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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

REPORT OF FINDINGS

GEOLOGIC EVALUATION OF NATURALLY OCCURRING ASBESTOS AND MATERIAL DURABILITY ASSESSMENT, FORMER SAN LUIS OBISPO TANK FARM, 276 TANK FARM ROAD, SAN LUIS OBISPO, SAN LUIS OBISPO COUNTY, CALIFORNIA

Prepared for:
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY

December 2012

369 Pacific Street ■ San Luis Obispo, California 93401 ■ (805) 786-2650 ■ FAX (805) 786-2651

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December 3, 2012
Project No. 0601-3284

Chevron Environmental Management Company
276 Tank Farm Road
Post Office Box 1332
San Luis Obispo, California 93401

Attention: Mr. Rik Williams
Project Manager

Subject: Report of Findings, Naturally Occurring Asbestos and Material Durability Assessment, Former San Luis Obispo Tank Farm, Former Quarry Area, 276 Tank Farm Road, San Luis Obispo, San Luis Obispo County, California

Dear Mr. Williams:

Padre Associates, Inc. is pleased to present to the Chevron Environmental Management Company this Report of Findings for the naturally occurring asbestos and material durability assessment activities completed at the subject site.

If you have any questions or comments or require additional information, please contact Mr. Eric Snelling at (805) 786-2650, ext. 12 or esnelling@padreinc.com.

Sincerely,

PADRE ASSOCIATES, INC.

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Senior Project Manager

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Mr. Bill Robeson, County of San Luis Obispo
Mr. Tim Fuhs, San Luis Obispo County Air Pollution Control District
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1.0 INTRODUCTION

This report of findings summarizes the Naturally Occurring Asbestos (NOA) assessment and material durability assessment (Material Assessment) activities recently completed by Padre Associates, Inc. (Padre) on behalf of Chevron Environmental Management Company (CEMC) to support the development of the engineering analysis and asbestos related monitoring plans associated with the San Luis Obispo Tank Farm Restoration and Redevelopment Project. The NOA investigation and Material Durability Assessment was completed in the vicinity of the Former Quarry Area of the former San Luis Obispo Tank Farm Facility, which is located at 276 Tank Farm Road, San Luis Obispo, San Luis Obispo County, California, County of San Luis Obispo Assessor's Parcel Numbers: 076-351-037, 076-351-040, 076-351-041, 076-352-061 076-352-062, 076-381-004, and 076-381-019 (Project Site). Please refer to Plate 1 – Site Location Map, and to Plate 2 – Project Site Map for additional information.

1.1 PROJECT BACKGROUND AND GOALS

The former San Luis Obispo Tank Farm facility was constructed in 1910 to serve as a bulk petroleum storage facility for the Producers Petroleum pipeline originating in the San Joaquin Valley. The Project Site was gradually withdrawn from operation during the later decades of the 20th century, and by the late 1990s, was formally decommissioned. Petroleum hydrocarbons released during historical site operations between 1910 and the early 1980s, and a fire at the Project Site involving stored crude oil petroleum products in 1926 have impacted soil and groundwater at the Project Site.

Proposed remediation and redevelopment at the Project Site consists of two principal elements. The first is remediation of the Project Site, including various risk management activities such as excavation, capping, habitat mitigation, and restoration. Remedial actions will facilitate planned development of commercial or other non-residential land uses. The second element includes entitlement of the proposed commercial land uses. Development is predicated on a proposed land use plan originally presented by the City of San Luis Obispo in the Airport Area Specific Plan. A more in-depth discussion of such activities can be found in Padre's *Project Execution Plan* (Padre 2007a).

To complete remediation and redevelopment activities, CEMC has proposed grading the Project Site to provide fill for remediation activities at the Project Site. The fill will provide a barrier between the impacted soil and potential commercial receptors as well as soil structural support for future onsite construction. However, the Project Site has been identified by the San Luis Obispo County Air Pollution Control District (SLOAPCD) as being located within an area of possible naturally occurring asbestos subject to the State of California Air Resources Board (ARB) ARB's Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations. The ARB requires a pre-construction assessment of sites within such areas for the presence of serpentine or ultramafic rock. Padre conducted a NOA assessment at the Project Site to facilitate compliance with the ATCM requirements.

Padre also conducted material durability testing to assess the suitability of rock material excavated from the former quarry area for cap and fill uses. Results of these tests will determine the need for importing supplemental materials from off-site sources.

1.2 OBJECTIVES

The objectives of the NOA investigation and Material Durability Assessment included the following:

- Assess for the potential presence of asbestos in the form of NOA in bedrock at the Project Site;
- If NOA concentrations are indicated, assess potential exposure hazards and develop a Health and Safety Plan (HASP);
- Assess geotechnical durability characteristics and suitability of proposed on-site earthen borrow materials; and
- Assist in the development of the APCD-required Dust Mitigation Plan.

1.3 REPORT ORGANIZATION

This report is organized as follows: Section 2.0 presents background information for the Project Site, including a description of geologic conditions, and historical NOA assessment activities; Sections 3.0 and 4.0 present the methodology for the NOA investigation and Gravel Material Assessment at the Project Site. This report includes two appendices: Appendix A – Previous Assessments, which contains readily available historical NOA assessment data pertaining to the Project Site, and; Appendix B –Drill Hole Logs and Laboratory Reports, which contains drill hole logs of the recently performed assessment, results of rock sample asbestos analyses and the results of materials tests performed on rock core samples. A complete digital copy of this report is provided in the CD-ROM attached to the back cover of this report.

2.0 BACKGROUND

2.1 SITE DESCRIPTION

The Project Site, also known as the former quarry area, is located within the northeast corner of the San Luis Obispo Tank Farm property (Tank Farm) and is characterized by relatively elevated, hummocky topography with rock outcrops and disturbed soils. The Tank Farm is located within Section 11, Township 31 South, Range 12 East, Mount Diablo Base and Meridian within the San Luis Valley (Refer to Plates 1 through 3). The Project Site is currently utilized as open space, with cattle grazing as the primary land use activity. Adjacent land uses include light commercial and industrial development, the San Luis Obispo Regional Airport, agricultural land with some residences, and a residential trailer park.

2.2 GEOLOGY

2.2.1 Regional Geology

The Project Site is located within the Coast Range Geomorphic Province of California, which is characterized by northwest-trending mountains and valleys located between the Great Valley of California and the Pacific Ocean. The Project Site is situated in the San Luis Valley, which is an alluvium-filled basin bound to the southwest and northeast by northwest trending ridges of Cretaceous to Jurrasic-aged Fraciscan Melange and Tertiary-aged marine sedimentary rock with Oligocene-aged porphyritic dacitic volcanic plugs which form craggy peaks and domes along the valley's central axis. The Franciscan formation consists of a chaotic mixture of sedimentary, volcanic, and metavolcanic rocks that are highly sheared and fractured. Serpentinite rock is locally common within the Franciscan formation and may contain relatively minor amounts of asbestos. (Lettis 1975, Wiegers, 2010)

Low lying areas within the San Luis Valley are underlain by Holocene-aged alluvium, which attains a maximum thickness of approximately 160 feet and rests unconformably on metavolcanic rock and mélange (Dibble, 2006).

2.2.2 Naturally Occurring Asbestos

In California, asbestos mineralization is most commonly found in and immediately adjacent to ultramafic rock bodies such as the serpentinite, serpentinized ultramafic rocks, and/or metavolcanic rocks described above. SLOAPCD has mapped the Project Site within a region of naturally occurring asbestos. The term *Asbestos* is a commercial term rather than a mineralogical term and does not define a particular mineral species or mineral group. The following naturally occurring minerals with corresponding applicable commercial asbestos names are regulated in the state of California: chrysotile; riebeckite (crocidolite), cummingtonite-grunerite (amosite), asbestiform tremolite, asbestiform actinolite, and asbestiform anthophyllite (CGS, 2002).

The term *asbestiform* refers to the habit (three dimensional crystalline shape of a mineral) of a mineral where the crystals are separable, thin, hair-like fibers with unique strength, durability, and flexibility characteristics. *Asbestiform* is differentiated from the term *fibrous* in that fibrous minerals are not separable (i.e., asbestiform minerals are fibrous but not all fibrous minerals are asbestiform) and they do not possess the unique strength, durability, and flexibility characteristics of asbestiform minerals. Additionally the term *acicular*, refers to a crystalline habit commonly assumed by asbestos minerals in which crystals are long, thin, and prismatic but do not have the unique qualities of asbestiform fibers. The currently regulated asbestiform minerals crystallize in non-asbestiform habits (CGS, 2002).

2.2.3 Site-Specific Geology

Metavolcanic rock mapped in the former quarry area consists primarily of greenstone formed from metamorphosed massive to pillowed basalt with relatively minor breccia, tuff and diabase with localized zones of silica carbonate rock (Wiegers, 2010). The surface of the bedrock tended to be weathered or disturbed by former quarry activities to depths between seven and ten feet below ground surface.

Based on field observations, the bedrock within the Project Area consists predominantly of a deeply weathered and fractured, massive, greenstone with very fine to coarse veins. Veins are commonly in-filled with white, aphanitic (very fine-grained) secondary mineral (possibly tremolite and/or actinolite); however, in a few locations, these minerals exhibited acicular habit. Less commonly, secondary mineralization on sheared fracture faces exhibited vitreous, acicular serpentine (variegated dark and light green) mineralization and or slickensides. In addition to the predominant greenstone, relatively small areas of massive, dark olive brown basalt, breccia, and pillow flow zones were noted at the surface near drill holes RS-1 and RS-2. No evidence of fibrous or asbestiform minerals was observed in the soil core samples, bedrock exposed at the ground surface, or within rock core samples collected from drill holes advanced at the Project Site.

The greenstone bedrock exhibited fairly consistent characteristics such as color, texture, luster, hardness, and apparent degree of induration with the exception of two intervals of relatively weak rock encountered in drill holes RS1 and RS2 at depths between 38 to 40 feet. This material was pulverized into coarse sand-sized fragments as a result of the sonic drilling methods. Rock material collected in the core barrel tended to be in fragments in sizes consistent with very coarse gravel to cobbles. Due to inconsistent variables during drilling activities such as variable sonic frequencies, rotation speeds and periodic loss of water in circulation to fractures, comparisons of durability based on the aggregate size could not be applied with confidence. There are zones (typically less than one foot thick) within the greenstone that contain relatively high vein density filled with harder minerals than the groundmass. These zones seem to be more resistant compared to the majority of the rock. However, due to the nature of the Franciscan Formation, these zones are not continuous from one drill hole to another, and thus, were not mapped.

Disturbed materials consisting of loose silty clay with gravel and locally-derived fill materials (soil and rock fragments—gravel to boulder sized) were observed on the ground surface especially near topographically high areas near drill holes RS-1 through RS-3 and RS-9. Windrows of loose boulders, rock fragments and soil material are evident on the ground surface and are visible in recent aerial photography (refer to Plate 3).

Drill holes RS-5, RS-6, RS-7 and RS-8 located at relatively low elevations at the Project Site, were drilled through brown to olive brown, unconsolidated, homogenous silty gravel with trace to little rock fragments to total depth. The approximate locations of the contacts between bedrock, alluvium and artificial fill are depicted on Plate 3.

2.2.4 Soils

Padre conducted a review of the *Soil Survey of San Luis Obispo County, California, Coastal Part* (Earnstrom, 1984) for information regarding serpentine soils in the Project Site area. No pertinent information regarding asbestos-containing soils was noted as a result of this review.

2.3 PREVIOUS ASSESSMENTS

Historical surface sampling and chemical analyses activities were completed at the Project Site by Earth Systems Pacific (ESP) on January 19, 2000. ESP's results and conclusions were documented in a letter report addressed to Unocal Corporation dated February 4, 2000 (Refer to Appendix A). The ESP assessment was completed in response to previous geologic mapping in the area that had identified the area of the subject area of concern (AOC) as being underlain by mixed metavolcanic rocks and serpentinite.

The ESP assessment activities consisted of the collection of four surface samples from outcrops of rock material in the area. During inspection and soil sample collection activities, it was noted that the former Quarry Area consisted of two primary rock types: a reddish-brown, highly fractured metavolcanic rock; and, a dark gray to greenish-gray greenstone. The greenstone appeared fractured and was much harder than the lighter colored volcanic rock. The four samples were collected in plastic bags, and then sealed for transport to the analytical laboratory. The samples were prepared and microscopically analyzed for the presence of asbestos utilizing California Air Resources Board (CARB) Method 435, (ARB, 1991). Based on the results of the laboratory microscopic analyses, it was indicated that the dark rock material in the area of the subject AOC (greenstone) did not contain asbestos concentrations at or in excess of the laboratory reporting limits. It should be noted that serpentinite minerals or other fibrous materials were not noted in the ESP assessment (refer to Appendix A).

3.0 ASSESSMENT METHODOLOGY

3.1 PRE-FIELD ACTIVITES

3.1.1 Health and Safety Plan

Padre implemented the existing site-specific Health and Safety Plan (HASP) for the planned NOA investigation and Material Assessment activities. The HASP included the procedures, equipment, and materials and supplies to be utilized to protect worker and community health and safety during the course of the planned field activities. The HASP also included the provisions for daily tailgate safety meetings, safe work permit (SWP) procedures, job safety analysis (JSA), behavior-based safety (BBS) observations, journey management plans (JMPs), and prescribed the personal protection equipment (PPE) necessary to safely complete the planned activities.

3.1.2 Permits

NO permits were required from the San Luis Obispo County Environmental Health Department for the planned soil assessment activities.

3.1.3 Pre-Field Notifications

The following agencies were notified before initiating field activities:

- Underground Service Alert (USA) 48 hours prior to field activities;
- SLOAPCD for the planned assessment activities; and
- All work was completed utilizing Padre's Safe Work Permit (SWP) procedures, which included the notification to the CEMC Project Manager for all scheduled work activities, including any high-risk work activities.

3.1.4 Private Utility Locator

Padre utilized a private utility locator to evaluate and clear drill hole locations of detectable underground obstructions or infrastructure prior to drilling.

3.2 DRILL HOLE ADVANCEMENT AND SAMPLE COLLECTION

Padre observed and documented the advancement of nine drill holes (RS-1 through RS-9) at the Project Site (Refer to Plate 3 – AOC Site Sampling Plan) between August 16 and August 20, 2012 to depths ranging from approximately 5 to 45 feet. Drill holes advanced to the greatest depths were located at higher elevations at the Project Site. The drill holes were advanced utilizing a rotary sonic drilling rig operated by Boart Longyear of Reno, Nevada, a C-57 licensed drilling company. Rotary sonic drilling methods utilize a specialized head that contains an oscillator mechanism in addition to rotary motion and downward force. Resonant energy created by the oscillator is transmitted down the drill string to the bit. The three combined forces allow drilling to proceed through most geological formations including most types of rock. In rock, the drill bit causes fractures at the rock face, creating rock dust and small rock particles, which facilitates advancement of the drill bit. As the drill string is advanced, the core sample is collected in a 10 foot long hollow core barrel which is brought to the surface for retrieval in plastic bags placed in lockable wooden boxes. Rock core samples were logged in the field using standard geologic descriptors for metamorphic rock. Soil core samples were logged using the Unified Soil Classification System (USCS). Copies of drill hole logs are provided in Appendix B.

Due to loose and/or disturbed rock conditions near the ground surface, a conductor casing was advanced using dry drilling methods and set in more competent bedrock at a depth of approximately ten feet. Water was circulated down hole during drilling activities below ten feet to mitigate dust generation and improve the speed the drilling process. Of the approximately 2,000 gallons of water used, approximately 300 gallons were retrieved for

disposal. The balance of the water used during drilling operations was likely lost to fractures within the bedrock.

After completion of the soil sampling activities, all drill holes advanced at the Project Site were backfilled with the removed soil cuttings and bentonite chips to within approximately 1-foot below grade, and subsequently hydrated in-place. The remaining 1-foot of each drill hole was restored to match the adjacent ground surface.

Padre's sampling program included the collection of rock and soil material for CARB Method 435 analyses and rock samples for geotechnical analyses. Based on a comprehensive analysis of all the rock core logs, samples collected for CARB Method 435 analyses were taken from specific portions of the rock cores exhibiting secondary mineralization (white, acicular minerals interpreted to be tremolite or actinolite), slickensides (potential chrysotile mineralization), and rock material representative of the bedrock formation (massive greenstone with very fine veins containing fine-grained secondary mineralization). Samples of the soil material (drill holes RS-5 through RS-8) were collected at arbitrary depths of 5 feet for CARB Method 435 analyses. Each rock and soil sample was collected in a Ziploc™ bag, labeled in the field and resealed in a secondary Ziploc bag™. Rock and soil samples were grouped according to respective drill holes and placed in a third, 1-gallon Ziploc™ plastic bag for transport to the analytical laboratory. Each sample was logged on a COC form indicating the date and time sampled, sample matrix, container and the sampler's name.

Representative samples of bedrock material submitted for geotechnical analyses were collected from intervals of rock cores collected from drill holes RS-1 and RS-2 exhibiting characteristics of the predominant rock type. Samples representing approximately 3-4 foot lengths of rock core were containerized in 5-gallon plastic buckets with sealed lids.

3.3 LABORATORY ANALYTICAL PROGRAM

Four soil and 18 rock samples were submitted to Forensic Analytical Laboratories, Inc. in Hayward, California for microscopic analysis of asbestos by CARB method 435, level A for 0.25% target analytical sensitivity.

Additionally, four rock samples were submitted to BTC Labs, Ventura, California for the following geotechnical tests:

- Abrasion of Coarse Aggregate by Los Angeles Rattler Machine by the State of California Department of Transportation Division of Engineering Services (DOT) Test 211;
- Durability Index by DOT Test 229; and,
- Specific Gravity and Absorption of Coarse Aggregate by DOT Test 206.

3.4 QUALITY ASSURANCE / QUALITY CONTROL PROCEDURES

The following quality assurance / quality control (QA/QC) procedures were utilized in both sample collection and chemical/microscopic analyses. The purpose of the QA/QC procedures will be to ensure the reliability and compatibility of all data generated during the subject assessment program.

3.4.1 Field QA/QC Procedures

Field QA/QC procedures will be performed during the sampling program and consist of the following measures:

- COC forms for sample submittal to the laboratory; and
- Daily information regarding sample collection will be recorded on field data sheets. Sample types, sample identification numbers, and recorded on field data sheets.

All COC records will be utilized to document sample collection and submittal to the laboratory for analysis and will accompany all samples submitted for microscopic analyses.

3.4.2 Laboratory QA/QC Procedures

Laboratory QA/QC procedures include the following:

- A state-certified and approved microscopy laboratory will conduct the required analysis;
- Signed laboratory reports including the sample designation, date of sample collection, date of sample analysis, laboratory analytical method employed, and the laboratory reporting limit.

3.5 ASSESSMENT DERIVED WASTES

Drill hole tailings were containerized in 55-gallon Department of Transportation (DOT) approved steel drums to remain on site until analytical results are received. Once the results have been profiled by CEMC, the material and drum will be properly disposed of at an approved facility in accordance with local, state, and federal regulations.

3.6 SURVEY

Padre subcontracted Cannon Associates, Inc. of San Luis Obispo, California, a State of California-licensed Professional Land Surveyor, to survey drill hole locations RS-1 through RS-9, which are depicted on Plate 3.

4.0 FINDINGS AND CONCLUSIONS

4.1 SITE-SPECIFIC GEOLOGY

Based on a review of available geologic maps, soil maps and other published data, and observations of surfical geology and rock cores collected from drill holes at the Project Site, bedrock material at the site is likely ultramafic in nature and contains zones of secondary mineralization (aphanitic texture and acicular habit) of possible serpentine and amphibole minerals. Fibrous and/or asbestiform minerals were not observed.

4.2 NATURALLY OCCURRING ASBESTOS

Asbestos was not indicated above the analytical detection limit of 0.25% in any of the rock or soil samples submitted for microscopic analysis by CARB Method 435. However, the *microscopic* analyses indicated that several rock core samples including those collected from drill holes RS-1, RS-2, RS-4, and RS-9 contained trace concentrations of chrysotile (serpentinite) asbestos but could not be quantified due to the method quantification criteria. The findings of the microscopic analyses and field observations will be utilized in the development of a dust mitigation plan associated with proposed future grading activities at the Project Site.

4.3 AGGREGATE TESTING

Four rock core samples were submitted for physical testing including durability index, abrasion resistance, specific gravity and absorption. The results of the tests are compiled in the report prepared by NV5 – BTC Labs provided in Appendix B and will be utilized to determine suitability for use in planned restoration activities at the Project Site by others under separate cover.

5.0 LIMITATIONS

This report has been prepared for the sole benefit of Chevron Environmental Management Company. No other persons may rely on the findings of this report without the expressed written consent of the client and Padre Associates, Inc.

In performing our professional services, we have attempted to apply present engineering and scientific judgment and use a level of effort consistent with the standard of practice measured on the date of work and in locale of the Project Site for similar type studies. Padre Associates, Inc. makes no warranty, express or implied.

The analyses and interpretations presented in this report have been developed based on the results from the review of existing information pertaining to the site, rock sampling at discrete locations at the Project Site, and the results from the laboratory analyses of the rock samples. It should be recognized that conditions can vary between sampling locations and between areas.

4.0 REFERENCES

Avocet Environmental, 2007, *Remedial Action Plan, SLO Tank Farm*. Prepared for Chevron EMC.

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Dibblee, T.W. Jr., 2006, *Geologic Map of the Pismo Beach Quadrangle, California*. Published by the Dibblee Geological Foundation.

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Wiegers, Mark, O. 2010, *Geologic Map of the San Luis Obispo 7.5' Quadrangle, San Luis Obispo County, California; A Digital Database*, Version 1.0, Preliminary Geologic Map, California Department of Conservation, California Geological Survey

Earnstrom, Daniel, J., 1984, *Soil Survey of San Luis Obispo County, California, Coastal Part,* United States Department of Agriculture Soil Conservation Service, in cooperation with University of California Agricultural Experiment Station

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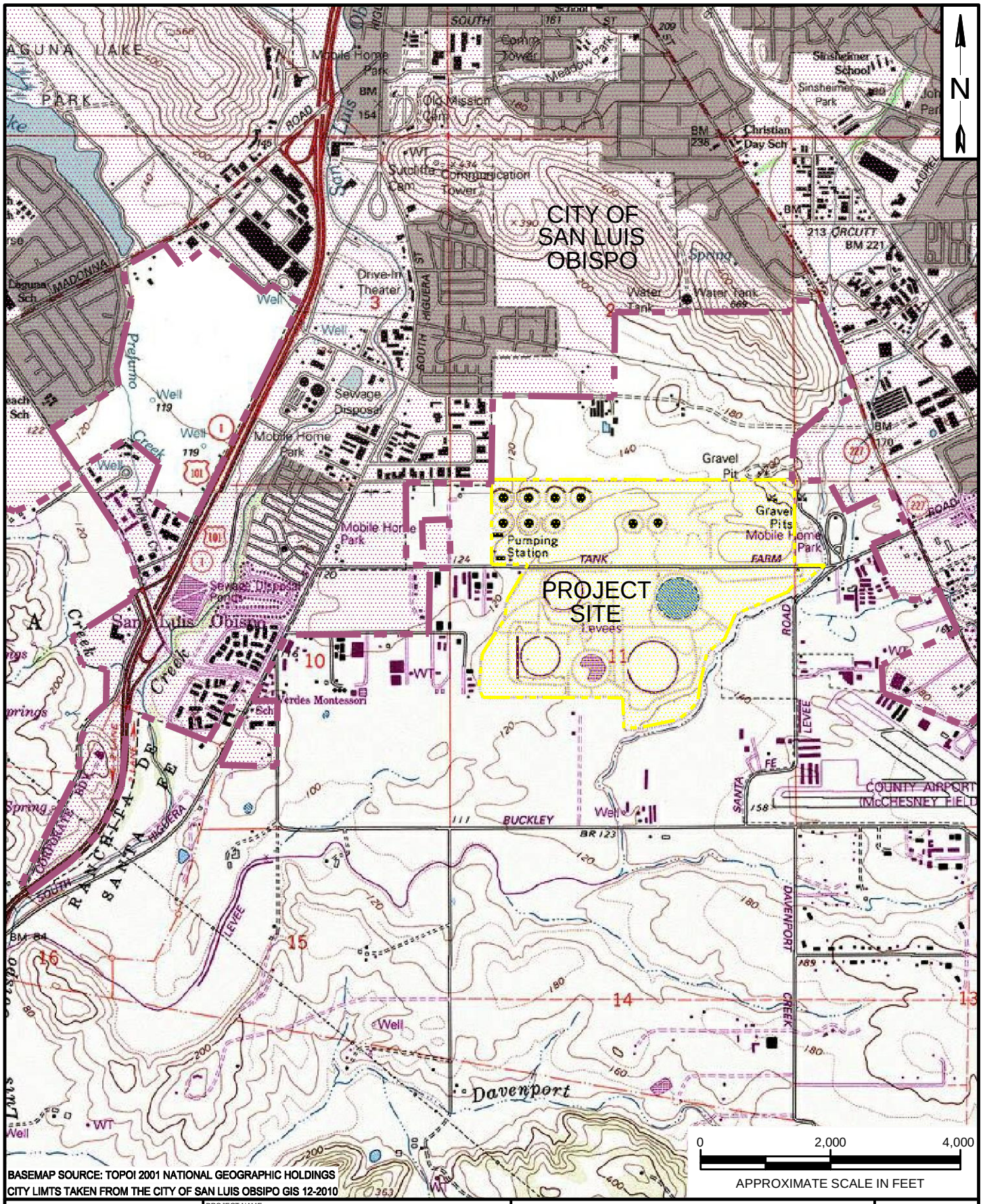
PLATES



BASEMAP SOURCE: TOPOI 2001 NATIONAL GEOGRAPHIC HOLDINGS
CITY LIMTS TAKEN FROM THE CITY OF SAN LUIS OBSIPO GIS 12-2010

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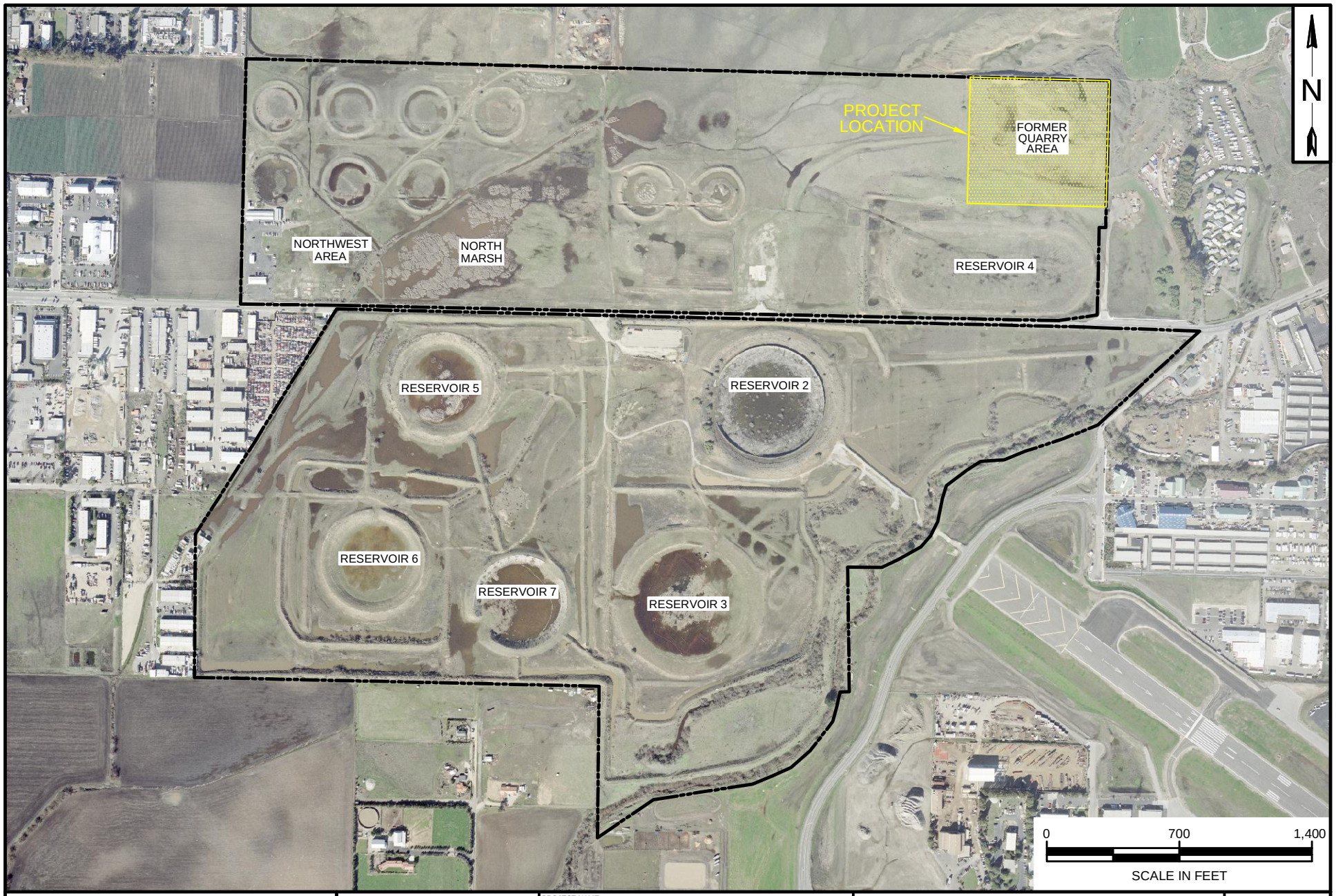
PROJECT NAME:
CEMC
SAN LUIS OBISPO TANK FARM
San Luis Obispo, California

PROJECT NUMBER: 0601-3284
DATE: October 2012

SITE LOCATION MAP

PLATE
1



LEGEND

PROPERTY BOUNDARY

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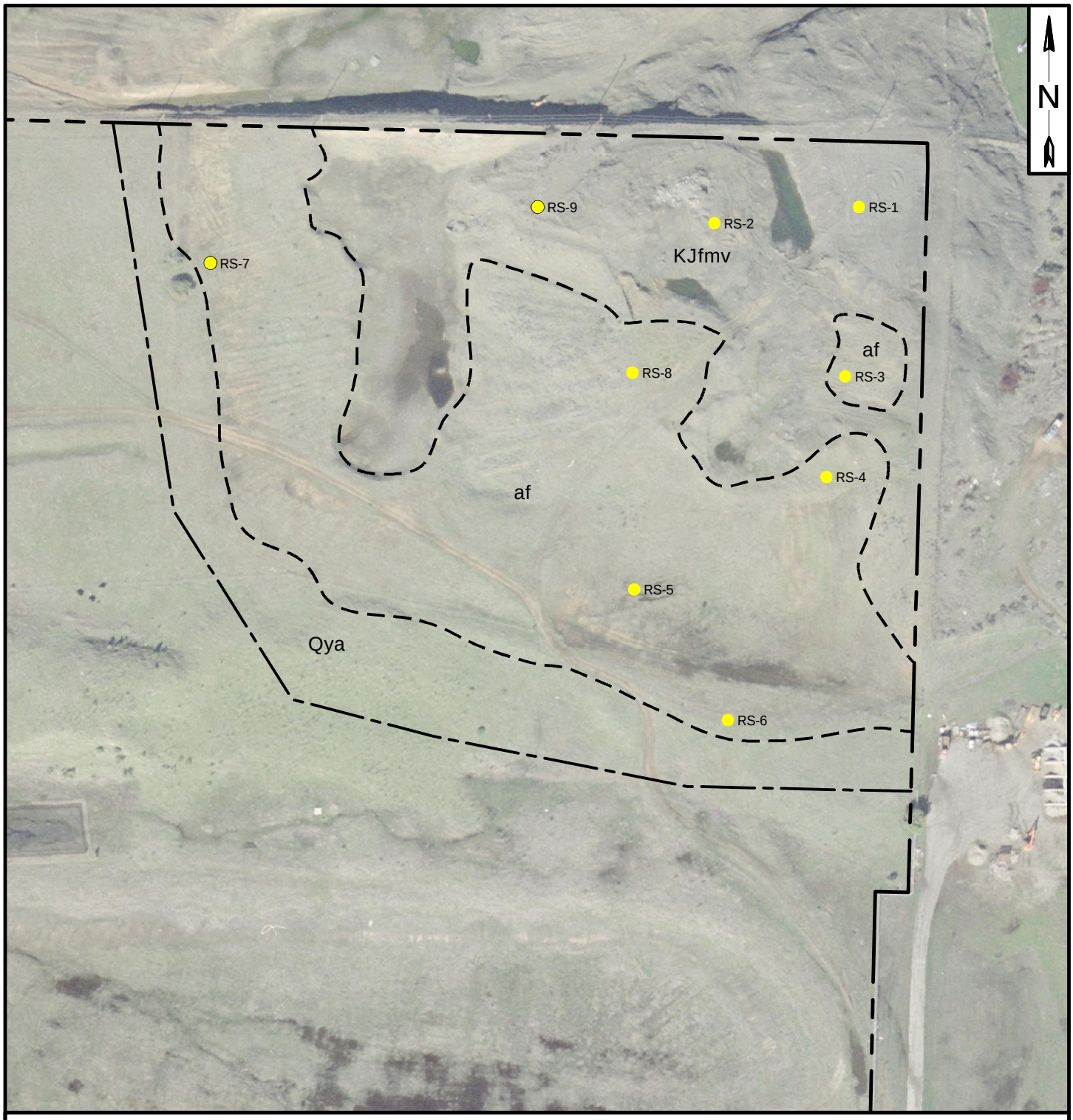
PROJECT NAME:
CEMC
SAN LUIS OBISPO TANK FARM
San Luis Obispo, California

PROJECT NUMBER: 0601-3284

DATE: October 2012

PROJECT SITE MAP

PLATE 2



LEGEND

— — — —	PROPERTY BOUNDARY	KJfmv	METOVOLCANIC ROCK - PRIMARILY GREENSTONE (CRETACEOUS TO JURRASSIC)
— — — —	PROJECT SITE BOUNDARY	Qya	YOUNG ALLUVIAL FLOOD PLAIN DEPOSITS
— — — —	APPROXIMATE CONTACT BETWEEN MAP UNITS	af	ARTIFICIAL FILL- MINE TAILINGS OF LOOSE SAND, GRAVEL AND BEDROCK
RS-1 ●	ROCK SAMPLE LOCATIONS		

NOTE:
GEOLOGIC MAP UNITS ADOPTED FROM "GEOLOGIC MAP OF THE SAN LUIS OBISPO 7.5 MINUTE QUADRANGLE, SAN LUIS OBISPO COUNTY, A DIGITAL DATABASE, VERSION 1.0, WIEGERS 2010.

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SCALE IN FEET

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PROJECT NAME:
CEMC
SAN LUIS OBISPO TANK FARM
San Luis Obispo, California

PROJECT NUMBER: 0601-3284
DATE: October 2012

DRILL HOLE LOCATION AND SURFACE GEOLOGY MAP

PLATE
3

December 2012
Project No. 0601-3284

APPENDIX A
HISTORICAL SITE ASSESSMENT DATA

Earth Systems Pacific

4378 Santa Fe Road
San Luis Obispo, CA 93401-8116
(805) 544-3276 • FAX (805) 544-1786
E-mail: esc@earthsys.com

February 4, 2000 FILE NO.: SL-10613-EA

Mr. John Ljung
Unocal Corporation, Central Coast Group
Post Office Box 1069
San Luis Obispo, California 93406

PROJECT: SAN LUIS OBISPO TANK FARM QUARRY AREA
TANK FARM ROAD
SAN LUIS OBISPO, CALIFORNIA

SUBJECT: Results of Rock Sampling and Analysis

Dear Mr. Ljung:

This letter presents the results of rock sampling and analysis conducted at the above referenced property. The sampling was conducted on January 19, 2000, at your request, to evaluate the asbestos content of bedrock in a quarry area at the northeast corner of the Unocal San Luis Obispo tank farm. Previous geologic mapping in the area (Hall, 1974, *Geologic Map of the Cayucos-San Luis Obispo Region, California*, USGS Miscellaneous Field Investigations Map MF-545) had identified the quarry area as being underlain by mixed metavolcanic rocks and serpentine.

Soil Sampling and Analysis

We visited the site on January 19, 2000, to sample bedrock in the area of the former quarry. Upon inspection, bedrock in the quarry area consists of two primary rock types: a reddish-brown, highly fractured metavolcanic rock, and a dark gray to greenish-gray greenstone. The greenstone, although fractured, is much harder than the lighter colored volcanic rock. It appears that the lighter, easier to excavate material was preferentially mined from the quarry, leaving a central plug of the darker, harder material exposed. Serpentine or other fibrous-appearing material was not visually evident in the various outcrops throughout the quarry.

Four samples were collected from outcrops of the dark material. Sample locations are shown on the figure attached with this letter. The samples were collected into plastic bags, and sealed for transport to the testing laboratory. The sample was analyzed for asbestos content by Air Resources Board (ARB) Proposed Method 435, *Determination of Asbestos Content of Serpentine Aggregate*. A description of the method is presented on the laboratory reports.

Analytical Results
Asbestos was not detected in any of the quarry samples, with a limit of quantitation of 1% by area. Laboratory reports and chain of custody documents are attached with this letter.

Conclusions
Based on the results of laboratory analysis, it appears that the dark material in the quarry area does not contain detectable levels of asbestos. Serpentine or other fibrous–appearing material was not noted in the reconnaissance of the quarry area performed on January 19, 2000.

Limitation
This document has been prepared for the exclusive use of the Unocal Corporation, Central Coast Group, regarding the quarry area at the San Luis Obispo tank farm in San Luis Obispo, California. The findings and conclusions rendered in this letter are based on laboratory analysis of rock samples. This letter does not reflect variations that may exist beyond or between sampling points. Use of or reliance on the information and opinions contained in this letter by other parties without first consulting this office is at those parties' own risk.

The services performed by Earth Systems Pacific have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in this area of California. No warranty is expressed or implied.

If you have any questions or comments regarding this letter, please contact the undersigned at your convenience.

Sincerely,

Earth Systems Pacific

REGISTERED GEOLOGIST
TIMOTHY S. CONROY
No. EG 1698
CERTIFIED ENGINEERING GEOLOGIST
6/00
STATE OF CALIFORNIA

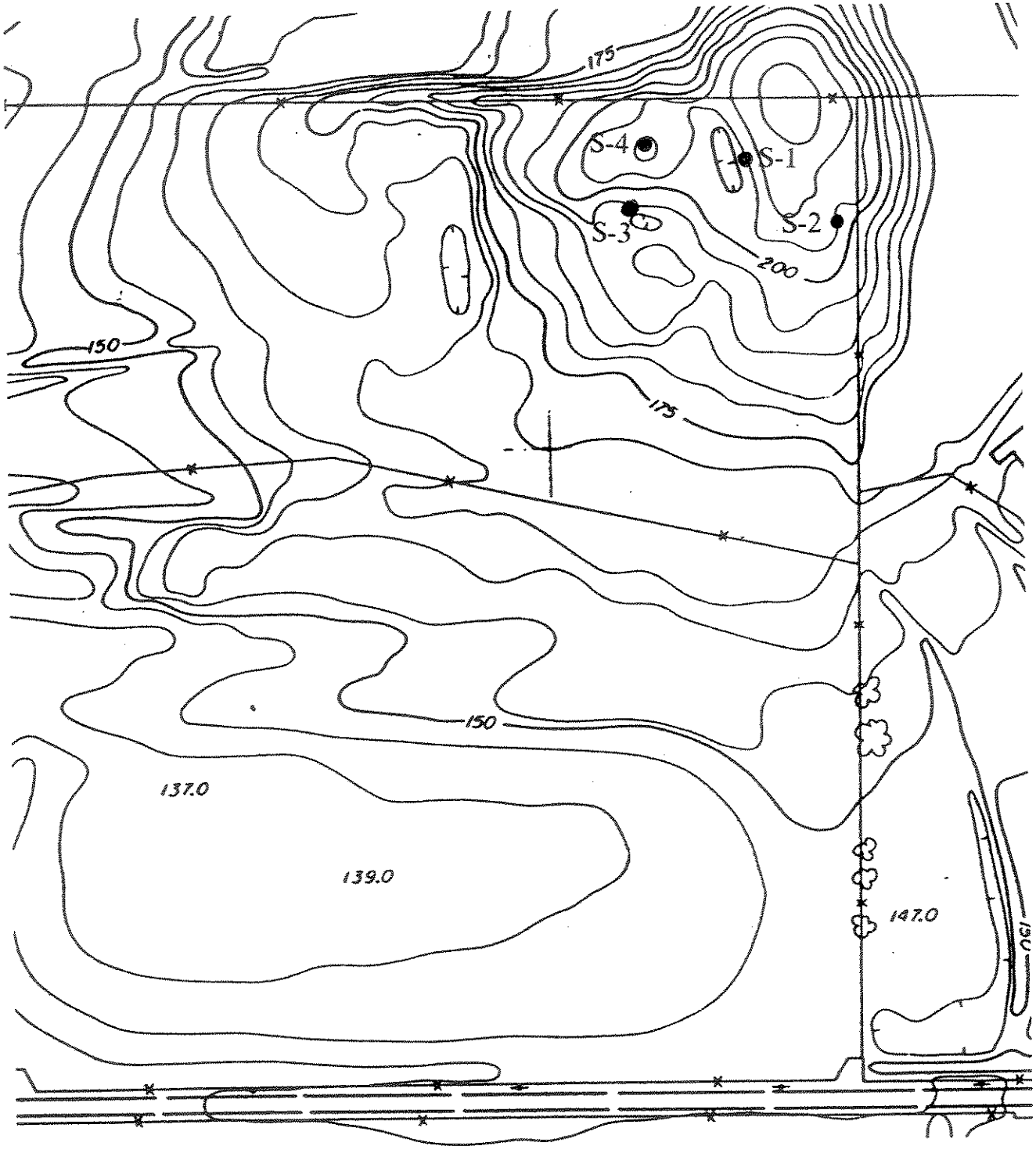
Timothy Conroy, C.E.G. 1698
Senior Geologist

Attachments: Laboratory Reports
Sample Location Map

Doc. No.: 0001-393.LTR/ls

SAMPLE LOCATION MAP

San Luis Obispo Tank Farm Quarry Area
Tank Farm Road
San Luis Obispo, California



Base Map: Topographic map of Unocal Tank Farm, 1988.

SCALE: 1: 1200

Earth Systems Pacific

4378 Santa Fe Road, San Luis Obispo, California 93401

TC

SL-10613-EA

Final Report

Forensic Analytical

San Francisco • Los Angeles • Minneapolis / St. Paul

Bulk Asbestos Material Analysis

(Air Resources Board Proposed Method 435)

Earth Systems
Tim Conroy
4378 Santa Fe Rd.

San Luis Obispo, CA 93401

Client ID: 3962
Report Number: B016790
Date Received: 01/21/00
Date Reported: 01/25/00

Sample ID: SITE1
Lab Number: 10005178
Sample Layer Description: Grey/Green Stones
Job ID / Site: SLOTF Quarry
FASI Job ID: 3962-1

Sample Preparation and Analysis

Samples were analyzed by the Air Resources Board's Proposed Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Visual Estimation Percentage: None Detected
Asbestos Type(s) Detected: None Detected

This result meets the requirements of Exception 1 as defined by the 435 Method.

Mark Floyd, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 1%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected.

Analytical results and reports are generated by Forensic Analytical at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by Forensic Analytical to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by Forensic Analytical. The client is solely responsible for the use and interpretation of test results and reports requested from Forensic Analytical. This report must not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government. Forensic Analytical is not able to assess the degree of hazard resulting from materials analyzed. Forensic Analytical reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

3777 Depot Road, Suite 409, Hayward, California 94545-2761 • Telephone: 510/887-8828 800/827-FASI Fax: 510/887-4218

Final Report

Forensic Analytical

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Bulk Asbestos Material Analysis

(Air Resources Board Proposed Method 435)

Earth Systems
Tim Conroy
4378 Santa Fe Rd.

San Luis Obispo, CA 93401

Client ID: 3962
Report Number: B016790
Date Received: 01/21/00
Date Reported: 01/25/00

Sample ID: **SITE2**
Sample Layer Description: Grey/Green Stones
Job ID / Site: SLOTF Quarry

Lab Number: **10005179**
FASI Job ID: 3962-1

Sample Preparation and Analysis

Samples were analyzed by the Air Resources Board's Proposed Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Visual Estimation Percentage: None Detected
Asbestos Type(s) Detected: None Detected

This result meets the requirements of Exception 1 as defined by the 435 Method.

Mark Floyd, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 1%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected.

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Final Report

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Bulk Asbestos Material Analysis

(Air Resources Board Proposed Method 435)

Earth Systems
Tim Conroy
4378 Santa Fe Rd.

San Luis Obispo, CA 93401

Client ID: 3962
Report Number: B016790
Date Received: 01/21/00
Date Reported: 01/25/00

Sample ID: **SITE3**
Sample Layer Description: Grey/Green Stones
Job ID / Site: SLOTF Quarry

Lab Number: **10005180**
FASI Job ID: 3962-1

Sample Preparation and Analysis

Samples were analyzed by the Air Resources Board's Proposed Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Visual Estimation Percentage: None Detected
Asbestos Type(s) Detected: None Detected

This result meets the requirements of Exception 1 as defined by the 435 Method.

Mark Floyd, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 1%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected.

Analytical results and reports are generated by Forensic Analytical at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by Forensic Analytical to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by Forensic Analytical. The client is solely responsible for the use and interpretation of test results and reports requested from Forensic Analytical. This report must not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government. Forensic Analytical is not able to assess the degree of hazard resulting from materials analyzed. Forensic Analytical reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

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Final Report

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Bulk Asbestos Material Analysis

(Air Resources Board Proposed Method 435)

Earth Systems
Tim Conroy
4378 Santa Fe Rd.

San Luis Obispo, CA 93401

Client ID: 3962
Report Number: B016790
Date Received: 01/21/00
Date Reported: 01/25/00

Sample ID: SITE4
Lab Number: 10005181
Sample Layer Description: Grey/Green Stones
Job ID / Site: SLOTF Quarry
FASI Job ID: 3962-1

Sample Preparation and Analysis

Samples were analyzed by the Air Resources Board's Proposed Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Visual Estimation Percentage: None Detected
Asbestos Type(s) Detected: None Detected

This result meets the requirements of Exception 1 as defined by the 435 Method.

Mark Floyd, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 1%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected.

Analytical results and reports are generated by Forensic Analytical at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by Forensic Analytical to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by Forensic Analytical. The client is solely responsible for the use and interpretation of test results and reports requested from Forensic Analytical. This report must not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government. Forensic Analytical is not able to assess the degree of hazard resulting from materials analyzed. Forensic Analytical reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

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3962-1

Forensic Analytical — Analysis Request Form

Client Name & Address: Earth Systems Pacific, 4378 Santa Fe Rd, San Luis Obispo, CA 93401

Contact: Tim Conroy

Phone #: (805) 544-3276

Fax#: (805) 544-0531

Site:

Job: SLOTF Quarry

P.O. #: SL-10613-EA **Date:** 1/19/00

Turn Around Time: ____ hr / 12hr / 24hr / (48 hr) / ext: ____

Due Date: / / **Due Time:** ____ am/pm

☐ PLM: ☐ Standard / ☐ Point Count ☐ PCM: NIOSH 7400

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402

☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield

☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Wt %

☐ TEM Microvac

☒ Special Project: ARB 435

☐ Metals Analysis: Method

Matrix:

Analytes:

Comments: Rock Samples - analyze by ARB 435.

Sample ID	Date/ Time	Sample Location/Description	FOR AIR SAMPLES ONLY: Type	Time On/Off	Avg. LPM	Total Time	Sample Area or Air Volume
SITE 1	1/19/00	QUARRY CENTRAL ~~NE~~	A P C				
SITE 2	↓	QUARRY NE	A P C				
SITE 3		QUARRY SW	A P C				
SITE 4		QUARRY NW	A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled by: Tim Conroy **Date:** 1/19/00 **Time:** 15:30

Shipped via: ☐ Fed Ex ☐ Airborne ☒ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished by:	Relinquished by:	Relinquished by:
T. Conroy		
Date / Time: 1/20/00 1000 AM	Date / Time:	Date / Time:
Received by:	**Received by:**	**Received by:**
Date / Time: 1/21/00	Date / Time:	Date / Time:
Condition Acceptable? ☒ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

San Francisco Office: 3777 Depot Road, Suite 409, Hayward, California 94545 / Telephone: (510)887-8828 (800)627-FASI / Fax: (510)887-4218
Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, California 90221 / Telephone: (310)763-2374 / Fax: (310)763-[illegible]

December 2012
Project No. 0601-3284

APPENDIX B
DRILL HOLE LOGS AND LABORATORY REPORTS

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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

DRILL HOLE LOG RS-1

SAN LUIS OBISPO TANK FARM
SAN LUIS OBISPO
SAN LUIS OBISPO COUNTY, CALIFORNIA

Chevron EMC

Project Number	: 0601-3284	Total Depth	: 45 feet
Project Name	: SLO Tank Farm	Drilling Date	: 08/16/12
Logged By	: Brett Sullivan	Backfilled With	: Cement Grout
Checked By	: Brett Sullivan	Elevation	: 217.84 feet amsl
Driller/Drilling Method	: BL/Sonic Core	Depth to Groundwater	: Not Encountered

Depth in Feet	Water Level	USCS	GRAPHIC	Sample Interval	Sample ID	PID (ppmv)	DESCRIPTION
0		KJfmv					GREENSTONE (KJfmv), massive, weathered to approximately 7 feet, fine to coarse veins of white aphanitic secondary mineral (possibly tremolite) and minor breccia zones, no asbestiform minerals observed.
5							
10					RS-1-10		NOA sample, Greenstone with numerous veins, no fibrous or asbestiform mineral habit observed.
							Poor recovery from 10 to 24 feet, all material recovered is gravel sized. Dark green with fine to coarse veins of white aphanitic mineral in dark green matrix, brecciated metavolcanic greenstone with chaotic veins of lighter minerals (possibly tremolite).
15					RS-1-16		NOA sample, Greenstone with coarse veins filled with white secondary mineral primarily aphanitic but with trace acicular crystalline habit, no fibrous or asbestiform mineral habit observed.
20					RS-1-20-24		Physical properties sample: cobble-sized fragment of Greenstone with fine veins filled with white secondary mineral, fractures with 3-5 hammer blows, waxy luster and feel.
							Good recovery from 24 to 30 feet.
25							
30							Good recovery, competent rock from 30 to 35 feet.
					RS-1-32		NOA sample, Greenstone with veins, filled with white secondary mineral, no fibrous or asbestiform habit noted.
35							Dry rock core from 35 to 38 feet, pulverized but competent, may have temporarily lost water circulation.
							Weathered/poorly indurated zone from 38 to 40 feet
40							Dry rock core from 40 to 45 feet, gravel to cobble sized fragments of greenstone
							NOA sample, sheared greenstone with fine veins filled with white aphanitic secondary mineral, no fibrous or asbestiform habit noted.
45					RS-1-45		Terminated at 45 feet.
50							
55							

Notes:
1. amsl - Above Mean Sea Level
2. BL - Boart Longyear
3. NOA - Naturally Occuring Asbestos
4. Conductor casing set from 0-10 ft. Fresh water circulated to bit during drilling activities.

10-31-2012 \\SERVER\Data\Current Projects\0601-3284 SLO Tank Farm\NOS\Report\drillhole logs\RS-1.bor

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DRILL HOLE LOG RS-2

SAN LUIS OBISPO TANK FARM
SAN LUIS OBISPO
SAN LUIS OBISPO COUNTY, CALIFORNIA

Chevron EMC

Project Number	: 0601-3284	Total Depth	: 45 feet
Project Name	: SLO Tank Farm	Drilling Date	: 08/17/12
Logged By	: Brett Sullivan	Backfilled With	: Cement Grout
Checked By	: Brett Sullivan	Elevation	: 207.18 feet amsl
Driller/Drilling Method	: BL/Sonic Core	Depth to Groundwater	: Not Encountered

Depth in Feet	Water Level	USCS	GRAPHIC	Sample Interval	Sample ID	PID (ppmv)	DESCRIPTION
0		KJfmv					GREENSTONE (KJfmv), massive, weathered, to approximately 7 feet, fine to coarse veins of white aphanitic secondary mineral (possibly tremolite) and minor breccia zones, no asbestiform minerals observed
5							Solid core from 7 feet,Greenstone, brecciated with veins of white aphanitic secondary mineralization
					RS-2-9		NOA sample, massive Greenstone, very fine veins with white secondary aphanitic mineral, no fibrous or asbestiform habit
10					RS-2-12		NOA sample, sheared Greenstone with fine veins filled with primarily white aphanitic secondary mineralization (possibly tremolite) with trace acicular habit
15							
					RS-2-17-20		Physical properties sample: Greenstone with very fine veins filled with white secondary aphanitic secondary mineral, fractures with 3 to 5 hammer blows, waxy luster on fracture surfaces have slickensides with waxy luster and feel
20							
25					RS-2-25		NOA sample, brecciated Greenstone in white aphanitic secondary mineral
30							Physical properties sample: massive Greenstone with fine to coarse veins, cobble-sized fragment fractures with 3 to 5 hammer blows
					RS-2-34		
35					RS-2-30-38		NOA sample, sheared Greenstone with white aphanitic secondary mineralization, no fibrous or asbestiform habit
							Weathered/poorly indurated zone from 38 to 39 feet
40							
					RS-2-42-45		Physical properties sample: Greenstone with few micro veins of white secondary mineralization, cobble-sized fragment fractures with 3 to 5 hammer blows
45					RS-2-45		NOA sample, massive Greenstone with trace very fine veins with white, aphanitic secondary mineralization, TD at 45 feet
50							
55							

Notes:
1. amsl - Above Mean Sea Level
2. BL - Boart Longyear
3. NOA - Naturally Occuring Asbestos
4. Conductor casing set from 0-10 ft. Fresh water circulated to bit during drilling activities.

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DRILL HOLE LOG RS-3

SAN LUIS OBISPO TANK FARM
SAN LUIS OBISPO
SAN LUIS OBISPO COUNTY, CALIFORNIA

Chevron EMC

Project Number	: 0601-3284	Total Depth	: 30 feet
Project Name	: SLO Tank Farm	Drilling Date	: 08/17/12
Logged By	: Brett Sullivan	Backfilled With	: Cement Grout
Checked By	: Brett Sullivan	Elevation	: 204.17 feet amsl
Driller/Drilling Method	: BL/Sonic Core	Depth to Groundwater	: Not Encountered

Depth in Feet	Water Level	USCS	GRAPHIC	Sample Interval	Sample ID	PID (ppmv)	DESCRIPTION
0		Fill					FILL, graded mix of topsoil, gravel and cobble-sized rock fragments.
5							
10		KJfmv			RS-3-12		GREENSTONE (KJfmv), fractured with slickensides, deeply weathered with abundant chaotic secondary fine to coarse veins filled with white aphanitic, trace acicular secondary mineral (possible tremolite), minor zones of greenstone breccia in sedondary mineral matrix, no fibrous or asbestiform mineral habit observed
15							
20					RS-3-20		NOA sample, sheared Greenstone with trace slickensides and fine to coarse veins filled with white secondary mineral with aphanitic to acicular habit, no fibrous or asbestiform mineral habit observed.
25					RS-3-26		NOA sample, sheared Greenstone with slickensides on fracture faces, veins filled with white secondary mineral with some acicular habit, no fibrous or asbestiform mineral habit observed.
30							Terminated at 30 feet
35							
40							
45							
50							
55							

Notes:
1. amsl - Above Mean Sea Level
2. BL - Boart Longyear
3. NOA - Naturally Occuring Asbestos
4. Conductor casing set from 0-10 ft. Fresh water circulated to bit during drilling activities.

10-31-2012 \\SERVER\Data\Current Projects\0601-3284 SLO Tank Farm\NOSI\Report\drillhole logs\RS-3.bor

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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

DRILL HOLE LOG RS-4

SAN LUIS OBISPO TANK FARM
SAN LUIS OBISPO
SAN LUIS OBISPO COUNTY, CALIFORNIA

Chevron EMC

Project Number	: 0601-3284	Total Depth	: 20 feet
Project Name	: SLO Tank Farm	Drilling Date	: 08/17/12
Logged By	: Brett Sullivan	Backfilled With	: Cement Grout
Checked By	: Brett Sullivan	Elevation	: 192.83 feet amsl
Driller/Drilling Method	: BL/Sonic Core	Depth to Groundwater	: Not Encountered

Depth in Feet	Water Level	USCS	GRAPHIC	Sample Interval	Sample ID	PID (ppmv)	DESCRIPTION
0		Fill					FILL, graded mix of topsoil, gravel and cobble-sized rock fragments.
5		KJfmv					GREENSTONE(KJfmv), massive, weathered to approximately 7 feet with fine to coarse veins filled with white aphanitic secondary mineral (possibly tremolite) with minor breccia zones, no asbestiform minerals observed
10					RS-4-10		NOA sample, massive sheared greenstone, with slickensides, no fibrous or asbestiform crystalline habit noted.
15							
20					RS-4-20		NOA sample, massive greenstone with abundant fine to coarse veins, no fibrous or asbestiform crystalline habit noted. TD at 20 feet
25							
30							
35							
40							
45							
50							
55							

Notes:
1. amsl - Above Mean Sea Level
2. BL - Boart Longyear
3. NOA - Naturally Occuring Asbestos
4. Conductor casing set from 0-10 ft. Fresh water circulated to bit during drilling activities.

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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

DRILL HOLE LOG RS-5

SAN LUIS OBISPO TANK FARM
SAN LUIS OBISPO
SAN LUIS OBISPO COUNTY, CALIFORNIA

Chevron EMC

Project Number	: 0601-3284	Total Depth	: 5 feet
Project Name	: SLO Tank Farm	Drilling Date	: 08/20/12
Logged By	: Brett Sullivan	Backfilled With	: Cement Grout
Checked By	: Brett Sullivan	Elevation	: 172.16 feet amsl
Driller/Drilling Method	: BL/Sonic Core	Depth to Groundwater	: Not Encountered

Depth in Feet	Water Level	USCS	GRAPHIC	Sample Interval	Sample ID	PID (ppmv)	DESCRIPTION
0							SANDY SILT topsoil to 0.5 feet.
		CL-GM					SILTY CLAY and Gravel (CL-GM) with coarse sand, dark yellowish brown (10YR 5/4), dry to slightly moist
					RS-5-5		NOA sample, silty clay with gravel, no fibrous or asbestiform material noted, TD at 5 feet
5							
10							

Notes:
1. amsl - Above Mean Sea Level
2. BL - Boart Longyear

10-31-2012 \\SERVER\Data\Current Projects\0601-3284 SLO Tank Farm\NOSI\Report\drillhole logs\RS-5.bor

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DRILL HOLE LOG RS-6

SAN LUIS OBISPO TANK FARM
SAN LUIS OBISPO
SAN LUIS OBISPO COUNTY, CALIFORNIA

Chevron EMC

Project Number	: 0601-3284	Total Depth	: 5 feet
Project Name	: SLO Tank Farm	Drilling Date	: 08/20/12
Logged By	: Brett Sullivan	Backfilled With	: Cement Grout
Checked By	: Brett Sullivan	Elevation	: 170.23 feet amsl
Driller/Drilling Method	: BL/Sonic Core	Depth to Groundwater	: Not Encountered

Depth in Feet	Water Level	USCS	GRAPHIC	Sample Interval	Sample ID	PID (ppmv)	DESCRIPTION
0							SANDY SILT topsoil to 0.5 feet.
		CL-GM					SILTY CLAY and Gravel (CL-GM) with coarse sand, dark yellowish brown (10YR 5/4), dry to slightly moist
					RS-6-5		NOA sample, silty clay with gravel, no fibrous or asbestiform material noted, TD at 5 feet
5							
10							

Notes:
1. amsl - Above Mean Sea Level
2. BL - Boart Longyear

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DRILL HOLE LOG RS-7

SAN LUIS OBISPO TANK FARM
SAN LUIS OBISPO
SAN LUIS OBISPO COUNTY, CALIFORNIA

Chevron EMC

Project Number	: 0601-3284	Total Depth	: 5 feet
Project Name	: SLO Tank Farm	Drilling Date	: 08/20/12
Logged By	: Brett Sullivan	Backfilled With	: Cement Grout
Checked By	: Brett Sullivan	Elevation	: 169.58 feet amsl
Driller/Drilling Method	: BL/Sonic Core	Depth to Groundwater	: Not Encountered

Depth in Feet	Water Level	USCS	GRAPHIC	Sample Interval	Sample ID	PID (ppmv)	DESCRIPTION
0							SANDY SILT topsoil to 0.5 feet.
		CL-GM					SILTY CLAY and Gravel (CL-GM) with coarse sand, dark yellowish brown (10YR 5/4), dry to slightly moist
					RS-7-5		NOA sample, silty clay with gravel, no fibrous or asbestiform material noted, TD at 5 feet
5							
10							

Notes:
1. amsl - Above Mean Sea Level
2. BL - Boart Longyear

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DRILL HOLE LOG RS-8

SAN LUIS OBISPO TANK FARM
SAN LUIS OBISPO
SAN LUIS OBISPO COUNTY, CALIFORNIA

Chevron EMC

Project Number	: 0601-3284	Total Depth	: 20 feet
Project Name	: SLO Tank Farm	Drilling Date	: 08/20/12
Logged By	: Brett Sullivan	Backfilled With	: Cement Grout
Checked By	: Brett Sullivan	Elevation	: 169.58 feet amsl
Driller/Drilling Method	: BL/Sonic Core	Depth to Groundwater	: Not Encountered

Depth in Feet	Water Level	USCS	GRAPHIC	Sample Interval	Sample ID	PID (ppmv)	DESCRIPTION
0							SANDY SILT topsoil to 0.5 feet. SILTY CLAY and Gravel (CL-GM) with coarse sand, dark yellowish brown (10YR 5/4), dry to slightly moist
5							NOA sample, silty clay with gravel, no fibrous or asbestiform material noted.
10		CL-GM			RS-8-10		NOA sample, silty clay with gravel, no fibrous or asbestiform material noted.
15							
20					RS-8-20		NOA sample, silty clay with gravel, no fibrous or asbestiform material noted. TD at 20 feet
25							

Notes:
1. amsl - Above Mean Sea Level
2. BL - Boart Longyear
3. NOA - Naturally Occuring Asbestos

10-31-2012 \\SERVER\Data\Current Projects\0601-3284 SLO Tank Farm\NOSI\Report\drillhole logs\RS-8.bor

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DRILL HOLE LOG RS-9

SAN LUIS OBISPO TANK FARM
SAN LUIS OBISPO
SAN LUIS OBISPO COUNTY, CALIFORNIA

Chevron EMC

Project Number	: 0601-3284	Total Depth	: 35 feet
Project Name	: SLO Tank Farm	Drilling Date	: 08/20/12
Logged By	: Brett Sullivan	Backfilled With	: Cement Grout
Checked By	: Brett Sullivan	Elevation	: 198.75 feet amsl
Driller/Drilling Method	: BL/Sonic Core	Depth to Groundwater	: Not Encountered

Depth in Feet	Water Level	USCS	GRAPHIC	Sample Interval	Sample ID	PID (ppmv)	DESCRIPTION
0		KJfmv					GREENSTONE (KJfmv), massive, weathered, to approximately 7 feet, fine to coarse veins filled with white aphanitic secondary mineral (possibly tremolite) and minor breccia zones, no fibrous or asbestiform minerals observed.
5							
10				■	RS-9-10		NOA sample, massive Greenstone with abundant fine to coarse, white, aphanitic secondary mineral veins, no fibrous or asbestiform habit observed.
							Poor recovery from 12 to 20 feet
15							
20							
25				■	RS-9-25		NOA sample, massive Greenstone with abundant fine to coarse, white, aphanitic secondary mineral veins, no fibrous or asbestiform habit observed
30							
35				■	RS-9-35		NOA sample, massive sheared Greenstone with slickensides, no fibrous or asbestiform habit observed. TD at 35 feet
40							
45							
50							

Notes:
1. amsl - Above Mean Sea Level
2. BL - Boart Longyear
3. NOA - Naturally Occuring Asbestos
4. Conductor casing set from 0-10 ft. Fresh water circulated to bit during drilling activities.

10-31-2012 \\SERVER\Data\Current Projects\0601-3284 SLO Tank Farm\NOSI\Report\drillhole logs\RS-9.bor

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Padre Associates, Inc.
Project Manager
1861 Knoll Drive

Ventura, CA 93003

Client ID: L1185
Report Number: N004841
Date Received: 08/29/12
Date Analyzed: 09/04/12
Date Printed: 09/04/12

Job ID/Site: 0601-3284 - SLO Tank Farm NOSI

PLM Report Number: N/A

FALI Job ID: L1185
Total Samples Submitted: 22
Total Samples Analyzed: 22

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
RS-1-10	11293186	**Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

RS-1-16	11293187	**Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Padre Associates, Inc.
Project Manager
1861 Knoll Drive

Ventura, CA 93003

Client ID: L1185
Report Number: N004841
Date Received: 08/29/12
Date Analyzed: 09/04/12
Date Printed: 09/04/12

Job ID/Site: 0601-3284 - SLO Tank Farm NOSI

PLM Report Number: N/A

FALI Job ID: L1185
Total Samples Submitted: 22
Total Samples Analyzed: 22

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
RS-1-32	11293188	**Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

RS-1-45 11293189 **Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

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Forensic Analytical Laboratories

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Padre Associates, Inc.
Project Manager
1861 Knoll Drive

Ventura, CA 93003

Client ID: L1185
Report Number: N004841
Date Received: 08/29/12
Date Analyzed: 09/04/12
Date Printed: 09/04/12

Job ID/Site: 0601-3284 - SLO Tank Farm NOSI

PLM Report Number: N/A

FALI Job ID: L1185
Total Samples Submitted: 22
Total Samples Analyzed: 22

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
RS-2-9	11293190	**Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

RS-2-12 11293191 **Grey/Green Stones**

Visual Estimation Results:

Matrix percentage of entire	100
Visual estimation percentage:	None Detected
Asbestos type(s) detected:	None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

RS-2-25 11293192 **Grey/Green Stones**

Visual Estimation Results:

Matrix percentage of entire	100
Visual estimation percentage:	None Detected
Asbestos type(s) detected:	None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

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Forensic Analytical Laboratories

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Padre Associates, Inc.
Project Manager
1861 Knoll Drive

Ventura, CA 93003

Client ID: L1185
Report Number: N004841
Date Received: 08/29/12
Date Analyzed: 09/04/12
Date Printed: 09/04/12

Job ID/Site: 0601-3284 - SLO Tank Farm NOSI

PLM Report Number: N/A

FALI Job ID: L1185
Total Samples Submitted: 22
Total Samples Analyzed: 22

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description

RS-2-34 11293193 **Grey/Green Stones**

Visual Estimation Results:

Matrix percentage of entire	100
Visual estimation percentage:	None Detected
Asbestos type(s) detected:	None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

RS-2-45 11293194 **Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

RS-3-12 11293195 **Grey/Green Stones**

Visual Estimation Results:

Matrix percentage of entire	100
Visual estimation percentage:	None Detected
Asbestos type(s) detected:	None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

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Forensic Analytical Laboratories

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Padre Associates, Inc.
Project Manager
1861 Knoll Drive

Ventura, CA 93003

Client ID: L1185
Report Number: N004841
Date Received: 08/29/12
Date Analyzed: 09/04/12
Date Printed: 09/04/12

Job ID/Site: 0601-3284 - SLO Tank Farm NOSI

PLM Report Number: N/A

FALI Job ID: L1185
Total Samples Submitted: 22
Total Samples Analyzed: 22

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description

RS-3-20 11293196 **Grey/Green Stones**

Visual Estimation Results:

Matrix percentage of entire	100
Visual estimation percentage:	None Detected
Asbestos type(s) detected:	None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

RS-3-26 11293197 **Grey/Green Stones**

Visual Estimation Results:

Matrix percentage of entire	100
Visual estimation percentage:	None Detected
Asbestos type(s) detected:	None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

RS-4-10 11293198 **Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

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Forensic Analytical Laboratories

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Padre Associates, Inc.
Project Manager
1861 Knoll Drive

Ventura, CA 93003

Client ID: L1185
Report Number: N004841
Date Received: 08/29/12
Date Analyzed: 09/04/12
Date Printed: 09/04/12

Job ID/Site: 0601-3284 - SLO Tank Farm NOSI

PLM Report Number: N/A

FALI Job ID: L1185
Total Samples Submitted: 22
Total Samples Analyzed: 22

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
RS-4-20	11293199	**Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

RS-5-5 11293200 **Brown Soil**

Visual Estimation Results:

Matrix percentage of entire	100
Visual estimation percentage:	None Detected
Asbestos type(s) detected:	None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

RS-6-5 11293201 **Brown Soil**

Visual Estimation Results:

Matrix percentage of entire	100
Visual estimation percentage:	None Detected
Asbestos type(s) detected:	None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

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Forensic Analytical Laboratories

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Padre Associates, Inc.
Project Manager
1861 Knoll Drive

Ventura, CA 93003

Client ID: L1185
Report Number: N004841
Date Received: 08/29/12
Date Analyzed: 09/04/12
Date Printed: 09/04/12

Job ID/Site: 0601-3284 - SLO Tank Farm NOSI

PLM Report Number: N/A

FALI Job ID: L1185
Total Samples Submitted: 22
Total Samples Analyzed: 22

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description

RS-7-5 11293202 **Brown Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: None Detected
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

RS-8-10 11293203 **Brown Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: None Detected
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

RS-8-20 11293204 **Brown Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: None Detected
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

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Forensic Analytical Laboratories

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Padre Associates, Inc.
Project Manager
1861 Knoll Drive

Ventura, CA 93003

Client ID: L1185
Report Number: N004841
Date Received: 08/29/12
Date Analyzed: 09/04/12
Date Printed: 09/04/12

Job ID/Site: 0601-3284 - SLO Tank Farm NOSI

PLM Report Number: N/A

FALI Job ID: L1185
Total Samples Submitted: 22
Total Samples Analyzed: 22

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
RS-9-10	11293205	**Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

RS-9-25	11293206	**Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

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Forensic Analytical Laboratories

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Padre Associates, Inc.
Project Manager
1861 Knoll Drive

Ventura, CA 93003

Client ID: L1185
Report Number: N004841
Date Received: 08/29/12
Date Analyzed: 09/04/12
Date Printed: 09/04/12

Job ID/Site: 0601-3284 - SLO Tank Farm NOSI

PLM Report Number: N/A

FALI Job ID: L1185
Total Samples Submitted: 22
Total Samples Analyzed: 22

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
RS-9-35	11293207	**Grey/Green Stones**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Matrix percentage of entire	100
Percent asbestos in matrix:	< 0.25
Visual estimation percentage:	<1
Asbestos type(s) detected:	Chrysotile

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 0.25%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected.

Analytical results and reports are generated by Forensic Analytical Laboratories Inc. (FALI) at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by FALI to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by FALI. The client is solely responsible for the use and interpretation of test results and reports requested from FALI. Forensic Analytical Laboratories Inc. is not able to assess the degree of hazard resulting from materials analyzed. FALI reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified. All samples were received in acceptable condition unless otherwise noted.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4848

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

CHAIN OF CUSTODY RECORD

Client Name/Account #: Padre Associates, Inc.
Address: 369 Pacific Street
City/State/Zip: San Luis Obispo, California 93401
Telephone Number: 805.786.2650 **Fax No.:** 805.786.2651
Project No. / Name: 0601-3284 / SLO Tank Farm NOSI
Laboratory: Forensic
Report To: Scott Santala (ssantala@padreinc.com)

Sampler: SS

Invoice To: Padre Associates, Inc.
1861 Knoll Drive
Ventura, CA 93003

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers	Sample Matrix	Preservative	Container Type	Asbestos in serpentine CARB method 435								NOTES
RS-1-10	8/16/2012	0910	1	bulk	np	plastic	X								
RS-1-16	8/16/2012	1020	1	bulk	np	plastic	X								
RS-1-32	8/16/2012	1045	1	bulk	np	plastic	X								
RS-1-45	8/16/2012	1130	1	bulk	np	plastic	X								
RS-2-9	8/16/2012	1450	1	bulk	np	plastic	X								
RS-2-12	8/16/2012	1530	1	bulk	np	plastic	X								
RS-2-25	8/16/2012	1630	1	bulk	np	plastic	X								
RS-2-34	8/17/2012	0900	1	bulk	np	plastic	X								
RS-2-45	8/17/2012	0930	1	bulk	np	plastic	X								
RS-3-12	8/17/2012	1110	1	bulk	np	plastic	X								
RS-3-20	8/17/2012	1125	1	bulk	np	plastic	X								

Special Instructions:
1. Send all reports to San Luis Obispo office address. Invoice to Ventura address.
2. Please combine results and COC into one final pdf document when e-mailed.

Turn Around Time (Check)
- Same Day
- 24 Hours
- 48 Hours
- 3 Days [X]
- 5 Days

Comments:

Relinquished by:	Date	Time	Shipped via:	Date	Time
[signature]	8/28/12	14:01	OnTrac	8/28/12	14:01

Relinquished by:	Date	Time	Received by:	Date	Time
			[signature]	8-29-12	8:40AM

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

CHAIN OF CUSTODY RECORD

Client Name/Account #: Padre Associates, Inc.
Address: 369 Pacific Street
City/State/Zip: San Luis Obispo, California 93401
Telephone Number: 805.786.2650 **Fax No.:** 805.786.2651
Project No. / Name: 0601-3284 / SLO Tank Farm NOSI
Laboratory: Forensic
Report To: Scott Santala (ssantala@padreinc.com)

Sampler: SS

Invoice To: Padre Associates, Inc.
1861 Knoll Drive
Ventura, CA 93003

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers	Sample Matrix	Preservative	Container Type	ANALYSIS REQUIRED: Asbestos in serpentine CARB method 435								NOTES
RS-3-26	8/17/2012	1145	1	bulk	np	plastic	X								
RS-4-10	8/17/2012	1430	1	bulk	np	plastic	X								
RS-4-20	8/17/2012	1540	1	bulk	np	plastic	X								
RS-5-5	8/20/2012	0830	1	bulk	np	plastic	X								
RS-6-5	8/20/2012	0845	1	bulk	np	plastic	X								
RS-7-5	8/20/2012	0920	1	bulk	np	plastic	X								
RS-8-10	8/20/2012	1000	1	bulk	np	plastic	X								
RS-8-20	8/20/2012	1030	1	bulk	np	plastic	X								
RS-9-10	8/20/2012	1315	1	bulk	np	plastic	X								
RS-9-25	8/20/2012	1430	1	bulk	np	plastic	X								
RS-9-35	8/20/2012	1500	1	bulk	np	plastic	X								

Special Instructions:
1. Send all reports to San Luis Obispo office address. Invoice to Ventura address.
2. Please combine results and COC into one final pdf document when e-mailed.

Turn Around Time (Check)
- Same Day
- 24 Hours
- 48 Hours
- 3 Days [X]
- 5 Days

Comments:

Relinquished by	Date	Time	Shipped via:	Date	Time
[signature]	8/28/12	14:01	OnTrac	8/28/12	14:01

Relinquished by:	Date	Time	Received by:	Date	Time
			[signature]	8-29-12	8:40AM

N|V|5

BTC LABS-VERTICALFIVE
1868 Palma Drive, Suite A, Ventura, California 93003
Telephone: (805) 656-6074; Fax: (805) 650-6264

NV5 JOB No: **11-001087**
LAB No: 83636

Padre Associates, Inc.
1861 Knoll Dr.
Ventura, CA 93003

Attention: Jeff Damron

Project: **Padre Associates, Inc. - Misc. Testing**

The results of the requested laboratory tests are attached for your use.

This report includes the following test reports:

Test Description	Test Method	# of Tests
Abrasion Resistance, L.A. Rattler	ASTM C131	4
Durability Index	CTM 214	4
Specific Gravity & Absorption	ASTM C127	4

BTC LABS - Vertical V appreciates the opportunity to be of service. Please contact our office if you have any questions regarding this report.

Respectfully submitted,
BTC LABS - Vertical Five

Bruce Smith
Engineering Manager

Copies: 1-Padre Associates, Inc./Jeff Damron
1-File

NV5 - BTC LABS
1868 Palma Drive, Suite A, Ventura, CA
A Vertical V, Inc. Company - Offices Nationwide

File No: -
DSA/OSHPD No: -

Padre Associates, Inc.
1861 Knoll Dr.
Ventura, CA 93003

NV5 JOB No: **11-001087**
LAB No: 83636
W.O. No: -
Bldg. Permit No:
Govt. Contract No: -

Attention:

Material: Cored rock fragments
Source: SLO TF NOA Assesment
Grading Designation: A
Date Sampled: 9/13/12
Sampled By: Client

RESISTANCE TO ABRASION OF COARSE AGGREGATE BY USE OF L.A. MACHINE (RATTLER)

(ASTM C131)

Sample ID	Percent Loss after 100 Revolutions	Percent Loss after 500 Revolutions
RS-1 16-24'	6.8%	18.7%
RS-2 15-20'	40.3%	71.0%
RS-2 30-38'	10.8%	26.6%
RS-2 40-45'	8.2%	24.4%

Reviewed By: MBS

N|V|5

NV5 - BTC LABS
1868 Palma Drive, Suite A, Ventura, CA
A Vertical V, Inc. Company - Offices Nationwide

File No: -
DSA/OSHPD No: -

NV5 JOB No: **11-001087**
LAB No: 83636
W.O. No: -
Bldg. Permit No:
Govt. Contract No: -

Padre Associates, Inc.
1861 Knoll Dr.
Ventura, CA 93003

Attention: Jeff Damron

Material: Cored rock Fragments
Source: SLO TF NOA Assesment
Date Sampled: 9/13/12
Sampled By: Client

DURABILITY INDEX OF AGGREGATES

(CTM 229)

Sample ID	Coarse Durability Factor	Durability Index
RS-1 16-24'	**87**	**87**
RS-2 15-20'	**90**	**90**
RS-2 30-38'	**85**	**85**
RS-2 40-45'	**73**	**73**

Reviewed By: MBS

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1861 Knoll Dr.
Ventura, CA 93003

NV5 JOB No: **11-001087**
LAB No: 83636
W.O. No: -
Bldg. Permit No:
Govt. Contract No: -

Project: Padre Associates, Inc. - Misc. Testing

Material:
Location: SLO TF NOA Assesment
Sampled By: client
Date Sampled: 9/13/12

SPECIFIC GRAVITY & ABSORPTION OF COARSE AGGREGATE
(ASTM C127)

Sample ID	SpG (Bulk SSD)	SpG (Bulk Oven Dry)	SpG (Apparent)	Absorption, %
RS-1 16-24'	2.84	2.83	2.87	0.5%
RS-2 15-20'	2.69	2.62	2.83	2.8%
RS-2 30-38'	2.78	2.74	2.84	1.3%
RS-2 40-45'	2.81	2.79	2.84	0.7%

Reviewed By: _____