B. WATER RESOURCES

This section provides general background information on the state of existing project site water supply information, current water usage estimates, water demand estimates, and water-related impacts due to the on-site wastewater treatment facility, surface water quality, and identification of potential impacts as a result of the proposed project. This section references a number of recent groundwater studies and/or reports conducted in the area by private consultants and by State and/or regional resource agencies, which are referenced where applicable. Information contained within each of the reports was used in assessing the potential impacts of the proposed project. These reports were peer reviewed by the EIR consultant, and information is incorporated by reference. These reports are on-file with the County of San Luis Obispo Department of Planning and Building, Environmental Resources and Management Division, and include the following:

- *Water Resources of the Arroyo Grande – Nipomo Mesa Area in 2002:* California Department of Water Resources (DWR), October 25, 2002 (hereinafter referred to as the 2002 DWR report). The 2002 DWR report took ten years to complete, reviewed hundreds of previously published technical reports (including the 1996a, 1997, 1998 Cleath reports), and is based on continual revision and input from hydrologists, geologists, engineers, and planning experts. The 2002 DWR report consolidates information concerning groundwater resources within the study area.
- *Water Supply Assessment for Laetitia Vineyard and Winery,* Cleath and Associates, Arroyo Grande, California, January 27, 2004
- *Revised Water Demand and Source Capacity for Laetitia Agricultural Cluster,* Cleath and Associates, San Luis Obispo County, October 6, 2005
- *Additional Water Resources Development, Laetitia Vineyard and Winery,* Cleath and Associates, Arroyo Grande, California, October 6, 2005. The Cleath reports are applicant-supplied water resource documents that provide information related to existing water supply and demands, the hydrogeology of the project site, and estimates of project-related water demands.
- *Hydrology & Hydraulic Report,* RRM Design Group, January 5, 2004. The RRM hydrology report includes an analysis of existing and future storm water runoff.

1. Existing Conditions

a. Water Supply and Infrastructure

The project site is located within the Oceano Hydrologic Sub-area (HSA), which is outside of the Santa Maria Groundwater Basin, as defined by the Santa Clara Superior Court (Case CV 770214). The Tri-Cities Mesa Arroyo Grande Plain and Nipomo Mesa HSA are located to the west and southwest of the project site (refer to Figure V.B.-1). The Oceano HSA has a watershed area of 97,830 acres. All existing and future water demands at the project site are served or would be served by on-site groundwater resources, including wells in the upper Los Berros Canyon. Existing vineyard/winery/ranch facilities would maintain the existing use of wells on the western portion of the property. The proposed project related water demand would

be supplied from groundwater resources that are independent of existing residential or agricultural operations.

1) Groundwater Rights

The amount of groundwater that can be used by an overlying groundwater rights holder is not defined by law. An overlying property owner is entitled to all of the water the owner can pump and beneficially use on his property until it adversely affects another neighboring property owner's ability to adequately produce water for use on their property. Groundwater can be produced by the project applicant for use on their properties on the basis of this right (Summit Station FEIR; 2004). This being the case, the proposed project can establish production wells and withdraw groundwater for domestic use so long as it does not have a significant affect on neighboring domestic wells of private property owners.

2) Geologic Conditions

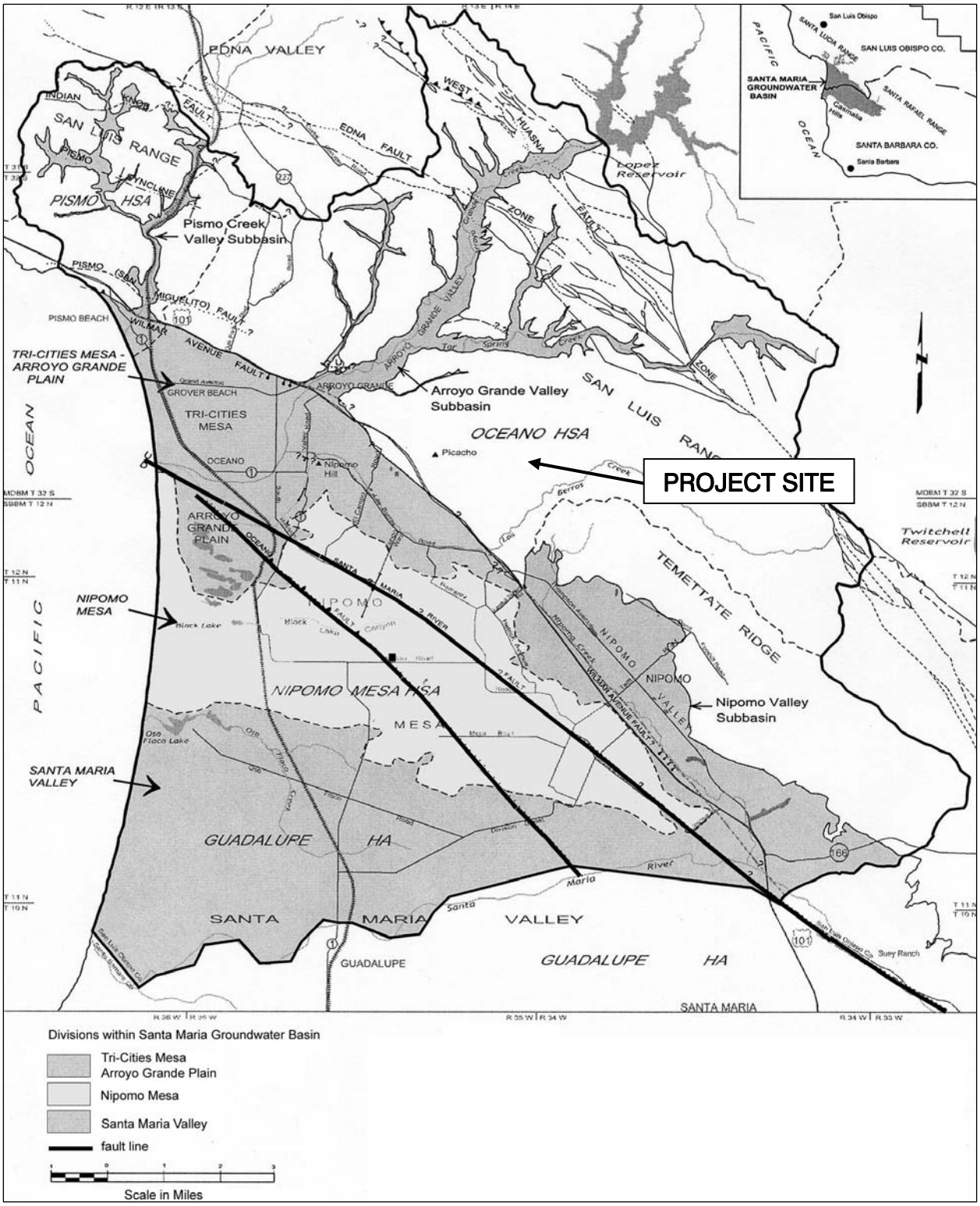
Information contained in this section is based on various bore logs and drilling records (Enloe Well Drilling) for the project site, as reported by Cleath and Associates (2005). The water bearing zones for the four new wells that would serve the proposed residential portion of the project are located in the northeast portion of the project site within fractured beds of siliceous shales and chert of the middle to upper Miocene age Monterey Formation, and within fractures of resistant tuff of the Lower Miocene age Obispo Formation (refer to Figure V.B.-1). The more productive wells of the area are generally found within the more resistant beds. Each well taps into a separate aquifer.

Project Wells 2004-1 and 2004-2 yield groundwater from resistant shale and chert beds of the Monterey Formation. These two wells are located relatively close together (approximately 450 feet), but appear to bear groundwater from separate aquifer zones due to sub-surface geology. The ground surface elevation of Well 2004-1 is approximately 600 feet above sea level and penetrates the top of the upper fractured aquifer shale zone at an elevation of approximately 380 feet. Well 2004-2 is located at a ground surface of approximately 520 feet, and penetrates the top of a lower aquifer zone at an elevation of approximately 320 feet. A bed of mudstone approximately 140 feet thick separates the two zones.

Wells 2004-3 and 2005-1 are located within separate resistant tuff aquifer zones of the Obispo Formation. Well 2004-3 is located at a ground surface elevation of approximately 620 feet, and penetrates the upper aquifer zone at an elevation of approximately 470 feet. Well 2005-1 is located at an elevation of approximately 400 feet and penetrates the top of the aquifer zone at an elevation of approximately 175 feet.

3) Water Supply Conditions

Information contained in this section is based on the resource capacity studies prepared by Cleath and Associates (2005) for the proposed project. The existing vineyard, winery, and ranch facilities will continue the historic use of groundwater resources on the west side of the property. Existing water use of these facilities is approximately 168 acre-feet per year (AFY), of which 161 AFY is used for vineyard/orchard irrigation, and seven AFY is used by the winery and existing residential uses.



Source: California Department of Water Resources, 2002

NORTH
Scale as Shown

Regional Groundwater Basins
FIGURE V.B.-1

4) Domestic Water Supply Infrastructure

The applicant proposes that additional water resources for the project would be obtained from private wells within the project site. Four new wells that are slated for domestic purposes have been drilled in the northeast portion of the project site. Wells 2004-1 and 2004-2 are located approximately 400 feet north and 250 feet west, respectively, of an existing residence on the far northeast parcel. Well 2004-3 is located approximately 2,200 feet north of F&T #1, and Well 2005-1 is located near Los Berros Creek Road in Adobe Canyon (refer to Figure V.B.-2).

The new wells were drilled during the period of November 2004 to July 2005. The wells were cased with polyvinyl chloride (PVC) immediately following final boring. County of San Luis Obispo Department of Environmental Health staff witnessed the placing of the sanitary seal for each well.

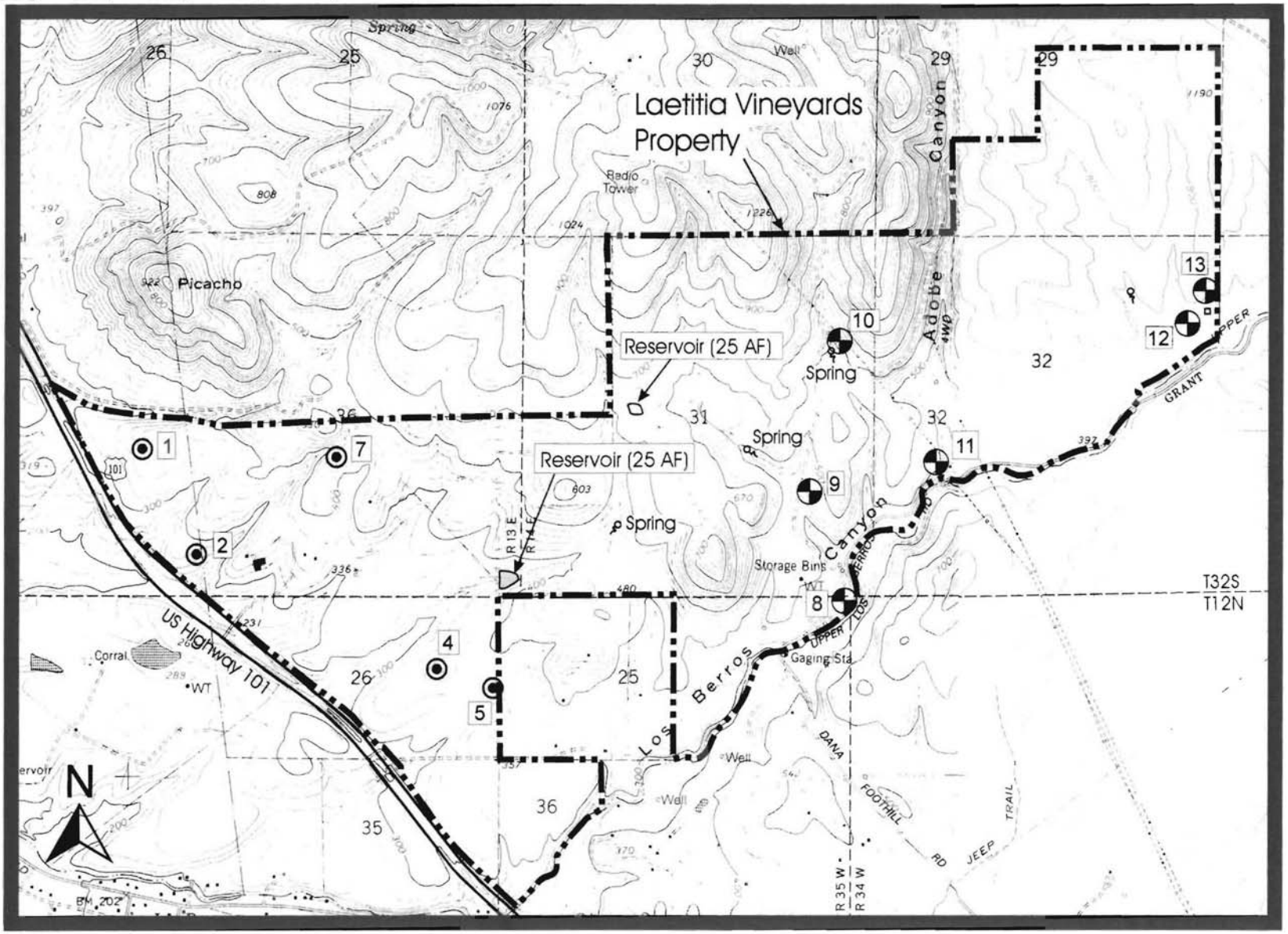
Although a storage tank(s) and water supply lines do not currently exist for the proposed project, the applicant intends to develop a looped water-main distribution system for all new facilities served by the four new wells. All water system facilities would be designed and installed in accordance with the County's Standards for Water Systems. In addition, the applicant intends to develop a mutual water company as approved by the County of San Luis Obispo Environmental Health Division. Operation of the water system will be monitored in accordance with all applicable standards and regulations using a certified operator to oversee well pumping, storage, distribution, maintenance of the system, and overall water quality in accordance with all State and County requirements. A 268,500-gallon water storage tank is proposed to provide fire suppression requirements and peak daily water demand usage requirements.

5) Project Water Supply and Quality

(a) Well Pumping Tests

Based on the water studies prepared by Cleath and Associates (2005), pump testing, site geology, water level data, groundwater storage and aquifer recharge were evaluated to determine yield calculations. After the wells were drilled, pumping tests were performed to determine yield and capacity for each well. A temporary test pump was installed and a short-term stepped discharge test was performed at each well to determine the optimum discharge rate for the subsequent constant discharge pump tests.

The recommended pumping capacities were sized to maximize production over a three-day demand period to provide for flexibility in meeting peak project demands. The three-day pump capacities for Wells 2004-1 (well 13), 2004-2 (well 12), 2004-3 (well 10), and 2005-1 (well 11) range from 75 to 200 gpm, totaling 505 gpm. The 30-day source capacities of the four new wells in the project water system range from 75 to 100 gpm, totaling 305 gpm. The well with the highest source capacity is Well 2004-3 (200 gpm three-day and 100 gpm 30-day capacities, respectively). With this highest producing well inoperative, the water system would still provide an estimated 305 gpm maximum day capacity, and 225 gpm of maximum month capacity, which exceed both the minimum State and County requirements of 140 gpm maximum daily demand, and in this case, 124 gpm maximum month capacity (Cleath and Associates; 2005).



Source: Cleath and Associates

Base map: U.S.G.S. 7.5 minute topographic, Oceano and Nipomo Quadrangles, CA

Explanation

Project Well

Vineyard Well

Not to Scale

Well Location Map
FIGURE V.B.-2

Static water levels were measured prior to initiation of the well pump tests, and following well recovery and heavy winter rains. The inert elevation of Los Berros Creek is located at an elevation 70 and 60 feet lower than the water levels measured in Wells 2004-1 and 2004-2, respectively. The water study notes that a groundwater flow gradient exists in the direction of the creek, and the creek receives flow from fractured shale/chert reservoirs that underlie the project site. Drought conditions (less than 10.7 inches of annual rainfall) and excessive well pumping could reverse this flow gradient so that groundwater from Los Berros Creek flows toward the pumping wells. Depletion of groundwater storage would occur when there is no surface flow in the creek (Cleath and Associates; 2005). Cleath and Associates notes that no project wells produce water from alluvial aquifers underlying Los Berros Creek (Cleath and Associates, 2008).

The static water level in Well 2004-3 is 85 feet above the inert elevation of Adobe Canyon and 155 feet above the inert elevation of Los Berros Creek. Springs producing a flow of up to two gallons per minute were observed in a drainage adjacent to this well. The static water level in Well 2005-1 was measured at an elevation approximately ten to twenty feet below the inert elevation of the confluence of Adobe Canyon and Los Berros Creek, suggesting that water may be flowing into the aquifer from the creek.

Well 2004-1 (Well 13)

A 41-hour constant discharge test was performed at 200 gpm from December 19 to 21, 2004. Total drawdown measured approximately 103 feet at the conclusion of the test. Following the test, well monitoring determined that water levels at well 2004-1 recovered to within 39 feet of the original static water level within seven hours following pump shut-down. This would indicate a slow recovery time for this well following constant discharge pumping.

Due to the close proximity of the two wells, water levels were monitored at well 2004-2 during the constant discharge test for well 2004-1 to determine if any drawdown interference were occurring between the two wells. Water levels were not lowered at well 2004-2 during the test, indicating that the two wells draw from substantially separated aquifer zones.

Well 2004-2 (Well 12)

A 71-hour constant discharge test was performed at 100 gpm from December 27 to 30, 2004. Total drawdown measured approximately 61 feet at the conclusion of the test. Following the test, well monitoring determined that water levels at well 2004-2 recovered to within 45.6 feet of the original static water level within approximately four hours following pump shut-down. This would indicate a slow recovery time for this well following constant discharge pumping.

Well 2004-3 (Well 10)

A 72-hour various rate discharge test was performed from February 1 to 4, 2005. Total drawdown measured approximately 52 feet at the conclusion of the test. The water level at the conclusion of the test was 144 feet depth, approximately 6 feet above the top of the well screen. Following the test, well monitoring determined that water levels at well 2004-3 recovered to within 22 feet of the original static water level approximately nine days following pump shut-

down. This would indicate a slow recovery time for this well following constant discharge pumping.

Well 2005-1 (Well 11)

A 72-hour constant discharge test was performed at 190 gpm from July 26 to 29, 2005. Total drawdown measured approximately 37 feet at the conclusion of the test. Following the test, well monitoring determined that water levels at well 2005-1 recovered to within 14 feet of the original static water level within approximately one day following pump shutdown.

(b) Hydro-geological Setting

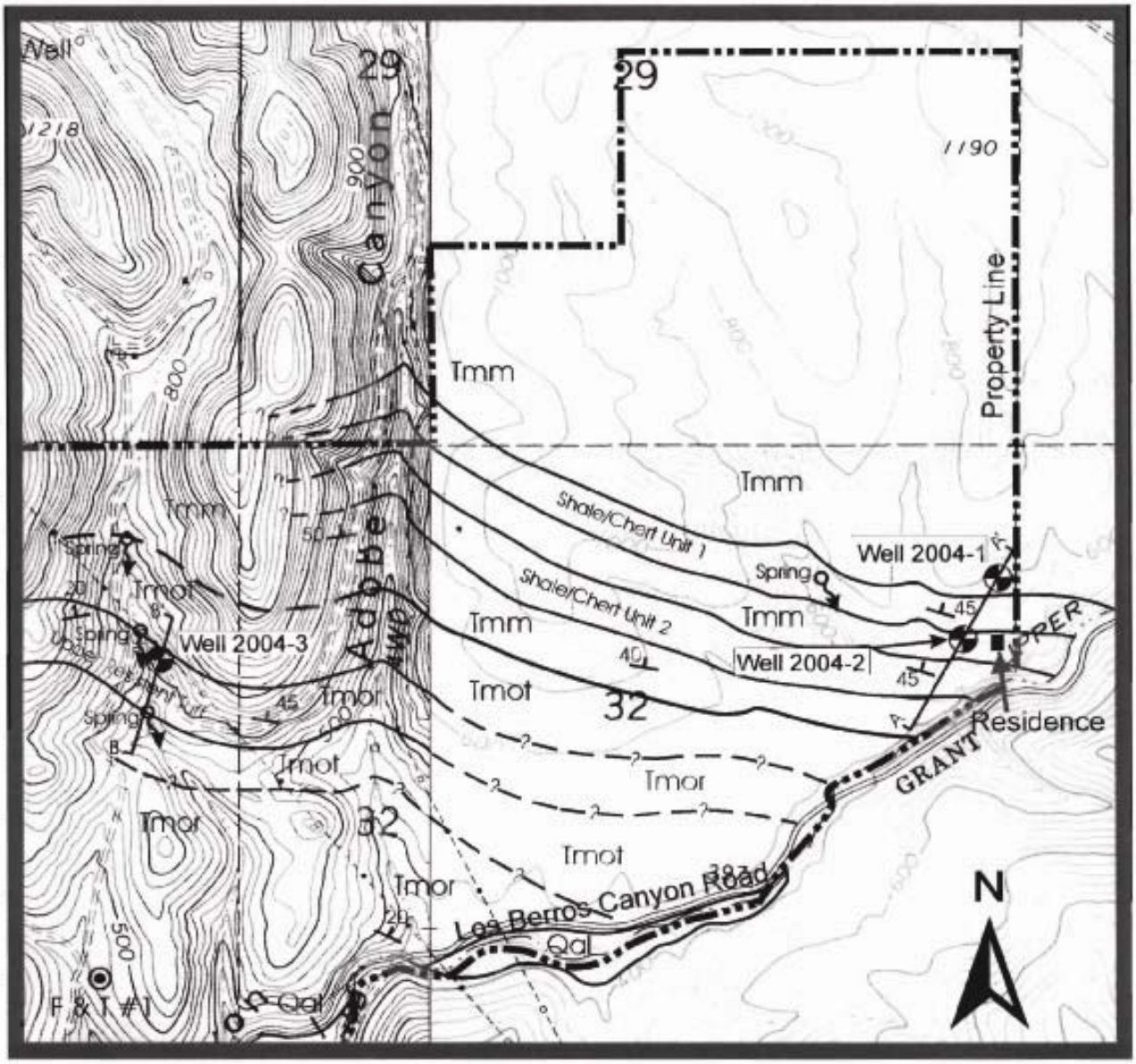
Wells 2004-1 and 2004-2 tap into Monterey Formation siliceous shale layers that outcrop along a west to northwest trend across the valley and beneath Los Berros Creek (refer to Figure V.B.-3). As water levels fluctuate over the course of time within fractured rock aquifers tapped by these wells, some recharge can be expected to occur into these zones from the Los Berros Creek valley alluvium. The alluvium would be, in part, recharged from Los Berros Creek and in part from other sources that recharge the alluvium (Cleath and Associates, 2008).

Well 2004-3 taps into a fractured volcanic rock in the Obispo Formation that outcrops along an east to west trend, bordered by Adobe Canyon to the east and a groundwater divide along the ridge to the west (refer to Figure V.B.-3). The resistant tuff bed that yields water to this well appears to contribute spring water to the flow of Adobe Canyon Creek, a tributary to Los Berros Creek. Well 2005-1 taps into fractured resistant tuff within the Obispo Formation; the aquifer zone extends north and south of Los Berros Creek, for a length of 3,500 feet. These tuff beds also trend beneath the Los Berros Creek alluvium and can receive recharge from the alluvium.

During pump testing conducted by Cleath and Associates, no evidence of stream seepage (as a recharge boundary) was observed, indicating that operation of the wells would not have a direct effect on Los Berros Creek. Wells 2004-1, 2004-2, and 2005-1 likely have an indirect connection to Los Berros Creek through the alluvial deposits. Operation of well 2004-3 may reduce flow in Adobe Canyon Creek. Los Berros Creek flows into the Tri-Cities sub-basin; however, this sub-basin does not have a hydraulic connection to the project-site aquifers (Cleath and Associates, 2008).

(c) Aquifer Storage and Annual Yield

To calculate available storage for each aquifer, the depth of the aquifer is assumed to coincide with the base of the well screen interval. The upper limits of groundwater storage coincide with static water levels for each distinct aquifer. The total available volume for each aquifer is then the available depth of storage multiplied by the estimated area of each aquifer (refer to Table V.B.-1). The available storage volume is not the same as the aquifer annual yield, because annual yield depends on other factors such as water usage, precipitation, drought conditions, and other methods of recharge to the aquifer. Groundwater recharge at the project wells occurs from stream flow in Los Berros Creek, Adobe Canyon, the spring-fed canyon west of wells 2004-1 and 2004-2, and by percolation of precipitation.



Source: Cleath and Associates

Base Map: USGS Topo maps, Oceano and Nipomo Quadrangles
Base Map Scale: 1 inch = 1,000 feet

Township 32 South, Range 14 East
Not to Scale

Explanation

⊕	New well
Qal	Alluvial deposits
Tmm	Montery Formation (shale, chert, mudstone)
Tmot	Obispo Formation (tuff)
Tmor	Obispo Formation (resistant tuff)
——?	Geologic contact, dashed and quified where uncertain
B ——— B'	Geologic cross section location

Well Aquifer Zones
FIGURE V.B.-3

Prior to 1981, fractured tuff aquifers functioned as a source of flow maintaining the base flow in Los Berros Creek during the dry season, and flow was perennial. Increased agricultural pumping in 1981 to the present appears to have affected historical flows within the creek at the gage location by lowering water levels in the underlying alluvial deposits. Stream gage data taken between 1981 and 2001 indicates that flow is present in Los Berros Creek an average of 145 days per year.

Recharge calculations were performed using precipitation rates for the project site using an average of the five worst-case drought periods that occurred from 1921 to 1993. This analysis provides a conservative estimate of expected recharge that could be expected for the project site. An average precipitation value of 10.7 inches for the two-year droughts was used to calculate estimated recharge. During drought conditions, flow within Los Berros Creek would be reduced to 40 days per year.

Annual yield is based on the volume of water that can be pumped from each aquifer during drought conditions without depleting the aquifer storage. The annual sustainable yield is then the volume of water in storage equalized over a three-year hypothetical drought period plus the amount of annual recharge occurring during the drought periods. Use of a three-year drought period for the available storage calculation and a two-year drought period for the recharge calculation is a conservative measure that takes into account the potential delay between recharge events and groundwater storage recovery. An operational drop in static water level of 20 to 30 feet was assumed in the well capacity calculations to offset the slow recovery rates. The combined annual yield of the four new wells is estimated to be approximately 197 acre-feet per year (AFY).

TABLE V.B.-1
Aquifer Storage and Yield

Well Number	Storage (acre-feet)	Total Recharge During 2-year Drought Condition (AFY)	Estimated Annual Yield (AFY)
2004-1	110	26	63
2004-2	140	11	58
2004-3	70	11	34
2005-1	55	24	42
		Total	197

(d) Groundwater Quality

Analytical water quality tests were also performed to determine suitability for domestic uses. Water quality in each of the four new wells was determined suitable for domestic uses (refer to Table V.B.-2). There were no concentrations of analytes exceeding the maximum contaminant level (MCL) for either the primary drinking water standards or the upper limit MCLs for secondary drinking water standards established by the California Department of Health Services.

TABLE V.B.-2
Project Well Information

	Well Number			
	2004-1	2004-2	2004-3	2005-1
Flow Rate (gpm)	100	75	200	130
Casing	8-inch PVC	8-inch PVC	10-inch PVC	8-inch PVC
Ground Elevation	600	520	620	410
Sanitary Seal Depth	50	60	100	50
Total Depth	560	510	330	305
TDS (MCL=1000)	550	580	860	650
Hardness	450	440	340	470
Iron (MCL=0.3)	0.1	0.1	0.2	0.1
Manganese (MCL=0.05)	0.03	<0.02	<0.02	<0.02
Sulfate (MCL=500)	62	66	350	140
Sulfide	<0.1	1.1	<0.1	<0.1
Chloride (MCL=500)	39	39	52	53

Water quality results in milligrams per liter
MCL= Maximum Contaminant Level
gpm = gallons per minute
AFY = acre-feet per year
depths in feet

b. Drainage and Surface Water Quality

The issue of surface water quality is important because of the habitat value of Los Berros Creek and its tributaries, including habitat for several endangered or threatened plant and animal species. Surface water entering water courses from undeveloped areas usually travels over vegetative cover and there is little erosion or production of sediment. Developed areas typically contain pollutants on the ground surface that are harmful to water quality. These include heavy metals, hydrocarbons, detergents, fertilizers, and pesticides that originate from vehicles, agricultural equipment, commercial, and residential land use activities. For the most part, these pollutants are associated with sediments that collect on roadways and are flushed into the creek system either in dry weather flows during construction wash-down or by rainfall runoff. Construction activities also create erosion and cause sediment to be transported off-site by

surface water runoff. Therefore, water quality depends mainly on the hydrologic characteristics of the drainage basin, the makeup of the soils in the watershed, and sources of pollution in the watershed.

The project site consists of nineteen sub-watersheds that drain into Los Berros Creek and its tributaries. Soil conditions and topography vary throughout the project site and several undeveloped and developed areas contain steep slopes or soils subject to erosion where containment of sediment on-site would require special construction and design considerations. Generally, due to their clayey nature, the onsite surface materials in their natural state are considered to have a low erosion potential. The potential for erosion would be significant, however, if site development activities result in concentration of drainage, or uncontrolled surface drainage, or if soils that are more prone to erosion are imported to the site during grading. Permeability is generally slow, and the rate of surface water runoff ranges from medium to rapid, primarily depending on slope (refer to Table V.A.-1).

2. Regulatory Setting

a. Federal Policies and Regulations

1) Safe Drinking Water Act of 1974

The Safe Drinking Water Act implemented by the Environmental Protection Agency is the primary federal regulation controlling drinking water quality. The Safe Drinking Water Act grants the EPA the authority to establish and enforce guidelines for the achievement of minimum national water quality standards for every public water supply system serving 25 people or more.

This act was originally implemented in 1974 with significant revisions in 1986. The Act originally set standards for 83 individual constituents, including pesticides, trihalomethanes, arsenic, selenium, radionuclides, nitrates, toxic metals, bacteria, viruses, and pathogens. The 1996 amendment to the Act made some significant changes, most of which resulted in more stringent application of control technology. The amended Act also adopted a more rigorous schedule for amending the Disinfectants/Disinfection By-Products Rule and the Enhanced Surface Water Treatment Rule, both of which took effect in 1998.

No federal permits relating to water utilities or infrastructure are anticipated for any potential development project resulting from the General Plan Amendment or the development project unless there were Army Corps of Engineers involvement or Endangered Species Act issues concerning the construction of new infrastructure such as pipelines, utility lines, etc; in sensitive habitat areas.

2) The Clean Water Act

The Clean Water Act (CWA) controls the discharge of toxic material into surface water bodies. Under this act, states are required to identify water segments impaired by pollutants and develop control strategy/management plans to reduce pollution and meet certain water quality standards.

3) Waters of the U.S: Sections 404 and 401 of the Clean Water Act of 1977.

Since it has been identified that construction of the proposed wastewater collection system would require crossing several tributaries to Los Berros Creek, federal regulations regarding impacts to "Waters of the U.S." would be addressed.

Regulatory protection for water resources throughout the United States is under the jurisdiction of the Army Corps of Engineers (ACOE). Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into waters of the United States without formal consent from the ACOE. Waters of the U.S. include marine waters, tidal areas, stream channels, and associated wetlands. Wetlands include freshwater marshes, vernal pools, freshwater seeps, and riparian areas.

Under Section 404, activities in Waters of the U.S. may be subject to either an individual permit or a general permit, or may be exempt from regulatory requirements. Some activities have been given blanket authorization under the provisions of a general permit through the Nationwide Permit system. Individual Permits require the applicant to prepare and submit an alternatives analysis of the project.

Section 401 of the Clean Water Act and its provisions ensure that federally permitted activities comply with the federal Clean Water Act and state water quality laws. Section 401 is implemented through a review process conducted by the Regional Water Quality Control Board (RWQCB), and is usually triggered by the 404 permitting process. Specifically, the RWQCB certifies via section 401 that the proposed project complies with applicable effluent limitations, water quality standards, and other conditions of California law. If the RWQCB denies certification, the lead federal agency must deny the federal permit application.

b. State Policies and Regulations

The establishment and enforcement of water quality standards for the discharge into and maintenance of water throughout California is managed by the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB). The SWRCB enforces the federal Clean Water Act on behalf of the EPA. Most of the quantitative objectives are based on the California Code of Regulations (CCR), Title 22 - State Drinking Water Standards. Other considerations include the University of California Agricultural Extension Guidelines for Agricultural Irrigation Use, the Porter-Cologne Water Quality Control Act, and the Water Quality Control Board's Non-degradation Policy. The County of San Luis Obispo lies entirely within Region 3 - Central Coast Regional Water Quality Control Board. The RWQCB is the primary State agency ensuring that the quality of potable water supplies is protected from harmful effects by man.

The California Department of Health Services (DHS) is responsible for overseeing the quality of water once it is in storage and distribution systems. DHS oversees the self-monitoring and reporting program implemented by all water purveyors, performs inspections, and assists with financing water system improvements for the purpose of providing safer and more reliable service.

State Health Department regulations, described in Title 22 of the California Code of Regulations, stipulate disinfection levels required for specific crops where disposal of treated effluent is by irrigation.

1) State Water Code

Section 10910 of the California Water Code (CWC) requires the County of San Luis Obispo to identify the agency or entity responsible for providing water service to the area and to request that the agency determine whether the project was included within the current Urban Water Management Plan maintained by that water agency. If no such plan exists, or if the proposed project was not considered, then the agency must prepare a water supply assessment for the project. The assessment shall include a discussion as to whether the public agency or entities total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project. In addition, the agency's existing and planned future uses, including agricultural and manufacturing uses need to be taken into account. There are other specifications regarding the water supply assessment in the Water Code and the County must prepare the assessment if it is unable to identify a water supply agency. The implementation of this requirement is triggered by the County's determination that the project is subject to CEQA and is completed separate from but simultaneously to the CEQA process.

Section 13260(a) of the CWC requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, that could affect the quality of the waters of the State, file a report of waste discharge (WDR). All WDR's must implement the applicable water quality control plan (Basin Plan) for the Region affected by the discharge. Therefore, WDR's require the project to comply with all applicable Basin Plan provisions, including any prohibitions and water quality objectives, governing the discharge. The siting, design, construction, operation, maintenance, and monitoring of all small domestic systems must comply with all of the applicable provisions of the RWQCB's Basin Plan. The project shall not discharge waste in excess of the maximum design and disposal capacity of the small domestic system. The discharger must comply with any more stringent standards in the Basin Plan. In the event of a conflict between the provisions of RWQCB Order NO. 97-10-DWQ and the Basin Plan, the more stringent provision prevails. Where treated wastewater is applied to land by sprinkler or spray methods, the discharger shall manage wastewater application to prevent it from commingling with storm water runoff, or such runoff shall be fully retained.

2) The Porter-Cologne Water Quality Control Act of 1987

The Porter-Cologne Water Quality Control Act provides the authority and method for the State of California to implement its water management program. The act establishes waste discharge requirements for both point and non-point source discharges, affecting surface water and groundwater.

3) Safe Drinking Water and Toxic Enforcement Act of 1986

The Safe Drinking Water and Toxic Enforcement Act prohibits the discharge or release of any significant amount of chemical known to cause cancer or reproductive toxicity into the drinking water supply, by any person in the course of doing business.

4) The Groundwater Management Act of 1992 (AB 3030)

The Groundwater Management Act was designed to provide local public agencies with increased management authority over groundwater resources in addition to existing groundwater management capabilities. A key element of this law is the development and implementation of groundwater management plans.

5) California Department of Fish and Game

The Department of Fish and Game (CDFG) is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. California law requires any person, agency, or public utility proposing a project that may impact a river, stream, or lake to notify the CDFG before beginning the project. If the CDFG determines that the project may adversely affect existing fish and wildlife resources, a Lake or Streambed Alteration Agreement is required. This Agreement lists the CDFG conditions of approval for the proposed project, and serves as an agreement between applicants and the CDFG.

c. Local Policies and Regulations

At the time of subdivision or building permit issuance, the County determines a project's water demand and the availability of water for allocation to the project. The County influences the use of water for residential and non-residential purposes by considering the availability of water in the approval of development projects and has measures in place to reduce long-term impacts to water supply. Long-term water supply is analyzed annually as part of the County Resource Management System (RMS).

The County of San Luis Obispo Division of Environmental Health is responsible under the provisions of Section 4.019.9 of the California Health and Safety Code for the regulation of water systems that fall under the state criteria of Public Water Systems. In 1991, the State assumed responsibility for regulation of these systems. However, budget problems have prevented the state from taking over as the actual service provider, and the State has contracted with County Health for continuation of these services. Environmental Health will continue to regulate systems with two to four connections under provisions of the County Code. Environmental Health also permits individual domestic wells.

Currently, all public water supply wells in the County are required by the local office of the Department of Health Services to be disinfected. They are charged with implementing the Groundwater Disinfection Rule that became effective in 2002.

The County Environmental Health Division regulates small water systems to assure that safe drinking water is provided to the public. Small water systems are defined as having between 15 to 199 service connections and regularly serving 25 or more individuals daily at least 60 days out of the year. The department also regulates small water systems that are defined as having

between five to 14 service connections and not regularly serving more than an average of 25 individuals daily for more than 60 days out of the year.

The County Environmental Health Division and the Central Coast RWQCB are the local agencies responsible for effluent treatment standards and siting of wastewater disposal fields. These agencies ensure that proposed projects conform to all applicable local standards. Since the proposed project now includes on-site wastewater treatment and disposal, requirements that would be imposed on this project potentially affecting water resources include:

- Depth to groundwater (minimum vertical separation of five feet from the bottom of the disposal field for soils having percolation rates slower than 30 minutes per inch. Greater separation distances are required for faster percolation rates).
- Setbacks (minimum setback of 100 feet between disposal area and any water supply well, spring, or water course).
- Surface and Subsurface Irrigation Water Recycling (subject to Title 22 of California Code of Regulations for water reuse criteria).

The following policies are contained in the Central Coast RWQCB Basin Plan:

- Groundwater recharge with high quality water shall be encouraged.
- In all groundwater basins known to have an adverse salt balance, total salt content of the discharge shall not exceed that which normally results from domestic use, and control of salinity shall be required by local ordinances, which effectively limit municipal and industrial contributions to the sewerage system.
- Wastewaters percolated into the groundwaters shall be of such quality at the point where they enter the ground so as to assure the continued usability of all groundwaters of the basin.

Chapter 52 of the County's Land Use Ordinance (Title 22 of the County Code) contains site development standards for the County, including drainage, grading, erosion, and sedimentation control. Sections that are applicable to drainage, grading, erosion, and sedimentation are outlined below.

Section 22.52.020 states that the County's standards for grading and excavation are to minimize hazards to life and property; protect against erosion and the sedimentation of water courses; and to protect the safety, use, and stability of public rights of way and drainage channels. Grading must follow the standards provided in the Uniform Building Code (section 3309) and the following standards:

- Areas of cut and fill are to be limited to the minimal amount necessary.
- Grading for a building site is prohibited on slopes of 30 percent or greater.
- Contours are to be blended with the natural terrain.
- Grading may not alter watercourses except as permitted through the Department of Fish and Game and various watercourse protection methods shall be followed.
- Areas where natural vegetation has been removed must be replanted by various approved methods.

Section 22.52.080 of the LUO states that standards for the control of drainage and drainage facilities are designed to minimize harmful effects of stormwater runoff and resulting inundation and erosion on proposed projects, and to protect neighboring and downstream properties from drainage problems resulting from new development. Erosion and sedimentation control to protect damaging effects on-site and on adjoining properties is discussed in Section 22.52.090 of the LUO. A sedimentation and erosion control plan would be required for future developments, and shall include temporary and final measures including:

- Slope surface stabilization including temporary mulching or other stabilization measures to protect exposed areas of high erosion potential during construction and interceptors and diversions at the top of slopes to redirect runoff;
- Erosion and sedimentation control devices such as absorbing structures or devices to reduce the velocity of runoff;
- Final erosion control measures including mechanical or vegetative measures.

3. Thresholds of Significance

a. CEQA Guidelines

CEQA Appendix G (Environmental Checklist) states that a significant water resource impact would occur if the project:

- Substantially depletes groundwater supplies or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

- Requires or results in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental issues; or,

- Did not have sufficient water supplies available to serve the project from existing entitlements and resources.

For purpose of the project specific-evaluation in this EIR, significant water supply and infrastructure impacts would occur if the demands placed on the area from this development exceeded the available water supply, there was a disruption in existing agricultural operations due to the newly created residential demand, or if the well capacity of adjoining parcels was diminished so as to create unsustainable yields or disruption of existing localized water supply. The conclusions regarding significance are influenced more by the adequacy of current and future supplies rather than by the magnitude of potential increased demands.

Criteria for evaluating the significance of hydrology and water quality impacts included in the CEQA Guidelines (14 CCR Appendix G) are directed toward identifying substantial changes in drainage patterns, drainage volumes, or violations of water quality standards. For the proposed project, the best interpretation of these guidelines relates to the potential to direct development in

areas with existing drainage concerns and incrementally create significant cumulative impacts to an area such as runoff exceeding downstream capacity or an increase of off-site sedimentation resulting in significant siltation of surface water areas.

Impacts would be considered significant if development would result in any of the following:

- Potentially degrade surface or groundwater quality below standards established by the Regional Water Quality Control Board;
- Substantially interfere with groundwater recharge;
- Substantially alter the existing drainage pattern of the area such that substantial erosion or siltation occurs;
- Substantially alter the existing drainage pattern or substantially increase the rate or amount of surface runoff in a manner which results in flooding;
- Create or contribute runoff which would exceed the capacity of stormwater drainage systems;
- Substantially add additional sources of polluted runoff to a water body; or,
- Place housing within a 100-year floodplain.

b. County of San Luis Obispo Initial Study Checklist

The County of San Luis Obispo Initial Study Checklist provides the following thresholds for determining significance with respect to water quantity and quality. Water quantity and quality impacts would be considered significant if the proposed project would:

- Violate any water quality standards;
- Discharge into surface waters or otherwise alter surface water quality (e.g., turbidity, temperature, dissolved oxygen, etc.);
- Change the quality of groundwater (e.g., saltwater intrusion, nitrogen-loading, etc.);
- Change the quantity or movement of available surface or ground water; and,
- Adversely affect community water service provider.

4. Impact Assessment and Methodology

a. Water Supply and Infrastructure

The impacts of any proposed development project are evaluated based on an assessment of project-related impacts on existing water supply, utilities, and service systems, as well as an assessment of site activities based on the intended land uses. The impacts of the proposed project were evaluated based on proposed water use requirements, which were derived from the maximum proposed density and intended use of the parcels, as identified in the project description. Water supply impacts were determined through the use of water duty factors derived from several sources including: information contained in the Water Resource Study prepared by Cleath and Associates (2005) for the proposed project; Woodlands Specific Plan EIR (1998); and, the County of San Luis Obispo Water Master Plan (CWMP 1998). The 1998 Woodlands water demands were also prepared by Cleath & Associates who derived those water demand estimates based on numerous studies and communication with various sized water purveyors to obtain local water use information. Water usage rates included in the Cleath report

prepared for the proposed project were obtained from the City of Arroyo Grande and the City of San Luis Obispo in addition to other sources. Copies of the Cleath reports (2004; 2005) submitted by the applicant for the proposed project are included in Appendix C.

The County typically utilizes a figure of 1.26 AFY of water consumption for primary residences as a guideline to estimate water demand from residential uses on one acre lots. The water duty factors established by the County are representative of the types of demand that would be expected from the proposed project (i.e., one-acre, nicely landscaped estate parcels). The Woodlands EIR also establishes useful information pertaining to water duty factors for various sized residential lots. The representative water duty factor used by Cleath in the Woodlands EIR is 1.50 AFY for lots ranging in size from 0.3-1.0 acre. The Water Resource Study prepared by Cleath for this project uses a water duty factor of 1.12 AFY for each lot. The total water demand for both indoor and outdoor uses is estimated to be 1.26 AFY per lot (Cleath & Associates, 2008).

Using a combination of the residential demand factors discussed above, water demand impacts have been analyzed using a reasonable "worst-case" approach for water supply resources. All three of the usage rates discussed above are presented below and provide a reasonable range of estimated water demand for the proposed project.

b. Surface Water Quality and Quantity

An impact would occur if proposed use of groundwater decreases surface flows in Upper Los Berros Creek and its tributaries. An impact would occur if the proposed project results in development in areas with existing drainage concerns without careful consideration of the potential impact of runoff exceeding downstream capacity in the area. Potential impacts would be assessed based on site topography, the proposed layout and elevations of potential project components, the erodibility of soils, and the regulatory framework applicable to the project.

With respect to water quality, determining significance is more indirect because there are no specific discharge requirements or standards for storm water runoff that can be compared at this time. For the purposes of this EIR, the determination of significance is based on a review of typical construction site pollutants usually found on job sites that might contribute to disproportionate amounts of polluting materials in runoff. The SWRCB has not attempted to identify numerical limits to be achieved in runoff from construction sites. Instead, the General Order contains narrative restrictions referencing best available technology economically achievable and the best conventional pollution control technology. In addition, land disposal of treated wastewater is regulated by the Regional Water Quality Control Board (refer to Section V.L., Wastewater, for additional discussion and analysis). Thus, the significance of water quality impacts will be judged in terms of conformance with these requirements and regulations.

5. Project-specific Impacts and Mitigation Measures

a. Project-wide

1) Water Supply

Water demand for the proposed project consists of four main components: residential, equestrian center, wastewater treatment facility, and the ranch headquarters/homeowners association facility. The residential portion of the project consists of 102 lots (no secondary units allowed), with a total water demand of approximately 114 AFY. Total water demand for the equestrian center is estimated to be approximately 4.4 AFY. The equestrian center estimate includes demands for public restrooms, facility landscaping, two caretaker units, office, and a wash rack for horses. The ranch headquarters and homeowners association facility would consist of an office, conference room, lounge, kitchen, and a swimming pool with hot tub. Demand for this facility is approximately one AFY. Demand for operation of the wastewater treatment facility is estimated to be approximately one AFY.

(a) Long-term Water Demand

An evaluation of the effects of the proposed project was prepared in order to document the anticipated water demand that would result from residential and the various related facilities included in the proposed project. Table V.B.-3 provides a range of water demand estimates for the proposed project using water duty factors from the Woodlands EIR, County Water Master Plan, and technical reports prepared for the proposed project. When determining impacts from a proposed project, CEQA allows for use of a reasonable "worst-case" analysis approach when determining water usage. Based on the reasonable worst-case water duty factors (i.e., Woodlands), estimated water demand from the residential component of the proposed project would be approximately 153 AFY, with an additional 6.4 AFY for other facilities, which represents approximately 80 percent of the 197 AFY estimated annual yield for the combined water system. However, these figures do not include any type of "reserve." It is reasonable to include a ten percent "water reserve" for unanticipated water needs, drought response, and flexibility in water planning. Therefore, a ten percent "water reserve" of approximately 16 AFY would be required. Worst-case total project demand would then be approximately 175 AFY for uses currently including in the use permit application. Operation of the 75-unit dude ranch, which is not currently included in the current project application, would require approximately 13 afy (Cleath & Associates, 2008).

CEQA states that a significant water resource impact would occur if the project: 1) substantially depletes groundwater supplies or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the groundwater table level; or, 2) if the project did not have sufficient water supplies available to serve the project from existing entitlements and resources.

TABLE V.B.-3
Estimated Project Water Demand

Project Component	Unit Type	Number of Units	Water Duty Factor (AFY/unit)			Proposed Project Estimated Demand (AFY)	CWMP Estimated Demand (AFY)	Woodlands Estimated Demand (AFY)
			Proposed Project[1]	County WMP[2]	Woodlands[3]			
Primary Dwelling Units	Dwelling Unit	102	1.12	1.44	1.50	114.24	146.88	153.0
Equestrian & HQ/HOA[1], Wastewater Treatment Facility						6.4	6.4	6.4
10 Percent Water Reserve						12.0	15.3	15.9
Total Project Demand						132.6	168.6	175.3

1) Revised Water Demand and Source Capacity for Laetitia Agricultural Cluster, October 6, 2005.
2) Water duty factor established in the 1998 County of San Luis Obispo Water Master Plan.
3) Woodlands 1998 FEIR.

Based on the above analysis of groundwater supply conditions (i.e., CEQA thresholds of significance, which state there is a significant impact if a proposed project does not have sufficient water supplies available to serve the project from existing entitlements and resources) the water consumption resulting from project-related demands would be sufficiently offset by newly developed groundwater resources and not considered a significant water resource impact. However, the worst-case demand estimate is close to the three-year drought yield estimate (i.e., 175.3 afy versus 197 afy). If drought conditions persisted longer than the three-year drought scenario, available resource capacity could be in question.

According to the *Management and Buffers Plan*, use of groundwater for irrigation may be limited during drought conditions. In the event of a water supply shortage, mandatory water conservation measures (listed in the applicant's proposed priority for implementation) would include: 1) increases in residential water rates and/or penalties to encourage water reductions; 2) a reduction or moratorium on irrigation for residential landscaping; 3) a reduction or moratorium on irrigation for common area and homeowners association facility landscaping (unless served by reclaimed water); 5) a prohibition on water use for swimming pools and spas; 6) mandatory water allocations for residential users; 7) potential purchase of water from an off-site party; and, 8) reduction or periodic cessation of agricultural irrigation. Implementation of the proposed policy to reduce agricultural irrigation at the benefit of the proposed residential and facility development may significantly affect on-site agricultural production.

Water conservation measures proposed by the applicant, which are intended to be incorporated into project design, include: the use of low-flush and low-flow appliances; insulation and circulation of hot water systems; minimized use of water for outdoor cleaning; use of drought-tolerant landscape plant species; a limit of 0.7 acre of onsite landscaping per residential lot; a limit of 7,000 square feet of lawn turf landscaping per residential lot; use of automatic irrigation systems; use of water-conserving pumps and filters for swimming pools and spas; and, regular

maintenance of all appliances, systems, and facilities. Revisions to the proposed water conservation measures, consistent with county guidelines and ordinance regulations for the Nipomo Mesa, are recommended to reduce potential impacts to water supply during prolonged drought conditions.

WAT Impact 1 **Development of the proposed project would potentially result in a direct impact to long-term water supply resources during drought conditions extending beyond three years.**

WAT/mm-1 At the time of application for subdivision improvement plans, the applicant shall prepare a Water Master Plan for approval by the County Planning and Building Department and Health Department. The plan shall include provisions that operations of the domestic water system would be monitored in accordance with all applicable standards and regulations using a certified operator(s) to oversee well pumping, storage, distribution, maintenance of the system, and overall water quality in accordance with all State and County requirements.

The plan shall be developed by a County-qualified consultant with experience specific to interior and exterior water usage for each type of approved use (e.g., the residential landscape watering section would be prepared by a landscape architect or contractor familiar with the area's vegetation to provide guidelines for residents covering water conservation techniques, and lists of ornamental drought-tolerant plants that would do well in the native soils, etc.). The program shall address all consumer-controlled water uses (e.g., landscaping, washing, showers, etc.). Once the program is developed, the plan shall also specify how this information will be disseminated to all future home builders and residents. The plan shall be administered by the mutual water company.

The plan shall show how the initial landscaping will have low-water requirements. As applicable, at a minimum the following shall be used: (1) all common area and residential irrigation shall employ low water use techniques (e.g., soil moisture sensors, drip irrigation); (2) residential landscaping shall be limited to 1,500 square feet (maximum), with turf area limited to 20 percent of the site’s total irrigated landscape area, and with remaining landscaping being drought-tolerant and having low water requirements (e.g., use of native vegetation, etc.); (3) all common area landscaping shall use no turf or other water intensive groundcover and will use ornamental native plants where feasible.

The Master Plan shall also include a Drought Water Management Program, which shall provide guidelines on how all land uses shall be managed during “severe” drought (drought exceeding three years), including landscaping. These measures would go into effect during

periods of "severe" drought. This plan shall include, but is not necessarily limited to:

a. The definition of a "severe" drought year (as defined by National Oceanic and Atmospheric Administration's Palmer Drought Severity method or other similarly recognized methodology);
b. Identification of general measures available to reduce indoor water usage for future development;
c. Identification of specific measures to be applied for landscape watering;
d. Determination of appropriate early triggers to determine when "severe" drought conditions exist and process for initiating additional water conservation measures for tract and future development.
e. Proposed drought-management policies shall not include a "reduction or periodic cessation of agricultural irrigation".

Once it is determined that a "severe" drought condition exists, restricted (drought) water usage measures shall remain in effect until it is shown satisfactorily to the County that the "severe" drought condition no longer exists.

WAT/mm-2 At the time of application for subdivision improvement plans, the applicant shall submit revised plans showing the use of tertiary treated effluent to provide irrigation for common area landscaping in a manner consistent with the Basin Plan.

WAT/mm-3 At the time of application for subdivision improvement plans (for common areas) or prior to permit issuance (for individual lots), the following measures shall be shown on applicable plans for landscaped and turf areas:

a. To maximize drought-tolerance and minimize water usage, warm season grasses (excludes bermuda grass) such as buffalo grass, shall be used;
b. A computerized irrigation controller shall be installed that can estimate cumulative evapo-transpiration losses to establish the most efficient and effective watering regimes.
c. To minimize establishment of shallow roots, the following shall be avoided on turf areas, and provided in all applicable documents (e.g., educational brochure, CC&Rs, landscape plans): close mowing, overwatering, excessive fertilization, soil compaction and accumulation of thatch, and;
d. Watering times shall be programmed for longer and less frequently rather than for short periods and more frequently.

WAT/mm-4 Prior to issuance of building permits for development on the proposed parcels, proposed construction plans must include indoor water

conservation measures including: low water-use toilets, showerheads, and faucets; automatic shut-off devices for bathroom and kitchen faucets or installation of high efficiency toilets; and point-of-use supplemental water heater systems or circulating hot water systems in bathrooms and kitchen.

WAT/mm-5 Prior to final inspection of construction permits, for structures where the pipe from the hot water heater to any faucet is greater than 20 feet in length, apply one or more of the following: 1) install a hot water pipe circulating system for entire structure; 2) install "point-of-use" water heater "boosters" near all hot water faucets (that are greater than 20 linear pipe feet from water heater), or 3) use the narrowest pipe possible (e.g., from 1" to ½" diameter). Prior to permit issuance, the measure(s) to be used shall be shown on all applicable plumbing plans.

WAT/mm-6 Prior to issuance of construction permits, the applicant shall submit landscape plans for the proposed parcels that include the following outdoor conservation measures: limited irrigated landscape area of 1,500 square feet, low water-use plant materials, turf area limited to 20 percent of the site's total irrigated landscaped area, soil moisture sensors, and drip irrigation systems.

WAT/mm-7 Prior to issuance of construction permits, the applicant shall pay a supplemental water development fee for each residential unit as required by County Ordinance.

Residual Impact With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

(b) Water Infrastructure and Management

Due to the size of the proposed project, an on-site water company that manages well pumping rates (due to the slow recovery rates of the wells), water quality health standards, maintenance of the system, and other tasks associated with domestic water treatment and delivery is proposed. The proposed project intends to do so in accord with guidelines set forth by the County of San Luis Obispo Environmental Health Division.

WAT Impact 2 **Development of the proposed project would potentially result in a direct, long-term impact to available domestic water supply if over-pumping or inefficient use of available domestic water resources occurs.**

WAT/mm-8 At the time of application for subdivision improvement plans, plans shall show that water meters shall be installed at all wells providing water to the proposed project (potable and non-potable uses), and for each approved use/building. All common landscaped areas and structures being provided water shall install a water meter. Monthly meter readings shall be taken at all meters and evaluated for possible water loss from pipes. Should a

greater than 15 percent loss of delivered water be shown (or loss amount determined appropriate by the County Environmental Health Division), the leaking pipe(s) within the development shall be identified and replaced within 60 days from when the leak is detected. The proposed mutual water company shall provide the Environmental Health Division with a yearly report that includes all of the monthly information, water loss summary, and any remedial work completed. No additional building permit or business license will be issued until any identified remedial work has been completed.

Residual Impact With implementation of the above measure, this impact would be considered *less than significant with mitigation, Class II*.

(c) Indirect Effects to Surface Water Quantity and Groundwater Basins

Based on the water study analysis prepared by Cleath and Associates, operation of the proposed wells may have an indirect effect on the Tri-Cities sub-basin of the Santa Maria Groundwater Basin, based on the net change in water volume that ultimately reaches the basin via Los Berros Creek and its alluvial underflow. Based on a the *Water Balance Study for the Northern Cities Area* (Todd Engineers, April 2007), the outflows from the Tri-Cities sub-basin were matched by inflows, with no significant change in groundwater storage and no evidence of sea water intrusion over a hydrologic base period (1986 through 2004), indicating the sub-basin is not in overdraft.

The proposed project wells would obtain water from fractured rock aquifers within the watershed of the sub-basin. A portion of water obtained from proposed wells would be consumed, and a portion would return to groundwater. The water demand for the project is anticipated to be 143 AFY, with a consumptive amount of 86.7 AFY. The amount of return flow to groundwater is estimated to be 56.3 AFY. The consumptive water use, approximately 0.1 cubic-foot per second (cfs), is the potential net change, or reduction, of water volume flowing from the upper Los Berros Canyon toward the Tri-Cities sub-basin of the Santa Maria Groundwater Basin. Cleath and Associates states that the actual indirect effect is likely to be less based on increased surface runoff and percolation of precipitation generated by hardscape development, the fact that there will be times when the basin is full and surplus water is flowing to the ocean, and dynamics of water pumping in the Los Berros Valley.

Stream flow in Los Berros Creek is measured at County Sensor 757, which is located at the North Dana Foothill Road/Upper Los Berros Road bridge crossing. Stream flow measurements were obtained by Cleath and Associates at five locations within Los Berros Creek and two locations within Adobe Canyon Creek on March 17, 2008. Approximately 13 inches of rainfall was measured in the Los Berros area, as of March 2008. 8.2 inches of precipitation was measured in the previous rain-season. Upstream of the proposed project wells, Los Berros Creek was flowing at a rate of 0.89 cfs. Immediately upstream of the Adobe Canyon Creek and Los Berros Creek confluence, the flow was 0.54 cfs. Adobe Canyon Creek flow was measured at 0.11 cfs at the confluence, and 0.12 cfs approximately 1,500 feet upstream. The composite flow was measured at 0.65 cfs immediately below the confluence. This flow seeped completely into the channel where the alluvial deposits widen approximately 600 feet downstream of the

confluence, and the channel remained dry through the next two gage sites, up to North Dana Foothill Road (Cleath and Associates, 2008).

Proposed project wells are located outside of alluvial deposits underlying Los Berros Creek. Operation of project wells is not anticipated to result in alluvial storage effects. The threshold of flow/no flow under project conditions would occur when stream flow under current conditions is below 0.1 cfs. The periods of time when flow was measured at County Sensor 757 as less than 0.1 cfs but more than no flow between 1972 through 1994 averaged 22 days per year (Bartelson Report, Morro Group, 1996). Based on the location of the gage (where stream flow percolates into alluvium), stream flow occurs when ground water levels do not allow total percolation of stream flow.

Stream flow measurements conducted by Cleath and Associates show that percolation of 0.65 cfs of Los Berros Creek flow occurs between the confluence with Adobe Creek and the first wide alluvial deposit, a distance of approximately 600 feet. This is equivalent to 0.1 cfs percolation into alluvial deposits every 90 feet of stream channel. If the proposed project resulted in an average reduction of 0.1 cfs flow emerging from the upper canyon (the project site), it would register at the gage site as having reduced the average number of stream flow days by 22 days. Cleath and Associates determined that in reality, the project impact would be to shift the location of the no flow point from some point below the gage to some point above the gage during those 22 days. The length of the reach over which the no flow point would move for a 0.1 cfs change in flow is dependent on the stream geometry, bank storage effects, and topographic gradient of the channel (2008). Based on March 2008 measurements, the point of flow/no flow in the steam channel under current conditions would move less than 100 feet upstream under project conditions. The impact to riparian vegetation would be minimal, due to rooting depth and available underflow.

Downstream, through the town of Los Berros, the average flow/no flow point may shift between current and project conditions would likely diminish to less than 90 feet, due to greater fluctuations in storage. Further downstream, near the confluence with Arroyo Grande Creek, stream conditions change because gravel lenses in the alluvium are thinner and the stream grade flattens. As a result, the ground water level is shallow and more riparian vegetation is present in the channel. Stream flow in this downstream reach would not likely be impacted by the proposed project.

Implementation of water conservation measures identified in the section above would reduce the indirect effects of anticipated water consumption.

WAT Impact 3 **Development of the proposed project would potentially indirectly reduce downstream flow by up to 0.1 cubic-foot per second.**

Implement WAT/mm-1 through WAT/mm-8.

Residual Impact With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

2) Drainage and Flooding

Implementation of the proposed project, including all phases of development, would create additional impervious surfaces including rooftops, paved roads, driveways, and parking areas. Based on the hydrology report submitted by the applicant, and peer reviewed by the EIR consultant, implementation of the project would result in a 2.8 percent increase in net peak runoff during a 100-year storm (RRM Design Group, January 5, 2004). Table V.B.-4 below shows the net increase of run-off for 10-year, 25-year, and 100-year storm events.

Based on the hydrology report, increases in flow rates over existing conditions would occur for approximately five minutes during storm events, before dropping to existing peak runoff rates. The report states that the peak increase in project-generated runoff would occur prior to the peak flow rate within Los Berros Creek; therefore, the amount of peak flow-rate increase would not result in a significant increase in offsite runoff rates, and would not significantly affect offsite, downstream drainage facilities.

TABLE V.B.-4
Net Peak Runoff Rate

Storm Event	Existing Conditions (cfs)	Proposed Project Conditions (cfs)	Percent Increase
10-year	2,806	2,931	4.4
25-year	3,527	3,662	3.8
100-year	5,424	5,575	2.8

Source: RRM Design Group, 2004

The proposed project's drainage plan includes the use of over-side drains and low-point drainage inlets within roadways to facilitate stormwater flow into existing natural drainages onsite (refer to Figures III-20 through III-26). Culverts would be installed at each proposed drainage crossing. Stormwater runoff would be discharged into a series of existing natural ditches and swales prior to entering Los Berros Creek. No onsite water stormwater detention basins are proposed. If stormwater management systems for project-wide tract improvements and individual lot development are not properly designed and maintained, potential impacts could occur from development of the proposed project.

WAT Impact 4 **Implementation of the proposed project would create additional impervious surfaces, and would result in a net increase in peak stormwater discharge, resulting in a potentially significant impact.**

WAT/mm-9 Prior to recordation of the final map, the applicant shall submit a final drainage plan to the County Public Works Department for review and approval.

WAT/mm-10 Prior to issuance of construction permits for individual lot development, the applicant shall submit landscaping plans to the County Planning and

Building Department for review and approval incorporating the following measures, as feasible:

a. Bioretention cells
b. Tree boxes to capture and infiltrate stormwater runoff
c. Vegetated swales, buffers, and strips
d. Roof leader flows directed to planter boxes and vegetated areas
e. Permeable pavement features
f. Impervious surface reduction and disconnection
g. Soil amendments to increase infiltration rates
h. Rain gardens, rain barrels, and cisterns.

Residual Impact With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

3) Water Quality

(a) Construction-related Sedimentation and Pollutant Discharge

During construction activities for all proposed phases of development, grading operations would require the removal of vegetation, disturbance of soil layers, and the creation of soil stockpiles. This would expose large areas of soil to the erosive forces of rainfall and runoff as storm water leaves the project site. The severity of erosion hazard impacts would be high based on the steepness of natural topography and proposed cut and fill slopes. The adverse effects of erosion and sediment transport include deposition of sediment within downstream drainage structures, which may increase the risk of localized flooding and the introduction of sediment into surface waters and sensitive habitats.

Construction activities could also affect water quality due to the potential for pollutants to be discharged to surface water bodies. Construction of the proposed project would involve the use, fueling, and storage of heavy equipment onsite. Soil and associated building material has the potential to enter a stream and drainage channels, cause an increase in suspended sediments, sedimentation of aquatic habitat, and introduce compounds that could potentially be toxic to aquatic organisms. Construction materials such as fuel, oil, paints, and concrete could be harmful to aquatic species if released into the environment. In addition, construction of roadbeds and structures requires use of asphalt, cement and concrete, and adhesives. These materials can be sources of pollutants in storm water discharges. These impacts during the construction phase of the project are potentially significant.

During project construction, a number of techniques are available to reduce the potential for erosion, sedimentation, and introduction of pollutants into runoff water and downstream sensitive habitat. Implementation of the proposed project improvements, construction of facilities, and installation of infrastructure would result in disturbance exceeding one acre; therefore, a Stormwater Pollution Prevention Plan (SWPPP) would be required. The SWPPP would evaluate the minimum required Best Management Practices (BMPs) identified in the SWPPP Preparation Manual. BMP examples would include: erosion control barriers such as silt fences, hay bales, drain inlet protection, and gravel bags; preservation of existing vegetation to the maximum extent feasible, and; stabilization of disturbed areas with vegetation or hard surface

treatments upon completion of construction in any specific area. All inactive disturbed soil areas are required to be stabilized with both sediment and temporary erosion control prior to the onset of the rainy season (October 15th to April 15th). The best approach to minimizing the potential for erosion is to minimize the time during which bare soil is exposed to the elements. To achieve this goal, construction should be scheduled to occur during the dry season of the year to the extent practicable, and the paving and landscaping operations should be completed as quickly as possible. In the event construction activities occur during the rainy season (October 15 to April 15), additional erosion and sedimentation control measures are necessary to ensure construction impacts are minimized.

WAT Impact 5 **Vegetation removal, grading, trenching, and construction activities associated with all phases of development, including tract improvements, facility construction, individual lot development, and utility installation would result in erosion and down-gradient sedimentation and pollutant discharges (e.g., sediment, oil, fuel, materials) into sources of surface water, including Los Berros Creek and its tributaries.**

WAT/mm-11 Prior to issuance of construction permits and prior to ground disturbance for all development, the applicant shall submit a detailed sediment and erosion control plan pursuant to Land Use Ordinance Section 22.52.090 for approval, which shall address both temporary and permanent measures to control erosion and reduce sedimentation. Erosion and soil protection shall be provided on all cut and fill slopes. Revegetation shall be facilitated by mulching, hydro-seeding or other methods, and shall be initiated as soon as possible after completion of grading, and prior to the onset of the rainy season (October 15). Permanent revegetation and landscaping shall emphasize drought-tolerant perennial ground coverings, shrubs, and trees, to improve the probability of slope and soil stabilization without adverse impacts to slope stability due to irrigation infiltration and long-term root development. If vegetation is included as the means to stabilize the soils, it shall be planted at least 30 days before the beginning of the wet season, and watered regularly to ensure adequate root establishment. Otherwise, non-vegetative means shall be employed. All plans shall show that sedimentation and erosion control measures are installed prior to any other ground disturbing work.

WAT/mm-12 Prior to issuance of construction permits and prior to ground disturbance, the applicant shall prepare and submit a Notice of Intent and Stormwater Pollution Prevention Plan (SWPPP) to the Regional Water Quality Control Board (RWQCB) or State Water Resources Control Board (SWRCB) in accordance with the requirements of the State General Order related to construction projects. The SWPPP shall identify storm water management procedures, pollution control technologies, spill response procedures, and other means that will be used to minimize erosion and sediment production and the release of pollutants to surface water during

construction. Compliance will be verified by the County Environmental Monitor through submission of compliance reports. A copy of the SWPPP shall be submitted to the County of San Luis Obispo for approval to show that sedimentation and erosion control measures are installed prior to any other ground disturbing work.

WAT/mm-13 Prior to issuance of grading permits, the applicant shall incorporate Natural Resource Conservation Service (NRCS) Field Office Technical Guide (FOTG) practices into all grading, erosion, and sedimentation control plans. The NRCS or the Upper-Salinas-Los Tablas Resource Conservation District can be contacted at (805) 434-1036 for assistance in implementing FOTG practices.

Residual Impact With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

(b) Operational Sediment and Pollutant Discharge

Implementation of the proposed project would create additional impervious surfaces, and would potentially result in increased concentrations of water pollutants (e.g., oils, fuels, and other hydrocarbons) in stormwater runoff. In addition, the proposed project would discharge collected stormwater into natural swales and ditches, which would gather sediment and transfer that sediment into Los Berros Creek. Another potential impact example would be the design of culverts, specifically at their outlet. If rock or hard surfaces are not placed at the outlet of a culvert, the water, which has been concentrated in the culvert, has more energy to cause erosion when it reaches the ground surface. This eroded material is then transferred downstream and deposited when the velocity of the water flow is decreased. If designed correctly and maintained, culverts would effectively transport runoff from storms to a natural water body while not degrading the quality of that water. If stormwater management systems for project-wide tract improvements and individual lot development are not properly designed and maintained, potential impacts could occur from future development of the proposed project.

WAT Impact 6 **The creation of additional impervious services may result in accelerated and concentrated stormwater runoff within natural drainages, causing gully erosion, down-gradient sedimentation, and discharge of fuel, oils, and other hydro-carbon based pollutants into sources of surface water including Los Berros Creek.**

Implement WAT/mm-12.

WAT/mm-14 Prior to issuance of construction permits for tract improvements, the applicant shall submit plans incorporating best management practices to reduce diffuse stormwater (e.g., rip-rap or other technologies). The plan shall also demonstrate how pollutants will be removed from stormwater runoff prior to discharge into natural drainage courses. Proposed methods may include, but not be limited to, filter blankets or particulate filters. The

homeowner's association shall be responsible for the long-term maintenance of stormwater management facilities and infrastructure.

Residual Impact With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

b. Phase One

1) Wastewater Treatment Facility

(a) Water Supply

The project site is located within the Oceano Hydrologic Sub-area (HSA) (SWRCB, 2002). Groundwater depth in the area of the proposed disposal area is approximately over 15 feet below ground surface. Using a required minimum separation of five feet from the ground surface and depth to groundwater, adequate separation to groundwater would exist. Given the fact that the treatment level of the wastewater would be tertiary-disinfected (well above typical discharge requirements), depth to groundwater is not anticipated to be a significant impact.

(b) Water Quality

Two lined wet weather storage ponds are proposed to facilitate management of the treated domestic effluent (refer to Figures III-13 and III-14). Domestic recycled water would be stored separately from winery process recycled water in an adjacent storage pond. Well #6 is located immediately adjacent to and down gradient from the disposal field area. The applicant proposes to implement a 100-foot setback between the treated wastewater application area and Well #6 and outer perimeter of vineyards. Well #6 is a pre-existing agricultural supply well, and would not be used to supply domestic water for residential uses. The proposed disposal area is located outside of the 100-year flood plain and maintains a 100-foot setback from all wells, springs, and creeks (refer to Figure III-16).

Surface waters near the proposed disposal field include Los Berros Creek, which flows in a southwesterly direction along the south/eastern edge of the property. Los Berros Creek is located down gradient approximately 200 feet southeast of the proposed disposal area. There are also several small spring-fed tributary streams feeding Los Berros Creek that border the east side of the property along Upper Los Berros Road. Los Berros Creek has been designated as having multiple beneficial uses in the RWQCB's Central Coast Basin Plan. Due to the close proximity and topographic conditions existing between the proposed disposal area and Los Berros Creek, the potential exists that if system failure occurs, treated effluent has the potential to flow directly into the creek. Adequate measures should be taken to assure that flood or surface drainage waters do not erode or otherwise damage the discharge facilities. The applicant proposes two feet of freeboard, and operation of an alarm system in the event of high waters. The applicant shall be required to demonstrate that

WAT Impact 7 **Incidental failure of treated effluent storage facilities could result in over-topping or sudden accidental release of treated effluent resulting in direct impacts to Los Berros Creek.**

Implement WW/mm-1.

Residual Impact With implementation of the above measure, this impact would be considered *less than significant with mitigation, Class II*.

6. Cumulative Impacts

a. Water Supply

The proposed project would be supplied by the newly developed groundwater resources located on the project site. Due to the fractured subsurface geology that underlies the project site, the wells proposed for use tap into individual aquifers. Under average rainfall conditions, operation of the proposed project would not have a significant effect on the Oceano Hydrologic Sub-basin; however, during prolonged drought conditions (three years), adequate groundwater recharge may not occur, and flow within Los Berros Creek may be directed towards on-site wells. Due to similar geology in the area, this effect may also occur on adjacent properties within the Los Berros Creek watershed, resulting in a significant cumulative effect on water resources. Project-specific mitigation measures are recommended to reduce overall water usage, and to ensure implementation of water conservation measures during drought conditions. Implementation of these measures would reduce the project's contribution to this cumulative impact.

WAT Impact 8 **During prolonged drought conditions, operation of the proposed project would contribute to the cumulative reduction of available water supply within the Los Berros Creek watershed, and the reduction of downstream flow.**

Implement WAT/mm-1 through WAT/mm-8.

Residual Impact With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

b. Drainage

Implementation of the proposed project, in addition to future adjacent residential and agricultural development within the Los Berros Creek watershed would potentially interfere with natural drainage patterns and peak runoff discharge rates. The applicant proposes to maintain existing drainage patterns by allowing stormwater to discharge into existing natural swales, which direct runoff into Los Berros Creek. Regarding cumulative development within the watershed, the County Land Use Ordinance requires submittal of a drainage plan on a project specific basis, which minimizes individual projects' effects on drainage and surface water resources. No large projects are currently proposed within the watershed; however, future development in the area would be required to comply with standard requirements. Implementation of project-specific mitigation, and compliance with standard requirements would minimize the potential for significant cumulative drainage impacts.

WAT Impact 9 **Implementation of the proposed project may result in cumulatively significant impacts to existing drainage patterns and flow rates within the Los Berros Creek watershed.**

Implement WAT/mm-9 and WAT/mm-10.

Residual Impact With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

c. Sediment and Pollutant Discharge

Sedimentation and pollutant discharge occurs during both the construction and operational phases of development. County Ordinance requires preparation and implementation of an erosion and sedimentation control plan for project requiring a grading permit, and a SWPPP is required for projects resulting in the disturbance of over one acre. Based on the amount of proposed grading, depth of cut and fill slopes, and topography of the project site, the potential water quality impacts would be cumulatively significant. Implementation of erosion and sedimentation control measures and BMPs associated with a SWPPP would minimize potential cumulative impacts to less than significant.

WAT Impact 10 **Implementation of the proposed project may result in cumulatively significant impacts to water quality, including discharge of sediments and other pollutants during construction and operation of the project.**

Implement WAT/mm-11, WAT/mm-12, WAT/mm-13, and WAT/mm-14.

Residual Impact With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.