium plasticity fines; low toughness; firm consistency; no hydrocarbon odor; moist.	0.0		HA	Grab	B-2-2-4-032019
					0.0		HA	Grab	
					0.0		HA	Grab	
5						11	SS	Grab	
					0.0	23			
						19			
			SC	CLAYEY SAND: brown (7.5YR 5/3); 55% fine to medium grained sand; 45% fines; dense consistency; hydrocarbon odor; moist.	32	10	SS	Grab	
					36	30			
					38	43			
						15		Grab	

Remarks:	0-5 feet bgs hand augered for utility clearance
	bgs = below ground surface
	Backfilled with cement-bentonite grout.
	HA = hand auger; SS = split spoon

AECOM
3995 Via Oro Ave
Long Beach, CA 90810
(562) 420-2933
(562) 420-2915 Fax

AECOM

Boring/Well Log

Well Name: B-2

Depth (ft bgs)	Well Log	Graphic	Group Symbol	Soil Description Classification Scheme: USCS	Sample Data: PID (ppm)	Blow Counts	Sample Interval	Sample Type	Analytical Sample ID
	Cement-Bentonite Grout		SM	SILTY SAND: pale yellow (5YR 8/2); 55% sand (55% fine, trace medium, trace coarse); 45% fines; very dense consistency; no hydrocarbon odor; moist.	0.0	33 50	SS		
10				SILTY SAND: pink (5YR 7/3); 55% sand; 45% fines; very dense consistency; slight hydrocarbon odor; possible decomposed sandstone bedrock at 13 feet bgs; moist.	0.0	10 24	SS	Grab	
					0.0	38			
						10	SS	Grab	
					0.0	17			
					0.0	29			
						7	SS	Grab	
					0.0	17			
					0.0	29			
						18	SS	Grab	
					0.0	50/3"			

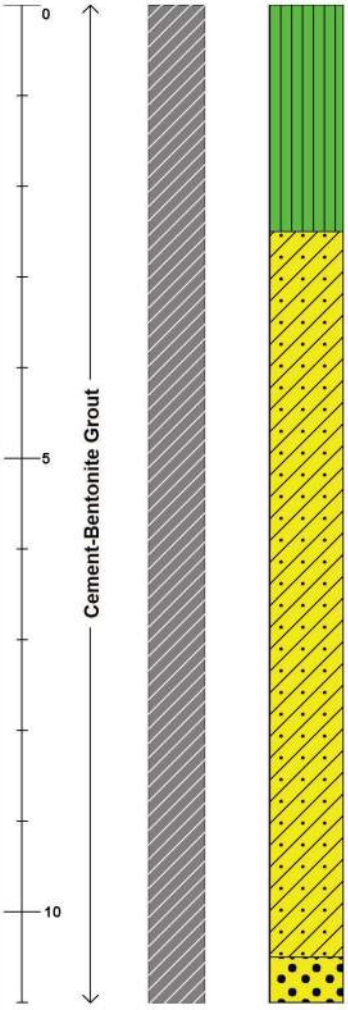
Remarks:	0-5 feet bgs hand augered for utility clearance
AECOM 3995 Via Oro Ave Long Beach, CA 90810 (562) 420-2933 (562) 420-2915 Fax	bgs = below ground surface
	Backfilled with cement-bentonite grout.
	HA = hand auger; SS = split spoon

AECOM

Boring/Well Log

Well Name: B-3

Project: **SMR Remediation Project**	**Boring Information**	**Survey Information**
Project #: **60592267**	Contractor: **S/G Drilling Company**	Ground Elevation: **-**
Location: **Santa Margarita Ranch**	Operator: **Timothy Blakeboro**	Datum: **-**
Client: **Phillips 66**	Drill Rig Type: **CME-75**	Northing: **-** Easting: **-**
Start Date: **03-25-19**	Method: **Hollow Stem Auger**	
Finish Date: **03-26-19**	Total Depth of Boring: **11 feet bgs**	
Logged By: **Jeff Gaines, P.G.**	Boring ID: **6"**	
Reviewed By: **Stan Kline, P.E.**		



Depth (ft bgs)	Group Symbol	Soil Description (Classification Scheme: USCS)	PID (ppm)	Blow Counts	Sample Interval	Sample Type	Analytical Sample ID
0	ML	SILT WITH SAND: dark brown (7.5YR 3/2); 25% sand (25% fine, trace medium, trace coarse); 75% fines; loose consistency; no hydrocarbon odor; moist.	0.0		HA	Grab	
			0.0		HA	Grab	
			0.0		HA	Grab	
	SC	CLAYEY SAND: very pale brown (10YR 8/3); 75% fine to medium grained sand; 25% fines; medium dense consistency; no hydrocarbon odor; moist.	0.0		HA	Grab	
			0.0		HA	Grab	
			0.0		HA	Grab	
5		CLAYEY SAND: very pale brown (10YR 8/3); 75% fine to medium grained sand; 25% fines; very dense consistency; no hydrocarbon odor; moist.		5.5	SS	Grab	
			0.0	6	SS		
				6.5	SS		
			0.0	7	SS	Grab	
				7.5	SS		
			0.0	8	SS		
				8.5	SS	Grab	
			0.0	9	SS		
				9.5	SS		
10			0.0	10	SS	Grab	
			0.0	10.5	SS		
		SANDSTONE BEDROCK: decomposed; refusal at 11 feet bgs with auger.		11	SS		

Remarks:	**0-5 feet bgs hand augered for utility clearance**
	bgs = below ground surface
	Backfilled with cement-bentonite grout
	HA = hand auger; SS = split spoon

AECOM
3995 Via Oro Ave
Long Beach, CA 90810
(562) 420-2933
(562) 420-2915 Fax

AECOM

Boring/Well Log

Well Name: B-4

Project: **SMR Remediation Project**	**Boring Information**	**Survey Information**
Project #: **60592267**	Contractor: **S/G Drilling Company**	Ground Elevation: **-**
Location: **Santa Margarita Ranch**	Operator: **Timothy Blakeboro**	Datum: **-**
Client: **Phillips 66**	Drill Rig Type: **CME-75**	Northing: **-** Easting: **-**
Start Date: **03-25-19**	Method: **Hollow Stem Auger**	
Finish Date: **03-25-19**	Total Depth of Boring: **10 feet bgs**	
Logged By: **Jeff Gaines, P.G.**	Boring ID: **6"**	
Reviewed By: **Stan Kline, P.E.**		

Depth (ft bgs)	Well Log	Graphic	Group Symbol	Soil Description (Classification Scheme: USCS)	PID (ppm)	Blow Counts	Sample Interval	Sample Type	Analytical Sample ID
0	Cement-Bentonite Grout		ML/ SM	SANDY SILT/SILTY SAND: dark brown (7.5YR 3/3); trace well rounded gravel; 55% fine grained sand; 45% fines (45% silt, trace clay); very loose consistency; roots-common; no hydrocarbon odor; moist.	0.0		HA	Grab	
					0.0		HA	Grab	
					0.0				
			ML	SANDY SILT: dark brown (7.5YR 3/3); trace well rounded gravel; 40% fine sand; 60% fines (60% silt, trace clay); soft consistency; roots-few; no hydrocarbon odor; moist.	0.0		HA	Grab	B-4-0-2-032519
					0.0		HA	Grab	
					0.0		HA	Grab	B-4-2-4-032519
5					0.0	1	SS	Grab	
				SANDY SILT: dark brown (7.5YR 3/3); trace well rounded gravel; 40% fine grained sand; 60% fines (60% silt, trace clay); soft consistency; roots-few; no hydrocarbon odor; groundwater encountered at 6.5 feet bgs; moist/wet.		1			
					0.0	2			
						2	SS	Grab	
					0.0	4			
						4			
					0.0	2	SS	Grab	
				SANDY SILT: dark brown (7.5YR 3/3); trace well rounded gravel; 30% fine grained sand; 70% fines (55% silt, 15% clay); soft consistency; roots-few; no hydrocarbon odor; wet.		7			
					0.0	15			
10					0.0		SS	Grab	

Remarks:	**0-5 feet bgs hand augered for utility clearance**
	bgs = below ground surface
	Backfilled with cement-bentonite grout
	HA = hand auger; SS = split spoon

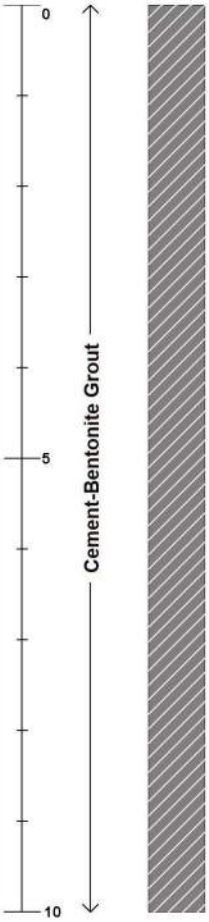
AECOM
3995 Via Oro Ave
Long Beach, CA 90810
(562) 420-2933
(562) 420-2915 Fax

AECOM

Boring/Well Log

Well Name: B-5

Project: **SMR Remediation Project**	**Boring Information**	**Survey Information**
Project #: **60592267**	Contractor: **S/G Drilling Company**	Ground Elevation: **-**
Location: **Santa Margarita Ranch**	Operator: **Timothy Blakeboro**	Datum: **-**
Client: **Phillips 66**	Drill Rig Type: **CME-75**	Northing: **-** Easting: **-**
Start Date: **03-28-19**	Method: **Hollow Stem Auger**	
Finish Date: **03-28-19**	Total Depth of Boring: **10 feet bgs**	
Logged By: **Jeff Gaines, P.G.**	Boring ID: **6"**	
Reviewed By: **Stan Kline, P.E.**		



Depth (ft bgs)	Group Symbol	Soil Description (Classification Scheme: USCS)	PID (ppm)	Blow Counts	Sample Interval	Sample Type	Analytical Sample ID
0	ML	SILT WITH SAND: brown (7.5YR 4/2); 15% fine to medium grained sand; 85% low plasticity fines; rapid dilatancy; soft to firm consistency; roots-common; no hydrocarbon odor; moist.	0.0		HA	Grab	
			0.0		HA	Grab	
	SP	POORLY GRADED SAND: strong brown (7.5YR 5/6); 95% fine grained sand; 5% fines; medium dense consistency; well cemented from 3 to 5 feet bgs; clay lenses/nodules; no hydrocarbon odor; moist.	0.0		HA	Grab	
			0.0				
			0.0		HA	Grab	
			0.0		HA	Grab	
5			0.0	5.5	SS	Grab	B-5-5-032819
				6			
			0.0	6.5			
				7		Grab	
		SANDSTONE BEDROCK: extremely weathered, decomposed in fractures.	0.0	7.5	SS		
				8			
			0.0	8.5		Grab	
				9	SS		
			0.0	9.5			B-5-10-032819
10			0.0	10	SS	Grab	

Remarks:	**0-5 feet bgs hand augered for utility clearance**
	bgs = below ground surface
	Backfilled with cement-bentonite grout
	HA = hand auger; SS = split spoon

AECOM
3995 Via Oro Ave
Long Beach, CA 90810
(562) 420-2933
(562) 420-2915 Fax

Attachment C

Evaluation of 2008 Soils Engineering Report

Moss, Samantha

From: Kline, Stan
Sent: Wednesday, January 16, 2019 9:38 PM
To: Riley, Mark
Cc: Smith, Whitney; Moss, Samantha; Acosta, Olegario
Subject: P66 Santa Margarita Pipeline Project - Geotechnical Evaluation of Potential Fill Materials
Attachments: WO_1839929_FinalReport.pdf; IMG_3245.JPG; Soils Engineering Report Ponds and AG Facility.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Mark,

Per our discussion and as requested, I have reviewed the attached materials / reports to evaluate acceptability of material spoils for use as common or engineered fill for the subject project. The information provided covers two potential material sources - a quarry overburden spoils material near the project ranch site (attached SEI soils test report and spoils stockpile photo) and spoils to be generated from planned water storage pond excavation on the project ranch property (attached GeoSolutions Santa Margarita Ranch pond facilities soils engineering report). It is understood that pond excavation spoils would be the first material of choice for use in the remediation backfill work.

Below is input / evaluation / conclusions relative to use of the identified potential fill material sources:

Quarry Overburden Spoils

- Based on one, assumed representative, bulk sample test for gradation and compaction, the quarry overburden spoils, characterized as a poorly graded sand to silty sand with a low fines content, would appear to be suitable for use as remediation excavation backfill with proper moisture conditioning, placement, and compaction.

- This type material - sandy / silty with minimal fines - is more difficult to work with (than a material with greater fines / binder) and more sensitive to proper moisture conditioning to achieve desired compaction.

- This is a material type, when in a loose condition and saturated, would be susceptible to liquefaction, but well compacted and above the water table okay.

Ranch Property Pond Excavation Spoils

- The GeoSolutions report indicates two different materials that would be generated from proposed pond excavation - a dense sandy clay to clayey sand overlying fairly shallow formational sandstone in the area of the proposed four southern ranch area ponds and a soft sandy clay alluvium material encountered to the maximum 25-foot depth explored in the area of the proposed northern ranch area pond.

- Based on limited gradation and expansion potential testing, all of the pond area exploration indicates that the excavation spoils would be a sandy clay (CL) material without high plasticity or expansive properties. Gradation testing indicates typically about 60 percent fines.

- Based on the pond exploration performed and the test data available on the near surface materials that would represent pond excavation spoils, it would appear that the expected pond excavation spoils would be suitable and a fairly desirable material for remediation excavation backfill.

- No Atterberg limits testing was performed, which would be desirable to confirm the lower plasticity material classification (CL), and the dark / black colored soft alluvium saturated below a fairly shallow groundwater table at the northern pond site is curious - should confirm no organics in this material for reuse as backfill.

- The planned use of the pond excavation spoils, which appears to look promising / desirable, should be confirmed with added index properties testing of gradation and Atterberg limits for increased material characterization confidence, in association with any other investigation activities that may be occurring for the project and also as the pond excavation is carried out.

I trust that this review / summary meets the present needs.

Let me know if discussion is desired.

Stan

Stanley H. Kline, P.E., G.E.
Senior Geotechnical Engineer
Water, San Francisco Bay Area
D 510.874.3191
stan.kline@aecom.com

AECOM
300 Lakeside Drive, Suite 400
Oakland, CA 94612
T 510.893.3600 F 510.874.3268
www.aecom.com

Date of Report: 01/09/2019

Samantha Moss

AECOM -Long Beach
3995 Via Oro Ave.
Long Beach, CA 90810

Client Project:	60592267
BCL Project:	Santa Margarita Pipeline
BCL Work Order:	1839929
Invoice ID:	B327381

Enclosed are the results of analyses for samples received by the laboratory on 12/21/2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Molly Meyers

Contact Person: Molly Meyers
Client Service Rep

Stuart Buttram
Technical Director

Table of Contents

Chain of Custody and Cooler Receipt Form for 1839929 Page 1 of 2

BC LABORATORIES, INC.

Chain of Custody Form

Page 1 of 1

Report To: Client:	AECOM	Project #:	60592267
Attn:	Samantha Moss	Project Name:	P66 Santa Margarita Pipeline Project
Street Address:	3995 Via Oro Avenue		
City, State, Zip:	Long Beach, CA 90810	Sampler(s):	Mark Riley, Samantha Moss
Phone:	562.665.1125	Fax:	
Email:	samantha.moss@aecom.com		
Work Order #:	PO# pending		18-39929

Analysis Requested (Please refer to the back of this page for completion instructions and method legend.)

Comments:

Sample #	Description	Date Sampled	Time Sampled	Minimum Proctor Density	Sieve Analysis	Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other
-1	HER Borrow-01-122018	12/20/18	14:10	X	X	X					

Result Request **Surcharge: ☒ STD (10 Days) ☐ 5 Day** ☐ 2 Day** ☐ 1 Day**

Notes

CHK BY: CSS

DISTRIBUTION

SUB-OUT ☒

Billing ☒ Same as above

Client:
Address:
City: State Zip
Attn:
P.O. #: Pending

EDF Required? Geotracker ☒ Yes ☐ No

Send Copy to State of CA? (EDT) ☐ Yes ☒ No

Global ID (Needed for EDF): SL0607989492

System # (Needed for EDT):

	Relinquished By	Date	Time	Received By	Date	Time
1.	Samantha A. Moss	12/20/18	4:35 pm	[signature]	12/20/18	1635
2.	[signature]	12/20/18	1800	[signature]	12-21-18	1125
3.	[signature]	12-21-18	1415	[signature]	12-21-18	1415

BC Laboratories, Inc. – 4100 Atlas Ct. – Bakersfield, CA 93308 – 661.327.4911 – Fax: 661.327.1918 – www.bclabs.com

Chain of Custody and Cooler Receipt Form for 1839929 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 18-39929

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐	Ice Chest ☐ None ☒ Box ☐	YES ☐ NO ☐
BC Lab Field Service ☒ Other ☐ (Specify)_____	Other ☐ (Specify)_____	W / S

Refrigerant: Ice ☐ Blue Ice ☐ None ☒ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☐ No ☐

COC Received ☒ YES ☐ NO

Emissivity: .97 Container: bucket Thermometer ID: 27 12/2

Temperature: (A) Room °C / (C) Temp °C

Date/Time 12-21-18 14:15

Analyst Init: MD

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
~~QT PE UNPRES~~ X99 (bucket)	AB3									
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
~~QT EPA 8270~~										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:_____

Sample Numbering Completed By: BS Date/Time: 12/21 1430

A = Actual / C = Corrected

Rev 21 05/23/2016

(S:\WPDocs\WordPerfect\LAB_DOCS\FORMS\SAMREC rev 20)

AECOM -Long Beach
3995 Via Oro Ave.
Long Beach, CA 90810

Reported: 01/09/2019 8:53
Project: Santa Margarita Pipeline
Project Number: 60592267
Project Manager: Samantha Moss

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1839929-01	**COC Number:**	---	**Receive Date:**	12/21/2018 14:15
	Project Number:	---	**Sampling Date:**	12/20/2018 14:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HQBorrow-01-122018	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

SOILS ENGINEERING, INC.

January 8, 2019

SEI File No. 18-16559

BC Laboratories, Inc.
4100 Atlas Court
Bakersfield, CA 93308

Attention: Ms. Molly Myers

Subject: **Laboratory Testing results**
Sample Location: 1839929-01 (B.C. Laboratories / Miscellaneous Testing Services)

Dear Ms. Myers:

Submitted herewith are the laboratory testing results for the maximum density and sieve analysis tests that were performed on the material sampled by said client on December 20, 2018.

Maximum Density - Optimum Moisture determinations were made in accordance with ASTM D1557, Method B. Results are shown on the document labeled Figure A-1. The sieve analysis test was performed according to ASTM D422 and results can be found on the document labeled Figure B-1.

As page 2 of this report we have provided a data table with all testing results performed. Also attached for your reference, are the laboratory testing reports.

The test results reported herein are applicable only for the specified sites investigated. No warranties, either express or implied are made for other areas not specifically tested. No recommendations or conclusions have been made pertaining to subsurface conditions below the reported test depths or adequacy of the site to receive structures or pavements.

We hope this provides the information you require. If you should have any questions or need further assistance, please contact us.

Respectfully submitted,
SOILS ENGINEERING, INC.

Andrew Lucas
Laboratory Manager

Attachments: (4)

4400 YEAGER WAY • BAKERSFIELD, CALIFORNIA 93313 • PHONE (661) 831-5100 • FAX: (661) 831-2111

SOILS ENGINEERING, INC.

BC Laboratories, Inc.
Geotechnical Testing Services
B.C. Laboratories / Miscellaneous Testing Services
Bakersfield, CA

SEI File No. 18-16559
January 8, 2019

TABLE 1

TEST LOCATION	USCS	% < # 200	CONSOLIDATION				DIRECT SHEAR		UNCONFINED COMPRESSION		E.I.	ATTERBERG LIMITS			R-VALUE @ 300 psi		MAXIMUM DENSITY	
			C_C	C_S	S.P. (psf)	HV %	C_i (ksf)	F.A.	Q_u (psi)	C_i (ksf)		LL	PL	PI	R.V.	E.P. (psi)	MDD (pcf)	O.M.
1839929-01	SP-SM	8.0															128.6	9.2%

CONSOLIDATION
Cc - Compression Index
Cs - Swell Index
S.P. (psf) - Swell Pressure
HV % - Heave Precentage / Collapse

UNCONFINED COMPRESSION
Q_u (psi) - Unconfined Compression Strength
C_i (ksf) - Cohesion

DIRECT SHEAR
C (ksf) - Cohesion
F.A. - Friction Angle

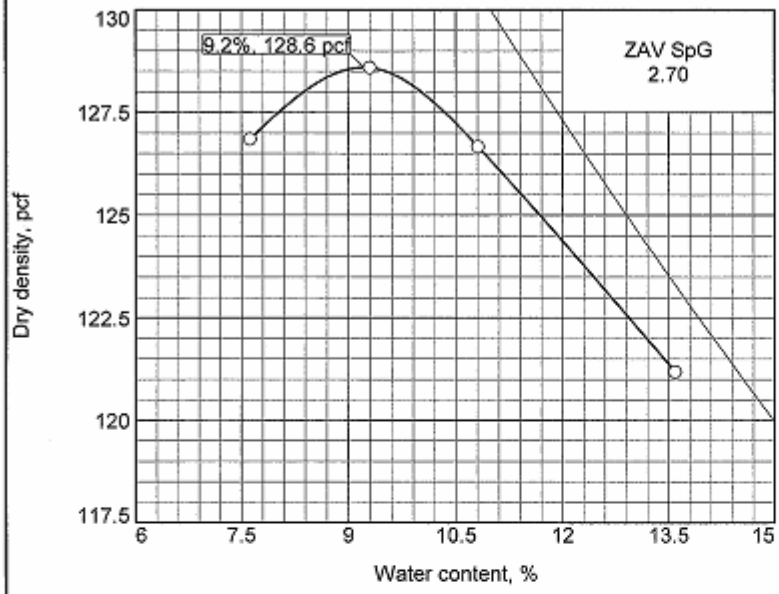
E.I. - EXPANSION INDEX

ATTERBERG LIMITS
LL - Liquid Limit
PL - Plastic Limit
PI - Plasticity Index

(R)ESISTANCE VALUE
RV - R-Value @ 300 psi
EP - Expansion Press @ 300 psi

MAXIMUM DENSITY
MDD (pcf) - Max Dry Density
O.M. - Optimum Moisture

COMPACTION TEST REPORT



Curve No.
01

Test Specification:
ASTM D 1557 Method B Modified

Hammer Wt.: 10 lb.
Hammer Drop: 18 in.
Number of Layers: five
Blows per Layer: 25
Mold Size: 0.03333 cu. ft.

Test Performed on Material Passing 3/4 in. **Sieve**

Soil Data

NM N/A **Sp.G.** EST 2.65
LL N/A **PI** N/A
%>3/4 in. N/A **%<#200** 8.0
USCS SP-SM **AASHTO** N/A

TESTING DATA

	1	2	3	4	5	6
WM + WS	4104.1	4101.2	4043.2	4060.4		
WM	1979.3	1979.3	1979.3	1979.3		
WW + T #1	310.0	200.1	203.0	209.2		
WD + T #1	295.7	189.1	194.8	194.6		
TARE #1	141.8	87.3	87.2	87.2		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	9.3	10.8	7.6	13.6		
DRY DENSITY	128.6	126.7	126.9	121.2		

TEST RESULTS

Maximum dry density = 128.6 pcf

Optimum moisture = 9.2 %

Material Description

POORLY GEADED SAND with low fine content; yellowish brown; with decomposed granite; trace of gravel.

Project No. 16559 **Client:** BC Laboratories, Inc.
Project: B.C. Laboratories / Miscellaneous Testing Services

○ **Location:** 1839929-01 **Depth:** Random **Sample Number:** 68563

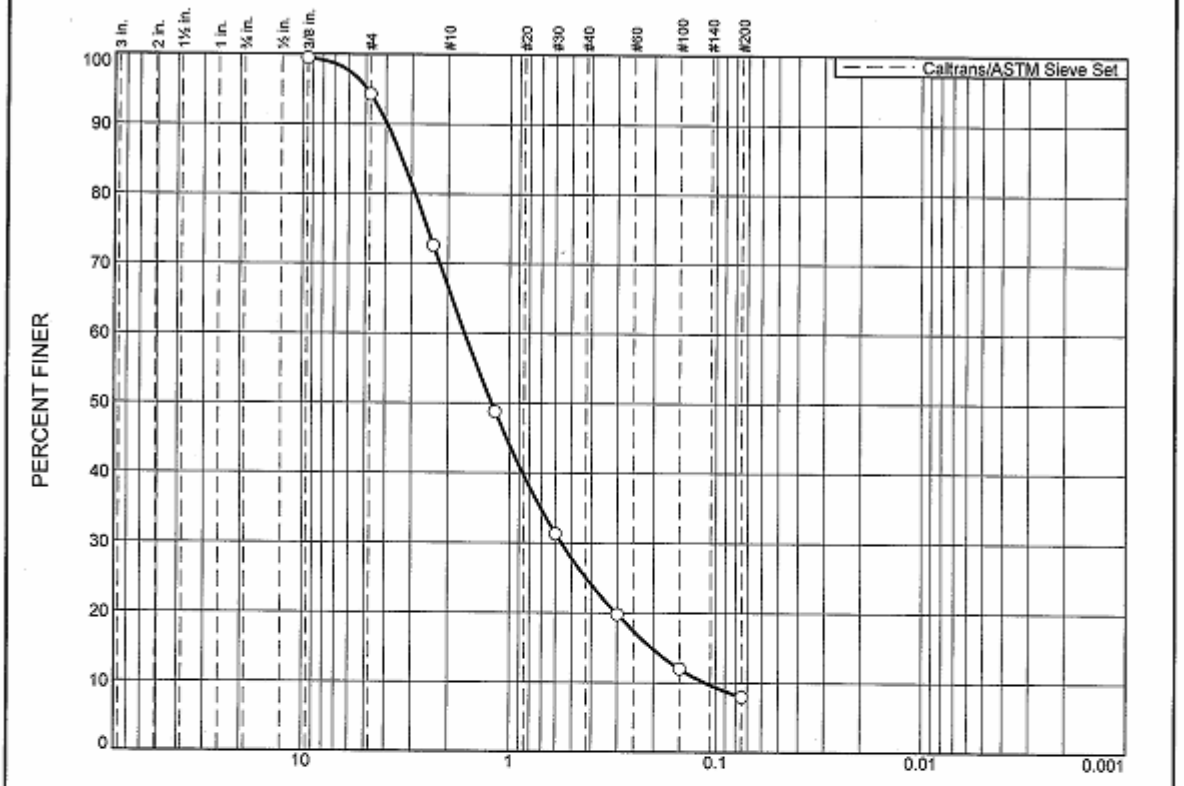
Remarks:
Sample No: 68563
Sampled By: Client
Date Tested: 01/07/19

SOILS ENGINEERING, INC.

Figure A-1

Tested By: RG **Checked By:** AL

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				27.6	41.7	17.0	8.0	

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○		68563	Random	POORLY GEADED SAND with low fine content	SP-SM
				Location: 1839929-01	
				Large Bulk Sample	

SOILS ENGINEERING, INC.

Client: BC Laboratories, Inc.
Project: B.C. Laboratories / Miscellaneous Testing Services
Project No.: 16559 **Figure** B-1

GRAIN SIZE DISTRIBUTION TEST DATA

1/8/2019

Client: BC Laboratories, Inc.
Project: B.C. Laboratories / Miscellaneous Testing Services
Project Number: 16559
Location: 1839929-01
Depth: Random **Sample Number:** 68563
Material Description: POORLY GEADED SAND with low fine content
Location: 1839929-01
Large Bulk Sample
USCS: SP-SM
Material specification: Caltrans/ASTM Sieve Set

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer	Lower Spec. Limit, %	Upper Spec. Limit, %	Deviation From Spec., %
693.20	398.00	398.00	3					
			2					
			1.5					
			1					
			0.75					
			0.5					
			0.375	399.60	99.5	0.0	0.0	*+99.5*
			#4	414.80	94.3	0.0	0.0	*+94.3*
			#8	478.70	72.7	0.0	0.0	*+72.7*
			#16	549.10	48.8	0.0	0.0	*+48.8*
			#30	600.60	31.4	0.0	0.0	*+31.4*
			#50	634.70	19.8	0.0	0.0	*+19.8*
			#100	657.70	12.0	0.0	0.0	*+12.0*
			#200	669.70	8.0	0.0	0.0	*+8.0*

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
				27.6	41.7	17.0	86.3			8.0

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.1121	0.2038	0.3040	0.5608	0.8663	1.2259	1.6571	2.8910	3.3487	3.9542	4.9329

Fineness Modulus	C_u	C_c
3.22	14.78	1.69

SOILS ENGINEERING, INC.

AECOM -Long Beach
3995 Via Oro Ave.
Long Beach, CA 90810

Reported: 01/09/2019 8:53
Project: Santa Margarita Pipeline
Project Number: 60592267
Project Manager: Samantha Moss

Notes And Definitions

SOILS ENGINEERING REPORT
SANTA MARGARITA RANCH
PONDS AND RELATED AG FACILITIES
APN: 070-091-036, SANTA MARGARITA AREA
SAN LUIS OBISPO COUNTY, CALIFORNIA

PROJECT SL06462-2

Prepared for

Robin L. Rossi Living Trust
Attn: Mr. Rob Rossi
750 Pismo Street
San Luis Obispo, California 93401

Prepared by

GEOSOLUTIONS, INC.
220 HIGH STREET
SAN LUIS OBISPO, CALIFORNIA 93401
(805) 543-8539

August 29, 2008

GeoSolutions, INC.

220 High Street, San Luis Obispo, CA 93401
(805) 543-8539, 543-2171 fax
info@GeoSolutions.net

August 29, 2008
Project No. SL06462-2

Robin L. Rossi Living Trust
Attn: Mr. Rob Rossi
750 Pismo Street
San Luis Obispo, California

Subject: **Soils Engineering Report**
Santa Margarita Ranch, Ponds and Related AG Facilities
APN: 070-091-036, Santa Margarita Area
San Luis Obispo County, California

Dear Mr. Rossi:

This Soils Engineering Report has been prepared for the proposed ponds and AG Facilities to be located at Santa Margarita Ranch, APN: 070-091-036, Santa Margarita Area, San Luis Obispo County, California. Geotechnically, the site is suitable for the proposed development provided the recommendations in this report for site preparation, earthwork, foundations, slabs, retaining walls, and pavement sections are incorporated into the design.

It is anticipated that the proposed 40,000-gallon water tank will be constructed with structural masonry walls founded approximately 8.0 feet below ground surface in uniform competent formational material as observed and approved by a representative of GeoSolutions, Inc. Deepened footings may be required in certain areas to achieve the required minimum embedment depth in uniform competent formational material. All foundations are to be excavated into uniform material to limit the potential for distress of the foundation systems due to differential settlement. If cuts steeper than allowed by State of California Construction Safety Orders for "Excavations, Trenches, Earthwork" are proposed, a numerical slope stability analysis may be necessary for temporary construction slopes.

Natural seepage at the interface of two materials with different densities, such as native soil and competent formational material is very common. This interface occurs at the Site and may require sub-surface drains. Sub-drains should be placed in established drainage courses, potential seepage areas, and during the development of all key and bench grading operations

Thank you for the opportunity to have been of service in preparing this report. If you have any questions or require additional assistance, please feel free to contact the undersigned at (805) 543-8539.

Sincerely,
GeoSolutions, Inc.

Kraig R. Crozier, PE
Principal, CE 61361

S:\jobs\SL06000-SL06499\SL06462-2 Santa Margarita Ranch\Engineering\SL06462-2 transmittal.doc

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

SOILS ENGINEERING REPORT
SANTA MARGARITA RANCH
PONDS AND RELATED AG FACILITIES
APN: 070-091-036, SANTA MARGARITA AREA
SAN LUIS OBISPO COUNTY, CALIFORNIA

PROJECT SL06462-2

1.0 INTRODUCTION

This report presents the results of the geotechnical investigation for the proposed ponds and related agricultural facilities to be located at Santa Margarita Ranch, APN: 070-091-036, Santa Margarita area, San Luis Obispo county California. See Figure 1: Site Location Map for the general location of the project area. Figure 1: Site Location Map was obtained from *Topo USA 6.0* (DeLorme, 2006).

Santa Margarita Ranch is located at approximately 35.394119 degrees north latitude and approximately 120.615693 degrees west longitude at an elevation of approximately 1000 feet above mean sea level. The property is irregularly shaped and is approximately 111 acres in size. It is located east of Highway 101, north of Highway 58, west of El Camino Real, with the north boundary following an irregular line approximately 1500 feet north of the intersection of Highway 101 and Highway 58 to approximately 720 feet north of the intersection of Highway 58 and El Camino Real. The project property will hereafter be referred to as the "Site." See Figure 2: Site Plan for the general layout of the Site. Figure 2: Site Plan was obtained from Above Grade Engineering.

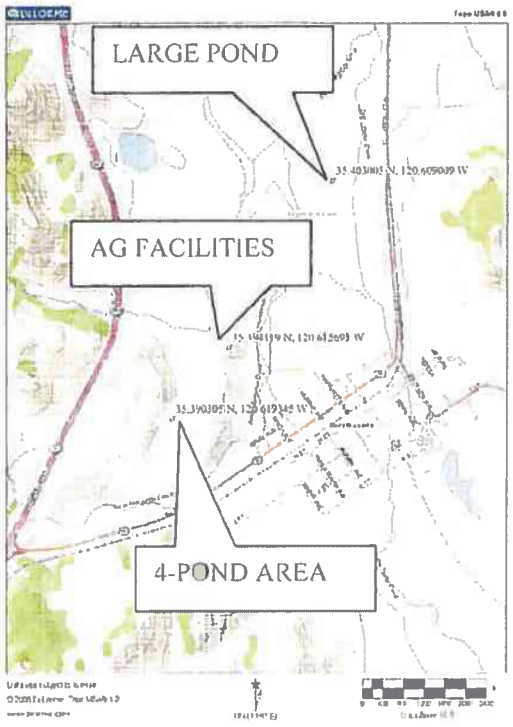


Figure 1: Site Location Map

It is our understanding that the development is to include four ponds to be located in the southwestern portion of the property, a water tank to be constructed of block walls to be located to the east and north of the ponds, and a large pond to be located north and east of the water tank.

The four proposed ponds, basins B through E, are to range in height from 10.0 feet to 22.0 feet. The ponds are to be connected by cascading spillways and/or 18-inch HDPE pipes with drop inlets to act as the spillway. The proposed ponds range in size from approximately 3.0 to 18.0 acres.

The proposed large pond located in the northern portion of the Site is approximately 48.0 acres in size and 15,600,000 gallons in volume. Sheet pile retaining walls are to be installed at two separate locations within the pond to create inner islands. The central portion of the Site is to consist of a 40,000-gallon water tank.

It is anticipated that the proposed agricultural facilities will utilize a slab-on-grade and/or raised wood lower floor system. Dead and sustained live loads are currently unknown, but they are anticipated to be

relatively light with maximum continuous footing and column loads estimated to be approximately 1.5 kips per linear foot and 20 kips, respectively.

2.0 PURPOSE AND SCOPE

The purpose of this study was to explore and evaluate the surface and sub-surface soil conditions at the Site and to develop geotechnical information and design criteria. The scope of this study includes the following items:

1. A review of available published and unpublished geotechnical data pertinent to the project site.

2. A field study consisting of site reconnaissance and exploratory borings in order to formulate a description of the sub-surface conditions at the Site.

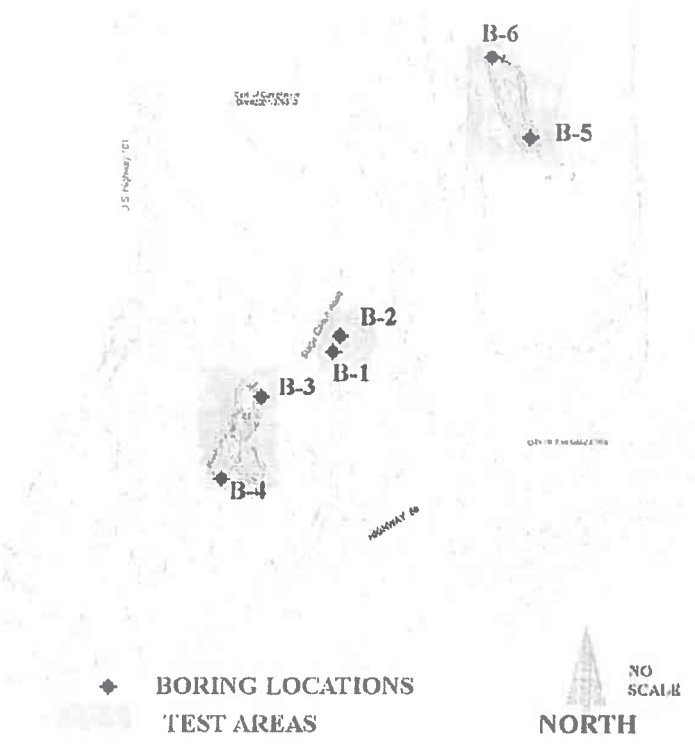


Figure 2: Site Plan

3. Laboratory Testing performed on representative soil samples that were collected during our field study.

4. Analysis of the data gathered during our field study and laboratory testing.

5. Development of recommendations for site preparation and grading as well as geotechnical design criteria for building foundations, retaining walls, pavement sections, underground utilities, and drainage facilities.

3.0 FIELD AND LABORATORY INVESTIGATION

The field investigation was conducted on June 6 and June 9, 2008 using a track-mounted CME 55 drill rig. Six four-inch diameter exploratory borings were advanced to a maximum depth of 25 feet below ground surface (bgs) at the approximate locations indicated on Figure 2: Site Plan. Sampling methods included the Standard Penetration Test utilizing a standard split-spoon sampler (SPT) without liners and a Modified California sampler (CA) with liners. The CME 55 drill rig was equipped with an automatic hammer, which has an efficiency of approximately 80-percent and was used to obtain test blow counts in the form of N-values.

Data gathered during the field investigation suggest that the soil materials at the Site consist of colluvial and alluvial soil overlying competent formational material. The material at the Site can be broken into two main soil types separated by the north and the south. Borings B-1 through B-4 were advanced in the southern portion of the Site and generally consisted of yellowish brown sandy CLAY (CL) encountered in a dry and very dense condition to approximately 1.0 to 1.5 feet bgs. Underlying the clay, SANDSTONE

was encountered to termination of borings. Using the *Geologic Map of the Santa Margarita Quadrangle* (Dibblee, 2004), this material was interpreted as Atascadero Formation (Kas) and will hereafter be referred to as competent formational material. The surface material in the northern portion of the site consisted of black Sandy CLAY (CL) encountered in a dry to saturated and very soft to firm condition to termination of borings. Groundwater was only encountered in the borings B-5 and B-6 at depths of 6.0 feet and 9.0 feet bgs, respectively.

During the boring operations the soils encountered were continuously examined, visually classified, and sampled for general laboratory testing. A project engineer has reviewed a continuous log of the soils encountered at the time of field investigation. See **Appendix A** for the Boring Logs from the field investigation.

Laboratory tests were performed on soil samples that were obtained from the Site during the field investigation. The results of these tests are listed below in Table 1: Engineering Properties. Laboratory data reports and detailed explanations of the laboratory tests performed during this investigation are provided in **Appendix B**.

Table 1: Engineering Properties

Sample Name	Sample Description	USCS Specification	Expansion Index	Expansion Potential	Average Hydraulic Conductivity Rate, k (cm/s)	Maximum Dry Density, γ_d (pcf)	Optimum Moisture (%)	Angle of Internal Friction, ϕ (deg.)	Cohesion, c (psf)
A	Yellowish Brown Sandy CLAY	CL	23	Low	-	114.3	14.0	-	-
B	Black Sandy CLAY	CL	-	-	-	116.5	13.5	-	-
B-3 @ 14'	Olive Brown CLAYSTONE	-	-	-	-	-	-	-	-
B-4 @ 4'	Dark Yellowish Brown Clayey SAND with Gravel	-	-	-	0.109203	-	-	-	-
B-6 @ 13'	Very Dark Grayish Brown Sandy CLAY	-	-	-	0.036319	-	-	-	-

4.0 SEISMIC DESIGN CONSIDERATIONS

4.1 Structural Building Design Parameters

Structural building design parameters within chapter 16 of the 2007 CBC (CBSC, 2007) are dependent upon several factors, which include site soil characteristics and faults near the Site. As per section 1613.5.5 of the 2007 CBC (CBSC, 2007), the site classification is determined by the average properties in the upper 100 feet of the site profile. Spectral Response Accelerations and Site Coefficients were obtained from the Seismic Hazard Curves and Uniform Hazard Response Spectra, Earthquake Ground Motion Tool computer application (USGS, 2007); this program is available from the United States Geological Survey website (USGS, 2008). This computer program utilizes the methods developed in the 1997, 2000, and 2003 editions of the NEHRP

Recommended Provisions for Seismic Regulations for New Buildings and Other Structures and user-inputted Site latitude and longitude coordinates to calculate seismic design parameters and response spectra (both for period and displacement), for Site Classifications A through E. This data is presented in tabular form in Table 2 and Table 2: 2007 California Building Code, Chapter 16, Structural Design Parameters. Analysis of the Design Spectral Response Acceleration Parameters for the Site and the Occupancy Category for the proposed structure assign this project a **Seismic Design Category of D**.

Table 2: 2007 California Building Code, Chapter 16, Structural Design Parameters for Four Ponds and Water Tank

Site Class- Soil Profile Type	C – Very Dense Soil and Soft Rock
Mapped Spectral Response Accelerations and Site Coefficients	S_S – 1.118, S_1 = 0.472 F_a = 1.000, F_v = 1.327
Adjusted Maximum Considered Earthquake Spectral Response Accelerations	$S_{MS} = S_S*F_a$ = 1.118*1.000 = 1.118 $S_{M1} = S_1*F_v$ = 0.472*1.327 = 0.627
Design Spectral Response Acceleration Parameters	S_{DS} = 2/3(S_{MS}) = 2/3(1.118) = 0.745 S_{D1} = 2/3(S_{M1}) = 2/3(0.627) = 0.418
Occupancy Category (from Table 1604.5, 2007 CBC)	II
Seismic Design Category – Short Period Accel. (from Table 1613.5.6(1), 2007 CBC)	D
Seismic Design Category – Long Period Accel. (from Table 1613.5.6(2), 2007 CBC)	D

Table 2: 2007 California Building Code, Chapter 16, Structural Design Parameters for Large Pond

Site Class- Soil Profile Type	E – Soft Soil Profile
Mapped Spectral Response Accelerations and Site Coefficients	S_S =1.120, S_1 = 0.479 F_a = 0.900, F_v = 2.400
Adjusted Maximum Considered Earthquake Spectral Response Accelerations	$S_{MS} = S_S*F_a$ = 1.120*0.900 = 1.008 $S_{M1} = S_1*F_v$ = 0.479*2.400 = 1.149
Design Spectral Response Acceleration Parameters	S_{DS} = 2/3(S_{MS}) = 2/3(1.008) = 0.672 S_{D1} = 2/3(S_{M1}) = 2/3(1.149) = 0.766
Occupancy Category (from Table 1604.5, 2007 CBC)	II
Seismic Design Category – Short Period Accel. (from Table 1613.5.6(1), 2007 CBC)	D
Seismic Design Category – Long Period Accel. (from Table 1613.5.6(2), 2007 CBC)	D

4.2 Design Response Spectra – 2007 CBC

A representation of Site ground motion having a 2 percent probability of being exceeded in 50 years may be used in the design of structures to resist lateral forces caused by ground motion at the Site. An elastic design response spectrum can be used for these design purposes. The Seismic Hazard Curves and Uniform Hazard Response Spectra computer program (USGS, 2007) was used to construct constructed a design response spectrum for the Site and is shown in Figure 3: Design Response Spectra (Four Ponds and **Water Tank) – 2007 CBC.**

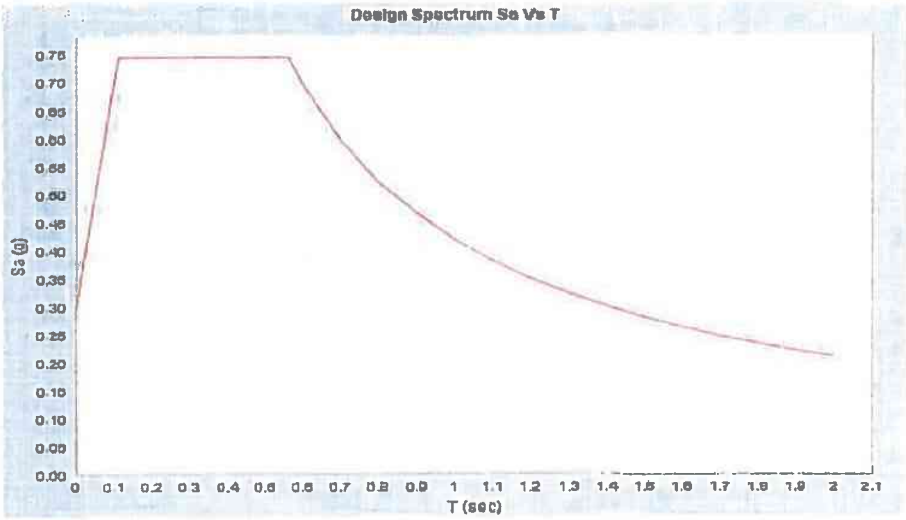


Figure 3: Design Response Spectra (Four Ponds and Water Tank) – 2007 CBC

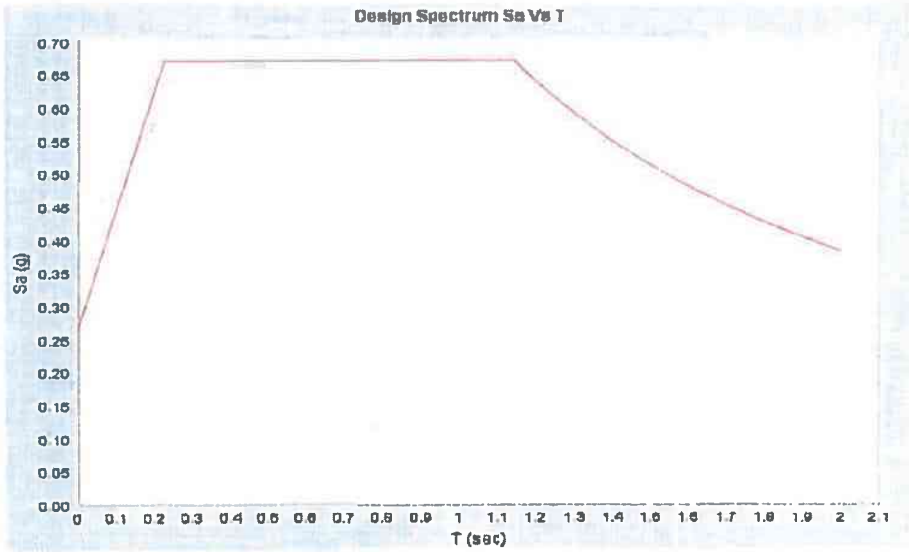


Figure 4: Design Response Spectra (Large Pond) – 2007 CBC

4.3 Seismic Hazard Analysis

1. A probabilistic seismic hazard analysis was performed in order to estimate the peak horizontal ground acceleration (a_{max}) in the southern portion of the Site during the Design Basis Earthquake (DBE), which can be defined as an earthquake having a 2 percent chance of being exceeded in 50 years. The probabilistic seismic hazard evaluation for the Site was performed using the computer program FRISKSP (Blake, 2000). An a_{max} of **0.420g** was produced by this analysis for the location of the water tank and the four ponds located on the Site, and an a_{max} of **0.726g** was produced by this analysis for the large pond located on the Site. The program FRISKSP is based on an earlier computer program, FRISK (McGuire, 1978), which was modified for the probabilistic estimations of seismic hazards using three-dimensional earthquake sources. See **Appendix D** for the seismic data used in this analysis and for the Probability of Exceedance Chart.

2. Site coordinates of 35.394119 degrees north latitude and 120.615693 degrees west longitude and a search radius of 62 miles were used in the probabilistic seismic hazard analysis.

4.4 Liquefaction Potential

1. In the context of soil mechanics, liquefaction is the process that occurs when the dynamic loading of a soil mass causes the shear strength of the soil mass to rapidly decrease. Liquefaction can occur in saturated cohesionless soils.

2. The most typical liquefaction-induced failures include consolidation of liquefied soils, surface sand boils, lateral spreading of the ground surface, bearing capacity failures of structural foundations, flotation of buried structures, and differential settlement of above-ground structures.

3. Liquefiable soils must undergo dynamic loading before liquefaction occurs. Ground motion from an earthquake may induce large-amplitude cyclic reversals of shear stresses within a soil mass. Repetitive lateral and vertical loading and unloading usually results from this process. This process is considered to be dynamic loading. In a liquefiable soil mass, liquefaction may occur as a result of the dynamic loading caused by ground motion produced by an earthquake.

4. The presence of loose, poorly graded, fine sand material that is saturated by groundwater within an area that is known to be subjected to high intensity earthquakes and long-duration ground motion are the key factors that indicate potentially liquefiable areas and conditions that lead to liquefaction.

5. Based on the relative density of the in-situ soils, the depth to groundwater, and the a_{max} caused by the Design Base Earthquake (DBE), the potential for seismic liquefaction of soils at the Site appears to be low. Assuming that the recommendations of the Soils Engineering Report are implemented, the potential for seismically induced settlement and differential settlement at the Site is considered to be low.

5.0 GENERAL SOIL-FOUNDATION DISCUSSION

It is anticipated that the proposed 40,000-gallon water tank will be constructed with structural masonry walls founded approximately 8.0 feet below ground surface in uniform competent formational material as observed and approved by a representative of GeoSolutions, Inc. Deepened footings may be required in certain areas to achieve the required minimum embedment depth in uniform competent formational material. All foundations are to be excavated into uniform material to limit the potential for distress of the foundation systems due to differential settlement. If cuts steeper than allowed by State of California Construction Safety Orders for "Excavations, Trenches, Earthwork" are proposed, a numerical slope stability analysis may be necessary for temporary construction slopes.

Natural seepage at the interface of two materials with different densities, such as native soil and competent formational material is very common. This interface occurs at the Site and may require sub-surface drains. Sub-drains should be placed in established drainage courses, potential seepage areas, and during the development of all key and bench grading operations

6.0 CONCLUSIONS AND RECOMMENDATIONS

The Site is suitable for the proposed development provided the recommendations presented in this report are incorporated into the project plans and specifications.

The primary geotechnical concerns at the Site are:

1. The potential of groundwater seepage.

2. The potential for differential settlement occurring between foundations supported on two soil materials having different settlement characteristics, such as native soil and engineered fill. Therefore, it is important that all of the foundations are founded in equally competent uniform material in accordance with this report.

6.1 Preparation of Building Pad

1. It is anticipated that footings for the proposed water tank will be founded in uniform competent formational material as observed and approved by a representative of GeoSolutions, Inc. As an alternative, a graded engineered fill pad may be developed for the proposed water tank with footings founded in engineered fill. Deepened footings may be required in certain areas to achieve the required embedment depth in uniform competent formational material.

2. For slab-on-grade construction with footings founded a minimum of 12 inches into uniform competent formational material, the pad area to receive slab-on-grade construction should be graded such that all slabs are supported on uniform competent material. The native material should be over-excavated beneath the slab at least 12 inches below existing grade and finished slab elevation, to competent material, or to one-half the depth of the deepest fill; whichever is greatest. The exposed surface should be scarified to a depth of 12 inches, moisture conditioned to near optimum moisture content, and compacted to a minimum relative density of 90 percent (ASTM D1557-07). The removed material should then be replaced as engineered fill. Refer to Figure 5: Sub-Slab Detail for under-slab drainage material and **Appendix C** for more details on fill placement.

3. For the development of an engineered fill pad, the native material should be over-excavated at least 36 inches below existing grade, 24 inches below the bottom of the

footings, to competent material, or to one-half the depth of the deepest fill; whichever is greatest. The limits of over-excavation should extend a minimum of 5 feet beyond the perimeter foundation. The exposed surface should be scarified to a depth of 12 inches, moisture conditioned to near optimum moisture content, and compacted to a minimum relative density of 90 percent (ASTM D1557-07). The over-excavated material should then be processed as engineered fill. Refer to Figure 5: Sub-Slab Detail for under-slab drainage material and **Appendix C** for more details on fill placement.

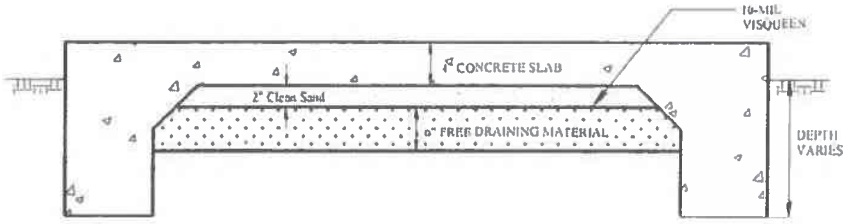


Figure 5: Sub-Slab Detail

4. If fill areas are constructed on slopes greater than 10-to-1 (horizontal-to-vertical), we recommend that benches be cut every four feet as fill is placed. Each bench shall be a minimum of 10 feet wide with a minimum of two percent gradient into the slope. If fill areas are constructed on slopes greater than 5-to-1, we recommend that the toe of all areas to receive fill be keyed a minimum of 24 inches into underlying dense material. Sub-drains shall be placed in the keyway and benches as required. See **Appendix C**, Detail A, Key and Bench with Backdrain for details on key and bench construction.

6.2 Preparation of Paved Areas

1. Pavement areas should be over-excavated 12 inches below existing grade or finished sub-grade; whichever is deeper. The exposed surface should be scarified an additional depth of eight inches, moisture conditioned to near optimum moisture content, and compacted to a minimum relative density of 90 percent (ASTM D1557-07 test method). The over-excavated soil should then be moisture conditioned to produce a water-content of at least one to two percent above optimum value and then compacted to a minimum relative density of 90 percent. The top 12 inches of sub-grade soil under all pavement sections should be compacted to a minimum relative density of 95 percent based on the ASTM D1557-07 test method at slightly above optimum.

2. Sub-grade soils should not be allowed to dry out or have excessive construction traffic between moisture conditioning and compaction, and placement of the pavement structural section.

6.3 Pavement Design

1. All pavement construction and materials used should conform to Sections 25, 26 and 39 of the latest edition of the State of California Department of Transportation Standard Specifications (State of California, 1999).

2. As indicated previously in Section 6.2, the top 12 inches of sub-grade soil under pavement sections should be compacted to a minimum relative density of 95 percent based on the

ASTM D1557-07 test method at slightly above optimum moisture content. Aggregate bases and sub-bases should also be compacted to a minimum relative density of 95 percent based on the aforementioned test method.

3. A minimum of six inches of Class II Aggregate Base is recommended for all pavement sections. All pavement sections should be crowned for good drainage.

6.4 Pond Construction

1. Embankment Foundations Preparation

It is anticipated that all embankment foundations will be founded in uniform competent material. For the development of embankment foundations, the native material should be over-excavated to impermeable material found at approximately 14 feet below ground surface. All material to be used for the construction of the embankment foundations should be observed and approved by a representative of GeoSolutions, Inc. The approved material should be moisture conditioned to near optimum moisture content, and compacted to a minimum relative density of 97 percent (ASTM 1557-07) in order to maintain designed water levels in ponds. Embankment slops should be constructed at no greater that 3-to-1 (horizontal to vertical).

A key trench should be excavated beneath the footprint of the slope face to a distance of 10 feet beyond the toe of slope to a depth of 2 to 4 feet into competent native material depending upon conditions observed.

2. Liners

Permeability tests were performed on the soil encountered at the proposed foundation depth for each basin. The results from the test indicated that the native material to a depth of approximately 14 feet below ground surface was permeable. Therefore GeoSolutions, Inc. recommends that a clay liner be implemented to avoid seepage through the sidewalls of the ponds with a hydraulic conductivity rate less than or equal to 10^{-7} feet per second.

Prior to the placement of the clay liner all loose material and debris should be removed. The existing material should be scarified 12 inches below existing grade moisture conditioned to near optimum moisture content, and compacted to a minimum relative density of 90 percent (ASTM D1557-07).

The clay liner should be a minimum of 3 feet thick and compacted with a smooth drum roller to a minimum relative density of 97 percent (ASTM 1557-07) in order to maintain designed water levels in ponds.

6.5 Conventional Foundations

1. Conventional continuous and spread footings with grade beams may be used for support of the proposed structure.

2. Minimum footing and grade beam sizes and depths in engineered fill or uniform competent formational material should conform to the following table, as observed and approved by a representative of GeoSolutions, Inc.

Table 3: Minimum Footing and Grade Beam Dimensions

Excavated in Engineered Fill		
Building Type	**Minimum Depth Below Lowest Adjacent Grade**	**Minimum Width**
One-Story	15 inches	12 inches
Two-Story	18 inches	15 inches

Excavated in Uniform Competent Formational Material			
Building Type	**Minimum Depth Below Lowest Adjacent Grade**	**Minimum Embedment into Uniform Competent Formational**	**Minimum Width**
One-Story	15 inches	12 inches	12 inches
Two-Story	18 inches	12 inches	15 inches

3. Minimum reinforcing for footings should be four No. 4 bars, placed two at the top and two at the bottom, or as directed by the project Structural Engineer.

4. A representative of this firm should observe and approve all foundation excavations for required embedment depth prior to the placement of reinforcing steel and/or concrete. Concrete should be placed only in excavations that are free of loose, soft soil and debris and that have been pre-moistened to 120 percent of optimum moisture content to a depth of 21 inches below lowest adjacent grade, with associated testing required.

5. An allowable dead plus live load bearing pressure of **1,500 psf** may be used for the design of footings founded in engineered fill or uniform competent formational material.

6. A total settlement of less than ¾ inch and a differential settlement of less than ½ inch are anticipated.

7. Lateral forces on structures may be resisted by passive pressure acting against the sides of shallow footings and/or friction between the engineered fill or uniform competent formational material and the bottom of the footings. For resistance to lateral loads, a friction factor of **0.50** may be utilized for sliding resistance at the base of footings extending a minimum of 12 inches into engineered fill or uniform competent formational material. A passive pressure of **300-pcf** equivalent fluid weight may be used against the side of shallow footings in engineered fill or uniform competent formational material. If friction and passive pressures are combined to resist lateral forces acting on shallow footings, the lesser value should be reduced by 50 percent.

8. Foundation excavations should be observed and approved by a representative of this firm prior to the placement of reinforcing steel and/or concrete.

9. Foundation design should conform to the requirements of Chapter 18 of the latest edition of the CBC (CBSC, 2007).

10. The base of all grade beams and footings should be level and stepped as required to accommodate any change in grade while still maintaining the minimum required footing embedment and slope setback distance.

11. The minimum footing setback distance from ascending or descending steeper than 3-to-1 (horizontal-to-vertical) but less than 1-to-1 must be maintained. See Figure 6: Setback

Dimensions – Slope Gradients Between 3-to-1 and 1-to-1 for the minimum horizontal setback distances from ascending and descending slopes steeper than 3-to-1 but not steeper than 1-to-1.

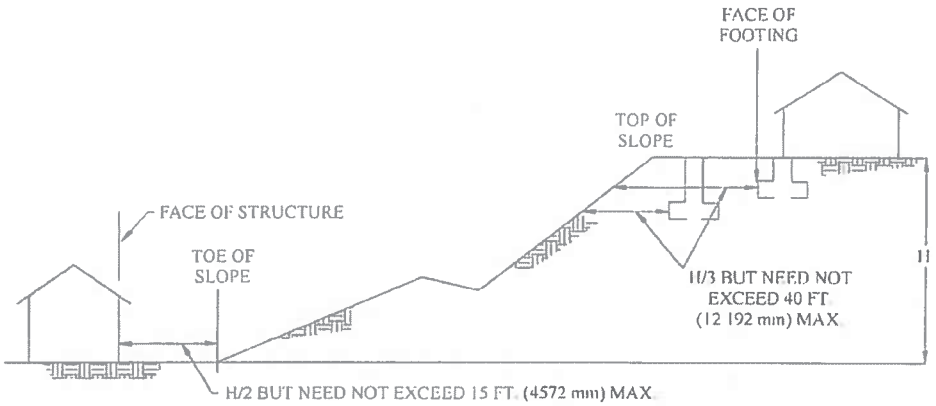


Figure 6: Setback Dimensions – Slope Gradients Between 3-to-1 and 1-to-1

12. If alternate footing setback distances from ascending or descending slopes are desired, GeoSolutions, Inc. may be contracted to perform an additional Numerical Slope Stability Study. Depending on the results of this study, alternate minimum footing setback distances from ascending or descending slopes may be provided.

6.6 Slab-On-Grade Construction

1. Concrete slabs-on-grade and flatwork should not be placed directly on unprepared native materials. Preparation of sub-grade to receive concrete slabs-on-grade and flatwork should be processed as discussed in the preceding sections of this report. Concrete slabs should be placed only over sub-grade that is free of loose, soft soil and debris and that has been lightly pre-moistened, with no associated testing required.

2. Concrete slabs-on-grade should be a minimum of 4 inches thick and should be reinforced with No. 3 reinforcing bars placed at 24 inches on-center both ways at or slightly above the center of the structural section. Reinforcing bars should have a minimum clear cover of 1.5 inches. The aforementioned reinforcement may be used for anticipated uniform floor loads not exceeding 200 psf. If floor loads greater than 200 psf are anticipated, a Structural Engineer should evaluate the slab design.

3. Concrete for all slabs should be placed at a maximum slump of less than 5 inches. Excessive water content is the major cause of concrete cracking. If fibers are used to aid in the control of cracking, a water-reducing admixture may be added to the concrete to increase slump while maintaining a water/cement ratio, which will limit excessive shrinkage. Control joints should be constructed as required to control cracking.

4. Where concrete slabs-on-grade are to be constructed, the slabs should be underlain by a minimum of six inches of clean free-draining material, such as a coarse aggregate mix, to serve as a cushion and a capillary break. Where moisture susceptible storage or floor coverings are anticipated, a 10-mil Visqueen-type membrane should be placed between the free-draining material and the slab to minimize moisture condensation under the floor

covering. See Figure 5: Sub-Slab Detail for the placement of under-slab drainage material. It is suggested that a two-inch thick sand layer be placed on top of the membrane to assist in the curing of the concrete, increasing the depth of the under-slab material to a total of eight inches. The sand should be lightly moistened prior to placing concrete.

5. Moisture condensation under floor coverings has become critical due to the use of water-soluble adhesives. Therefore, it is suggested that moisture sensitive slabs not be constructed during inclement weather conditions.

6.7 Retaining Walls

1. Retaining walls should be designed to resist lateral pressures from adjacent soils and surcharge loads applied behind the walls. We recommend using the lateral pressures presented in Table 4: Retaining Wall Design Parameters and Figure 7: Retaining Wall Detail for the design of retaining walls at the Site. The Active Case may be used for the design of unrestrained retaining walls, and the At-Rest Case may be used for the design of restrained retaining walls.

Table 4: Retaining Wall Design Parameters

Lateral Pressure and Condition	Equivalent Fluid Pressure, pcf
Static, Active Case, Engineered Fill or Competent Formational Material (K_A)	40
Static, At-Rest Case, Engineered Fill or Competent Formational Material (K_O)	55
Static, Passive Case, Engineered Fill or Competent Formational Material (K_P)	300

2. The above values for equivalent fluid pressure are based on retaining walls having level retained surfaces, having an approximately vertical surface against the retained material, and retaining granular backfill material or engineered fill composed of native soil within the active wedge. See Figure 8: Retaining Wall Active and Passive Wedges for a description of the location of the active wedge behind a retaining wall.

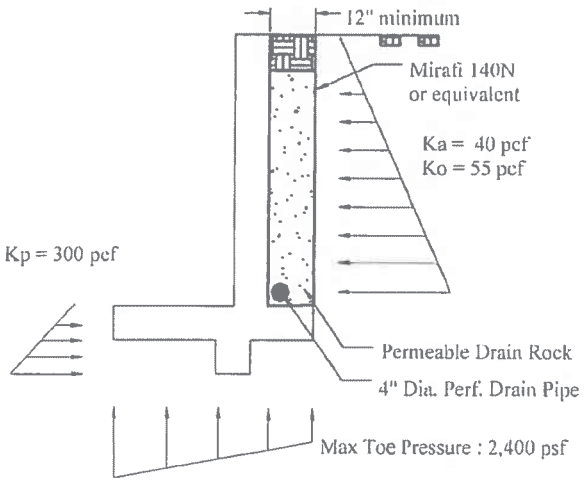


Figure 7: Retaining Wall Detail

3. Proposed retaining walls having a retained surface that slopes upward from the top of the wall should be designed for an additional equivalent fluid pressure of **1 pcf** for the active case and **1.5 pcf** for the at-rest case, for every **two degrees** of slope inclination. This applies for slope angles up to 20 degrees; a 20 degree slope is approximately equivalent to a slope with a 2.75-to-1 gradient. For slope angles greater than 20 degrees, the Soils Engineer should be consulted to obtain design equivalent fluid pressure values for retaining walls located at the Site.

4. We recommend that the proposed retaining walls at the Site have an approximately vertical surface against the retained material. If the proposed retaining walls are to have sloped surfaces against the retained material, the project designers should contact the Soils Engineer to determine the appropriate lateral earth pressure values for retaining walls located at the Site.

5. We recommend that the proposed retaining walls at the Site have an approximately vertical surface against the retained material. If the proposed retaining walls are to have sloped surfaces against the retained material, the project designers should contact the Soils Engineer to determine the appropriate lateral earth pressure values for retaining walls located at the Site.

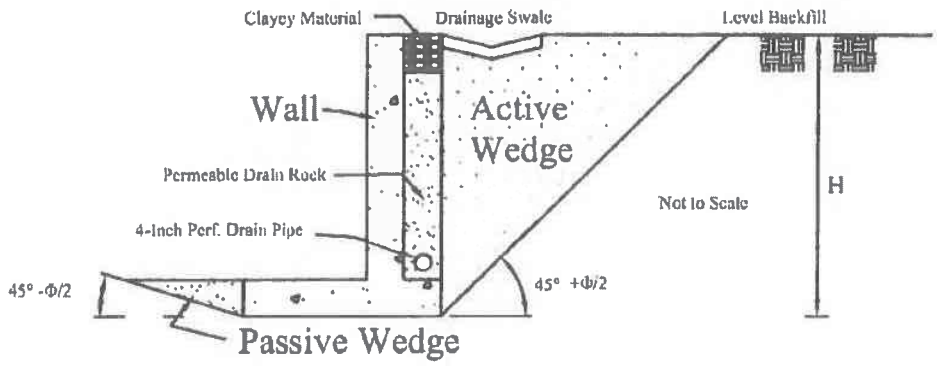


Figure 8: Retaining Wall Active and Passive Wedges

6. Retaining wall foundations should be founded a minimum of 12 inches below lowest adjacent grade in engineered fill or founded a minimum of 12 inches below lowest adjacent grade with a minimum embedment of 12 inches in uniform competent formational material as observed and approved by a representative of GeoSolutions, Inc. A coefficient of friction of **0.50** may be used between engineered fill or uniform competent formational material and concrete footings. Project designers may use a maximum toe pressure of **1,800 psf** for the design of retaining wall footings founded in engineered fill or uniform competent formational material.

7. The static lateral earth pressure values listed in Table 4: Retaining Wall Design Parameters and in Figure 7: Retaining Wall Detail may be used for the design of retaining walls subjected to static loading conditions. For the design of retaining walls subjected to seismic loading conditions, the seismic lateral earth pressure values listed in Table 4:

Retaining Wall Design Parameters may be added to the appropriate static lateral earth pressure value, either the Active case or the At-Rest case. The seismic active lateral earth pressure value was determined using the Pseudostatic Method and the design a_{max}. See section 4.3.5 for a description of the analysis used to determine the design a_{max}. The seismic at-rest lateral earth pressure value was determined by multiplying the seismic active lateral earth pressure value by 1.5. The pseudostatic seismic pressure resultant force should be assumed to act a distance of $^2/_3$H above the base of the retaining wall, where H is the height of the retaining wall.

8. These seismic lateral earth pressure values are appropriate for retaining walls that have level retained surfaces, that have an approximately vertical surface against the retained material, and that retain granular backfill material within the active wedge. For other retaining wall designs, seismic lateral earth pressure values may be obtained using methods such as the Mononobe and Okabe Method developed by Monouobe and Matsuo (1929) and Okabe (1926), which are included in retaining wall computer design software such as Retain Pro.

9. Seismically-induced forces on retaining walls are considered to be short-term loadings. Therefore, when performing seismic analyses for the design of retaining wall footings, we recommend that the allowable bearing pressure and the passive pressure acting against the sides of retaining wall footings be increased by a factor of one-third.

10. In addition to the static lateral soil pressure values reported in Table 4: Retaining Wall Design Parameters, the retaining walls at the Site should be designed to support any design live load, such as from vehicle and construction surcharges, etc., to be supported by the wall backfill. If construction vehicles are required to operate within 10 feet of a retaining wall, supplemental pressures will be induced and should be taken into account in the design of the retaining wall.

11. The recommended lateral earth pressure values are based on the assumption that sufficient sub-surface drainage will be provided behind the walls to prevent the build-up of hydrostatic pressure. To achieve this we recommend that a granular filter material be placed behind all proposed walls. The blanket of granular filter material should be a minimum of 12 inches thick and should extend from the bottom of the wall to 12 inches from the ground surface. The top 12 inches should consist of moisture conditioned, compacted, clayey soil. Neither spread nor wall footings should be founded in the granular filter material used as backfill.

12. A 4-inch diameter perforated or slotted drainpipe (ASTM D1785 PVC) should be installed near the bottom of the filter blanket with perforations facing down. The drainpipe should be underlain by at least 4 inches of filter type material and should daylight to discharge in suitably projected outlets with adequate gradients. The filter material should consist of a clean free-draining aggregate, such as a coarse aggregate mix. If the retaining wall is part of a structural foundation, the drainpipe must be placed below finished slab sub-grade elevation.

13. The filter material should be encapsulated in a permeable geotextile fabric. A suitable permeable geotextile fabric, such as non-woven needle-punched Mirafi 140N or equal, may be utilized to encapsulate the retaining wall drain material and should conform to Caltrans Standard Specification 88-1.03 for underdrains.

14. For hydrostatic loading conditions (i.e. no free drainage behind retaining wall), an additional loading of 45-pcf equivalent fluid weight should be added to the active and at-rest lateral earth pressures. If it is necessary to design retaining structures for submerged conditions, the allowed bearing and passive pressures should be reduced by 50 percent. In addition, soil friction beneath the base of the foundations should be neglected.

13. Precautions should be taken to ensure that heavy compaction equipment is not used adjacent to walls, so as to prevent undue pressure against, and movement of the walls.

14. The use of water-stops/impermeable barriers should be used for any basement construction, and for building walls that retain earth.

7.0 ADDITIONAL GEOTECHNICAL SERVICES

The recommendations contained in this report are based on a limited number of borings and on the continuity of the sub-surface conditions encountered. It is assumed that GeoSolutions, Inc. will be retained to perform the following services:

1. Consultation during plan development.

2. Plan review of grading and foundation documents prior to construction.

3. Construction inspections and testing as required including, but not limited to, stripping, grading, over-excavating, backfill placement, imported materials, foundation excavation observations and compaction.

8.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed during our study. Should any variations or undesirable conditions be encountered during the development of the Site, GeoSolutions, Inc. should be notified immediately and GeoSolutions, Inc. will provide supplemental recommendations as dictated by the field conditions.

2. This report is issued with the understanding that it is the responsibility of the owner or his/her representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project, and incorporated into the project plans and specifications. The owner or his/her representative is responsible to ensure that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. As of the present date, the findings of this report are valid for the property studied. With the passage of time, changes in the conditions of a property can occur whether they are due to natural processes or to the works of man on this or adjacent properties. Therefore, this report should not be relied upon after a period of 3 years without our review nor should it be used or is it applicable for any properties other than those studied. However many events such as floods, earthquakes, grading of the adjacent properties and building and municipal code changes could render sections of this report invalid in less than 3 years.

REFERENCES

REFERENCES

Blake, Thomas F. "*FRISKSP – A computer program for the probabilistic estimation of peak acceleration and uniform hazard spectra using 3-D faults as earthquake sources.*" Windows Version 4.0, 2000.

California Building Standards Commission (CBSC). *2007 California Building Code, California Code of Regulations*. Title 24. Part 2. Vol. 2. California Building Standards Commission: June 2007.

DeLorme. *Topo USA 6.0*. Vers.6.0.0 – F2.3 – 21.027.1970.1153. Computer software. DeLorme, 2006. Microsoft Windows XP/2000 SP3, 128 MB RAM, Intel Pentium III 600 MHz processor, 700 MB of available hard-disk space, 3D-capable video card with 32 MB VRAM, Microsoft Internet Explorer 5.01 or later, DVD-ROM drive.

Dibblee, Thomas W., Jr.. *Geologic Map of the Santa Margarita Quadrangle*. Dibblee Geologic Center Map Number DF-133. Santa Barbara Museum of Natural History: April 2004.

McGuire, R.K. "FRISK – Computer Program for Seismic Risk Analysis Using Faults as Earthquake Sources." *Open File Report No. 78-1007.* United States Geologic Survey (USGS). Reston. Virginia. 1978

State of California. Department of Industrial Relations. *California Code of Regulations*. 2001 Edition. Title 8. Chapter 4: Division of Industrial Safety. Subchapter 4, Construction Safety Orders. Article 6: Excavations. http://www.dir.ca.gov/title8/sub4.html.

State of California, Department of Transportation. *Standard Specifications*. State of California Department of Transportation Central Publication Distribution Unit: July 1999.

United States Geological Survey. *Seismic Design Values for Buildings, Earthquake Ground Motion Parameter Java Application*. 7 January 2008
<http://earthquake.usgs.gov/research/hazmaps/design/>

United States Geological Survey. *Seismic Hazard Curves and Uniform Hazard Response Spectra, Earthquake Ground Motion Tool*. Vers. 5.0.8. Computer software. USGS, 20 November 2007. PC-Windows XP, 4.6 MB, internet download.

California Division of Safety of Dams. The Resources Agency, Department of Water Resources *Parameter* Guidelines: Foundation and Construction Materials June 17, 2003
http://www.dsod.water./ca.gov/guidelines/foundation.htm

California Division of Safety of Dams. The Resources Agency, Department of Water Resources *Parameter* Guidelines: Embankment Design June 17, 2003
http://www.dsod.water./ca.gov/guidelines/embankment.htm

Natural Resources Conservation Service Conservation Practice Standard. Pond (No.) Code 378 Pages 378-1 to 378-7 NRCS, CA August 2006

Field Grading Report, Agricultural Pond, Biddle Ranch: Lopez Drive, Arroyo Grande Area, San Luis Obispo County, California.by GeoSolutions, Inc. Project SL01987-3

APPENDIX A

Field Investigation

Soil Classification Chart

Boring Logs

FIELD INVESTIGATION

The field investigation was conducted June 6 and June 9, 2008 using a track-mounted CME 55 drill rig. The surface and sub-surface conditions were studied by advancing six exploratory borings. This exploration was conducted in accordance with presently accepted geotechnical engineering procedures consistent with the scope of the services authorized to GeoSolutions, Inc.

The CME 55 drill rig with a four-inch diameter solid-stem continuous flight auger bored six exploratory borings near the approximate locations indicated on Figure 2: Site Plan. The drilling and field observation was performed under the direction of the project engineer. A representative of GeoSolutions, Inc. maintained a log of the soil conditions and obtained soil samples suitable for laboratory testing. The soils were classified in accordance with the Unified Soil Classification System. See Soil Classification Chart, **Appendix A.**

Standard Penetration Tests with a two-inch outside diameter standard split tube sampler (SPT) without liners (ASTM D1586-99) and a three-inch outside diameter Modified California (CA) split tube sampler with liners (ASTM D3550-01) were performed to obtain field indication of the in-situ density of the soil and to allow visual observation of at least a portion of the soil column. Soil samples obtained with the split spoon sampler are retained for further observation and testing. The split spoon samples are driven by a 140-pound hammer free falling 30 inches. The sampler is initially seated six inches to penetrate any loose cuttings and is then driven an additional 12 inches with the results recorded in the boring logs as N-values, which area the number of blows per foot required to advance the sample the final 12 inches.

The CA sampler is a larger diameter sampler than the standard (SPT) sampler with a two-inch outside diameter and provides additional material for normal geotechnical testing such as in-situ shear and consolidation testing. Either sampler may be used in the field investigation, but the N-values obtained from using the CA sampler will be greater than that of the SPT. The N-values for samples collected using the CA can be roughly correlated to SPT N-values using a conversion factor that may vary from about 0.5 to 0.7. A commonly used conversion factor is 0.67 ($^2/_3$). More information about standardized samplers can be found in ASTM D1586-99 and ASTM D3550-01.

Disturbed bulk samples are obtained from cuttings developed during boring operations. The bulk samples are selected for classification and testing purposes and may represent a mixture of soils within the noted depths. Recovered samples are placed in transport containers and returned to the laboratory for further classification and testing.

Logs of the borings showing the approximate depths and descriptions of the encountered soils, applicable geologic structures, recorded N-values, and the results of laboratory tests are presented in this appendix. The logs represent the interpretation of field logs and field tests as well as the interpolation of soil conditions between samples. The results of laboratory observations and tests are also included in the boring logs. The stratification lines recorded in the boring logs represent the approximate boundaries between the surface soil types. However, the actual transition between soil types may be gradual or varied.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS		LABORATORY CLASSIFICATION CRITERIA		GROUP SYMBOLS	PRIMARY DIVISIONS
COARSE GRAINED SOILS More than 50% retained on No. 200 sieve	GRAVELS More than 50% of coarse fraction retainined on No. 4 (4.75mm) sieve	Clean gravels (less than 5% fines*)	C_u greater than 4 and C_z between 1 and 3	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			Not meeting both criteria for GW	GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		Gravel with fines (more than 12% fines*)	Atterberg limits plot below "A" line or plasticity index less than 4	GM	Silty gravels, gravel-sand-silt mixtures
			Atterberg limits plot below "A" line and plasticity index greater than 7	GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 (4.75mm) sieve	Clean sand (less than 5% fines*)	C_u greater than 6 and C_z between 1 and 3	SW	Well graded sands, gravely sands, little or no fines
			Not meeting both criteria for SW	SP	Poorly graded sands and gravelly and sands, little or no fines
		Sand with fines (more than 12% fines*)	Atterberg limits plot below "A" line or plasticity index less than 4	SM	Silty sands, sand-silt mixtures
			Atterberg limits plot above "A" line and plasticity index greater than 7	SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS 50% or more passes No. 200 sieve	SILTS AND CLAYS (liquid limit less than 50)	Inorganic soil	PI < 4 or plots below "A"-line	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
		Inorganic soil	PI > 7 and plots on or above "A" line**	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		Organic Soil	LL (oven dried)/LL (not dried) < 0.75	OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS (liquid limit 50 or more)	Inorganic soil	Plots below "A" line	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
		Inorganic soil	Plots on or above "A" line	CH	Inorganic clays of high plasticity, fat clays
		Organic Soil	LL (oven dried)/LL (not dried) < 0.75	OH	Organic silts and organic clays of high plasticity
Peat	Highly Organic	Primarily organic matter, dark in color, and organic odor		PT	Peat, muck and other highly organic soils

*Fines are those soil particles that pass the No. 200 sieve. For gravels and sands with between 5 and 12% fines, use of dual symbols is required (i.e. GW-GM, GW-GC, GP-GM, or GP-GC).

**If the plasticity index is between 4 and 7 and it plots above the "A" line, then dual symbols (i.e. CL-ML) are required.

CLASSIFICATIONS BASED ON PERCENTAGE OF FINES

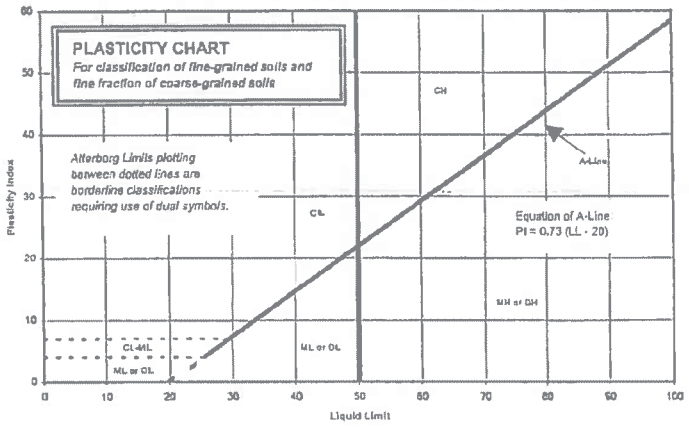
Less than 5%, Pass No. 200 (75mm)sieve)	GW, GP, SW, SP
More than 12% Pass N. 200 (75 mm) sieve	GM, GC, SM, SC
5%-12% Pass No. 200 (75 mm) sieve	Borderline Classification requiring use of dual symbols

CONSISTENCY

CLAYS AND PLASTIC SILTS	STRENGTH TON/SQ. FT ++	BLOWS/ FOOT +
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	Over 4	Over 32

RELATIVE DENSITY

SANDS, GRAVELS AND NON-PLASTIC SILTS	BLOWS/ FOOT +
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	Over 50



+ Number of blows of a 140-pound hammer falling 30-inches to drive a 2-inch O.D. (1-3/8-inch I.D.) split spoon (ASTM D1586).

++ Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D1586), pocket penetrometer, torvane, or visual observation.

Drilling Notes:

1. Sampling and blow counts
   a. California Modified – number of blows per foot of a 140 pound hammer falling 30 inches
   b. Standard Penetration Test – number of blows per 12 inches of a 140 pound hammer falling 30 inches

Types of Samples:
X – In-Situ
SPT - Standard Penetration
CA - California Modified
N - Nuclear Gauge
PO – Pocket Penetrometer (tons/sq.ft.)

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-1**

JOB NO. **SL06462-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Santa Margarita Ranch**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**4 Inches**
DATE DRILLED:	**6/6/08**	SAMPLING METHOD:	**CA**
LOGGED BY:	**LZ**	HOLE ELEVATION:	**Not Recorded**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **10 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	$(N_1)_{60}$	FRICTION ANGLE, (degrees)	COHESION, C (psf)	OPTIMUM WATER CONTENT (%)	MAXIMUM DRY DENSITY (pcf)	EXPANSION INDEX (EI)	PLASTICITY INDEX (PI)
0	SANDY CLAY: yellowish brown, dry, coarse to fine grain, Atascadero Formation (Kas)	CL		A					14.0	114.3	23	
-1				X	67							
-2												
-3												
-4				X	78							
-5												
-6												
-7												
-8												
-9				X	50/2"							
-10												
-11												
-12												
-13												
-14												
-15												
-16												
-17												
-18												
-19												
-20												
-21												
-22												
-23												
-24												
-25												

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-2**

JOB NO. **SL06462-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Santa Margarita Ranch**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**4 Inches**
DATE DRILLED:	**6/6/08**	SAMPLING METHOD:	**SPT**
LOGGED BY:	**LZ**	HOLE ELEVATION:	**Not Recorded**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **10 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	$(N_1)_{60}$	FRICTION ANGLE, (degrees)	COHESION, C (psf)	OPTIMUM WATER CONTENT (%)	MAXIMUM DRY DENSITY (pcf)	EXPANSION INDEX (EI)	PLASTICITY INDEX (PI)
0	SANDY CLAY: yellowish brown, dry, coarse to fine grain, Atascadero Formation (Kas)	CL										
-4				X	67							
-9				X	50/6"							

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-3**

JOB NO. **SL06462-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Santa Margarita Ranch**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**4 Inches**
DATE DRILLED:	**6/6/08**	SAMPLING METHOD:	**CA/SPT**
LOGGED BY:	**LZ**	HOLE ELEVATION:	**Not Recorded**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	$(N_1)_{60}$	FRICTION ANGLE, (degrees)	COHESION, C (psf)	OPTIMUM WATER CONTENT (%)	MAXIMUM DRY DENSITY (pcf)	EXPANSION INDEX (EI)	PLASTICITY INDEX (PI)
0	CLAYEY SAND: reddish brown, dry, dense, Atascadero Formation (Kas)	SC										
-4				SPT	33							
-9				SPT	40							
-14				CA	50/6"							
-15												

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-4**

JOB NO. **SL06462-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Santa Margarita Ranch**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**4 Inches**
DATE DRILLED:	**6/9/08**	SAMPLING METHOD:	**CA/SPT**
LOGGED BY:	**LZ**	HOLE ELEVATION:	**Not Recorded**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **10 Feet** Page 4 of 6

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/12 IN	(N1)60	FRICTION ANGLE, (degrees)	COHESION, C (psf)	OPTIMUM WATER CONTENT (%)	MAXIMUM DRY DENSITY (pcf)	EXPANSION INDEX (EI)	PLASTICITY INDEX (PI)
0	CLAYEY SAND: reddish brown, with gravel, dry, dense, Atascadero Formation (Kas)	SC										
-4				CA	66							
-9				SPT	50/6"							

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-5**

JOB NO. **SL06462-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Santa Margarita Ranch**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**4 Inches**
DATE DRILLED:	**6/9/08**	SAMPLING METHOD:	**CA/SPT**
LOGGED BY:	**LZ**	HOLE ELEVATION:	**Not Recorded**

▼ Depth of Groundwater: **6 Feet** Boring Terminated At: **25 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/12 IN	(N 1)60	FRICTION ANGLE, (degrees)	COHESION, C (psf)	OPTIMUM WATER CONTENT (%)	MAXIMUM DRY DENSITY (pcf)	EXPANSION INDEX (EI)	PLASTICITY INDEX (PI)
0	CLAYEY SAND: dark brown to black, dry, Alluvium(Qa)	CL		B					13.5	116.5		
-3	moist			SPT	5							
-6	saturated											
-9				SPT	1							
-13	sample not retrieved			CA	3							
-19				SPT	2							
-24				SPT	2							

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-6**

JOB NO. **SL06462-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Santa Margarita Ranch**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**4 Inches**
DATE DRILLED:	**6/9/08**	SAMPLING METHOD:	**CA/SPT**
LOGGED BY:	**LZ**	HOLE ELEVATION:	**Not Recorded**

▼ Depth of Groundwater: **9 Feet** Boring Terminated At: **25 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	$(N_1)_{60}$	FRICTION ANGLE, (degrees)	COHESION, C (psf)	OPTIMUM WATER CONTENT (%)	MAXIMUM DRY DENSITY (pcf)	EXPANSION INDEX (EI)	PLASTICITY INDEX (PI)
0	SANDY CLAY: dark brown to black, dry, Alluvium(Qa)	CL										
-4	moist			SPT	5							
-9	▼ saturated			SPT	2							
-13				CA	1							
-19				SPT	2							
-24				SPT	3							

APPENDIX B

Laboratory Testing

Soil Test Reports

LABORATORY TESTING

This appendix includes a discussion of test procedures and the results of the laboratory tests performed as part of this investigation. The purpose of the laboratory testing is to assess the engineering properties of the soil materials underlying the Site. The laboratory tests are performed using the currently accepted test methods, when applicable, of the American Society for Testing and Materials (ASTM).

Undisturbed and disturbed bulk samples used in the laboratory tests are obtained from various locations during the course of the field exploration, as discussed in **Appendix A** of this report. Each sample is identified by sample letter and depth. The Unified Soils Classification System is used to classify soils according to their engineering properties. The various laboratory tests performed are described below:

Expansion Index of Soils (ASTM D4829-03) is conducted in accordance with the ASTM test method and the California Building Code Standard, and are performed on representative bulk and undisturbed soil samples. The purpose of this test is to evaluate expansion potential of the site soils due to fluctuations in moisture content. The sample specimens are placed in a consolidometer, surcharged under a 144-psf vertical confining pressure, and then inundated with water. The amount of expansion is recorded over a 24-hour period with a dial indicator. The expansion index is calculated by determining the difference between final and initial height of the specimen divided by the initial height.

Laboratory Compaction Characteristics of Soil Using Modified Effort (ASTM D1557-07) is performed to determine the relationship between the moisture content and density of soils and soil-aggregate mixtures when compacted in a standard size mold with a 10-lbf hammer from a height of 18 inches. The test is performed on a representative bulk sample of bearing soil near the estimated footing depth. The procedure is repeated on the same soil sample at various moisture contents sufficient to establish a relationship between the maximum dry unit weight and the optimum water content for the soil. The data, when plotted, represents a curvilinear relationship known as the moisture density relations curve. The values of optimum water content and modified maximum dry unit weight can be determined from the plotted curve.

Particle Size Analysis of Soils (ASTM D422-63R02) is used to determine the particle-size distribution of fine and coarse aggregates. In the test method the sample is separated through a series of sieves of progressively smaller openings for determination of particle size distribution. The total percentage passing each sieve is reported and used to determine the distribution of fine and coarse aggregates in the sample.

GeoSolutions, Inc.	SOILS REPORT	(805) 543-8539

Project:	Santa Margarita Ranch			Date Tested:	June 16, 2008
Client:				Project #:	SL06462-2
Sample:	A	Depth:	1.0 Foot	Lab #:	13681
Location:	B-1			Sample Date:	June 10, 2008
				Sampled By:	LZ

Soil Classification
ASTM D2487-00, D2488-00

Result: Yellowish Brown Sandy CLAY

Specification: CL

Sieve Analysis
ASTM D422-63R02

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	88	
No. 8	82	
No. 16	74	
No. 30	68	
No. 50	65	
No. 100	63	
No. 200	60.3	

Sand Equivalent Cal 217 (11/1999)

1		SE
2		
3		
4		

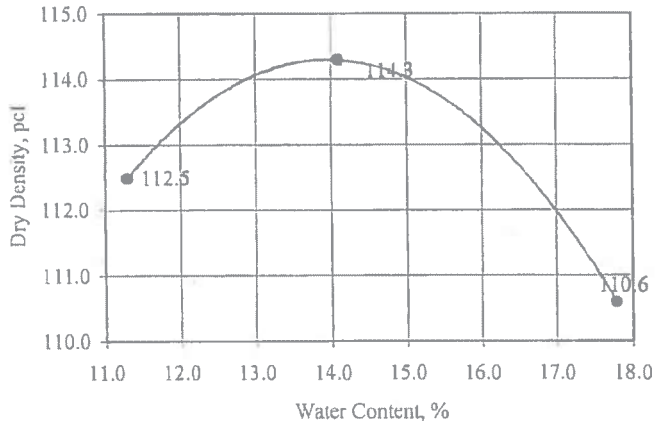
Plasticity Index
ASTM D4318-05

Liquid Limit:	
Plastic Limit:	
Plasticity Index:	

Expansion Index
ASTM D4829-03

Expansion Index:	23
Expansion Potential:	Low
Initial Saturation, %:	50

Laboratory Maximum Density
ASTM D1557-02 [e1]



Mold ID	n/a	Mold Diameter, ins.	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve = 2.6

Trial #	1	2	3	4
Water Content:	11.3	14.1	17.8	
Dry Density:	112.5	114.3	110.6	

Maximum Dry Density, pcf:	**114.3**
Optimum Water Content, %:	**14.0**

Moisture-Density ASTM D2937-04, ASTM D2216-05

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description

Report By: Aaron Eichman

GeoSolutions, Inc.	SOILS REPORT	(805) 543-8539

Project:	Santa Margarita Ranch			Date Tested:	June 17, 2008
Client:				Project #:	SL06462-2
Sample:	B	Depth:	1.0 Foot	Lab #:	13681
Location:	B-5			Sample Date:	June 10, 2008
				Sampled By:	LZ

Soil Classification
ASTM D2487-00, D2488-00

Result: Black Sandy CLAY

Specification: CL

Sieve Analysis
ASTM D422-63R02

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	98	
No. 8	95	
No. 16	91	
No. 30	87	
No. 50	81	
No. 100	72	
No. 200	63.4	

Sand Equivalent Cal 217 (11/1999)

1		SE
2		
3		
4		

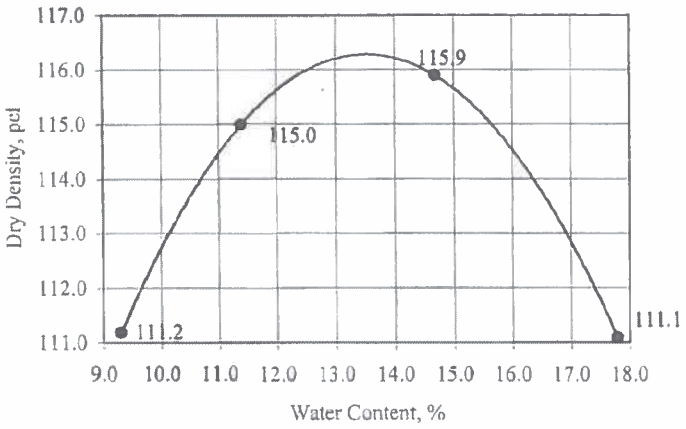
Plasticity Index
ASTM D4318-05

Liquid Limit:	
Plastic Limit:	
Plasticity Index:	

Expansion Index
ASTM D4829-03

Expansion Index:	
Expansion Potential:	
Initial Saturation, %:	

Laboratory Maximum Density
ASTM D1557-02 $^{\varepsilon 1}$



Mold ID	n/a	Mold Diameter, ins.	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve – 2.65

Trial #	1	2	3	4
Water Content:	9.3	11.4	14.7	17.8
Dry Density:	111.2	115.0	115.9	111.1

Maximum Dry Density, pcf:	**116.5**
Optimum Water Content, %:	**13.5**

Moisture-Density ASTM D2937-04, ASTM D2216-05

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description

Report By: Aaron Eichman

GeoSolutions, Inc.	PERMEABILITY TEST REPORT D5084-03	(805) 543-8539

Project:	Santa Margarita Ranch			Date Tested:	July 9, 2008
Client:				Project #:	SL06462-2
Sample #:	B-3 @ 14'	Depth:	14.0 Feet	Lab #:	13681
Location:	B-3			Sample Date:	June 10, 2008
Material:	Olive Brown CLAYSTONE			Sampled By:	LZ

Test Data

PROPERTY	BEFORE TEST	AFTER TEST
Water Content (%)	-	-
Dry Density (pcf)	-	-
Void Ratio	-	-
Saturation (%)	-	-
Maximum Dry Density (pcf)	-	-
Optimum Water Content (%)	-	-
Relative Compaction (%)	-	-

Permeability Results

TRIAL NO.	HYDRAULIC CONDUCTIVITY, k (cm/sec)
1	0.000000
2	0.000000
3	0.000000
4	0.000000
5	0.000000

Average Hydraulic Conductivity Rate, k (cm/sec)	**IMPERMEABLE**

Comments: Falling Head Constant Tailwater Permeability

Report By: Aaron Eichman

GeoSolutions, Inc.	PERMEABILITY TEST REPORT D5084-03	(805) 543-8539

Project:	Santa Margarita Ranch			Date Tested:	July 17, 2008
Client:				Project #:	SL06462-2
Sample #:	B-4 @ 4'	Depth:	4.0 Feet	Lab #:	13681
Location:	B-4			Sample Date:	June 10, 2008
Material:	Dark Yellowish Brown Clayey SAND with Gravel			Sampled By:	LZ

Test Data

PROPERTY	BEFORE TEST	AFTER TEST
Water Content (%)	-	-
Dry Density (pcf)	-	-
Void Ratio	-	-
Saturation (%)	-	-
Maximum Dry Density (pcf)	-	-
Optimum Water Content (%)	-	-
Relative Compaction (%)	-	-

Permeability Results

TRIAL NO.	HYDRAULIC CONDUCTIVITY, k (cm/sec)
1	0.110744
2	0.116949
3	0.109683
4	0.102231
5	0.106408

Average Hydraulic Conductivity Rate, k (cm/sec)	**0.109203**

Comments: Falling Head Constant Tailwater Permeability

Report By: Aaron Eichman

GeoSolutions, Inc.	PERMEABILITY TEST REPORT D5084-03	(805) 543-8539

Project:	Santa Margarita Ranch			Date Tested:	July 21, 2008
Client:				Project #:	SL06462-2
Sample #:	B-6 @ 13'	Depth:	13.0 Feet	Lab #:	13681
Location:	B-6			Sample Date:	June 10, 2008
Material:	Very Dark Grayish Brown Sandy CLAY			Sampled By:	LZ

Test Data

PROPERTY	BEFORE TEST	AFTER TEST
Water Content (%)	-	-
Dry Density (pcf)	-	-
Void Ratio	-	-
Saturation (%)	-	-
Maximum Dry Density (pcf)	-	-
Optimum Water Content (%)	-	-
Relative Compaction (%)	-	-

Permeability Results

TRIAL NO.	HYDRAULIC CONDUCTIVITY, k (cm/sec)
1	0.042533
2	0.032532
3	0.033872
4	0.036766
5	0.035892

Average Hydraulic Conductivity Rate, k (cm/sec)	**0.036319**

Comments: Falling Head Constant Tailwater Permeability

Report By: Aaron Eichman

APPENDIX C

Preliminary Grading Specifications

Key and Bench with Backdrain

PRELIMINARY GRADING SPECIFICATIONS

A. General

i. These preliminary specifications have been prepared for the subject site; GeoSolutions, Inc. should be consulted prior to the commencement of site work associated with site development to ensure compliance with these specifications.

ii. GeoSolutions, Inc. should be notified at least 72 hours prior to site clearing or grading operations on the property in order to observe the stripping of surface materials and to coordinate the work with the grading contractor in the field.

iii. These grading specifications may be modified and/or superseded by recommendations contained in the text of this report and/or subsequent reports.

iv. If disputes arise out of the interpretation of these grading specifications, the Soils Engineer shall provide the governing interpretation.

B. Obligation of Parties

i. The Soils Engineer should provide observation and testing services and should make evaluations to advise the client on geotechnical matters. The Soils Engineer should report the findings and recommendations to the client or the authorized representative.

ii. The client should be chiefly responsible for all aspects of the project. The client or authorized representative has the responsibility of reviewing the findings and recommendations of the Soils Engineer. During grading the client or the authorized representative should remain on-site or should remain reasonably accessible to all concerned parties in order to make decisions necessary to maintain the flow of the project.

iii. The contractor is responsible for the safety of the project and satisfactory completion of all grading and other operations on construction projects, including, but not limited to, earthwork in accordance with project plans, specifications, and controlling agency requirements.

C. Site Preparation

i. The client, prior to any site preparation or grading, should arrange and attend a meeting which includes the grading contractor, the design Structural Engineer, the Soils Engineer, representatives of the local building department, as well as any other concerned parties. All parties should be given at least 72 hours notice.

ii. All surface and sub-surface deleterious materials should be removed from the proposed building and pavement areas and disposed of off-site or as approved by the Soils Engineer. This includes, but is not limited to, any debris, organic materials, construction spoils, buried utility line, septic systems, building materials, and any other surface and subsurface structures within the proposed building areas. Trees designated for removal on the construction plans should be removed and their primary root systems grubbed under the observations of a representative of GeoSolutions, Inc. Voids left from site clearing should be cleaned and backfilled as recommended for structural fill.

iii. Once the Site has been cleared, the exposed ground surface should be stripped to remove surface vegetation and organic soil. A representative of GeoSolutions, Inc. should determine the required depth of stripping at the time of work being completed. Strippings may either be disposed of off-site or stockpiled for future use in landscape areas, if approved by the landscape architect.

D. Site Protection

i. Protection of the Site during the period of grading and construction should be the responsibility of the contractor.

ii. The contractor should be responsible for the stability of all temporary excavations.

iii. During periods of rainfall, plastic sheeting should be kept reasonably accessible to prevent unprotected slopes from becoming saturated. Where necessary during periods of rainfall, the contractor should install check-dams, de-silting basins, sand bags, or other devices or methods necessary to control erosion and provide safe conditions.

E. Excavations

i. Materials that are unsuitable should be excavated under the observation and recommendations of the Soils Engineer. Unsuitable materials include, but may not be limited to: 1) dry, loose, soft, wet, organic, or compressible natural soils; 2) fractured, weathered, or soft bedrock; 3) non-engineered fill; 4) other deleterious materials; and 5) materials identified by the Soils Engineer or Engineering Geologist.

ii. Unless otherwise recommended by the Soils Engineer and approved by the local building official, permanent cut slopes should not be steeper than 2:1 (horizontal to vertical). Final slope configurations should conform to section 1803 of the 2007 California Building Code unless specifically modified by the Soil Engineer/Engineering Geologist.

iii. The Soil Engineer/Engineer Geologist should review cut slopes during excavations. The contractor should notify the Soils Engineer/Engineer Geologist prior to beginning slope excavations.

F. Structural Fill

i. Structural fill should not contain rocks larger than 3 inches in greatest dimension, and should have no more than 15 percent larger than 2.5 inches in greatest dimension.

ii. Imported fill should be free of organic and other deleterious material and should have very low expansion potential, with a plasticity index of 12 or less. Before delivery to the Site, a sample of the proposed import should be tested in our laboratory to determine its suitability for use as structural fill.

G. Compacted Fill

i. Structural fill using approved import or native should be placed in horizontal layers, each approximately 8 inches in thickness before compaction. On-site inorganic soil or approved imported fill should be conditioned with water to produce a soil water content near optimum moisture and compacted to a minimum relative density of 90 percent based on ASTM D1557-02$^{\varepsilon 1}$.

ii. Fill slopes should not be constructed at gradients greater than 2-to-1 (horizontal to vertical). The contractor should notify the Soils Engineer/Engineer Geologist prior to beginning slope excavations.

iii. If fill areas are constructed on slopes greater than 10-to-1 (horizontal to vertical), we recommend that benches be cut every 4 feet as fill is placed. Each bench shall be a minimum of 10 feet wide with a minimum of 2 percent gradient into the slope.

iv. If fill areas are constructed on slopes greater than 5-to-1, we recommend that the toe of all areas to receive fill be keyed a minimum of 24 inches into underlying dense material. Key depths are to be

observed and approved by a representative of GeoSolutions, Inc. Sub-drains shall be placed in the keyway and benches as required. See Detail A: Key and Bench with Backdrain.

H. Drainage

i. During grading, a representative of GeoSolutions, Inc. should evaluate the need for a sub-drain or back-drain system. Areas of observed seepage should be provided with sub-surface drains to release the hydrostatic pressures. Sub-surface drainage facilities may include gravel blankets, rock filled trenches or Multi-Flow systems or equal. The drain system should discharge in a non-erosive manner into an approved drainage area.

ii. All final grades should be provided with a positive drainage gradient away from foundations. Final grades should provide for rapid removal of surface water runoff. Ponding of water should not be allowed on building pads or adjacent to foundations. Final grading should be the responsibility of the contractor, general Civil Engineer, or architect.

iii. Concentrated surface water runoff within or immediately adjacent to the Site should be conveyed in pipes or in lined channels to discharge areas that are relatively level or that are adequately protected against erosion.

iv. Water from roof downspouts should be conveyed in solid pipes that discharge in controlled drainage localities. Surface drainage gradients should be planned to prevent ponding and promote drainage of surface water away from building foundations, edges of pavements and sidewalks. For soil areas we recommend that a minimum of 2 percent gradient be maintained.

v. Attention should be paid by the contractor to erosion protection of soil surfaces adjacent to the edges of roads, curbs and sidewalks, and in other areas where hard edges of structures may cause concentrated flow of surface water runoff. Erosion resistant matting such as Miramat, or other similar products, may be considered for lining drainage channels.

vi. Sub-drains should be placed in established drainage courses and potential seepage areas. The location of sub-drains should be determined after a review of the grading plan. The sub-drain outlets should extend into suitable facilities or connect to the proposed storm drain system or existing drainage control facilities. The outlet pipe should consist of a non-perforated pipe the same diameter as the perforated pipe.

I. Maintenance

i. Maintenance of slopes is important to their long-term performance. Precautions that can be taken include planting with appropriate drought-resistant vegetation as recommended by a landscape architect, and not over-irrigating, a primary source of surficial failures.

ii. Property owners should be made aware that over-watering of slopes is detrimental to long term stability of slopes.

J. Underground Facilities Construction

i. The attention of contractors, particularly the underground contractors, should be drawn to the State of California Construction Safety Orders for "Excavations, Trenches, Earthwork." Trenches or excavations greater than 5 feet in depth should be shored or sloped back in accordance with OSHA Regulations prior to entry.

ii. Bedding is defined as material placed in a trench up to 1 foot above a utility pipe and backfill is all material placed in the trench above the bedding. Unless concrete bedding is required around utility pipes, free-draining sand should be used as bedding. Sand to be used as bedding should be tested in our laboratory to verify its suitability and to measure its compaction characteristics. Sand bedding should be compacted by mechanical means to achieve at least 90 percent relative density based on ASTM D1557-02$^{\varepsilon 1}$.

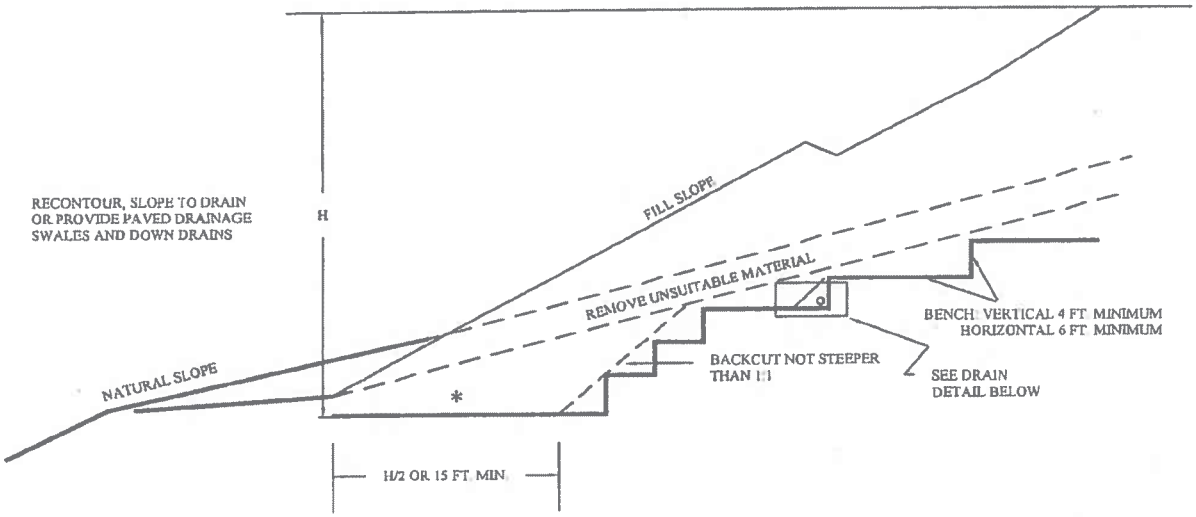
iii. On-site inorganic soils, or approved import, may be used as utility trench backfill. Proper compaction of trench backfill will be necessary under and adjacent to structural fill, building foundations, concrete slabs, and vehicle pavements. In these areas, backfill should be conditioned with water (or allowed to dry), to produce a soil water content of about 2 to 3 percent above the optimum value and placed in horizontal layers, each not exceeding 8 inches in thickness before compaction. Each layer should be compacted to at least 90 percent relative density based on ASTM D1557-02$^{\varepsilon 1}$. The top lift of trench backfill under vehicle pavements should be compacted to the requirements given in report under Preparation of Paved Areas for vehicle pavement sub-grades. Trench walls must be kept moist prior to and during backfill placement.

K. Completion of Work

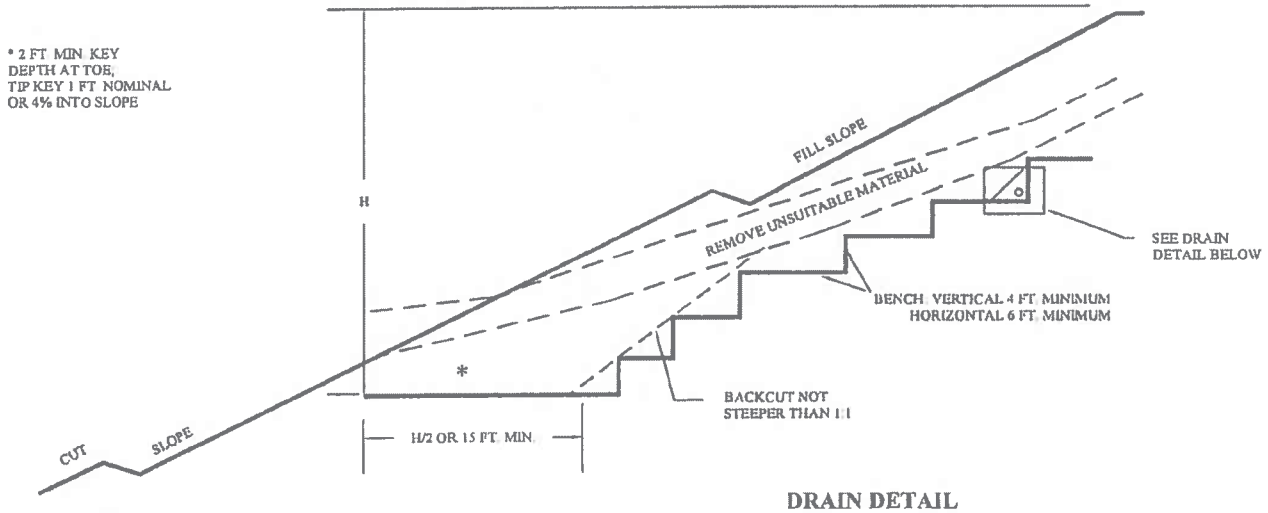
i. After the completion of work, a report should be prepared by the Soils Engineer retained to provide such services in accordance with section 1803.5 of the 2007 CBC. The report should including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during grading and their effect on the recommendations made in the approved Soils Engineering Report.

ii. Soils Engineers shall submit a statement that, to the best of their knowledge, the work within their area of responsibilities is in accordance with the approved soils engineering report and applicable provisions within section 1803 of the 2007 CBC.

FILL OVER NATURAL SLOPE



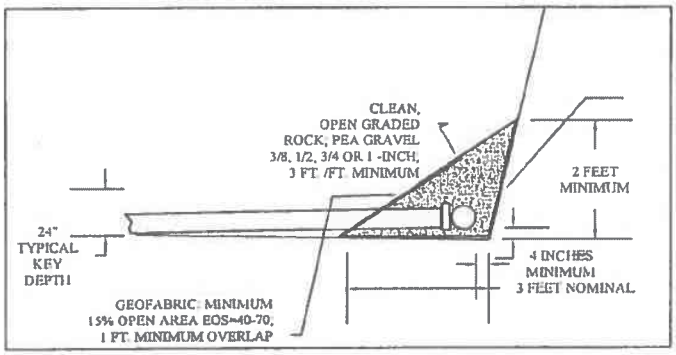
FILL OVER CUT SLOPE



NOTES:
1 - IF OVERFILLING AND CUTTING BACK TO GRADE IS ADOPTED, 15 FT. MIN. FILL WIDTH MAY BE REDUCED TO 12 FT. MIN. IN NO CASE SHOULD THE FILL WIDTH BE LESS THAN 1/2 THE HEIGHT OF FILL REMAINING.

1 - BACKDRAIN AS RECOMMEDNED BY GEOTECHNICAL CONSULTANT PER DUTTRESS BACKDRAIN DETAIL.

DRAIN DETAIL



GeoSolutions, Inc.
220 High Street
San Luis Obispo, CA 93401
(805) 543-8539 Fax: (805) 543-2171

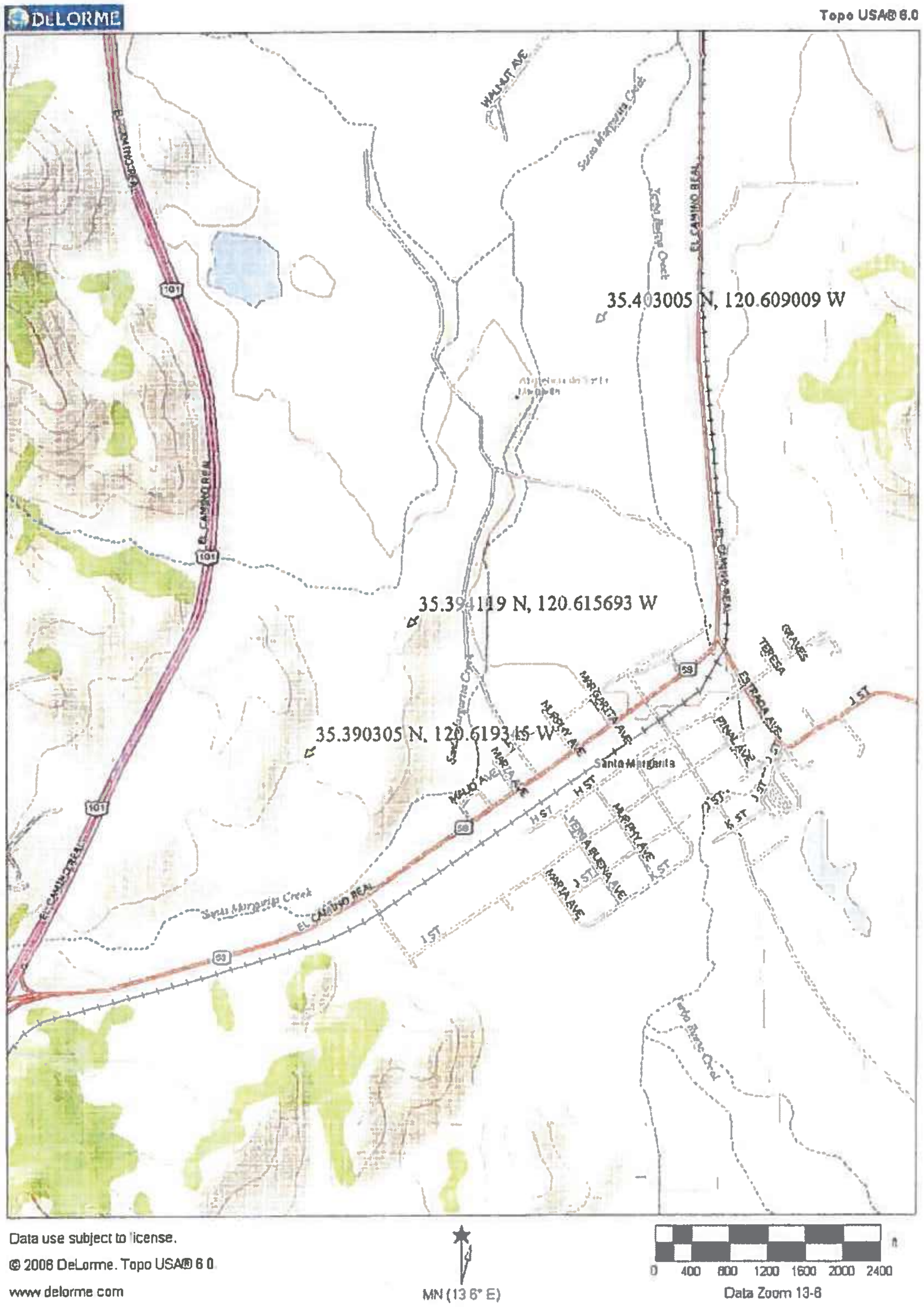
KEY AND BENCH WITH BACKDRAIN

DETAIL
A

APPENDIX D

Seismic Data – (DeLorme, 2006)

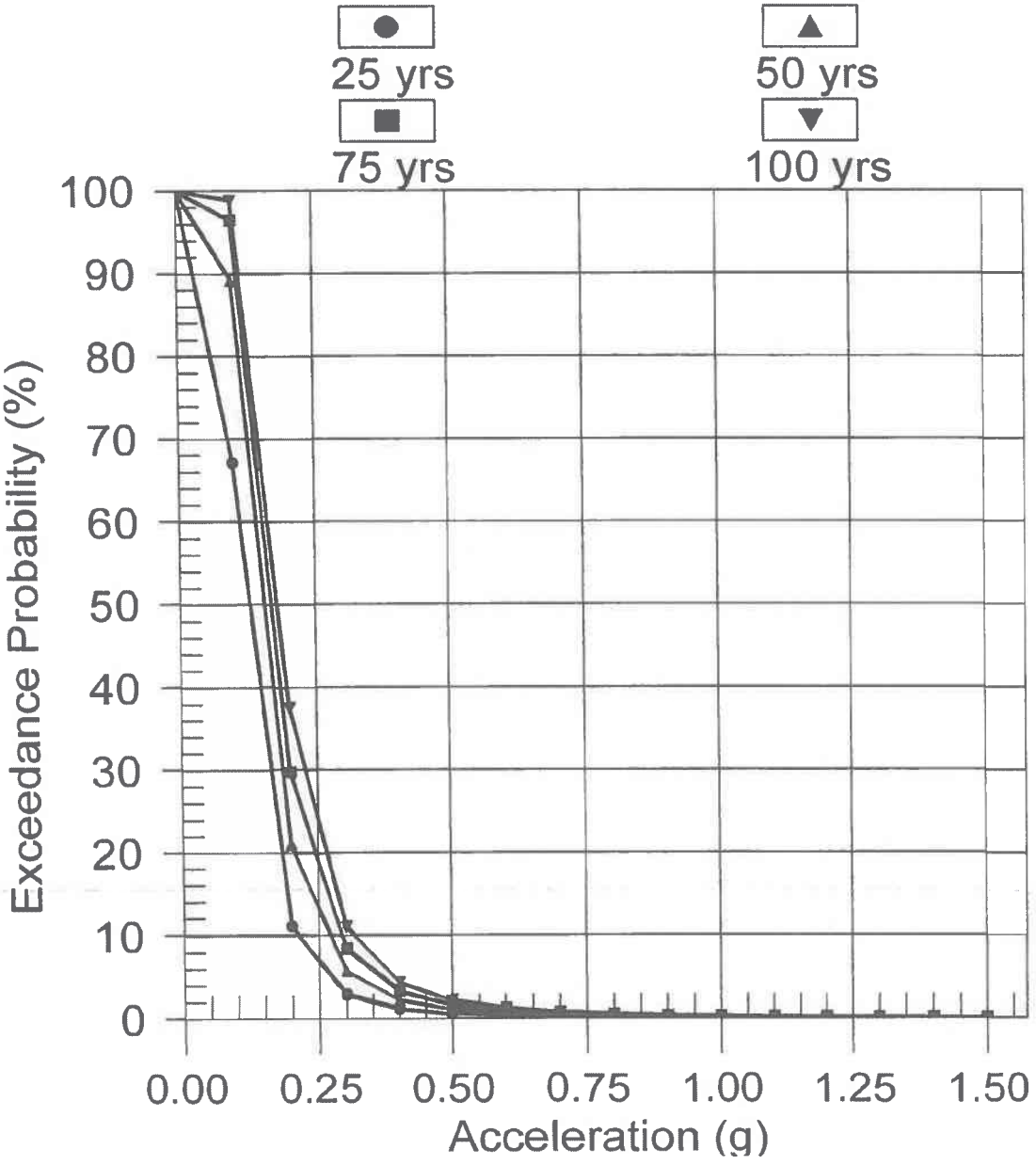
Probability of Exceedance Chart (Blake, 2000)



DeLORME
Topo USA® 6.0
35.403005 N, 120.609009 W
35.394119 N, 120.615693 W
35.390305 N, 120.619345 W
EL CAMINO REAL
WALNUT AVE
Santa Margarita Creek
Yerba Buena Creek
Santa Margarita
MURPHY AVE
MARGARITA AVE
ESTRADA AVE
PINAL AVE
TERESA
GRAVES
H ST
I ST
J ST
K ST
MARIA AVE
YERBA BUENA AVE
Data use subject to license.
© 2006 DeLorme. Topo USA® 6.0
www.delorme.com
MN (13.6° E)
0 400 800 1200 1600 2000 2400
Data Zoom 13-6

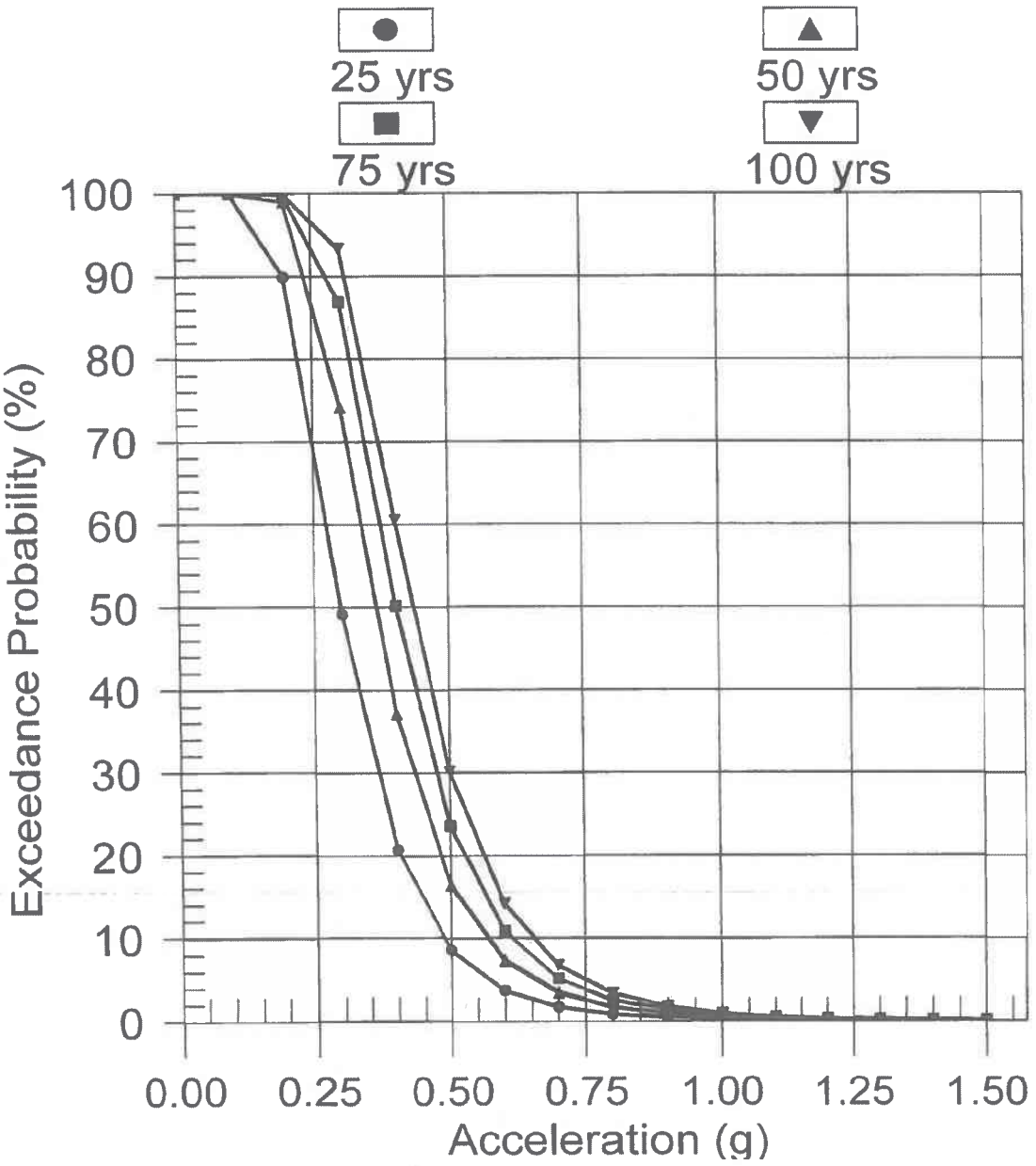
PROBABILITY OF EXCEEDANCE

BOORE ET AL(1997) NEHRP C (520)1



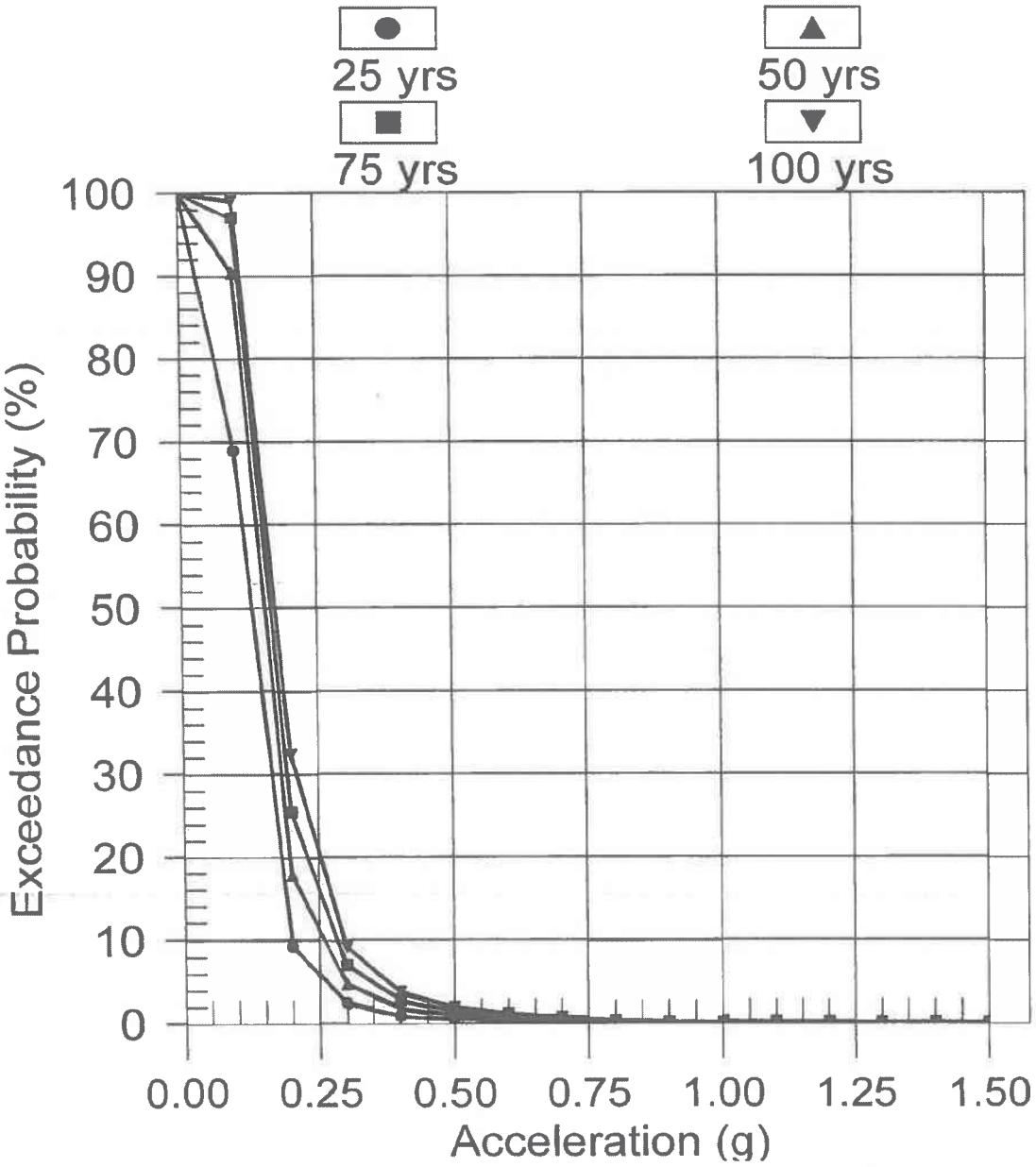
PROBABILITY OF EXCEEDANCE

IDRISS (1994) HOR. SOFT SOIL 1



PROBABILITY OF EXCEEDANCE

BOORE ET AL(1997) NEHRP C (520)1



Attachment I

Traffic Assessment for Santa Margarita Ranch Remediation Project

TECHNICAL MEMORANDUM

AECOM
999 W. Town and Country Road
Orange, California 92868
Phone: (714) 567-2400
Fax: (714) 567-2594

To: Ed Ralston, Phillips 66

From: Noel V. Casil, PE, TE, PTOE, AECOM
Olegario Acosta, AECOM

Date: March 24, 2020

Subject: Traffic Assessment for Santa Margarita Remediation Project

1.0 Introduction

The purpose of this technical memorandum is to present the updated results of a traffic assessment conducted to evaluate potential traffic impacts associated with the Santa Margarita Remediation Project (Project) on a portion of the Santa Margarita Ranch (Ranch) in the unincorporated community of Santa Margarita, San Luis Obispo, California (Project Area). This technical memorandum updates AECOM's previous submittal on June 20, 2019.

The Project Area is located adjacent to the unincorporated community of Santa Margarita, with residential neighborhoods to the south of the subject property. To the north of the Project Area is the residential community of Garden Farms. To the east of the Project Area are El Camino Real and the Phillips 66 Santa Margarita Pump Station. US 101 passes along the western boundary of the Project Area with rural or undeveloped properties across the highway from the Project Area.

AECOM Technical Services, Inc. (AECOM) is planning to conduct remediation activities at the Ranch under contract with Phillips 66 Company (Phillips 66). The Project is located on a portion of the Ranch (APN 070-091-036). The entire parcel is approximately 900 acres. Phillips 66 Pipeline LLC, a subsidiary of Project proponent and Applicant Phillips 66 currently operates two parallel 8-inch diameter petroleum pipelines that traverse the central portion of the Project Area from the eastern side of US 101 to the Phillips 66 Santa Margarita Pump Station located on the east side of El Camino Real. A 6-inch diameter natural gas pipeline owned and operated by Phillips 66 Pipeline LLC is also present within the pipeline easement.

Remediation of hydrocarbon-impacted soil is planned to occur over one construction period between mid-April and end of October to avoid excavation activities during the rainy season. Trucking of excavated impacted soil may continue into November, weather dependent; and if so,

Project restriction will apply as presented in the Initial Study and Biological Resources Analysis.

The Project will entail the following major activities:

- Project mobilization and preparation
- Excavation and slot trenching
- Stockpiling
- Confirmation soil sampling
- Backfilling (including use of cement slurry)
- Loading and off-site hauling (export) of impacted material
- Project Area restoration
- Demobilization

During peak months of activity, excavation, trenching, stockpiling, backfilling and export activities will occur concurrently at multiple excavation locations within the Project Area.

2.0 Study Area and Traffic Assessment Conditions

The traffic study area encompasses the immediate roadway circulation system serving the Ranch and specifically the fronting roadway segment of State Route (SR) 58 between the Ranch access road (Stagecoach Road) and US 101.

The following traffic assessment conditions were analyzed as a part of this study:

- Existing Conditions – utilized to establish the current level of traffic operating conditions within the study area.
- Year 2021 No Project Conditions – represents near term No Project baseline conditions prior to remediation activities.
- Year 2021 Plus Project Conditions – represents near term No Project baseline Plus Project added traffic associated with the Project activities.

The analyses prepared for this traffic assessment were performed in accordance with the latest state of the practice traffic analysis procedures for roadway segments. The segment of SR 58 within the County of San Luis Obispo is under the jurisdictional control and review oversight of California Department of Transportation (Caltrans), District 5, which maintains, and grant encroachment permits within SR 58 right-of-way.

3.0 Analysis Methodology

According to the Caltrans Guide for the Preparation of Traffic Impact Studies, Caltrans does not officially advocate the use of any special software. However, consistency with the Highway Capacity Manual (HCM) is advocated in most but not all cases. For this assessment, the roadway segment traffic analysis was performed in accordance with analysis procedures outlined in the most current edition of the *Highway Capacity Manual (HCM), 6th Edition* and using the *Highway Capacity Software (HCS) Two-Lane Highways Release 7.1.* The HCS is developed and maintained by McTrans as a faithful implementation of the HCM procedures. (McTrans, 2019).

3.1 Level of Service (LOS) Concept and Description

Level of Service (LOS) is an indicator of operating conditions on a roadway or at an intersection and is defined in categories ranging from A to F, with "A" representing the best traffic flow conditions and "F" representing poor conditions. LOS A indicates free-flowing traffic, and LOS F indicates substantial congestion with stop-and-go traffic and long delays at intersections. Table 3-1 provides definitions of LOS for 2-lane highways.

Table 3-1: 2-Lane Highway Level of Service Descriptions

Level of Service	Description of Operation
A	At LOS A, motorists experience high operating speeds on Class I highways, and experience little difficulty in passing. Platoons of three or more vehicles are rare. On Class II highways, speed would be controlled primarily by roadway conditions. A small amount of platooning would be expected. On Class III highways, drivers should be able to maintain operating speeds close or equal to the free-flow speed of the facility.
B	At LOS B, the balance of passing demand and passing capacity approaches equivalence. On both Class I and Class II highways, the degree of platooning noticeably increases. Some speed reductions are present on Class I highways. On Class III highways, it becomes difficult to maintain free-flow speed operation, but the speed reduction is still relatively small.
C	At LOS C, platoon formation becomes a noticeable problem, and the degree of platooning increases sharply on Class I and II facilities. Speeds are noticeably curtailed on all three classes of highway.
D	At LOS D, platooning increases significantly. Passing demand is high on both Class I and II facilities but passing capacity approaches zero. Most vehicles are now traveling in platoons, and general congestion is noticeable. On Class III highways, the fall-off from free-flow speed is now significant.
E	At LOS E, demand is approaching capacity. Passing on Class I and II highways is virtually impossible, and the degree of platooning is more than 80%. Speeds are seriously curtailed. On Class III highways, speed is less than two-thirds the free-flow speed. The lower limit of this LOS represents capacity.
F	LOS F exists whenever demand flow in one or both directions exceeds the capacity of the segment. Operating conditions are unstable, and heavy congestion exists on all classes of two-lane highway.
Source: Highway Capacity Manual 6th Edition, Transportation Research Board (TRB) 2019	

3.2 Existing Traffic Volume

Existing available traffic data reviewed and collected for the traffic analysis included 7 to 9 AM, 1 to 3 Midday, and 4 to 6 PM peak hour turning movement counts conducted in 2017 (Pinnacle Traffic Engineering, 2017). Additionally, Average Daily Traffic (ADT) data from Caltrans Traffic Operations Traffic Census Program were reviewed to develop the roadway segment volumes used in the analysis (Caltrans, 2019).

3.3 Project Trip Generation

To evaluate potential Project traffic impacts, the anticipated Project Trip Generation was developed to describe the daily and AM and PM peak hour trips generated by specific or concurrent Project activities.

During Project activities, truck exporting of excavated impacted soil will occur during a limited time window (9 AM to 4 PM) in order to avoid the adjacent street traffic 7 - 9 AM and 4 - 6 PM peak hours.

Incoming empty trucks generally originate from north US 101, then head east on SR 58 and then turn left northbound onto the Project access road (Stagecoach Road, which is an existing private

agricultural road) to the Project Area using Stagecoach Road. Conversely, the exiting loaded truck traffic will turn right from the Stagecoach Road to westbound SR 58 and then head north on US 101 towards its final destination off-site.

The following discussion provides a brief summary of the trip generation potential and resulting roadway LOS analysis results for each Project exporting timeframe (Scenario A to C). The proposed scenarios are presented below in anticipated implementation order.

Scenario A – Trip Generation Summary

Daily Project workers will be at the Project on 8- or 12-hour shifts Monday through Thursday and half day on Friday (9 AM to 12 PM). The Friday work will consist of a small crew (3 to 5 Project workers) to just load exporting trucks. These workers are assumed to commute individually and will use at least 10 personal vehicles and 20 support trucks (light duty pickups) to and from the Project. Workers will be required to be on Project by 6:00 AM and these workers will not commute during peak hours. However, for analysis purposes, limited workers vehicles (3 personal vehicle and 2 support trucks) were assumed to commute during the 7 to 9 AM and 4 to 6 PM peak hours, prior to and after the exporting activities.

In addition to the cement slurry and exporting truck hauling trips, it is anticipated that there will be 3 weekly deliveries of field supplies on a limited scale, between mid-April and the end of October. These minimal deliveries are excluded from the Trip Generation summary based on their short duration, random timing and non-recurring schedule.

Table 3-2 below summarizes the anticipated trip generation.

Table 3-2: Anticipated Scenario A Project (2021) Trip Generation

Category	Actual Number of Vehicles	PCE Daily Trips (One-Way Trips)	AM Peak Hour Trips (7:00–9:00 AM)		PM Peak Hour Trips (4:00–6:00 PM)		Non-Peak Hour Trips	
			In	Out	In	Out	In	Out
Truck Vehicles (including Cement Slurry)	60	240[1]	8	0	0	8	112	112
Construction Workers (personal vehicles)[2]	10	20	3	0	0	3	7	7
Support Trucks [3]	20	40	2	0	0	2	18	18
Total	90	300	13	0	0	13	137	137

[1]According to the Project Description approximately 3,439 truckloads of excavated impacted soil are estimated to be hauled off-site (exported) over the course of the construction period. Additionally, 1,489 truckloads of cement slurry will be delivered to the Project during the construction period in 2021 for a cumulative total of 4,928 trucks. This total cumulative truckload was converted into daily truck trips based on the duration of the hauling period (21 weeks), truck capacity, required weekly truckloads and the number of truck hauling days per week (i.e. 4 days for slurry trucks and 4.5 days for exporting impacted soil off-site). For Scenario A, it is assumed that exporting activities will occur during the non-peak hours between 9:00 AM and 4:00 PM Monday through Thursday and between 9 AM and 12 PM on Fridays. For analysis purposes, the haul trucks were converted to Passenger Car Equivalent (PCE), assuming one Truck equals two Passenger Cars (Caltrans, April 30, 2019) resulting in 60 Trucks x 2 PCE equals 120 roundtrips or 240 one-way trips. And up to 4 inbound cement slurry trucks (8 PCE) will access the Project during the 7 to 9 AM peak hour and up to 4 slurry trucks (8 PCE) egress the Project during the 4 to 6 PM peak hour. **Scenario A accounts for both exporting of impacted soil and cement slurry trucks for a total 60 truckloads resulting in an average of 8 trucks per hour during the 9 - 4 PM non-peak hour.**

[2,3]Project workers are assumed to travel individually to the Project area using personal vehicles and light duty support pickup trucks.

The Project workforce/support trips that will commute during peak hours are estimated to account for an average of 60 (Daily One-way) vehicle trips per day during the construction period.

Scenario B – Trip Generation Summary

Daily Project workers will be at the Project on 8- or 12-hour shifts Monday through Thursday and half day on Friday (9 AM to 12 PM). The Friday work will consist of a small crew (3 to 5 Project workers) to just load exporting trucks. These workers are assumed to commute individually and will use at least 10 personal vehicles and 20 support trucks (light duty pickups) to and from the Project. Workers will be required to be on Project by 6:00 AM and these workers will not commute during peak hours. However, for analysis purposes, limited workers vehicles (3 personal vehicle and 2 support trucks) were assumed to commute during the 7 to 9 AM and 4 to 6 PM peak hours, prior to and after the exporting activities.

In addition to the cement slurry and exporting truck hauling trips, it is anticipated that there will be 3 weekly deliveries of field supplies on a limited scale, between mid-April and the end of October. These minimal deliveries are excluded from the Trip Generation summary based on their short duration, random timing and non-recurring schedule.

Table 3-3 below summarizes the anticipated trip generation.

Table 3-3: Anticipated Scenario B Project (2021) Trip Generation

Category	Actual Number of Vehicles	PCE Daily Trips (One-Way Trips)	AM Peak Hour Trips (7:00–9:00 AM)		PM Peak Hour Trips (4:00–6:00 PM)		Non-Peak Hour Trips	
			In	Out	In	Out	In	Out
Truck Haul Vehicles (including Cement Slurry)	60	240[1]	8	0	0	8	112	112
Construction Workers (personal vehicles)[2]	10	20	3	0	0	3	7	7
Support Trucks [3]	20	40	2	0	0	2	18	18
Total	90	300	13	0	0	13	137	137

[1]According to the Project Description approximately 3,439 truckloads of excavated impacted soil are estimated to be hauled off-site (exported) over the course of the construction period. Additionally, 1,489 truckloads of cement slurry will be delivered to the Project during the construction period in 2021 for a cumulative total of 4,928 trucks. This total cumulative truckload was converted into daily truck trips based on the duration of the hauling period (21 weeks), truck capacity, required weekly truck loads and the number of truck hauling days per week (i.e. 4 days for slurry trucks and 4.5 days for exporting impacted soil off-site). For Scenario B, it is assumed that the exporting activities will occur during the non-peak hours between 9:00 AM and 4:00 PM and between 6 PM and 9 PM Monday through Thursday, plus half day on Friday (between 9 AM and 12 PM). For analysis purposes, the haul trucks were converted to Passenger Car Equivalent (PCE), assuming one Truck equals two Passenger Cars (Caltrans, April 30, 2019) resulting in 60 Trucks x 2 PCE equals 120 roundtrips or 240 one-way trips. And up to 4 inbound slurry trucks (8 PCE) will access the Project Area during the 7 to 9 AM peak hour and up to 4 slurry trucks (8 PCE) egress the Project during the 4 to 6 PM peak hour. **Scenario B accounts for both exporting of impacted soil and cement slurry trucks for a total 60 truckloads resulting in an average of 6 trucks per hour during the 9 AM to 4 PM and 6 AM to 9 PM non-peak hours.**

[2,3]Project workers are assumed to travel individually to the Project area using personal vehicles and light duty support pickup trucks. The Project workforce/support trips are estimated to account for an average of 60 (Daily One-way) vehicle trips per day during the construction period.

Scenario C– Trip Generation Summary

Daily Project workers will be at the Project on 8- or 12-hour shifts Monday through Thursday and

half day on Friday (9 AM to 12 PM). The Friday work will consist of a small crew (3 to 5 Project workers) to just load exporting trucks. These workers are assumed to commute individually and will use at least 10 personal vehicles and 20 support trucks (light duty pickups) to and from the Project Area. Workers will be required to be at the Project by 6:00 AM and these workers will not commute during peak hours. However, for analysis purposes, limited workers vehicles (3 personal vehicle and 2 support trucks) were assumed to commute during the 7 to 9 AM and 4 to 6 PM peak hours, prior to and after the exporting activities.

In addition to the cement slurry and export truck hauling trips, it is anticipated that there will be 3 weekly deliveries of field supplies on a limited scale, between April and October. These minimal deliveries are excluded from the Trip Generation summary based on their short duration, random timing and non-recurring schedule.

Table 3-4 below summarizes the anticipated trip generation.

Table 3-4: Anticipated Scenario C Project (2021) Trip Generation

Category	Actual Number of Vehicles	PCE Daily Trips (One-Way Trips)	AM Peak Hour Trips (7:00–9:00 AM)		PM Peak Hour Trips (4:00–6:00 PM)		Non-Peak Hour Trips	
			In	Out	In	Out	In	Out
Truck Haul Vehicles (including Slurry)	41	164[1]	8	0	0	8	74	74
Construction Workers (personal vehicles)[2]	10	20	3	0	0	3	7	7
Support Trucks [3]	20	40	2	0	0	2	18	18
Total	71	224	13	0	0	13	99	99

[1]According to the Project Description approximately 3,439 truckloads of excavated impacted soil are estimated to be hauled off-site (exported) over the course of the construction period. Additionally, 1,489 truckloads of cement slurry will be delivered to the Project during the construction period in 2021 for a cumulative total of 4,928 trucks. This total cumulative truckload was converted into daily truck trips based on the duration of the hauling period((Scenario C, 21 weeks in 2021 and 9 weeks in 2022 for a total of 30 weeks), truck capacity, required weekly truck loads and the number of truck hauling days per week (i.e. 4 days for cement slurry trucks and 4.5 days for exporting impacted soil off-site). For Scenario C, it is assumed that exporting activities will occur during the non-peak hours between 9:00 AM and 4:00 PM Monday through Thursday, plus half day on Friday (between 9 AM and 12 PM). For analysis purposes, the haul trucks were converted to Passenger Car Equivalent (PCE), assuming one Truck equals two Passenger Cars (Caltrans, April 30, 2019) resulting in 41 Trucks x 2 PCE equals 82 roundtrips or 164 one-way trips. And up to 4 inbound slurry trucks (8 PCE) will access the Project Area during the 7 to 9 AM peak hour and up to 4 slurry trucks (8 PCE) egress the Project during the 4 to 6 PM peak hour. **Scenario C accounts for both exporting of impacted soil and cement slurry trucks but assumes that some portion of the exporting of impacted soil will be stockpiled during the rainy season between 2021 and 2022 and this remaining stockpiled impacted soil will be hauled off-site between March and May 2022. Postponing exporting of a portion of impacted soil to 2022, reduce the number of haul trucks to 6 (compared to Scenario A) trucks per hour during the construction period.**

[2,3]Project workers are assumed to travel individually to the Project Area using personal vehicles and light duty support pickup trucks. The Project workforce/support trips are estimated to account for an average of 60 (Daily One-way) vehicle trips per day during the construction period.

4.0 Traffic Impact Analysis

The updated traffic analysis presented below, evaluates the potential traffic impact associated with the Project exporting timeframes (Scenarios A to C) described above and

compares "no project baseline roadway operating conditions" with "no project baseline plus Project roadway operating conditions."

4.1 Existing Roadway Operating Conditions

Available existing weekday AM, Midday, and PM peak hour traffic volume collected along SR 58 are shown in Table 4-1 below. This table also includes the peak hour roadway segment LOS analysis results. As shown in the table, the PM peak hour shows the highest volume among the three peak hours analyzed.

Table 4-1: Existing Roadway Segment Volumes and LOS

Roadway	Segment	AM Peak Hour (1)			Midday Hour (2)			PM Peak Hour (1)		
		EB	WB	LOS	EB	WB	LOS	EB	WB	Total
SR 58	East of US 101	166	432	D	206	175	D	410	221	D

Source: Las Pilitas Quarry Supplemental Traffic Analysis, Pinnacle Traffic Engineering, 2017
[1] Derived from US 101 NB Ramp and SR 58 AM/PM peak hour intersection volumes
[2] Derived from SR 58 (Estrada Ave) and SR 58 (El Camino Real) Midday intersection volumes

As shown in Table 4-1, the study roadway segment of SR 58 to be used as the primary access route to the Project Area is currently operating at acceptable LOS D during all peak analysis hours. The detailed LOS calculation worksheets are provided in Appendix A to this traffic assessment.

4.2 Project Added Trips

Tables 4-2, 4-3 and 4-4 summarizes the anticipated project added peak hour vehicular traffic volume and Passenger Car Equivalent (PCE) adjusted truck volume at the study roadway segment under all three Project exporting timeframes (Scenarios A to C). During AM and PM peak hours, the directional project added trips are primarily attributed to a combination of PCE adjusted truck hauling trips and worker trip commutes to and from the Project Area. These Project added trips however constitute only a fraction of the worker trips who arrive during the 7 to 9 AM peak and leave during the 4 to 6 PM peak hour and the bulk of the Project hauling activities occurring during the 9 AM to 4 PM nonpeak hours.

Table 4-2: Scenario A Project Construction (2021) Peak Added Trips

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	Total	EB	WB	Total	EB	WB	Total
SR 58	East of US 101	13	0	13	16	16	32	0	13	13

Source: AECOM, 2020

Table 4-3: Scenario B Project Construction (2021) Peak Added Trips

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	Total	EB	WB	Total	EB	WB	Total
SR 58	East of US 101	13	0	13	14	14	28	0	13	13

Source: AECOM, 2020

Table 4-4: Scenario C Project Construction (2021) Peak Added Trips

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	Total	EB	WB	Total	EB	WB	Total
SR 58	East of US 101	13	0	13	14	14	28	0	13	13
Source: AECOM, 2020										

4.3 Baseline (2021) No Project Conditions

For analysis purposes, and to establish Year 2021 baseline or no project conditions, it was conservatively assumed that to account for ambient traffic growth and for yet to be developed cumulative development projects that could potentially occur within the Project study area, a traffic growth factor of 1.09 representing 9 percent growth was developed by AECOM and based upon review of historical traffic volume data (Caltrans Census Traffic Volume Data, 2019) and subsequently applied to existing traffic volume shown in Table 4-1.

Table 4-5 summarizes the baseline roadway segment LOS analysis results prior to Project activities.

Table 4-5: Baseline (2021) Roadway Segment Volumes and LOS

Roadway	Segment	AM Peak Hour (1)			Midday Hour (2)			PM Peak Hour (1)		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	181	471	D	225	191	D	447	241	D
Source: Las Pilitas Quarry Supplemental Traffic Analysis, 2017 and growth adjusted to 2021 conditions. [1] Derived from US 101 NB Ramp and SR 58 intersection volumes [2] Derived from SR 58 (Estrada Ave) and SR 58 (El Camino Real) intersection volumes										

As shown in Table 4-5, the highway study segment is forecast to operate at LOS D for all peak analysis hour Scenarios. The detailed LOS calculation worksheets are provided in Appendix A of this traffic assessment.

4.3 Baseline (2021) Plus Project Conditions

Tables 4-6, 4-7 and 4-8 summarizes the Baseline (2021) plus Project roadway segment operating conditions for Scenarios A, B and C respectively. With the addition of Project added traffic, the study roadway segment is forecast to operate at LOS D during all peak analysis hours. The detailed LOS calculation worksheets are provided in Appendix A to this traffic assessment.

Scenario A - Level of Service Summary

Table 4-6 below presents the Baseline (2021) plus Project Scenario A roadway segment operating conditions. With the addition of Project added traffic, the study roadway segment is forecast to operate at LOS D during all peak analysis hours.

Table 4-6: Baseline (2021) Plus Project Scenario A Roadway Segment LOS

Roadway	Segment	AM Peak Hour	Midday Hour	PM Peak Hour

		EB	WB	LOS	EB	WB	LOS	EB	WB	Total
SR 58	East of US 101	194	471	D	241	207	D	447	254	D
Source: AECOM, 2020										

As shown in Table 4-6, the addition of Project (Scenario A) added traffic will not change the forecast LOS D under Baseline (2021) No Project Conditions resulting in no significant traffic impacts for all three peak analysis hours.

Scenario B- Level of Service Summary

Table 4-7 below presents the Baseline (2021) plus Project Scenario B roadway segment operating conditions. With the addition of Project added traffic, the study roadway segment is forecast to operate at LOS D during all peak analysis hours.

Table 4-7: Baseline (2021) Plus Project Scenario B Roadway Segment LOS

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	Total
SR 58	East of US 101	194	471	D	239	205	D	447	254	D
Source: AECOM, 2020										

As shown in Table 4-7, the addition of Project (Scenario B) added traffic will not change the forecast LOS D under Baseline (2021) No Project Conditions resulting in no significant traffic impacts for all three peak analysis hours.

Scenario C- Level of Service Summary

Table 4-8 below presents the Baseline (2021) plus Project Scenario C roadway segment operating conditions. With the addition of Project added traffic, the study roadway segment is forecast to operate at LOS D during all peak analysis hours.

Table 4-8: Baseline (2021) Plus Project Scenario C Roadway Segment LOS

Roadway	Segment	AM Peak Hour			Midday Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	Total
SR 58	East of US 101	194	471	D	239	205	D	447	254	D
Source: AECOM, 2020										

As shown in Table 4-8, the addition of Project (Scenario C) added traffic will not change the forecast LOS D under Baseline (2021) No Project Conditions resulting in no significant traffic impacts for all three peak analysis hours.

5.0 Pro-Active Mitigation Measures

During Project construction period, the study roadway segment will not be significantly impacted by the Project. The study roadway segment will experience minor short-term increases in traffic during the peak construction period. The study roadway segment volume will return to pre-project operating conditions upon completion of Project construction

activities.

The following proposed mitigation measures are offered pro-actively to address Project-related traffic contribution and safety to the roadway network.

TRAFFIC-1, Truck Turning Plan

Truck turning analyses were conducted to develop truck turning plans to demonstrate the inbound and merging truck turns to and from the Project access driveway. The turning plans were developed to disclose the anticipated footprints of incoming and outgoing trucks and to help develop any needed traffic enhancement and countermeasures to facilitate truck turning movements. The truck turning plan is provided in Appendix B of this traffic assessment. As shown in the plan, inbound trucks will execute a 90-degree turn from eastbound SR 58 to enter the Project Area, while exiting loaded truck traffic will safely merge into westbound SR 58 using the existing paved shoulder as an acceleration lane.

TRAFFIC-2, Traffic Control Measures

The Project proponent will develop and implement a project-specific traffic and monitoring control plan consistent with the size and scope of the Project activity designed to minimize potential impacts to traffic flow.

Proposed measures where applicable, include but are not limited to the following:

- Use proper signs and traffic control measures in accordance with Caltrans and San Luis Obispo County requirements. All traffic signs, equipment, and control measures shall conform to the provisions specified in the Caltrans Manual of Uniform Traffic Control Device. Specific jurisdictional requirements will be identified during the plan review and approval process.
- Deployment of flag persons to provide temporary traffic control, facilitate vehicle egress/ingress and assignment of roadway right-of-way during Project hauling operating hours.
- Limit vehicular traffic to designated access roads, construction laydown and worker parking areas, and the Project Area.
- Provide orientation and briefing to Project workers and contractors on the desired Project access route and traffic safety measures.
- Encourage Project worker carpooling to minimize drive-alone worker trips.

The proposed Traffic Control Plan is provided in Appendix C of this traffic assessment and is subject to Caltrans review prior to issuance of an Encroachment Permit.

6.0 Conclusion

Hauling of impacted soil off-site and delivery of cement slurry from the Project Area would generate additional truck trips during the construction period. Traffic operations were evaluated along the immediate study roadway segment of SR 58 adjacent to the Project access road. The hauling operation will be conducted in a manner that will minimize disruption of SR 58 traffic and it will be facilitated by a traffic control plan that includes approved signage and deployment of flag persons during vehicle crossing and merging. The construction activity would temporarily add approximately 41 to 60 trucks and 30 light duty vehicles to the study roadway segment per day, however the additional vehicles would create less than significant

impacts.

1. Scenario A – Will have the highest Midday Project Added Trips and similar AM and PM Peak Added Trips with Scenario B and C. The LOS remains at LOS D for all AM, Midday and PM analysis hours.
2. Scenario B – Will have night operation and the same AM and PM Peak Project Added Trips with Scenarios A and C; and along with Scenario C will have lower Midday Added Trips compared to Scenario A. The LOS remains at LOS D for all AM, Midday and PM analysis hours.
3. Scenario C – Will generally be similar with Scenario B in terms of Project added trips, however it will not have night operations and has longest schedule duration up to Year 2022. The LOS remains at LOS D for all AM, Midday and PM analysis hours.

Overall and based on the LOS analysis results all proposed Project timeframes (Scenarios A to C) are viable options and are anticipated not to create new significant traffic impacts.

After the remediation activity is completed, the Project Area would not generate any new trips, except for the occasional maintenance trips. Therefore no operational impacts are anticipated.

7.0 References

California Manual on Uniform Traffic Control Devices, Caltrans, 2019.

Flagging Instruction Handbook, Caltrans, 2014.

Highway Capacity Manual 6th Edition, National Academies, Transportation Research Board, 2019.

Highway Capacity Software (HCS) Two-Lane Highways Release 7.1, McTrans, 2019.

Las Pilitas Quarry Supplemental Traffic Analysis, Pinnacle Traffic Engineering, 2017.

Appendix A – Traffic Calculation Sheets

Existing 2017 Counts

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	166	432	D	206	175	D	410	221	D

2021 No Project Baseline

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	181	471	D	225	191	D	447	241	D

Project Added Trips (Scenario A)

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB		EB	WB		EB	WB	
SR 58	East of US 101	13	0		16	16		0	13	

2021 with Project (Scenario A) Conditions

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	194	471	D	241	207	D	447	254	D

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	5/22/2019
Analysis Time Period	AM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2019
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	432	veh/h
Opposing direction volume, Vo	166	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	521	pc/h	200	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	41.3	mi/h
Percent Free Flow Speed, PFFS	86.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	491 pc/h	190 pc/h
Base percent time-spent-following,(note-4) BPTSFd	44.1 %	
Adjustment for no-passing zones, fnp	26.6	
Percent time-spent-following, PTSFd	63.3 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	41.3	mi/h
Percent time-spent-following, PTSFd (from above)	63.3	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	490.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.63
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	5/22/2019
Analysis Time Period	Midday
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2019
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	175	veh/h
Opposing direction volume, Vo	206	veh/h

Average Travel Speed

Direction	Analysis (d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor, (note-5) fHV	0.943		0.943	
Grade adj. factor, (note-1) fg	1.00		1.00	
Directional flow rate, (note-2) vi	211	pc/h	248	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, (note-3) S FM	-	mi/h
Observed total demand, (note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, (note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width, (note-3) fLS	0.0	mi/h
Adj. for access point density, (note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	43.4	mi/h
Percent Free Flow Speed, PFFS	90.4	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	200 pc/h	235 pc/h
Base percent time-spent-following,(note-4) BPTSFd	22.0 %	
Adjustment for no-passing zones, fnp	38.8	
Percent time-spent-following, PTSFd	39.8 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	43.4	mi/h
Percent time-spent-following, PTSFd (from above)	39.8	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	198.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.17
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	5/22/2019
Analysis Time Period	PM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2019
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	221	veh/h
Opposing direction volume, Vo	410	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	266	pc/h	494	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATSd	41.3	mi/h
Percent Free Flow Speed, PFFS	86.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	253 pc/h	466 pc/h
Base percent time-spent-following,(note-4) BPTSFd	32.4 %	
Adjustment for no-passing zones, fnp	29.2	
Percent time-spent-following, PTSFd	42.7 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	41.3	mi/h
Percent time-spent-following, PTSFd (from above)	42.7	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	251.1
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.29
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/05/2020
Analysis Time Period	AM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 No Project
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	4	%
Grade: Length	0.25	mi	% No-passing zones	20	%
Up/down	3.0	%	Access point density	8	/mi

Analysis direction volume, Vd	471	veh/h
Opposing direction volume, Vo	181	veh/h

Average Travel Speed

Direction	Analysis (d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor, (note-5) fHV	0.943		0.943	
Grade adj. factor, (note-1) fg	1.00		1.00	
Directional flow rate, (note-2) vi	568	pc/h	218	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, (note-3) S FM	-	mi/h
Observed total demand, (note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, (note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width, (note-3) fLS	0.0	mi/h
Adj. for access point density, (note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	40.8	mi/h
Percent Free Flow Speed, PFFS	85.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.994
Grade adjustment factor,(note-1) fg	0.92	1.00
Directional flow rate,(note-2) vi	582 pc/h	207 pc/h
Base percent time-spent-following,(note-4) BPTSFd	49.2 %	
Adjustment for no-passing zones, fnp	22.8	
Percent time-spent-following, PTSFd	66.0 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1690	veh/h
Capacity from PTSF, CdPTSF	1564	veh/h
Directional Capacity	1564	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.8	mi/h
Percent time-spent-following, PTSFd (from above)	66.0	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	535.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.67
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/20/2020
Analysis Time Period	Midday
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 No Project
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	191	veh/h
Opposing direction volume, Vo	225	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	230	pc/h	271	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	43.1	mi/h
Percent Free Flow Speed, PFFS	89.7	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	218 pc/h	257 pc/h
Base percent time-spent-following,(note-4) BPTSFd	24.4 %	
Adjustment for no-passing zones, fnp	38.5	
Percent time-spent-following, PTSFd	42.1 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	43.1	mi/h
Percent time-spent-following, PTSFd (from above)	42.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	217.0
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.21
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/05/2020
Analysis Time Period	PM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 No Project
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd 241 veh/h
Opposing direction volume, Vo 447 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	290	pc/h	539	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	40.9	mi/h
Percent Free Flow Speed, PFFS	85.2	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	276 pc/h	508 pc/h
Base percent time-spent-following,(note-4) BPTSFd	34.7 %	
Adjustment for no-passing zones, fnp	26.6	
Percent time-spent-following, PTSFd	44.1 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.9	mi/h
Percent time-spent-following, PTSFd (from above)	44.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	273.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.33
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/05/2020
Analysis Time Period	AM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 with Project Construction
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	471	veh/h
Opposing direction volume, Vo	206	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	568	pc/h	248	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	40.6	mi/h
Percent Free Flow Speed, PFFS	84.6	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	535 pc/h	235 pc/h
Base percent time-spent-following,(note-4) BPTSFd	47.3 %	
Adjustment for no-passing zones, fnp	24.9	
Percent time-spent-following, PTSFd	64.6 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.6	mi/h
Percent time-spent-following, PTSFd (from above)	64.6	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	535.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.67
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	03/19/2020
Analysis Time Period	Midday
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 with Project Construction
Description	Santa Margarita Ranch - Scen A

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	207	veh/h
Opposing direction volume, Vo	241	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	249	pc/h	290	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	42.8	mi/h
Percent Free Flow Speed, PFFS	89.1	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.994		0.994	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	237	pc/h	276	pc/h
Base percent time-spent-following,(note-4) BPTSFd	26.9	%		
Adjustment for no-passing zones, fnp	38.3			
Percent time-spent-following, PTSFd	44.6	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	42.8	mi/h
Percent time-spent-following, PTSFd (from above)	44.6	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	235.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.25
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/05/2020
Analysis Time Period	PM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 with Project Construction
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	266	veh/h
Opposing direction volume, Vo	447	veh/h

Average Travel Speed

Direction	Analysis (d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor, (note-5) fHV	0.943		0.943	
Grade adj. factor, (note-1) fg	1.00		1.00	
Directional flow rate, (note-2) vi	321	pc/h	539	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, (note-3) S FM	-	mi/h
Observed total demand, (note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, (note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width, (note-3) fLS	0.0	mi/h
Adj. for access point density, (note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	40.7	mi/h
Percent Free Flow Speed, PFFS	84.7	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	304 pc/h	508 pc/h
Base percent time-spent-following,(note-4) BPTSFd	37.1 %	
Adjustment for no-passing zones, fnp	26.8	
Percent time-spent-following, PTSFd	47.1 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.7	mi/h
Percent time-spent-following, PTSFd (from above)	47.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	302.3
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.38
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Existing 2017 Counts

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	166	432	D	206	175	D	410	221	D

2021 No Project Baseline

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	181	471	D	225	191	D	447	241	D

Project Added Trips (Scenario B)

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB		EB	WB		EB	WB	
SR 58	East of US 101	13	0		14	14		0	13	

2021 with Project (Scenario B) Conditions

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	194	471	D	239	205	D	447	254	D

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	03/18/2020
Analysis Time Period	AM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2020
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	432	veh/h
Opposing direction volume, Vo	166	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	521	pc/h	200	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	41.3	mi/h
Percent Free Flow Speed, PFFS	86.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	491 pc/h	190 pc/h
Base percent time-spent-following,(note-4) BPTSFd	44.1 %	
Adjustment for no-passing zones, fnp	26.6	
Percent time-spent-following, PTSFd	63.3 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	41.3	mi/h
Percent time-spent-following, PTSFd (from above)	63.3	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	490.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.63
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	03/18/2020
Analysis Time Period	Midday
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2020
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	175	veh/h
Opposing direction volume, Vo	206	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	211	pc/h	248	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	43.4	mi/h
Percent Free Flow Speed, PFFS	90.4	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	200 pc/h	235 pc/h
Base percent time-spent-following,(note-4) BPTSFd	22.0 %	
Adjustment for no-passing zones, fnp	38.8	
Percent time-spent-following, PTSFd	39.8 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	43.4	mi/h
Percent time-spent-following, PTSFd (from above)	39.8	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	198.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.17
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	03/18/2020
Analysis Time Period	PM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	221	veh/h
Opposing direction volume, Vo	410	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	266	pc/h	494	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATSd	41.3	mi/h
Percent Free Flow Speed, PFFS	86.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	253 pc/h	466 pc/h
Base percent time-spent-following,(note-4) BPTSFd	32.4 %	
Adjustment for no-passing zones, fnp	29.2	
Percent time-spent-following, PTSFd	42.7 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	41.3	mi/h
Percent time-spent-following, PTSFd (from above)	42.7	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	251.1
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.29
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	03/18/2020
Analysis Time Period	AM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 No Project
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	4	%
Grade: Length	0.25	mi	% No-passing zones	20	%
Up/down	3.0	%	Access point density	8	/mi

Analysis direction volume, Vd	471	veh/h
Opposing direction volume, Vo	181	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	568	pc/h	218	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	40.8	mi/h
Percent Free Flow Speed, PFFS	85.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.994
Grade adjustment factor,(note-1) fg	0.92	1.00
Directional flow rate,(note-2) vi	582 pc/h	207 pc/h
Base percent time-spent-following,(note-4) BPTSFd	49.2 %	
Adjustment for no-passing zones, fnp	22.8	
Percent time-spent-following, PTSFd	66.0 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1690	veh/h
Capacity from PTSF, CdPTSF	1564	veh/h
Directional Capacity	1564	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.8	mi/h
Percent time-spent-following, PTSFd (from above)	66.0	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	535.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.67
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	03/18/2020
Analysis Time Period	Midday
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 No Project
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	191	veh/h
Opposing direction volume, Vo	225	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	230	pc/h	271	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	43.1	mi/h
Percent Free Flow Speed, PFFS	89.7	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.994		0.994	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	218	pc/h	257	pc/h
Base percent time-spent-following,(note-4) BPTSFd	24.4	%		
Adjustment for no-passing zones, fnp	38.5			
Percent time-spent-following, PTSFd	42.1	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	43.1	mi/h
Percent time-spent-following, PTSFd (from above)	42.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	217.0
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.21
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	03/18/2020
Analysis Time Period	PM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 No Project
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	241	veh/h
Opposing direction volume, Vo	447	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	290	pc/h	539	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	40.9	mi/h
Percent Free Flow Speed, PFFS	85.2	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	276 pc/h	508 pc/h
Base percent time-spent-following,(note-4) BPTSFd	34.7 %	
Adjustment for no-passing zones, fnp	26.6	
Percent time-spent-following, PTSFd	44.1 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.9	mi/h
Percent time-spent-following, PTSFd (from above)	44.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	273.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.33
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	03/19/2020
Analysis Time Period	AM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 with Project Construction
Description	Santa Margarita Ranch - Scen B

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	471	veh/h
Opposing direction volume, Vo	194	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	568	pc/h	234	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	40.7	mi/h
Percent Free Flow Speed, PFFS	84.8	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	535 pc/h	222 pc/h
Base percent time-spent-following,(note-4) BPTSFd	47.9 %	
Adjustment for no-passing zones, fnp	24.7	
Percent time-spent-following, PTSFd	65.4 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.7	mi/h
Percent time-spent-following, PTSFd (from above)	65.4	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	535.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.67
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	03/19/2020
Analysis Time Period	Midday
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 with Project Construction
Description	Santa Margarita Ranch - Scen B

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	205	veh/h
Opposing direction volume, Vo	239	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	247	pc/h	288	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	42.8	mi/h
Percent Free Flow Speed, PFFS	89.2	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	234 pc/h	273 pc/h
Base percent time-spent-following,(note-4) BPTSFd	26.7 %	
Adjustment for no-passing zones, fnp	38.4	
Percent time-spent-following, PTSFd	44.4 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	42.8	mi/h
Percent time-spent-following, PTSFd (from above)	44.4	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	233.0
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.25
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	03/19/2020
Analysis Time Period	PM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 with Project Construction
Description	Santa Margarita Ranch - Scen B

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	254	veh/h
Opposing direction volume, Vo	447	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	306	pc/h	539	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	40.8	mi/h
Percent Free Flow Speed, PFFS	84.9	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.994		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	290	pc/h	508	pc/h
Base percent time-spent-following,(note-4) BPTSFd	35.9	%		
Adjustment for no-passing zones, fnp	26.5			
Percent time-spent-following, PTSFd	45.5	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.8	mi/h
Percent time-spent-following, PTSFd (from above)	45.5	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	288.6
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.36
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Existing 2017 Counts

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	166	432	D	206	175	D	410	221	D

2021 No Project Baseline

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	181	471	D	225	191	D	447	241	D

Project Added Trips (Scenario C)

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB		EB	WB		EB	WB	
SR 58	East of US 101	13	0		14	14		0	13	

2021 with Project (Scenario C) Conditions

Roadway	Segment	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		EB	WB	LOS	EB	WB	LOS	EB	WB	LOS
SR 58	East of US 101	194	471	D	239	205	D	447	254	D

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	5/22/2019
Analysis Time Period	AM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2019
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	432	veh/h
Opposing direction volume, Vo	166	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	521	pc/h	200	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	41.3	mi/h
Percent Free Flow Speed, PFFS	86.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	491 pc/h	190 pc/h
Base percent time-spent-following,(note-4) BPTSFd	44.1 %	
Adjustment for no-passing zones, fnp	26.6	
Percent time-spent-following, PTSFd	63.3 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	41.3	mi/h
Percent time-spent-following, PTSFd (from above)	63.3	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	490.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.63
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	5/22/2019
Analysis Time Period	Midday
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2019
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	175	veh/h
Opposing direction volume, Vo	206	veh/h

Average Travel Speed

Direction	Analysis (d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor, (note-5) fHV	0.943		0.943	
Grade adj. factor, (note-1) fg	1.00		1.00	
Directional flow rate, (note-2) vi	211	pc/h	248	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, (note-3) S FM	-	mi/h
Observed total demand, (note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, (note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width, (note-3) fLS	0.0	mi/h
Adj. for access point density, (note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	43.4	mi/h
Percent Free Flow Speed, PFFS	90.4	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	200 pc/h	235 pc/h
Base percent time-spent-following,(note-4) BPTSFd	22.0 %	
Adjustment for no-passing zones, fnp	38.8	
Percent time-spent-following, PTSFd	39.8 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	43.4	mi/h
Percent time-spent-following, PTSFd (from above)	39.8	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	198.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.17
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	5/22/2019
Analysis Time Period	PM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2019
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	221	veh/h
Opposing direction volume, Vo	410	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	266	pc/h	494	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATSd	41.3	mi/h
Percent Free Flow Speed, PFFS	86.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	253 pc/h	466 pc/h
Base percent time-spent-following,(note-4) BPTSFd	32.4 %	
Adjustment for no-passing zones, fnp	29.2	
Percent time-spent-following, PTSFd	42.7 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	41.3	mi/h
Percent time-spent-following, PTSFd (from above)	42.7	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	251.1
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.29
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/05/2020
Analysis Time Period	AM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 No Project
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	4	%
Grade: Length	0.25	mi	% No-passing zones	20	%
Up/down	3.0	%	Access point density	8	/mi

Analysis direction volume, Vd	471	veh/h
Opposing direction volume, Vo	181	veh/h

Average Travel Speed

Direction	Analysis (d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor, (note-5) fHV	0.943		0.943	
Grade adj. factor, (note-1) fg	1.00		1.00	
Directional flow rate, (note-2) vi	568	pc/h	218	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, (note-3) S FM	-	mi/h
Observed total demand, (note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, (note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width, (note-3) fLS	0.0	mi/h
Adj. for access point density, (note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	40.8	mi/h
Percent Free Flow Speed, PFFS	85.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.994
Grade adjustment factor,(note-1) fg	0.92	1.00
Directional flow rate,(note-2) vi	582 pc/h	207 pc/h
Base percent time-spent-following,(note-4) BPTSFd	49.2 %	
Adjustment for no-passing zones, fnp	22.8	
Percent time-spent-following, PTSFd	66.0 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1690	veh/h
Capacity from PTSF, CdPTSF	1564	veh/h
Directional Capacity	1564	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.8	mi/h
Percent time-spent-following, PTSFd (from above)	66.0	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	535.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.67
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/20/2020
Analysis Time Period	Midday
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 No Project
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	191	veh/h
Opposing direction volume, Vo	225	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	230	pc/h	271	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	43.1	mi/h
Percent Free Flow Speed, PFFS	89.7	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	218 pc/h	257 pc/h
Base percent time-spent-following,(note-4) BPTSFd	24.4 %	
Adjustment for no-passing zones, fnp	38.5	
Percent time-spent-following, PTSFd	42.1 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	43.1	mi/h
Percent time-spent-following, PTSFd (from above)	42.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	217.0
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.21
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/05/2020
Analysis Time Period	PM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 No Project
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd 241 veh/h
Opposing direction volume, Vo 447 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	290	pc/h	539	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	40.9	mi/h
Percent Free Flow Speed, PFFS	85.2	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	276 pc/h	508 pc/h
Base percent time-spent-following,(note-4) BPTSFd	34.7 %	
Adjustment for no-passing zones, fnp	26.6	
Percent time-spent-following, PTSFd	44.1 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.9	mi/h
Percent time-spent-following, PTSFd (from above)	44.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	273.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.33
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/05/2020
Analysis Time Period	AM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 with Project Construction
Description	Santa Margarita Ranch Project

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	471	veh/h
Opposing direction volume, Vo	206	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	568	pc/h	248	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	40.6	mi/h
Percent Free Flow Speed, PFFS	84.6	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	535 pc/h	235 pc/h
Base percent time-spent-following,(note-4) BPTSFd	47.3 %	
Adjustment for no-passing zones, fnp	24.9	
Percent time-spent-following, PTSFd	64.6 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.6	mi/h
Percent time-spent-following, PTSFd (from above)	64.6	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	535.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.67
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/07/2020
Analysis Time Period	AM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 with Project Construction
Description	Santa Margarita Ranch - Scen B

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	471	veh/h
Opposing direction volume, Vo	206	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	568	pc/h	248	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	40.6	mi/h
Percent Free Flow Speed, PFFS	84.6	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	535 pc/h	235 pc/h
Base percent time-spent-following,(note-4) BPTSFd	47.3 %	
Adjustment for no-passing zones, fnp	24.9	
Percent time-spent-following, PTSFd	64.6 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.6	mi/h
Percent time-spent-following, PTSFd (from above)	64.6	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	535.2
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.67
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/07/2020
Analysis Time Period	Midday
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 with Project Construction
Description	Santa Margarita Ranch - Scen B

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	203	veh/h
Opposing direction volume, Vo	237	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	245	pc/h	286	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	42.8	mi/h
Percent Free Flow Speed, PFFS	89.2	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	0.994
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	232 pc/h	271 pc/h
Base percent time-spent-following,(note-4) BPTSFd	26.6 %	
Adjustment for no-passing zones, fnp	38.4	
Percent time-spent-following, PTSFd	44.3 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	42.8	mi/h
Percent time-spent-following, PTSFd (from above)	44.3	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	230.7
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.24
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

HCS7: Two-Lane Highways Release 7.1

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	NVC
Agency/Co.	San Luis Obispo County
Date Performed	01/07/2020
Analysis Time Period	PM
Highway	SR 58
From/To	East of SR 101
Jurisdiction	Santa Margarita
Analysis Year	2021 with Project Construction
Description	Santa Margarita Ranch - Scen B

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	6	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	4	%
Grade: Length	-	mi	% No-passing zones	20	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd 278 veh/h
Opposing direction volume, Vo 459 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0*		2.0*	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.943		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	335	pc/h	553	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	50.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	48.0	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	40.5	mi/h
Percent Free Flow Speed, PFFS	84.3	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.994	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	318 pc/h	522 pc/h
Base percent time-spent-following,(note-4) BPTSFd	38.9 %	
Adjustment for no-passing zones, fnp	26.5	
Percent time-spent-following, PTSFd	48.9 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.5	mi/h
Percent time-spent-following, PTSFd (from above)	48.9	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	315.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	3.40
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

* These items have been entered or edited to override calculated value

Appendix B – Truck Turning Plans

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

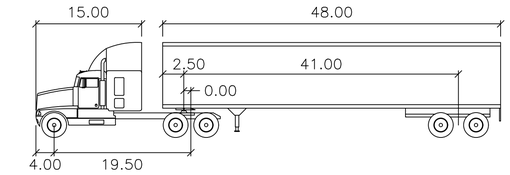
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAIN SHEET.

AECOM
999 TOWN & COUNTRY RD
ORANGE, CALIFORNIA 92868

ENLARGED PLAN
SCALE: 1" = 40'



WB–19M

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

SANTA MARGARITA RANCH REMEDIATION PROJECT PROPOSED INBOUND/OUTBOUND TRUCK TURNS PLAN

SCALE: 1" = 40'

SK-201

REVISED BY	DATE REVISED

CALCULATED–DESIGNED BY
CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR
STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
Caltrans

FILE PATH: Q:\DCS\Projects\TRN\60592267_P66 – SM\400_Technical\431_Traffic\CAD\SK–200–DPK–R2.DWG

LAST REVISION DATE PLOTTED = Mar 12, 2020
00–00–00 TIME PLOTTED = 3:39:36 pm

BORDER LAST REVISED 7/2/2010
USERNAME = pranabd
DGN FILE = SK–200–DPK–R2.DWG
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 00000000001

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

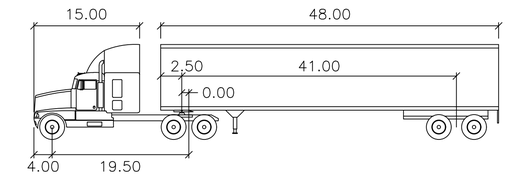
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

AECOM
999 TOWN & COUNTRY RD
ORANGE, CALIFORNIA 92868

ENLARGED PLAN
SCALE: 1" = 40'



WB–19M

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

SANTA MARGARITA RANCH REMEDIATION PROJECT OUTBOUND TRUCK TURNS PLAN

SCALE: 1" = 40'

SK-202

REVISED BY | DATE REVISED
CALCULATED–DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR
STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
Caltrans

FILE PATH: Q:\DCS\Projects\TRN\60592267_P66 – SM\400_Technical\431_Traffic\CAD\SK–200–DPK–R2.DWG

LAST REVISION | DATE PLOTTED = Mar 12, 2020
00–00–00 | TIME PLOTTED = 3:40:31 pm

BORDER LAST REVISED 7/2/2010 | USERNAME = pranabd | DGN FILE = SK–200–DPK–R2.DWG | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 00000000001

Appendix C – Traffic Control Plan

TRUCKS ENTERING AHEAD	ROAD WORK AHEAD	DO NOT PASS		BE PREPARED TO STOP	STOP	SPEED LIMIT 55	SPEED LIMIT 50	END 45 SPEED LIMT
PCMS	W20-1	W4-1	C9A(CA)	W3-4	R1-1	~~R2-1(55)~~ COVER	R2-1(50)	~~R3(CA)45~~ COVER

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

AECOM
999 TOWN & COUNTRY RD
ORANGE, CALIFORNIA 92868

SANTA MARGARITA RANCH REMEDIATION PROJECT

PROPOSED TRAFFIC CONTROL PLAN

SCALE: 1" = 150'

SK-200

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY

CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

FILE PATH: Q:\DCS\Projects\TRN\60592267_P66 - SM\400_Technical\431_Traffic\CAD\SK-200-DPK-R1.DWG

LAST REVISION
DATE PLOTTED = Mar 11, 2020
TIME PLOTTED = 5:27:09 pm

BORDER LAST REVISED 7/2/2010

USERNAME = pranabd
DGN FILE = SK-200-DPK-R1.DWG

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 00000000001