FUGRO WEST, INC.

WATER RESOURCES ASSESSMENT FOR THE COLD CANYON LANDFILL EXPANSION ENVIRONMENTAL IMPACT REPORT

Prepared for:
MORRO GROUP

March 2008
Fugro Project No. 3571.001

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March 4, 2008
Project No. 3571.001

Morro Group
1422 Monterey Street
San Luis Obispo, California 93401

Attention: Mr. Keith Miller, Project Manager

Subject: Water Resources Assessment for the Cold Canyon Landfill Expansion, Environmental Impact Report

Dear Mr. Miller:

This report provides an evaluation of the groundwater resources for the proposed Cold Canyon Landfill (CCL) Expansion. The report describes the environmental setting relative to groundwater resources, the reliability of the groundwater supply, and identifies potential groundwater quantity and quality impacts associated with the planned use of groundwater for the proposed landfill expansion.

Principal conclusions of the assessment include:

1. The landfill expansion will require an estimated water demand of up to 80,000 gallons per day (gpd), which is an increase of approximately 20,000 gpd relative to current operational demand of up to 60,000 gpd.
2. The on-site wells are capable of meeting the estimated water demand for the proposed landfill expansion. Existing wells at the landfill are capable of providing sufficient groundwater for the average daily operational demand (dust control, composting, MRF and non-potable use) with or without supplemental supplies. Water demand associated with grading activities for future landfill modules could create greater short-term water demand that will be met by importation of water from off-site sources.
3. The quality of groundwater in the area unaffected by landfill operations is generally poor, such that landfill operational staff reportedly rely on bottled water for potable needs. The San Luis Obispo County Environmental Health Department will require the CCL to be permitted as a non-transient non-community water system. Further, the CCL will be required to submit chemical and bacterialogical analyses of all water sources that could come in bodily contact with employees to prove that the water is potable.
4. The estimated increase in water use for the landfill expansion of about 9 acre feet per year will not have a significant impact on existing groundwater uses in the vicinity of the landfill.
5. A general review of the existing groundwater monitoring program indicates it is consistent with the RWQCB objectives relative to protection of groundwater quality. The current waste discharge requirements (WDRs) and future WDRs that will be adopted for expansion of the landfill will address compliance issues of the landfill expansion on groundwater quality. The forthcoming RWQCB guidance (WDRs, preliminary closure, and post-closure maintenance plans) will prescribe methods to maintain the integrity of the final cover, drainage system, leachate control system, landfill gas system, and groundwater monitoring system in a manner that protects groundwater quality.

We will remain available to respond to questions you or the County of San Luis Obispo may have regarding groundwater resource issues for the proposed Cold Canyon Landfill Expansion.

Sincerely,

FUGRO WEST, INC.

Timothy A. Nicely, P.G.
Project Hydrogeologist

David A. Gardner, P.G., CHg
Senior Vice President

Copies Submitted: (1-Pdf)

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INTRODUCTION

This water resources assessment for the Cold Canyon Landfill (CCL) expansion Environmental Impact Report (EIR) evaluates potential impacts of the proposed expansion on groundwater resources. It is the aim of the water resources assessment to identify potentially significant groundwater impacts to the water supply and quality both on-site and in the surrounding area.

The goals of this water resources assessment as related to water supply are to:

- Compile and review information related to the project site and underlying groundwater basin;
- Describe the estimated current and future water demand for the project;
- Assess the hydrologic connectivity between the CCL and adjacent properties;
- Assess on-site water availability;
- Identify potential short- and long-term impacts to local groundwater supplies including potential drawdown effects from on-site wells;
- Identify potential impacts to local groundwater supplies from the cumulative demand of other groundwater users; and
- Recommend mitigation measures to minimize potential impacts related to groundwater availability.

The goals of the water resources assessment as related to water quality are to:

- Compile and review potable water quality baseline data in the area of the project site;
- Identify potable water quality impacts should the aquifer experience an overdraft condition, intensification of agricultural uses, topographic alteration, short- and long-term water resource impacts from leachate migration, adequacy of the existing groundwater monitoring network; and,
- Recommend mitigation measures to minimize potential impacts related to groundwater quality, including: short- and long-term leachate production, maintenance of the landfill caps, composition of the leachate, ability of the groundwater monitoring system to detect leakage from the landfill liner, and a qualitative description of potential clean-up procedures if contamination is detected.

DATA SOURCES

Data were collected from local, regional, state and federal agencies describing existing local water demand, land use, climate, hydrology, and hydrogeology. Well completion reports were obtained from the California Department of Water Resources (DWR) for an area approximately 1 mile in radius from the CCL. Many geologic and hydrogeologic reports and maps have been prepared that frame the geology and regulatory framework at the periodically

expanded and highly-regulated landfill. Baseline data for this EIR have been extracted largely from published data sources and through discussions with CCL staff. We reviewed hydrogeologic site characterizations prepared by EMCON Associates (1992) and Golder (2007). Groundwater monitoring was discussed in several reports by RMC Geoscience (2006; 2007a, 2007b). An additional annual groundwater monitoring report was prepared by RMC Geoscience in January 2008; however, it was not available for inclusion in this report. We also reviewed a final EIR of the site prepared by ERCE (1991) in advance of a prior expansion.

In addition to the above sources, we also contacted and met with CCL general manager, Mr. Bruce Rizzoli (2007), to better estimate their use of groundwater to meet the historic and future water demands at the site. CCL staff also provided data describing existing production wells and data for current and historical water demand of the CCL. The meeting also included a discussion of any limitations the CCL may have experienced in providing a reliable source of water during construction of the landfill modules (cells) and their estimates of future water demand related to the proposed expansion.

REGULATORY SETTING

The California Environmental Quality Act provides authority to the County of San Luis Obispo to assess the extent to which proposed projects such as this may contribute to groundwater overdraft within individual basins and to determine whether the incremental contribution to the overdraft is considered significantly adverse. To accomplish this, the Governor's office of Planning and Research (1994) established a "threshold of significance criteria" that provides a way of defining thresholds of significant impacts. It is the intent of this water resources assessment to identify whether the proposed project will have any significant impact on the water resources of and surrounding the project site. Specific thresholds, related to groundwater supply and quality, were adopted from CEQA guidelines.

The regulation of impacts to surface and groundwater resources are within the jurisdiction of local, state, and federal agencies including the California Regional Water Quality Control Board (RWQCB) and the California Integrated Waste Management Board (IWMB). Current permits required for the operation of the CCL include Solid Waste Facilities Permit No. 40-AA-0004, Revised Waste Discharge Requirements (WDR) Order No. R3-2002-0065, Monitoring and Reporting Program (MRP) No. R3-2002-0065, Approved Land Development Plan Permit No. D860156D, and Title V Permit to Operate No. 37 (RMC Geoscience, 2007b).

The WDR describes requirements to protect groundwater quality related to the operation of the CCL. The WDR discusses the site description and history of monitoring; status of the monitoring programs; basin water quality issues; prohibitions; provisions for groundwater monitoring, onsite use of water, post-closure maintenance plans, reporting, and general provisions. The MRP discusses the self-monitoring program to document compliance with RWQCB requirements as follows. The MRP identifies the monitoring and observation schedules; site, leachate and drainage system inspections; specific monitoring points; sampling methods, analyses, frequency; and record keeping and reporting requirements. The MRP also summarizes the contingency response necessary if a release is tentatively identified including general conditions for the preparation of an Evaluation Monitoring and Reporting Program, and

release discovery responses. The WDR is presented in Appendix A – Revised Waste Discharge Requirements.

ENVIRONMENTAL SETTING

LOCATION

The CCL is currently a 121-acre, permitted Class III solid waste disposal site located approximately 7 miles southeast of the City of San Luis Obispo in a rural area of San Luis Obispo County, California. The Santa Lucia Mountains are located east of the site, and the Edna Valley located to the east and north. The actively producing Price Canyon Oilfield is located approximately 1 mile to the west. The general location of the CCL is presented as Plate1 -Vicinity Map. The specific location of the CCL is presented as Plate 2 - Site Location Map.

The proposed project would increase the facility footprint by approximately 88 acres and the disposal area by approximately 46 acres (Morro Group, 2007). The CCL would be located on four parcels (totaling approximately 209 acres) following expansion onto the properties located southeast of the current site.

CLIMATE

The CCL is situated within a region that has a Mediterranean climate with warm, dry summers and mild winters. The average annual precipitation is 22.1 inches, which was measured at the San Luis Obispo County Regional Airport located approximately 3.5 miles northwest of the CCL. The standard annual average evapotranspiration rate (ETo) at the Salinas Reservoir (Santa Margarita Lake), located approximately 11 miles northeast, is 5.6 feet per year. Closer to the site, the standard annual average ETo at Lopez Lake, approximately 6 miles east, is 3.7 feet per year (San Luis Obispo County Public Works Department, 2008). ETo measures the loss of water to the atmosphere by evaporation from soil and plant surfaces and transpiration from plants. Environmental data are presented in Appendix B - Precipitation and Evaporation Data.

GEOLOGY

The Central Coast hydrologic basin planning area, as defined by the Central Coast RWQCB, encompasses all coastal drainages flowing to the Pacific Ocean between the Pajaro River in southern Santa Clara County and Rincon Point on the coast of Western Ventura County. The CCL is located in the southern portion of the 779-square mile Estero Bay watershed immediately downgradient from the San Luis Obispo groundwater basin and upgradient of the narrow northeast-southwest trending lower Pismo groundwater basin (Plate 3, Regional Groundwater Basins and Geologic Map).

The study area is located in the Pismo (geologic) Basin along the northeastern flank of the Pismo Syncline. The Pismo (geologic) Basin is bounded on the northeast by the Huasna fault zone and on the west by the Hosgri fault zone (EMCON, 1992).

The Pismo Syncline formed during the late Pliocene as part of a tectonic block bounded between the San Andreas fault zone on the east and the Hosgri fault zone on the west. The Indian Knob and Edna faults parallel the northeast limb of the Pismo Syncline within and adjacent the study area. The Indian Knob fault zone is a reverse fault that crosses the northern portion of the site. Reverse displacement of Indian Knob fault has juxtaposed the older Monterey Formation over the younger Pismo Formation. The Edna fault is an inferred high-angle fault (EMCON Associates, 1992).

Monterey Formation

Within the Pismo (geologic) Basin, the Monterey Formation includes four members. The older two typically consist of dolomitic claystone and siltstone, diatomite, tuffaceous siltstone, and tuff. The younger two members include bedded chert, diatomite and diatomaceous siltstone, tuffaceous sandstone and siltstone, and phosphatic or porcelaneous shale. At the CCL, the exposed Monterey Formation consists of the younger diatomaceous member deposited northeast of a volcanic topographic high (EMCON, 1992). The Monterey Formation sediments include copious organic material that, subjected to heat and pressure due to deformation, produced hydrocarbons. These hydrocarbons accumulated in structural traps and formed significant reserves, including the Arroyo Grande Oil Field located approximately 1 mile west of the CCL.

Pismo Formation

The Pismo Formation is composed of five members: Edna, Miguelito, Gragg, Belleview, and Squire (Hall, 1973). Each member contains basal gravel or coarse sand deposited in a high-energy environment overlain by a thick, upward-fining sequence of sandstone, diatomaceous siltstone, and claystone deposited in progressively lower-energy environments. At the CCL, the exposed Pismo Formation consists of the Edna Formation (EMCON, 1992).

Younger Deposits

After the Pismo Formation was deposited, the area was uplifted and eroded by waves and streams that deposited sediments including marine terraces, dunes, alluvium, and landslide deposits. Locally, these deposits are present within the study area in Cañada Verde and west into Price Canyon.

REGIONAL HYDROGEOLOGY

The principal aquifer of the Pismo (geologic) Basin consists of the recent alluvial deposits. The alluvium consists of sand, gravel and clay to a maximum thickness of 100 feet. The Monterey and Pismo formations that underlie the site are not considered major groundwater aquifers, although they do yield usable quantities of water for small-scale operations such as domestic and livestock purposes. Within the Monterey and Pismo Formations, groundwater generally occurs under semi-confined to confined conditions (EMCON, 1992). Recharge to the aquifer occurs by percolation of stream flow, percolation of

precipitation, and subsurface underflow. Basin discharges occur through surface outflow, springs, groundwater pumpage, and ETo (RMC Geoscience, 2007).

Regionally, groundwater flow directions reflect topography and geologic structure; generally from northeast to southwest. Groundwater in the San Luis Obispo groundwater basin is structurally controlled (Plate 3).

Water from the alluvium is generally of good quality with relatively low concentrations of dissolved constituents. Generally, water quality from the Pismo Formation is good in shallow wells and poor in deeper wells. Water quality from the Monterey Formation is not well documented but likely affected by naturally occurring tar and oil (EMCON, 1992).

LOCAL HYDROGEOLOGY

Hydrogeologic conditions at the site were determined based on data from the drilling and installation of monitoring wells on the existing and proposed expanded site (Golder, 2007). The drilling, installation, pump testing, and regular sampling of the network of monitoring wells at the site have allowed determination of water level data, hydraulic gradient, flow direction, water quality, and aquifer characteristics.

The fractured bedrock of the Monterey Formation underlies approximately 35 percent of the current and proposed expanded CCL. Surface fractures indicate that there are two dominant bedrock fracture trends, both of which strike north-south subparallel to groundwater flow. Surface and subsurface connectivity of the fractures increases to the north towards the Indian Knob fault zone. Hydraulic conductivity is approximately 0.18 feet per day (ft/d) or 6.3 x 10^{-5} centimeters per second (cm/sec) (Golder, 2007). The effective porosity of the formation at the site is approximately 20 percent (Golder, 2007).

The Pismo Formation underlies approximately 65 percent of the entire CCL and most of the proposed expansion area. The Pismo Formation is predominantly massive bedrock at the site, but exists in the undifferentiated Pismo Formation north of the CCL as approximately 55 percent fractured bedrock and 45 percent massive bedrock. Fractures are typically present as discrete zones (15 to 25 feet thick). The hydraulic conductivity of the Edna Member of the Pismo Formation (the only member present below the site) was determined based on a constant-discharge test within well P-1B to be approximately 0.65 ft/d or 2.3 x 10^{-4} cm/sec (Golder, 2007). The effective porosity of the formation is estimated to be 25 percent (Golder, 2007).

Bedding in the Pismo and Monterey Formations are generally consistent across the site. Beds dip from 30 to 45 degrees to the southwest and strike from 50 to 75 degrees to the northwest (refer to Plate 3).

Groundwater occurs in the Pismo and Monterey formations at the site, both of which are water-bearing materials that appear to be hydraulically connected (ERCE, 1991). Locally, groundwater flows generally from northeast to southwest at a gradient of 0.04 to 0.05 feet per foot (EMCON Associates, 1992). Generally, shallow groundwater elevations within the

Monterey Formation vary between 180 and 210 feet above mean sea level (MSL). Water levels in MW-5 vary between 260 and 280 feet above MSL. The locations of the monitoring wells are presented as Plate 4 - On-Site Groundwater Well Location Map. Groundwater hydrographs for the site monitoring wells are presented on Plate 5 - Groundwater Hydrographs. The most recent groundwater contour map from May 2006 is representative of pumping conditions and is presented on Plate 6 - Typical Groundwater Contour Map. Groundwater extraction from Supply Well Nos. 1 and 2, to be discussed later, appears to have created an artificial depression in the potentiometric surface, creating a localized area of groundwater flow to the north and east, toward the supply wells.

Groundwater occurrence beneath the proposed expansion area is described by Golder (2007) based on data obtained through the drilling of new Monitoring Wells P-10 through P-14 and temporary Observation Wells B-1 and B-2. A total of 15 monitoring wells were present at the site prior to the installation of monitoring wells P-10 through P-14, after which, there are 20 monitoring wells. The depth to the water surface varies between approximately 7 feet in well P-11 to 93 feet in Well B-1. Groundwater elevations range between approximately 230 feet above MSL in the northern well (P-14) and 180 feet above MSL in the southern well (P-11). Groundwater elevations are measured quarterly in the site monitoring wells as presented on Plate 5 - Groundwater Hydrographs. The hydrographs indicate that MW-2 and P-5 (Monterey Formation wells) have an extended period of seasonal variability. The same seasonal variability may be evident in limited-duration hydrographs (not presented) for the newer monitoring wells (P-11, P-12 and P-13). For the five-event period of record for the newer monitoring wells, groundwater levels have varied between 0.14 feet (Well B-1) and 7.27 feet (Well P-13) (Golder, 2007).

San Luis Obispo County Public Works Department maintains a database of groundwater levels throughout the County (San Luis Obispo County Water Resources Unit, 2008). However, water Resources Unit staff does not measure water levels in any well within the study area.

GROUNDWATER SUPPLY

On-Site Supply

The hydrogeologic site characterization report (EMCON, 1992) and personal communications with CCL general manager, Mr. Bruce Rizzoli (2007) are the main sources of data related to groundwater supply at the CCL and within the surrounding area.

Six on-site low-capacity wells are located on the property with an estimated total source capacity of approximately 88 gallons per minute (gpm) (Rizzoli, 2007). The wells, as with all wells within the hydrogeologic study area, pump from an area that is not within a defined groundwater basin (RWQCB, 2007), but near the San Luis Obispo groundwater basin and lower Pismo groundwater basin. None of the on-site wells have meters to document groundwater production. The locations of the wells are presented on Plate 4. Photographs of the wells are presented in Appendix C - Site Photographs.

In the westernmost corner of the site are three wells known as the "Shop Wells," and are located adjacent to the shop. Two of these wells (PW-1 and PW-2), which operate as a single water source produce an estimated 10 gpm. Except for the recycling operation, the two wells satisfy demand associated with the landfill operation and all non-potable uses. Well PW-1 was constructed in 1986 to a depth of 205 feet, with perforations placed between 65 and 205 feet. The well is surface sealed to 24 feet and produces water from the Monterey Formation. The well consists of a 6-inch diameter PVC casing and is gravel packed. According to the Water Well Drillers Report, the well is equipped with a 1-horsepower submersible pump that reportedly produced approximately 50 gpm at the time it was drilled. The actual production rate from the well is much less, likely several gpm, but unknown because of the lack of a flow meter.

The other shop well (PW-2) was installed in 1987 to a depth of 400 feet, with perforations placed between 320 and 400 feet. The well is located 10 feet from Well PW-1. The well is surface sealed to 20 feet and produces water from the Monterey Formation. The well consists of a 6-inch diameter PVC casing and is gravel packed. The well is equipped with a submersible pump that produced approximately 8 gpm at the time it was drilled according to the Water Well Drillers Report.

A third shop well (PW-3) located near the other two, is completed to a depth of 367 feet. A Water Well Drillers Report does not exist for this well. Although the well is equipped with a 1-1/2-horsepower pump, it is believed that it does not contribute water to the system and is not used. The three shop wells will be destroyed as part of the CCL expansion (Rizzoli, 2007).

Three wells are located along the southeastern edge of the site that contains the expansion area on the so-called Weir property. The "Weir" wells, designated as Wells #1, #2 and #3 on Plate 4, produce water from the Pismo Formation and consist of 5-inch-diameter PVC casing and are gravel packed. Well No. 1 is 186 feet deep. Well No. 2 is 156 feet deep. Well No. 3 is 245 feet deep. Each well is equipped with a 5-horsepower (Well No. 1) or 2-horsepower (Well Nos. 2 and 3) submersible pump. Currently, only Well Nos. 1 and 2 are connected and in use. Well No. 3 could be reactivated in the future. State well completion reports, which document the design and age of the wells, do not exist for these wells. Mr. Rizzoli believes that one of the wells (Well No. 1) may have been installed when the adjacent house was built around 1956. The other well (Well No. 2), may have been installed around 1975. Well No. 3 is reportedly more recent, but the date of installation is unknown (Rizzoli, 2007). Other than State well completion reports and Mr. Rizzoli's opinion, we have no way to confirm the age or condition of the wells.

The two active Weir wells satisfy water demand associated with site operations on the southeastern portion of the site, the Sort facility, and fire suppression. The produced groundwater is pumped directly to an 86,000-gallon steel tank behind the Sort Facility (65,000 gallons of which are maintained for fire suppression) or to a pond adjacent Well P-14 where it is stored for site operational needs (Golder, 2007) (Plate 4). During the expansion, these wells will be the only remaining water supply wells on-site. The three Weir wells would have a combined source capacity of 78 gpm, although the current capacity from the wells is 62 gpm because Weir Well No. 3 is not active (Rizzoli, 2007).

A summary of the on-site groundwater supply well data is presented as Table 1 - Summary of On-Site Water Well Data. Well Completion Reports and Well Summary Sheets for the wells for which this data exists are provided in Appendix D - On-Site Well Information.

Table 1. Summary of On-Site Water Well Data

Well	State Well Completion Report	Status	Formation Aquifer	Capacity (gpm)	Future Use
Shop Wells (PW-1 and PW-2)	Yes	Active	Monterey	10 (combined)	To Be Destroyed
Shop Well PW-3	No	Inactive	Monterey	0	To Be Destroyed
Weir Well No. 1	No	Active	Pismo	40	To Remain
Weir Well No. 2	No	Active	Pismo	22	To Remain
Weir Well No. 3	No	Inactive	Pismo	16	To Remain

Private and Public Water Companies

The Department of Public Health (DPH) Drinking Water Program for the Santa Barbara District regulates water systems for San Luis Obispo, Santa Barbara and Ventura counties for water systems with greater than 15 connections or 25 people. The only DPH-regulated water system in the general area is the Golden State Water Company, Edna Road System. The system is located approximately 2 miles northwest of the CCL, generally along County Club Drive (personal communication with DPH staff). This water system is outside of the hydrogeologic study area that could potentially be impacted by the landfill expansion project. The extent of the area to be evaluated for potential impact analysis is presented as Plate 7 - Hydrogeologic Study Area.

The San Luis Obispo County Environmental Health Services Division regulates Small Water Systems (15 to 199 service connections, regularly serving 25 or more individuals at least 60 days per year) and State Small Water Systems (5 to 14 service connections, serving more than an average of 25 individuals daily for more than 60 days per year). A single Small Water System and a single State Small Water System are located immediately outside of the hydrogeologic study area. H_2O Incorporated is a Small Water System with 24 connections located slightly more than a mile northeast of the CCL expansion area. Camino Edna is a State Small Water System located north of Corbett Canyon Road approximately 1 mile northwest of the existing CCL. This State Small Water system serves 10 connections.

WATER DEMAND

Current On-Site Water Demand

Estimates of current and future on-site water demand were acquired through an interview with Mr. Bruce Rizzoli (2007). Water demand at the landfill has historically varied seasonally and between phases of site operations. The existing landfill uses water for dust control purposes, irrigation of compost, Materials Recovery Facility (MRF) uses (excluding

potable use), and for the yard/office area (excluding potable use). No on-site groundwater has historically been used as a potable water source. Groundwater is pumped from four on-site wells, two of which (Weir Well Nos. 1 and 2) will provide all non-potable water for the project during expansion.

For landfill-related dust control, water produced from the shop wells is conveyed by water truck and spread as needed around the heavily-trafficked areas. Approximately two to three loads, each consisting of a volume of 4,300 gallons (for a total of 8,600 to 12,900 gallons) is used for these purposes each weekday (Monday through Friday). No dust-suppression water is needed following rainfall events. Conversely, on exceedingly dry, warm, or windy days up to four loads of water (17,200 gallons) is used per day for dust control (Rizzoli, 2007). Based on a field visit to the CCL during active landfill operations, these estimates seem reasonable.

The compost operation irrigates approximately 16 compost windrows daily. Each windrow is between 200 and 600 feet long and approximately 7 feet high. The facility currently maintains 18 aisles for the windrows, but in leaving room to turn each windrow, has room for only 16 filled windrows at any time. Each windrow requires approximately 8,000 gallons of water per week during the weekdays, or on average of approximately 25,600 gallons per day (gpd). The compost operation also requires an average of 2 loads per day for dust suppression (8,600 gpd). In total, approximately 34,200 gallons are used each weekday for this operation. Demand increases in warm weather up to as much as 40,000 gpd. Demand decreases during and following rainfall periods.

Other than for employee water use, the MRF uses water only for periodic washing down of the facility. Less than 1,000 gpd is used during the weekdays, and 300 gpd on the weekends for these operations (Rizzoli, 2007). These estimates seem reasonable.

According to the County of San Luis Obispo's Environmental Health department report that light-industrial workers use an average of about 15 gpd for non-potable uses (personal communication with Mr. Brad Pryor). Currently, a total of 40 people work at the MRF on weekdays. No employees work at the MRF on weekends. Approximately 14 employees work at the landfill operation on weekdays, decreasing to 7 employees on weekends. In total 79 employees currently work in all components of the CCL including administrative, landfill, scalehouse, MRF, compost, resource recovery park, household hazardous waste, and universal and electronic waste components (Morro Group, 2007). The entire CCL staff is estimated to use about 1,185 gpd on weekdays and 105 gpd on weekends. Total current on-site water demand is summarized in Table 2 - Summary of Estimated Current On-Site Water Demand.

Table 2. Summary of Estimated Current On-Site Water Demand

Operation	Typical Weekday Use		Typical Weekend Use		Maximum Use	
	gpd	afy	gpd	afy	gpd	afy
Landfill (dust control)	8,600	6.9	4,300	1.4	17,200[1]	10.1[2]

Composting (compost irrigation)	34,200	27.3	0	0	40,000[1]	30.1[2]
MRF (toilets, hand washing, cleaning, facility maintenance)	1,000	0.8	300	0.1	1,000[3]	0.9[3]
Non-Potable Use (toilets, hand washing, cleaning)	1,185	0.9	105	0.03	1,185[3]	1[3]
Total	44,985	35.9	4,705	1.5	59,385	42.1[2]

Note: Total average groundwater demand: 31,500 gpd or 35.2 afy
[1] Landfill and composting maximum use values represent hot and dry conditions
[2] Number of days of hot and dry conditions are unknown but estimated to be 60 per year
[3] MRF and employee use values represent weekdays

Total water use at the CCL ranges between approximately 45,000 and 59,000 gpd on weekdays. Weekend water use is about 10 percent of the typical weekday water use, averaging about 4,700 gpd. Average water demand is approximately 33,000 gpd (37.4 acre-feet per year [afy]). During exceedingly hot and dry years, on-site demand could be as great as approximately 37,600 gpd (42.1 afy). Of this total water demand, approximately 700,000 gallons per year (2.1 afy) are satisfied by application of leachate for dust control purposes. Therefore, total groundwater demand is currently approximately 31,500 gpd on average (35.2 afy). Past water demand associated with cell development is not included in the current groundwater demand estimates but is discussed more thoroughly later. Following rainfall events, neither dust-control nor composting irrigation demand exists. During and following rainfall, on-site water demand can be as low as 5,000 gpd. During the dry months, the wells have typically pumped for 48 hours per week to satisfy demand (Golder, 2007).

Future On-Site Water Demand

Daily Operations

As part of the expansion, the landfill will begin accepting greater quantities of waste. Daily tonnage limits will increase at the resource recovery park (450 tons per day, up from 0 tons per day), the compost operation (450 tons per day, up from 300 tons per day) and the MRF (400 tons per day, up from 120 tons per day). A summary of the current and future tonnage limits is presented in Table 3 - Summary of Existing and Proposed Daily Tonnage Limits.

Table 3. Summary of Existing and Proposed Daily Tonnage Limits

Component	Permitted Tonnage Limit (tons per day)	Proposed Tonnage Limit (tons per day)
Landfill	1,200	1,200
Resource Recovery Park	Included in landfill	450
Compost	300	450
MRF	120	400
Total	1,620	2,500

The increase in tonnage to be processed as part of the recovery park will result in no additional water demand. The 50 percent increase in compost generation will result in a total

demand of 38,400 gpd, up from 25,600 gpd. At the MRF, the increase in tonnage is best quantified by the increase in employee water use. According to the project description, a total of 120 people will be employed at the expanded CCL, an increase from the current employment of 79 people. The total future on-site water demand is presented in Table 4 - Summary of Estimated Future On-Site Water Demand.

Table 4. Summary of Estimated Future On-Site Water Demand

Operation	Typical Weekday Use		Typical Weekend Use		Maximum Use	
	gpd	Afy	gpd	afy	gpd	afy
Landfill (dust control)	8,600	6.9	4,300	1.4	17,200[1]	10.1[2]
Composting (compost irrigation)	47,000	37.5	0	0.0	60,000[1]	42.3[2]
MRF (toilets, hand washing, cleaning, facility maintenance)	1,000	0.8	300	0.1	1,000[3]	0.9
Non-Potable Use (toilets, hand washing, cleaning)	1,800	1.4	105	0.03	1,800[3]	1.5
Total	**58,400**	**46.6**	**4,705**	**1.5**	**80,000**	**54.8[2]**

Note: Total average groundwater demand: 39,200 gpd or 44.0 afy

[1] Landfill and composting maximum use values represent hot and dry conditions

[2] Number of days of hot and dry conditions are unknown but estimated to be 60 per year

[3] MRF and employee use values represent weekdays

Following expansion, water use at the CCL is estimated to range between 58,400 and 80,000 gpd on weekdays. Weekend water use will be less than a tenth of the weekday water use, averaging about 4,700 gpd. Throughout the year, the average water demand will be approximately 42,900 gpd (48.1 afy). During exceedingly hot and dry years, on-site demand could be as great as approximately 48,900 gpd (54.8 afy) to accommodate increases in dust-control operations. Leachate applied for dust control will satisfy approximately 700,000 gallons per year (2.1 afy).

Module Construction

Construction of the landfill cells (modules) will entail a significant short-term increase in water demand associated with excavation and construction of the cells. The proposed expansion would entail construction of seven additional cells with a total area of approximately 46 acres and a total disposal capacity of 13.1 million cubic yards (Morro Group, 2007). According to Mr. Rizzoli (2007), the excavation and construction of each cell will likely occur for approximately 6 to 7 months and require approximately 4,000 gpd. The water demand for construction of each cell is proportional to the volume of material to be excavated. Assuming a typical cell requires 6 months to construct (Rizolli, 2007), approximately 87,000 gallons of water would be required per month or 522,000 gallons (1.60 acre-feet) per cell. Construction of each of the past three cells was performed by three different contractors, each of whom was required to provide water for the construction. Each contractor obtained off-site water from the adjacent Corbett Canyon Winery (now Vintage Wine Trust) through methods that included a combination

of placing temporary pipelines directly from a well to a cell area, or to a pond with use of water trucks.

Landscaping

As part of the proposed expansion, additional short-term water demand will be needed for re-landscaping associated with the relocation of a new scalehouse and entrance amenities to be located approximately 2,800 feet south of the existing entrance on State Highway 227. The extent of this water demand is included in the Landscape Plan as the Maximum Applied Water Allowance (Wallace Group, 2008). The Maximum Applied Water Allowance constitutes a worst-case water demand estimate for re-landscaping. The Landscape Plan focuses on southwestern, southern, and southeastern boundaries of the property and will consist of planting natives or plants adapted to the Central Coast climate. A summary of the estimated water demand associated with the Landscape Plan is presented in Table 5 - Summary of Estimated Landscape Water Demand. The values presented in Table 5 have not been adjusted for precipitation, which would offset some portion of the landscaping demand. The extent of the area to be re-landscaped is not contained in the Maximum Applied Water Allowance document, therefore, correction for precipitation could not be made.

Table 5. Summary of Estimated Landscape Water Demand

Planting Type	Water Demand First Year (afy)	Water Demand Second Year (afy)[1]	Water Demand Third Year (afy)[2]
Screen Planting	2.86	1.43	0.71
Wetland Enhancement	3.89	1.94	0.97
Bioswale	0.83	0.42	0.21
Bioretention	0.61	0.31	0.15
Oak Trees	0.09	0.04	0.02
Total	**8.27**	**4.14**	**2.07**

1. Second year demand is calculated as half of first year demand
2. Third year demand is calculated as quarter of first year demand

For the first year of the re-landscaping project, approximately 8.3 afy will be required. In the second year, approximately half of that amount would be required, or approximately 4.1 afy. If the landscaping is planted during dry years, it is conceivable the plants would need a little water during the third summer; approximately 25 percent of the first year's water demand or 2.1 afy (Wallace Group, 2008). Because this demand will only occur during the first 3 years, landscaping demand will increase total groundwater demand above current demand (Table 1, estimate of 35.2 afy), not the total future water demand (Table 2, estimate of 44.0 afy). Therefore, total groundwater demand will increase to 43.5 afy during the first year of the expansion project, decrease to 39.4 afy, then decrease further to 37.2 afy during the third year. Presumably, irrigation water will only be needed to establish the native plants in the 3 years, after which they will survive on precipitation alone.

Proposed On-Site Supply

Proposed Onsite Production

During the expansion, the three Weir wells will be the only remaining water supply wells on-site, with a combined source capacity of 78 gpm. Well Nos. 1 and 2 will be required to pump approximately 15 hours per day to satisfy average future weekday demand. If additional water is required, it is possible to reactivate Weir Well No. 3 to obtain an additional 16 gpm (Rizzoli, 2007). Activation of Well No. 3 would decrease the required pumping duration to approximately 12.5 hours per day. If additional supply is required, additional well(s) could be drilled for short-term demand on-site. Any additional wells should be completed within the Pismo Formation due to the relatively higher transmissivity values of the Pismo relative to the Monterey Formation. The Weir wells are completed within the Pismo Formation that is located in two areas at the site; south of the MRF along the southeastern edge of the site and in the northern portion of the site. Water produced from the Pismo Formation is more likely to be of potable quality than water from the Monterey Formation, due to a lack of hydrogen sulfide present in many wells completed in the Monterey Formation.

Proposed Imported Water

To supplement water supplies, the CCL has reached an informal agreement with the adjacent Vintage Wine Trust to purchase water from their wastewater ponds. The quantity, quality, and time during which such water would be available for purchase is unknown. This additional water source, if available, could decrease demand from on-site groundwater operations to approximately 39,200 gpd (44.0 afy) if the additional water source proves dependable. Because the supplemental water is described as wastewater, and generally because it will be applied to the landfill, the use of the water for dust control may need to be approved by the RWQCB pending analysis of the water source. The nature of the water-use agreement between the CCL and Vintage Wine Trust is not known. Without the supplemental water supply, the proposed groundwater supply is sufficient to satisfy future demands. We gather or assume:

- The quantity of water available may be as much as 2 afy,
- The water would be conveyed through a small diameter pipe from a wastewater pond at the vineyard to the pond adjacent Well P-14,
- The water would be available for the expansion project (module construction) and on a regular basis throughout the year,
- The quality of the water will meet RWQCB standards for dust-control water.

Currently, the CCL provides employees with potable drinking water from bottled sources. According to Mr. Brad Pryor of the San Luis Obispo County Environmental Health Department (2008), certain non-community water systems, such as schools and small offices that have either poor water quality or an unreliable supply, are allowed to use bottled water for potable uses. However, the CCL is not currently permitted by the Environmental Health Department to supply water to its employees, by bottled sources or otherwise. Because the CCL employs

more than 25 people, they will need to be permitted by the Environmental Health Department to supply potable water to its employees. The CCL would become a non-transient, non-community water system. The source of potable water for employees is not known, but may include bottled sources or water from the Weir wells. Whatever the source of drinking water, the CCL will be required to submit chemical and bacterialogical analyses of all water sources that could come in contact with employees to prove that the water is potable including each well that provides water to the restroom areas. We have asked for, but have not received, water quality data from the Weir wells to determine if the water, with disinfection, is potable. Prior to the CCL's acquisition of the Weir property, the Weirs used the water for drinking (Rizzoli). As part of the process of permitting the water system with the Environmental Health Department, the CCL will be required to submit water quality data for the water sources or, if no water quality data exists, collect and analyze samples.

The on-site Weir wells (Nos. 1, 2, and if needed, 3) have sufficient capacity to supply the groundwater demand associated with the proposed landfill expansion of approximately 58,000 gpd on average during weekdays. Total groundwater demand will be approximately 39,200 gpd on average (44.0 afy). Possible importation of water from the adjacent winery could provide approximately 5 percent of the daily water demand. Such water could possibly be imported through a pipe or water truck for the proposed module construction. Potable water could be supplied by bottled sources.

Water Demand Within The Study Area

The scope of work of this study included an assessment of water demand within a defined study area surrounding the CCL based on the assumption that the existing, largely fallow land uses of nearby properties would be converted to agriculture. Such a "build-out" projection of water demand entailed a number of assumptions, such as the area to consider, type of agriculture, density of agriculture, and the suitability of soils, slopes, and drainage to accommodate agriculture. Groundwater was assumed to be the source of water for such future build-out. The extent of the defined study area is presented on Plate 7.

Currently, groundwater wells surrounding the CCL are used for domestic and livestock purposes. The locations of some of the wells were determined based on review of approximately 200 Well Completion Reports for the area provided by the DWR. Additional water supply wells, for which records were not included in DWR files, were identified through a field survey. The locations of surrounding wells are presented on Plate 8 - Surrounding Land Use and Water Well Location Map.

Potential water demand resulting from "build out" within the study area was estimated based on the assumption that: 1) parcels not currently developed with intensive agriculture, but within the agriculture land use category would be developed with vineyards, and 2) within the designated hydrogeologic study area, second dwellings would be built on parcels classified in the residential rural (RR) land use category. Plate 8 shows parcels within the study area where water consumption may increase significantly due to vineyard planting and/or residential development (Morro Group, 2008). Currently, and into the foreseeable future, the predominant

agricultural crop is and will be grapes. Other land uses include dry-land farming of grasses and native vegetation in support of livestock grazing.

Currently, approximately 169 acres of vineyards are planted within the hydrogeologic study area. Vineyards in the area require 1.0 to 1.2 acre-feet of irrigation water per acre per year (afy/ac) (Fugro West and ETIC Engineering, 2005). Using the higher value of 1.2 afy/ac, the estimated current groundwater demand to satisfy vineyards is up to 203 afy.

Intensification of conversion from fallow land to vineyards is expected for much of the study area. The soil types and topography in the area are similar to those in areas to the north and east of the CCL currently developed with vineyards. In some places, steep slopes and heavy vegetation make vineyard development less likely. These areas have not been included in the acreage calculations. As many as 550 acres of new vineyards may be planted within the next 20 years. By assigning a water duty factor of 1.2 acre-feet of irrigation water per acre per year (Fugro West and ETIC Engineering, 2005), this would increase demand for groundwater by approximately 660 afy. Total groundwater demand to satisfy the estimated 719 acres of vineyards after build-out could be as great as 863 afy. The increase in groundwater demand from approximately 200 afy to approximately 860 afy would represent a four fold increase in groundwater demand related to vineyards, directly proportional to the increase in vineyard acreage.

Based on parcel data supplied by the County of San Luis Obispo Planning and Building Department (Morro Group, 2008), approximately 70 parcels exist within the study area and each of which contain at least a single dwelling. For this analysis, we assumed that all parcels except for the landfill currently have a single dwelling. Based on the County's standard water consumption rates, each dwelling requires approximately 1.26 afy (City of Santa Barbara, 1989). Therefore, the current domestic water consumption within the hydrogeologic study area is approximately 88 afy.

Construction of second dwellings will be the only source of residential development within the study area within the next 20 years (Morro Group, 2008). This type of development is possible for parcels that are both designated within the RR land use category and within the study area. A total of 42 such parcels exist on which second dwellings could potentially be constructed (Morro Group, 2008). For purposes of this analysis, it was assumed that second dwellings do not already exist on the parcels in the RR land use category. In addition, to develop a reasonable worst-case development scenario, our analysis assumed that all parcel configurations within the RR land use category could accommodate a second dwelling, which would be regulated by the San Luis Obispo County Land Use Ordinance (Title 22). This may not be the case on smaller parcels and those with steep slopes. Based on City of Santa Barbara guidelines (1989), each secondary well requires approximately 0.33 afy. Therefore, total water consumption resulting from future development of second dwellings would equal approximately 14 afy (Morro Group, 2008).

Current water consumption in the area related to domestic and agricultural uses is estimated to be approximately 292 afy. Increases associated with both residential and agricultural development could increase total groundwater demand by approximately 674 afy,

for a total of 900 afy. The proposed project would increase demand by approximately 9 afy, an increase from 35 afy to approximately 44 afy. Total groundwater demand could increase from approximately 326 afy to as much as 1,009 afy or an increase of 210 percent. The CCL demand would increase by approximately 26 percent, domestic demand by 16 percent and vineyard demand by over 300 percent. Estimates of current and maximum future groundwater demand within the study area are presented in Table 6.

Table 6. Summary of Estimated Current and Maximum Future Groundwater Demand within the Study Area

Groundwater User	Current Demand (afy)	Maximum Future Demand (afy)	Increased Demand	
			Afy	%
Cold Canyon Landfill	35	44	9	26
Domestic Use	88	102	14	16
Agriculture (vineyards)	203	863	660	324
Total	**326**	**1,009**	**683**	**210**

HYDROGEOLOGIC CONNECTIVITY BETWEEN LANDFILL AND ADJACENT PROPERTIES

The CCL is located in an area relatively isolated from its surroundings hydrogeologically. The hydrogeologic study area, which contains the CCL is bounded on the north by the Edna Valley fault and the other sides by shallow alluvial valleys. The hydrogeologic study area is underlain largely by the Pismo and Monterey Formations, with alluvial clay and sand deposits in the surrounding valleys. The study area encompasses approximately 1,687 acres, of which the expanded CCL will encompass 209 acres, or approximately 12 percent of the entire area. As described below, groundwater users outside of the hydrogeologic study area will likely not be affected by groundwater drawdown associated with pumpage at the CCL. The boundaries of the hydrogeologic study area consist of a barrier to flow (northern boundary) or a recharge boundary (alluvium). The hydrogeologic study area is believed to be the maximum extent of hydraulic communication with the CCL.

A Theis analysis was performed by ERCE (1991) to predict drawdown at distances of 0.25, 1, and 1.5 miles from two pumping wells (DG-1 and PW-2) at the project site. Well DG-1 was located in the far western corner of the existing landfill property (ERCE, 1991). Other than the location of the well and the aquifer parameters of hydraulic conductivity and storativity calculated from a pumping test (presented below) little is known about this well. The predicted drawdowns were calculated for durations of 1, 5, 10, and 20 years from wells that had not been pumped previously. The results of the analyses overestimated actual drawdown because the predicted values were based upon a condition that no previous pumpage had occurred. Pumping from the production wells at rates of 2 and 4 gpm, respectively, did not cause significant drawdown. The Theis analysis, as performed in this geologic setting is appropriate to use as a guide to assess drawdown impacts. The area is geologically complex with various fracture and joint systems, geologic contacts, and adjacent groundwater basins and faults and

the geologic materials are not laterally extensive. The use of Theis analyses to predict drawdown at any great distance is not appropriate in such a complex geologic setting. It is not appropriate to reproduce simple Theis analyses to predict drawdown at any great distance from the current pumping wells using current and future on-site groundwater pumping rates. This analysis should only be used to gain a general understanding of predicted drawdown as general worst-case guidance.

In the current study, a Theis analysis was used to generally predict drawdown within Well Nos. 1 and 2 while pumping at average rates sufficient to satisfy average future demand, or 24 and 14 gpm, respectively. The analysis was also used to predict drawdown a short distance to the nearest property boundary of approximately 80 feet from Well No. 1 and 400 feet from Well No. 2. In lieu of pumping test data from Well Nos. 1 and 2, hydraulic conductivity values of 2.3×10^{-4} cm/sec or 4.9 gpd/ft^2 for the Pismo Formation at the site were used (Golder, 2007). Golder calculated storativity of the Pismo Formation to be approximately 0.25. Both pumping wells are completed within the Pismo Formation. These values are considered reasonable for the geologic materials. One set of analyses of pumping test data performed on Well DG-1 (ERCE, 1991) indicated that hydraulic conductivity values of 24 to 32 gpd/ft^2 may be warranted, which would cause predicted drawdowns to be less than predicted. For Well Nos. 1 and 2, we calculated worst-case predicted drawdowns at the end of 1, 5, 10 and 20 years of pumping using saturated thickness values of 116 and 130 feet, respectively. A summary of predicted drawdown in Well Nos. 1 and 2 is presented in Tables 7 and 8, respectively.

Table 7. Predicted Drawdown in Well No. 1

Pumping Duration (years)	Predicted Drawdown (feet)	Base of Well (feet. Below TOC)	Saturated Thickness (feet)
1	73.62	186	42.38
5	81.42	186	34.58
10	84.78	186	31.22
20	88.14	186	27.86

Table 8. Predicted Drawdown in Well No. 2

Pumping Duration (years)	Predicted Drawdown (feet)	Base of Well (feet. Below TOC)	Saturated Thickness (feet)
1	38.58	156	77.42
5	42.64	156	73.36
10	44.39	156	71.61
20	46.13	156	69.87

On the basis of these calculations, approximately 28 feet of saturated thickness would remain within Well No. 1 at the end of 20 years of pumping. Well No. 2 would have approximately 70 feet of saturated thickness remaining at the end of 20 years of pumping. At

the property boundary nearest Well No. 1, drawdown after 1 year of pumping would be 17.8 feet; after 20 years of pumping, drawdown would be 32 feet. At the property boundary nearest Well No. 2, drawdown after 1 year of pumping would be 2.2 feet; after 20 years of pumping, drawdown would be 9 feet. Water levels will not likely decline significantly beyond the footprint of the current and expanded CCL due to pumpage associated with the project.

The analysis as performed is considered conservative (worst-case) for the following reasons. The drawdown predictions assume no prior pumpage of the production wells has occurred. Because both wells have been producing for many years, steady state conditions may have already been achieved and future drawdown in Well Nos. 1 and 2 would be expected to be significantly less than the calculations suggest. The drawdown predictions represent water levels due to pumpage associated the project expansion, but do not consider what the drawdowns would be at the current pumpage rates. The current pumpage (35.2 afy) is about 80 percent of future proposed pumpage (44.0 afy). Therefore, it is reasonable to conclude that the impacts of the proposed project cause about 20 percent of the predicted drawdown and the current pumpage would cause about 80 percent of the predicted drawdown. Analysis of mutual interference was not performed, which would have increased predicted drawdown slightly. However, it is believed that the prior pumping of the wells (lack of steady state) and cumulative predicted drawdown (current plus future demand) overestimate the predicted drawdown associated with the proposed project significantly.

During periods of increased pumpage associated with summer-time irrigation at the adjacent winery, water levels in the Weir wells declined somewhat (Rizzoli, 2007). The magnitude of the decline is not evident in on-site water level hydrographs, so is likely less than several feet (Plate 5).

The water level hydrographs presented on Plate 5 indicate no significant declining water level trends in most monitoring wells, some of which have continuous water level data dating from as early as January 1989. The water level in Monitoring Well P-6, located approximately 800 feet west of Well No. 2, has declined approximately 7 feet between 1993 and 2006. Similarly, Monitoring Well MW-8 (to be decommissioned) has shown 6 feet of water level decline between 2000 and 2006. Monitoring Well MW-2 is a Monterey Formation monitoring well with the longest period of record and is to be decommissioned. MW-2 is located approximately 800 feet north-northwest of Well No. 2. Water levels within MW-2 have declined from an initial high of approximately 218 feet above MSL in 1989 to a low (dry state) of 200 feet MSL in 2004. Between 2004 and 2006 (above average water years), water levels rose 2 feet for a period-of-record decline of 16 feet, or about 1 foot per year on average. The observed historic water level variations are not considered significant.

Localized subsidence will not occur due to the groundwater pumpage related to the expansion operations at the CCL because of the bedrock environment underlying the site, and the limited magnitude and duration of groundwater pumping from the CCL.

GROUNDWATER RECHARGE ESTIMATE

An estimate of recharge in the hydrogeologic study area was performed by considering percolation of precipitation. For this analysis, we considered all components of groundwater inflow and outflow. For lack of data and geologic complexity, it is assumed that subsurface inflow and subsurface outflow are equal and as a result neither contribute nor remove water from the aquifer. Of the components of inflow (recharge), percolation of precipitation is often the component that contributes the greatest quantities of water to the aquifer, as can, to a lesser degree, percolation of applied irrigation and percolation of streamflow. Calculation of streamflow percolation requires streamflow data, which are not available for the hydrogeologic study area. Therefore, only percolation of precipitation and percolation of applied irrigation water were utilized to estimate groundwater recharge within the study area. Such an approach is considered reasonable to estimate a gross water balance for the area.

Only a small portion of total rainfall percolates to groundwater. Some of the rainfall runs off, some evaporates directly from the soil surface, or is taken up by plants to be transpired to the atmosphere (a process jointly referred to as ETo). Only after a sufficient amount of rainfall has saturated the soil to some depth can any additional precipitation percolate to become groundwater. Detailed estimates of percolation of precipitation require surface area, soil type, daily measurements of precipitation and ETo and runoff data. We referred to a study conducted in the Arroyo Grande - Nipomo Mesa area (DWR, 2002) that presents estimates of percolation of precipitation based on annual precipitation. Based on that study, between 9 (Tri-Cities Mesa - Arroyo Grande Plain) and 16 percent (Santa Maria Valley) of average annual precipitation percolates to groundwater. For our calculations we chose a factor of 12 percent of average annual precipitation to estimate percolation of precipitation. Average annual precipitation in the area is approximately 22.1 inches per year. Application of the DWR's average value is 12 percent of the 22.1 inches, or 2.65 inches, to the study area of approximately 1,687 acres, leads to an estimated percolation of precipitation of approximately 373 afy. This estimate would not change significantly following expansion of the CCL. Arguably, percolation of precipitation directly on the coarser alluvial materials (refer to Qa and Qoa on Plate 3) would increase the recharge estimate, as would percolation of streamflow.

Percolation of applied irrigation water can be calculated relative to total applied irrigation water. Based on studies in the region that included detailed water balances (Fugro West, 2002; DWR, 2002), it is estimated that as much as 15 percent of irrigation water applied within the study area percolates deeply to the aquifer. If so, an estimated 31 afy would recharge the groundwater. If the future projections of conversion to vineyards are accurate, as much as 129 afy of applied irrigation water could percolate to the aquifer after build out. Total recharge due to percolation of precipitation and applied irrigation water is approximately 404 afy. If fallow land is converted to the full extent estimated, a total of 502 afy will recharge the groundwater in the study area.

Components of groundwater outflow include groundwater pumpage, underflow, and extraction by phreatophytes. Underflow into and out of the aquifer are assumed to be equal. Phreatophytes (deep rooted plants that obtain water from shallow groundwater) typically located within alluvial valleys, are not present within the study area to a significant degree. Generally,

the quantity of phreatophytes is considered so small as to be negligible in the overall water balance. Therefore, extractions by phreatophytes were not estimated as a groundwater outflow component.

The only significant and quantifiable groundwater outflow component is groundwater pumpage from the CCL and domestic and agricultural users. Currently, groundwater pumpage (326 afy) is lower than the estimated recharge (404 afy). Total future groundwater demand of as great as 1,009 afy would be significantly greater than the estimated future recharge of 502 afy by as much as 507 afy.

A comparison of the components of groundwater recharge and outflow is presented as Table 9 – Gross Water Balance for Hydrogeologic Study Area.

Table 9. Gross Water Balance for the Hydrogeologic Study Area

Period	Components of Recharge (afy)		Component of Outflow (afy)	Surplus / Deficit (afy)
	Percolation of Precipitation	Percolation of Irrigation	Pumpage	
Current	373	31	326	78
Proposed	373	129	1,009	-507

Without future conversion of fallow land to vineyards, total future groundwater pumpage within the study area would be approximately 349 afy, a value lower than the estimated recharge of 404 afy. Of this increase in pumpage over current conditions of 26 afy, a total of 17 afy would be due to the addition of secondary homes and 9 afy would be due to expansion of the CCL.

GROUNDWATER QUALITY

Existing Groundwater Quality

Groundwater quality data from EMCON Associates (1992) and RMC Geoscience (2007) were reviewed in order to determine the background water quality on and surrounding the site, the variability of the native water quality, the impact of the various operations at the CCL on water quality, and the record of compliance with relevant groundwater quality requirements.

Water quality data through 1965 were considered as conditions present prior to the landfilling operations, a time before which landfill operations were not likely to cause any groundwater contamination. EMCON's analysis of water quality extended regionally as far northwest as Well -12D9 located near the San Luis Obispo County Airport, and as far north as Well -16D2 located on Righetti Road north of Orcutt Road. More locally, EMCON attempted to compile water quality data for all wells within a 1-mile radius of the CCL. Generally, water quality both regionally and from wells within a 1-mile radius of the CCL is magnesium bicarbonate in chemical character and has not changed significantly since CCL operations

began. Within 1 mile west of the CCL, total dissolved solids (TDS) ranged between 423 and 1,227 mg/l, nitrate ranged between 0 and 27 mg/l, and sodium ranged between 27 and 67 mg/l. South of the site within 1-mile, the TDS ranged between 608 and 693 mg/l, nitrate ranged between 0 and 14 mg/l, and sodium ranged between 56 and 135 mg/l. East of the site within 1-mile, TDS ranged between 420 and 484 mg/l, nitrate ranged between 0 and 31 mg/l and sodium ranged between 34 and 72 mg/l.

Generally, groundwater within a mile radius to the west of the CCL is high in TDS and slightly elevated with respect to sodium. According to Mr. Rizzoli (2007), groundwater west of the site (within the Monterey Formation), including the Shop Wells, has elevated hydrogen sulfide (H_2S) concentrations, which limit potablity. Hydrogen sulfide is commonly associated with hydrocarbons in the diatomaceous Monterey Formation. TDS concentrations are lower within a mile radius to the south of the site, but sodium concentrations are elevated. Water quality from the alluvium and Pismo Formation east of the site is generally considered to be of potable quality. The three Weir wells are completed in the Pismo Formation.

Water quality data for the site are more complete than regional water quality data. Groundwater sampling has been performed at the site regularly since 1987, originally as part of a hydrogeologic site characterization study (EMCON, 1987). In February 1989, groundwater samples collected from wells MW-1, MW-2, MW-5, PW-2, UG-1, and DH-1 were analyzed for organic and inorganic constituents for comparison with California drinking water standards (maximum contaminant limits or MCLs). The results indicate that secondary (aesthetic) MCLs were exceeded for: TDS in all wells, electrical conductivity in all wells except MW-3, chloride in PW-2, and sulfate in MW-2. Generally, except for chloride and sulfate, all downgradient exceedences were also exceeded in upgradient MW-5. The elevated chloride and sulfate character of the groundwater may reflect natural groundwater conditions within the shallow geologic formations in which they were detected (RMC, 2007b and ERCE, 1991). The chloride and sulfate concentrations are likely controlled by relatively higher solubility of chloride and sulfate minerals relative to bicarbonate minerals. The reasons for the increases in chloride and sulfate are not known in all instances (RMC, 2007b). The WDRs require quarterly monitoring of groundwater quality to determine if a statistical exceedence occurred in any well and constituent.

The RWQCB issued WDRs for the site in 1975, subsequently updated in January 1990 (Order 90-33). Order No. 93-51 was issued in 1993 to allow a horizontal and vertical expansion of the landfill. In response to the requirements of the order, the CCL capped 14 acres of the unlined area and constructed a gas extraction system. The Order was updated in 2002, during which RWQCB staff issued a letter indicating that the CCL was in substantial compliance with the requirements of the Order and that a comprehensive file review from 1993 to 2002 failed to turn up a single Notice of Violation or other formal enforcement action. The report also indicated that Volatile Organic Compounds (VOC) had been reduced to levels below detectable limits as a result of several corrective actions (RMC, 2007b).

The 2002 RWQCB report indicated that there may have been a release (of undocumented constituents) from the existing landfill in the vicinity of MW-2 and MW-3. However, upon installing Wells P-8 and P-9, and performing subsequent monitoring, it was

determined that the release had not migrated beyond MW-2 and MW-3 (RMC, 2007b). Subsequent groundwater monitoring reports have not identified any release. The methods to mitigate statistically significant releases through a corrective action plan are discussed below.

In March 2002, CCL documented that chloride and sulfate concentrations measured in well P-7 were statistically significant.. The cause was identified as seepage associated with a former wet-weather fill area, which has since been corrected (RMC, 2007b). The CCL prepared an Amended Report of Waste Discharge that concluded that the conditions in Well P-7 were not replicated. Additional monitoring or corrective action were not required (RMC, 2007b).

Current Groundwater Quality Monitoring

Currently, the CCL is subject to water quality sampling requirements contained in the adopted WDR MRP No. R3-2002-0065. The MRP requires that 15 of the monitoring wells on site be sampled and analyzed on a quarterly or semiannual basis as a part of three routine monitoring programs. Detection monitoring includes those constituents that have not been exceeded. Corrective action monitoring is based on inorganic constituents that occasionally exceed statistically-derived concentration limits for chloride, sulfate, or dissolved manganese. All constituents involved with Corrective Action Monitoring are naturally occurring or associated with naturally-occurring oil and tar in the geologic formations underlying the site. A summary of the monitoring status of each of the monitoring wells is presented in Table 10 - Summary of Groundwater Monitoring Requirements (RMC, 2007b).

Table 10. Summary of Groundwater Monitoring Requirements

Well	Detection Monitoring	Corrective Action Monitoring	Other Monitoring
MW-1	X (VOCs)	X (Inorganics)	
MW-2		X (VOCs and Inorganics)	
MW-3	X (VOCs)	X (Inorganics)	
MW-5	X		
P-1A			X
P-1B	X		
P-2			X
P-3A	X (VOCs)	X (Inorganics)	
P-3B	X		
P-4			X
P-5	X		
P-6			X
P-7	X (VOCs)	X (Inorganics)	
P-8	X		
P-9	X		

Note: X indicates inclusion in monitoring program

The MRP requires that a total of 8 quarters of background monitoring be performed prior to the expansion of the CCL. Two years of monitoring is a sufficient time to provide the CCL and RWQCB a "fingerprint" of the native groundwater quality, against which future groundwater quality can be compared to demonstrate whether any significant impacts are occurring. The extended background monitoring will include the additional Monitoring Wells P-10 through P-14 located in the expansion area (Plates 4 and 6). The addition of these five monitoring wells will allow more complete monitoring of the water-bearing zone underlying the present and expanded CCL.

In the event that monitoring results identify significant levels of contamination, the RWQCB will be notified immediately and an evaluation monitoring program will be initiated per Chapter 15 of the California Code of Regulations requirements. The evaluation monitoring program would include a subsurface investigation to assess the vertical and horizontal extent of the contamination plume and potential sources. If it is determined through the evaluation monitoring program that a release has occurred and the nature and extent of the release are known, an incident-specific corrective action program would be designed and implemented. The corrective action program would also take corrective action to remediate releases, such as the installation of one or more pumping wells to remove the contaminant. A water quality monitoring program shall be implemented to demonstrate the effectiveness of the corrective action program. We are not aware of any past corrective action plans at the CCL. Determination of the details of potential costs, specific responsibilities, and logistical issues is not possible until a release is identified and an appropriate corrective action plan is adopted.

Leachate Collection System

A system is installed within each module to collect and remove liquids that migrate downward through the waste. Captured liquids are conveyed to a sump where they are pumped into an above-ground storage tank located in the southwest corner of the site (Plate 4). On average, the landfill generates approximately 700,000 gallons of leachate per year (Morro Group, 2007). The generated leachate offsets groundwater pumpage for dust control as an in-lieu water source.

Leachate collected from Modules 6, 7, and 8 is collected in an 11,000 gallon above-ground storage tank, which when full, is applied on the lined portions of the landfill for dust control or, if it is deemed hazardous, sent off-site to a wastewater treatment facility that can accept hazardous wastes. Leachate from the storage tank is analyzed annually. The most recent analysis of leachate was performed in 2006, the results of which are presented in Appendix E - Summary of Recent Leachate Analytical Results. To date, the leachate has been determined to be non-hazardous and acceptable for use in dust control operations.

IMPACTS ANALYSIS

Thresholds of significance for the project were adopted from Section 15382 of the State CEQA Guidelines. Based on information contained in CEQA Guidelines, the proposed project would have a significant environmental effect if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or
- Otherwise substantially degrade water quality.

In addition to CEQA Guidelines impacts, the proposed project may pose significant environmental effects if it would:

- Cause groundwater overdraft;
- Contribute to leachate migration into the groundwater; or
- Contribute to short- and long-term leachate production.

VIOLATION OF WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS

We reviewed the CCL's record of compliance related to the WDRs and MRPs. The CCL has complied with the water quality monitoring and reporting requirements of the RWQCB. The proposed project will continue to be monitored within the current regulatory setting. Before onset of expansion of the landfill, the CCL will have obtained 8 quarters of background water quality data from the monitoring well network. Data obtained from these 8 quarters will be used to develop the future WDRs and MRPs. The intent of the MRP will be to obtain water quality data from the recently installed monitoring wells (P-10 through P-14) and the existing monitoring well network. Compliance with the WDRs and MRPs will require quarterly review of water quality data for identification of any statistically-significant releases from the CCL.

The RWQCB requires that any release from the landfill, as determined from periodic groundwater, leachate, and landfill gas monitoring be reported immediately followed by implementation of a corrective action plan. Such plans typically include comprehensive investigations to assess the vertical and horizontal extent of the release. If any groundwater contamination is deemed significant (a release), a groundwater remediation program would be required by the RWQCB.

The monitoring program in place is considered appropriate to detect a release from the landfill that could affect groundwater quality. Compliance with the future required monitoring and reporting programs will mitigate potential adverse effects of the project on water groundwater quality to a level that is **less-than-significant.**

DEPLETION OF GROUNDWATER SUPPLIES OR INTERFERENCE WITH GROUNDWATER RECHARGE

The CCL will require approximately 42,900 gpd of water on average, with a peak water demand of 80,000 gpd. During the course of a year, the CCL will require approximately 48.1 afy, of which approximately 44.0 afy (39,200 gpd) will be satisfied by groundwater. The remaining water demand (4.1 afy) will be satisfied by application of leachate on the landfill for dust control purposes and from water that may be obtained from the adjacent Vintage Wine Trust property. Potable water demand for CCL employees will continue to be satisfied by bottled supplies.

Water demand for the expansion of several landfill components and construction of additional landfill modules will increase during the proposed expansion project. Water use should be quantified through the installation of meters on all of the water supply wells and from the adjacent winery property. The well meters and water levels should be read regularly (monthly) and used to calculate actual site water demand. Water for construction of the expansion modules may exceed the capabilities of the on-site water supply system. If additional water is required, it is considered feasible to reactivate Weir Well No. 3 to obtain an additional 16 gpm. If further additional supply is required, additional well(s) could be installed on-site within the Pismo Formation to satisfy additional water demands.

No significant groundwater level declines have been noted within the monitoring well record available on-site since 1989 (refer to the discussion in the Hydrogeologic Connectivity section). With the installation of water meters, and the use of alternate sources of water for dust control (leachate and possibly Vintage Wine Trust water), reliance on off-site water to satisfy construction needs related to cell development and general water conservation practices on-site, will reduce this potential impact to a level that is **less-than-significant.**

CONTRIBUTION TO RUNOFF

According to the project description, the surface drainage control system will consist of a series of benches, culverts, natural drainage channels, and sedimentation basins. Finished landfill slopes will be graded to slopes of 3H:1V (horizontal:vertical) or flatter and will include benches placed every 50 feet of elevation. Flat surfaces at the top of the slope (top deck) will be sloped to approximately a 3 percent grade to discourage formation of ponds and too-rapid runoff, which would increase erosion.

Surface water runoff will be directed to one of three detention basins designed to accommodate flows from 100-year, 24-hour storm events, where sediment and other debris can settle out. When eventually full, the basins will outfall to tributaries of Pismo Creek. The grading controls and topographical alteration, if properly implemented, will minimize the impact of creating runoff that exceeds the capacity of planned storm water drainage systems to a level that is **less-than-significant.**

SUBSTANTIAL DEGRADATION OF WATER QUALITY

Any water quality impacts from the CCL will be well-documented through the processes described within the MRP, which also provides methods for mitigation of any detected water quality exceedences. Therefore, compliance with the existing and any forthcoming MRPs will reduce this impact to a level that is **less-than-significant.**

INCREASED AGRICULTURAL USE

Agricultural demand could increase significantly, as estimated by the Morro Group (2008), and compete for groundwater resources in the designated hydrogeologic study area. Groundwater demand associated with the expansion of agricultural and, to a lesser extent, residential uses could increase from an estimated current demand of 261 afy to as much as 925 afy in 20 years. A simple water balance for the area indicates groundwater is not sufficient to support such land use changes. Implementation of the project, along with full build-out of neighboring properties and maximum conversion of agricultural properties to vineyards would create a condition that would have **significant, unavoidable impacts on the groundwater resource**.

MONITORING AND MAINTENANCE OF LANDFILL CAPS

California Code of Regulations will require that the CCL prepare a preliminary closure and post-closure maintenance plan. Typical plans describe the methods that will be used to close a landfill in a manner that protects the long-term health of the public and the environment. The long-term maintenance plan will specify programs to maintain the integrity of the final cover, drainage system, leachate control system, landfill gas system, groundwater monitoring system, and the final grading. Details of potential costs, specific responsibilities, and logistical issues will be included in the post-closure maintenance plan.

The WDR requires that the Closure and Postclosure Plan be submitted to the RWQCB by August 18, 2006. The CCL has not done so in anticipation of acceptance of formalized expansion plans. Therefore, the RWQCB considers the CCL to be out of compliance. However, the RWQCB has stated that formal enforcement is not likely as long as they submit the Closure and Postclosure Plan in a "timely manner," that is, upon acceptance of the formalized expansion plans.

Compliance with RWQCB and IWMB final cover designs and post-closure maintenance plans, which will describe the specific methods to determine that the landfill caps remain effective, will minimize this impact to a level that is **less-than-significant**.

SUMMARY AND CONCLUSIONS

In this water resources assessment, the impacts of anticipated pumping demand for the proposed CCL expansion on local groundwater levels, reliability and quality were evaluated. Groundwater use for the proposed landfill expansion is expected to be pumped from the Weir Well Nos. 1 and 2 at a build-out pumping rate of 39,200 gpd or 44 afy. Peak water demand,

expected to occur on weekdays during the driest and warmest months, is estimated to be about 80,000 gpd. Well Nos. 1 and 2, with the possible later reactivation of Well No. 3, are capable of satisfying the daily demand. Water demand associated with construction of the landfill modules will likely be greater than the current sources can supply. Therefore, as was the case during the prior landfill expansions, the contractors may be required to temporarily obtain water from an off-site source during construction.

The CCL is not currently permitted by the Environmental Health Department to supply water for its employees by bottled water sources for drinking. Such use will need to be permitted by the San Luis Obispo County Environmental Health Department as a non-transient, non-community water system. Even though the proposed source for potable use for the 120 future employees will be bottled sources, the CCL will be required to submit chemical and bacterialogical analyses of all water sources that could come in contact with employees to prove that the water is potable.

Surrounding groundwater demand could increase significantly during the next 20 years due to intensification of agriculture and, to a lesser extent, residential in-filling. Total groundwater demand within a defined hydrogeologic study area could increase by as much as 254 percent. CCL demand may increase by approximately 26 percent, domestic demand may increase by 61 percent, and vineyard demand may increase by over 300 percent. Groundwater supply in the designated study area is likely not sufficient to satisfy the cumulative water demand if agricultural intensification and residential development occur as projected.

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PERSONS CONTACTED

Cold Canyon Landfill, Mr. Bruce Rizzoli

San Luis Obispo County, Public Works Department, Water Resources Unit, Mr. Sylas Cranor

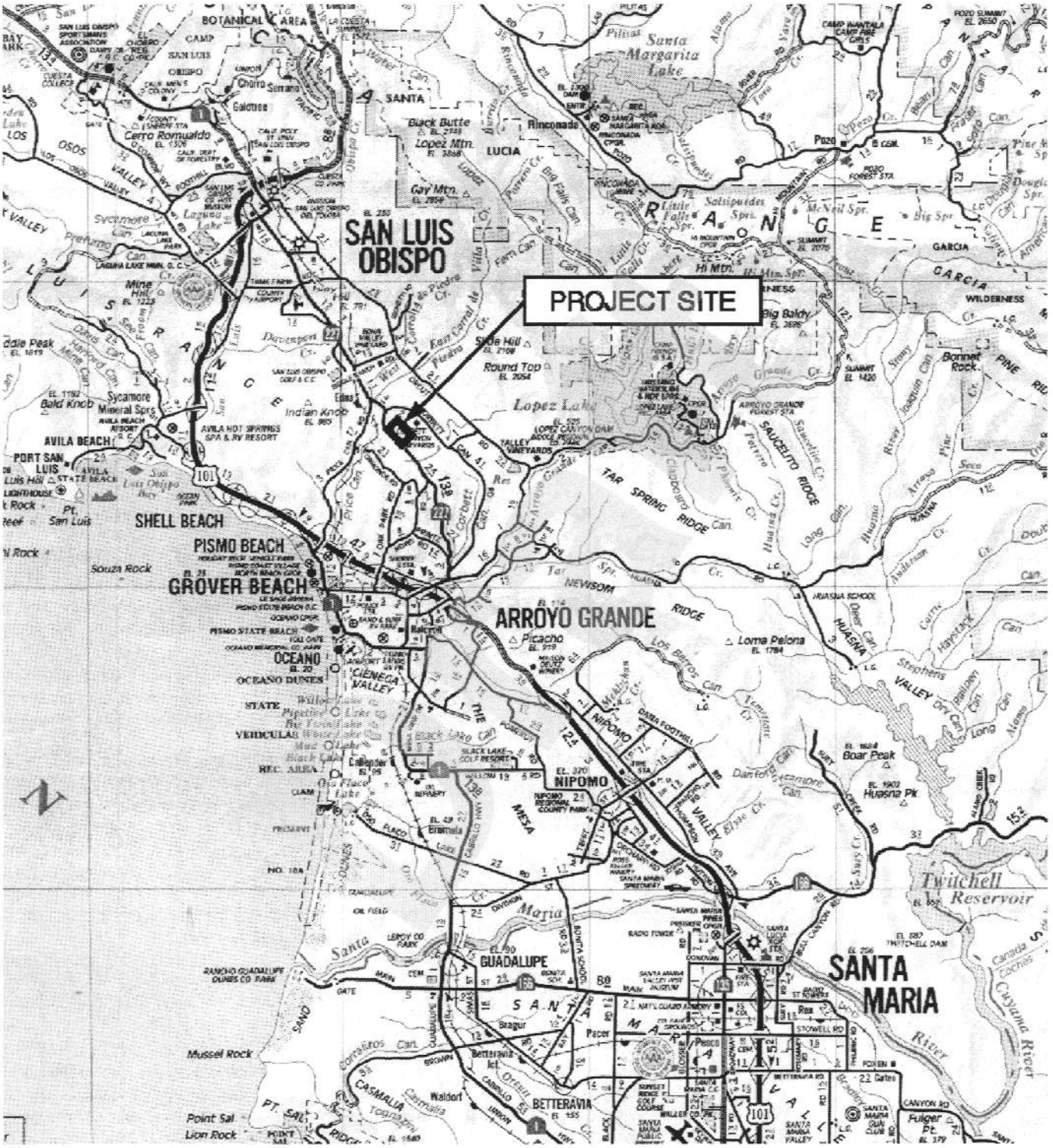
San Luis Obispo County, Environmental Health Department, Mr. Brad Pryor

Department of Public Health (DPH) Drinking Water Program, Santa Barbara District staff.

California Regional Water Quality Control Board, Central Coast Region (2007), Mr. Martin Fletcher

California Department of Water Resources, Mr. Michael Van Raalte.

PLATES



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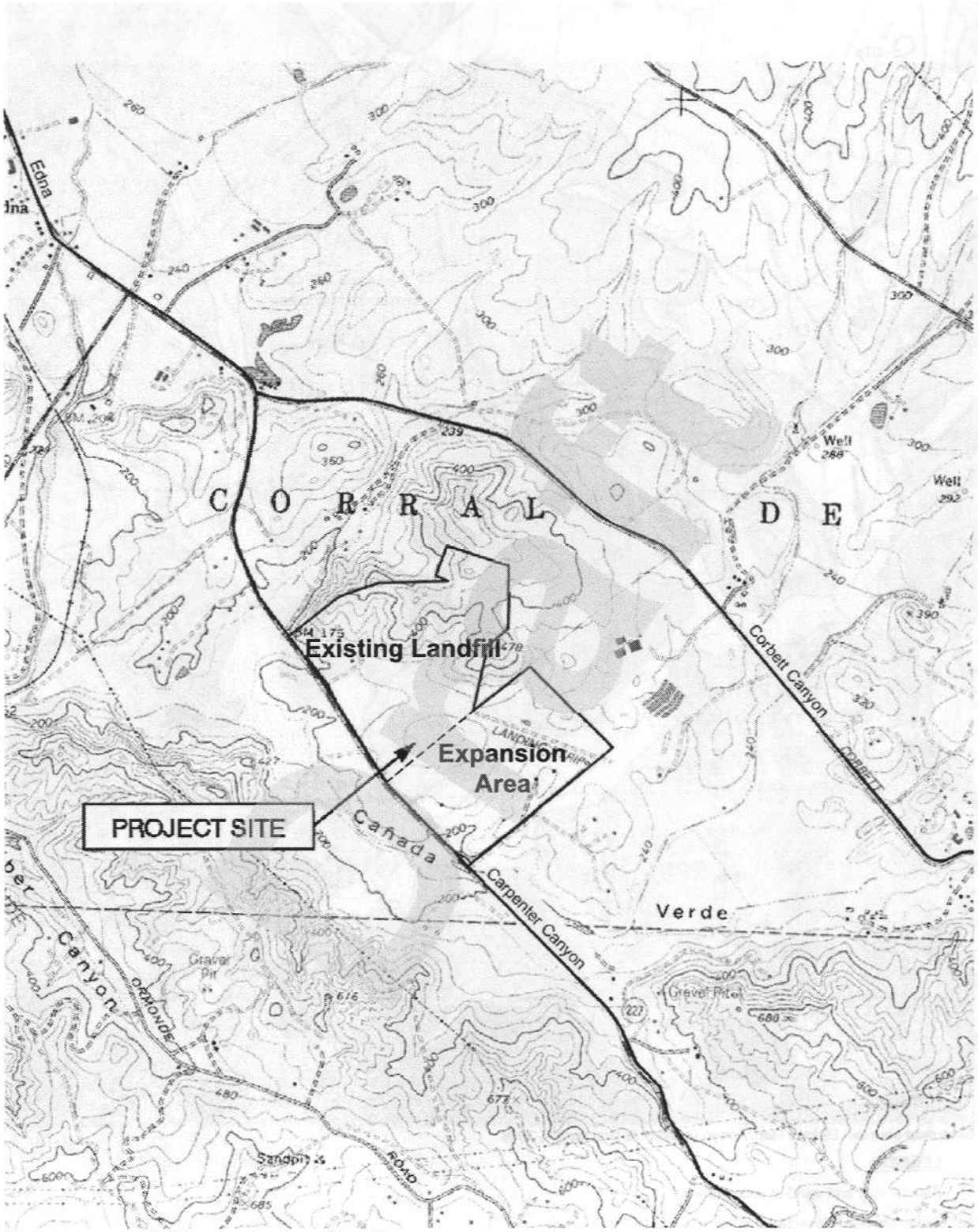
NORTH

VICINITY MAP
Water Resources Assessment
Cold Canyon Landfill Expansion
San Luis Obispo County, California

PLATE 1



Base map source: USGS quadrangle - Arroyo Grande NE.

NORTH

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SITE LOCATION MAP

Water Resources Assessment
Cold Canyon Landfill Expansion
San Luis Obispo County, California

PLATE 2

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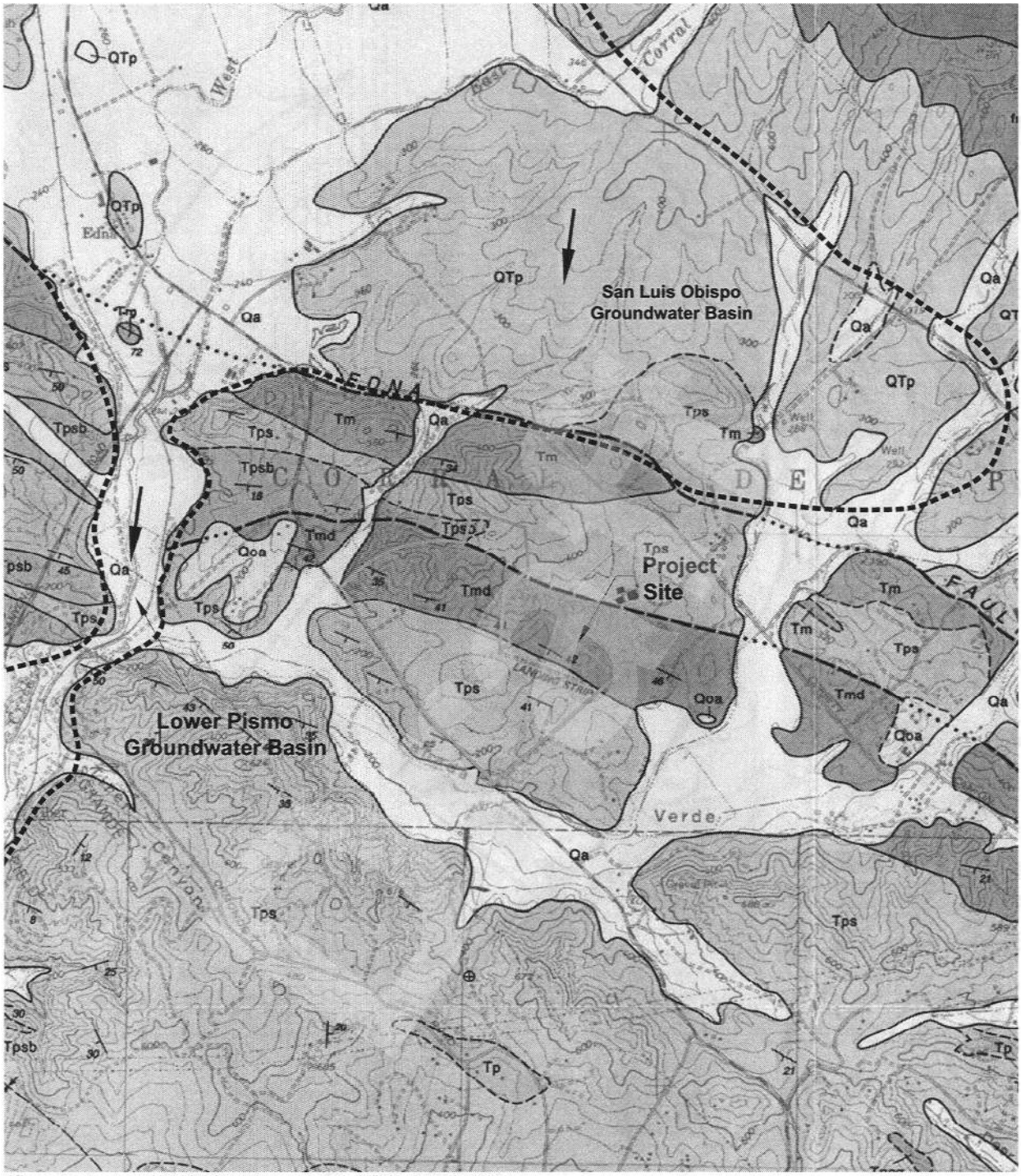

Base map source: Dibblee Map, Arroyo Grande NE Quadrangle, 2006

LEGEND

Qa	Alluvial clay and sand of valley areas
Qoa	Older alluvium dissected
QTp	Paso Robles Formation - pebble, gravel, sand and gravel pebbles
Tps/Tpsb	Pismo Formation - sandstone
Tm/Tmd	Monterey Formation
------	Approximate boundary of groundwater basin
←	Approximate direction of groundwater flow

REGIONAL GROUNDWATER BASINS AND GEOLOGIC MAP

Water Resources Evaluation
Cold Canyon Landfill Expansion
San Luis Obispo County, California

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PLATE 3

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BASE MAP SOURCE: Morro Group Inc., Fig. III-10, 7/31/07.

LEGEND

- Groundwater monitoring well
- Groundwater monitoring well to be decommissioned
- Proposed groundwater monitoring well
- Stormwater discharge sample location
- Proposed stormwater discharge sample location
- Groundwater monitoring well to be decommissioned
- Water supply well
- Proposed stormwater discharge sample location

ON-SITE GROUNDWATER WELL LOCATION MAP

Water Resources Assessment
Cold Canyon Landfill Expansion
San Luis Obispo County, California

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PLATE 4

The Morro Group
Project No. 3571.001

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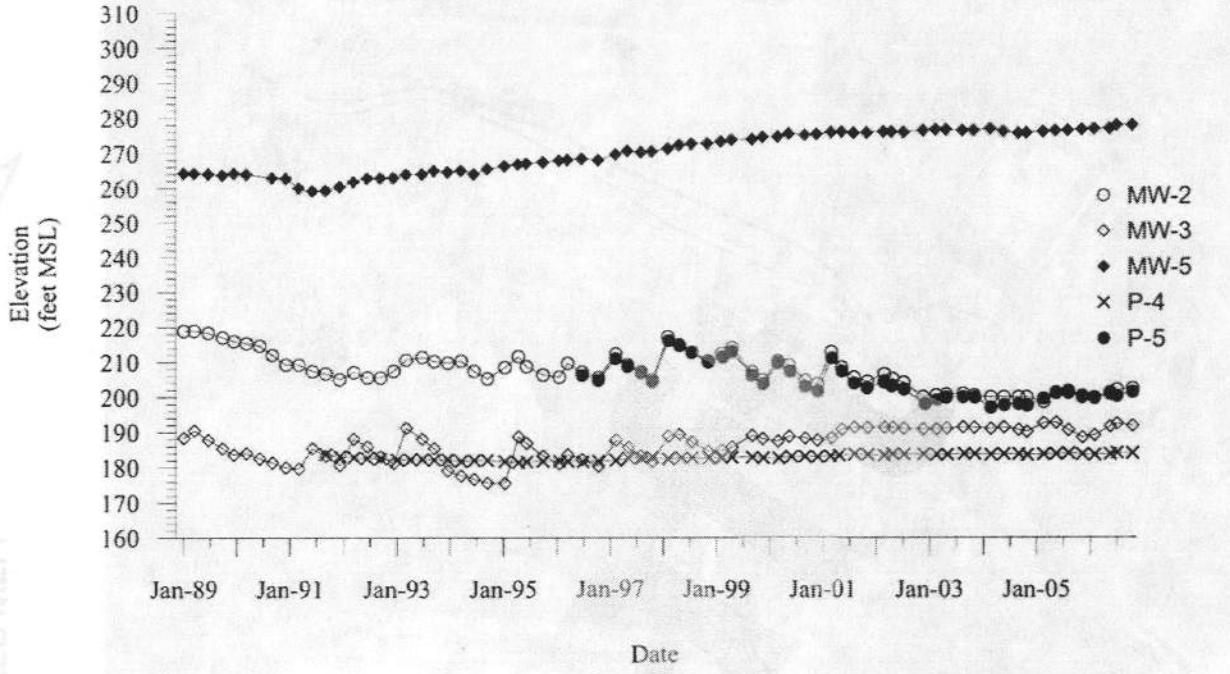

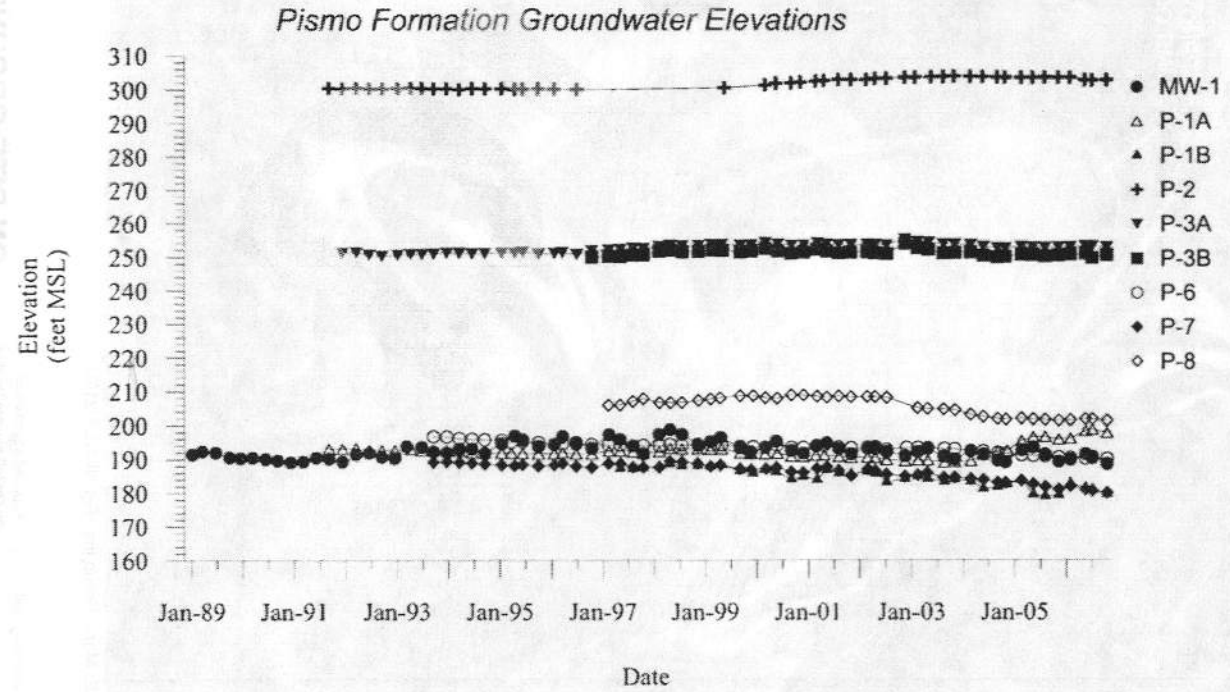

Document source: Golder Associates, Hydrogeologic Characterization Report, January 2007.

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GROUNDWATER HYDROGRAPHS

Water Resources Assessment
Cold Canyon Landfill Expansion
San Luis Obispo County, California

PLATE 5

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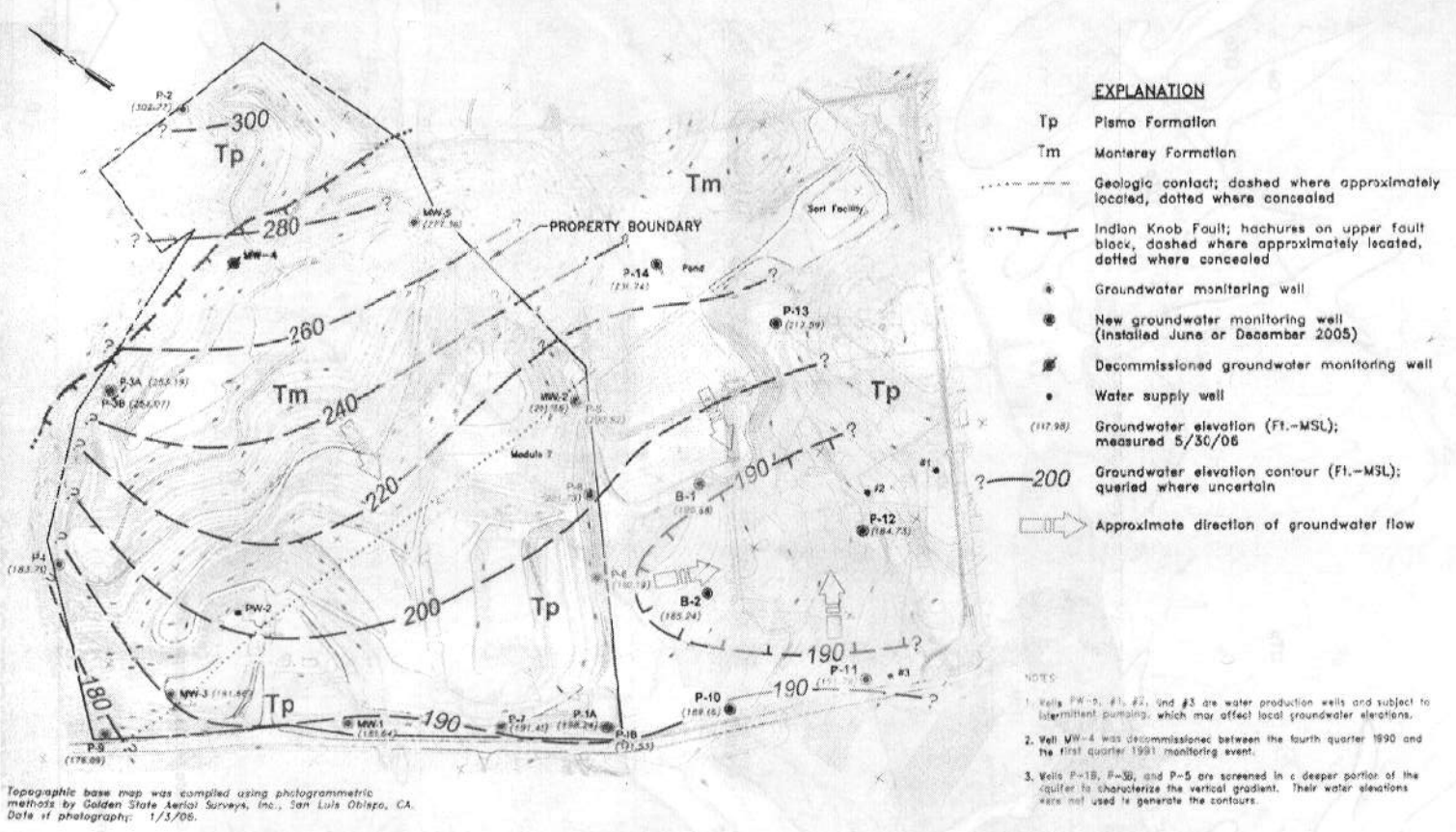

EXPLANATION

Tp	Pismo Formation
Tm	Monterey Formation
	Geologic contact; dashed where approximately located, dotted where concealed
	Indian Knob Fault; hachures on upper fault block, dashed where approximately located, dotted where concealed
	Groundwater monitoring well
	New groundwater monitoring well (installed June or December 2005)
	Decommissioned groundwater monitoring well
	Water supply well
(117.98)	Groundwater elevation (Ft.-MSL); measured 5/30/06
200	Groundwater elevation contour (Ft.-MSL); queried where uncertain
	Approximate direction of groundwater flow

NOTES

1. Wells PW-2, #1, #2, and #3 are water production wells and subject to intermittent pumping, which may affect local groundwater elevations.
2. Well MW-4 was decommissioned between the fourth quarter 1990 and the first quarter 1991 monitoring event.
3. Wells P-1B, P-3B, and P-5 are screened in a deeper portion of the aquifer to characterize the vertical gradient. Their water elevations were not used to generate the contours.

Base map source: Golder Associates, Hydrogeologic Characterization Report, January 2007.

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TYPICAL GROUNDWATER CONTOUR MAP

Water Resources Assessment
Cold Canyon Landfill Expansion
San Luis Obispo County, California

PLATE 6

The Morro Group
Project No. 3571.001

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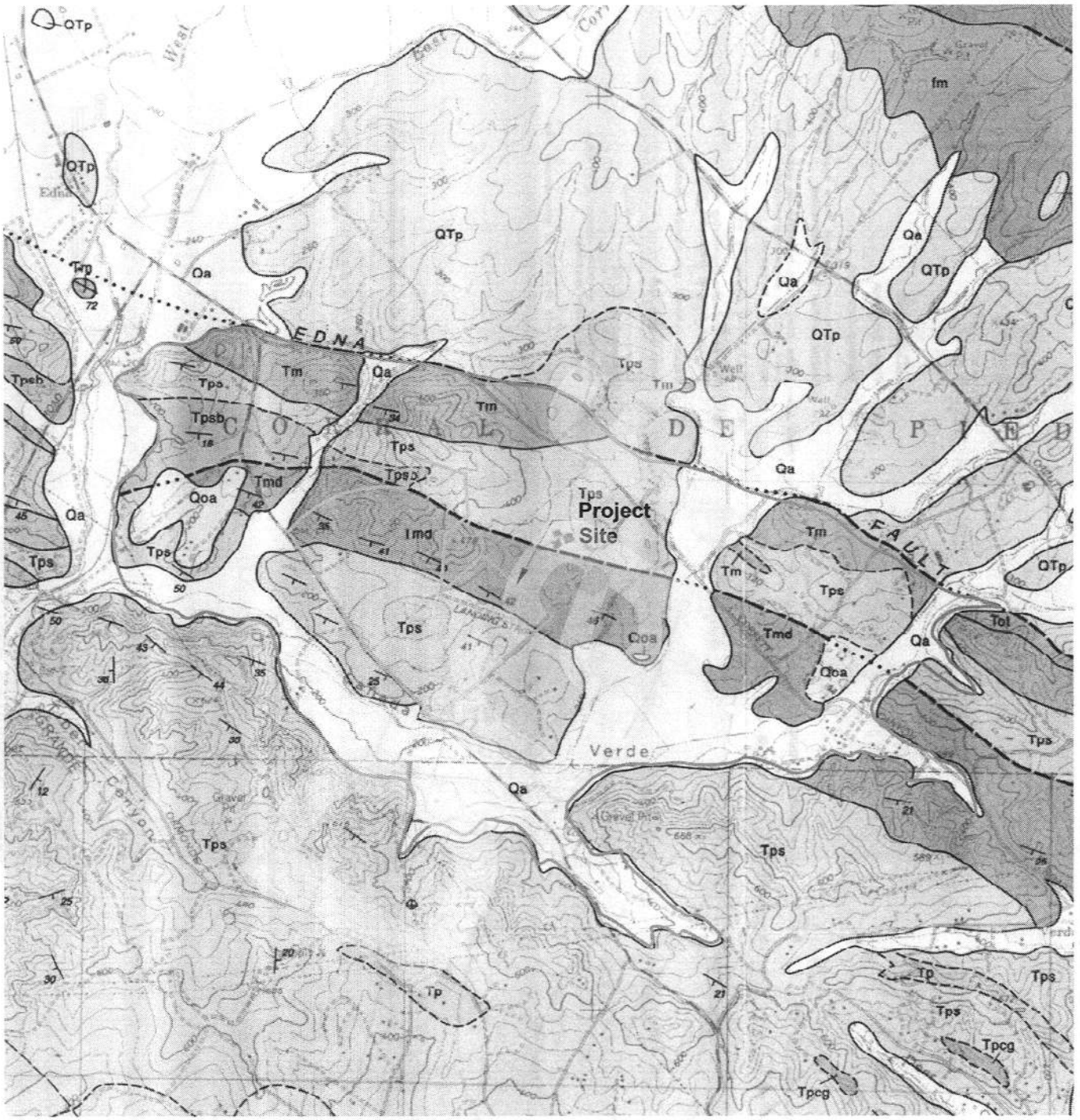

Base map source: Dibblee Map, Arroyo Grande NE Quadrangle, 2006

LEGEND

Qa	Alluvial clay and sand of valley areas
Qoa	Older alluvium dissected
QTp	Paso Robles Formation - pebble, gravel, sand and gravel pebbles
Tps/Tpsb	Pismo Formation - sandstone
Tm/Tmd	Monterey Formation
———	Hydrogeologic Study Area

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HYDROGEOLOGIC STUDY AREA

Water Resources Assessment
Cold Canyon Landfill Expansion
San Luis Obispo County, California

PLATE 7

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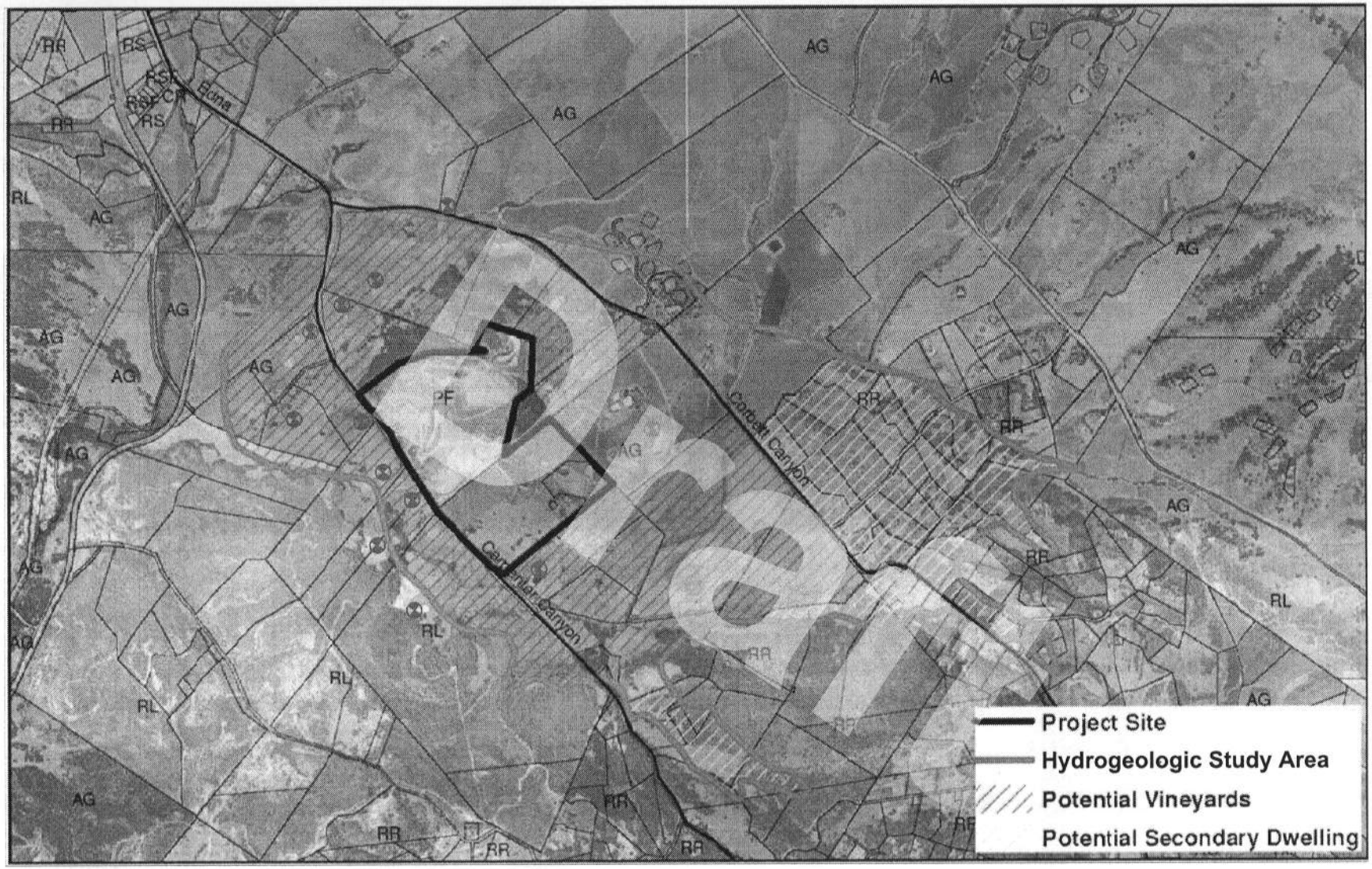

BASE MAP SOURCE: Morro Group Inc., Fig. III-10, 7/31/07. Land Use Codes from County of San Luis Obispo Planning and Building Department. Parcels from Barclay Maps.

LEGEND

Approximate location of water supply well (per DWR files or field survey).

LAND USE CODES

- AG Agricultural
- RR Residential Rural
- RL Rural Lands
- PF Public Facilities
- CR Commercial Residential

SURROUNDING LAND USE AND WATER WELL LOCATION MAP

Water Resources Assessment
Cold Canyon Landfill Expansion
San Luis Obispo County, California

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PLATE 8

The Morro Group
Project No. 3571.001

FUGRO

APPENDIX A
PRECIPITATION AND EVAPORATION DATA

San Luis Obispo County Public Works

Volunteer Precipitation Gauge Station

MONTHLY PRECIPITATION REPORT

Station Name - SLO Airport # 205.4

Station Location -

Latitude - 35° 14' 14"

Longitude - 120° 38' 05"

Description - San Luis Obispo

Water Years -

Beginning - 1981-1982

Ending - 2006-2007

Station Statistics -

Month	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Average	0.03	0.04	0.34	0.83	2.14	3.81	4.25	4.90	3.95	1.37	0.44	0.03	22.13
Maximum	0.35	0.63	2.00	5.05	5.96	12.55	14.80	14.82	13.70	5.94	3.10	0.50	44.14
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.30	0.00	0.00	0.00	0.00	8.97

San Luis Obispo County Public Works

Volunteer Precipitation Gauge Station

MONTHLY PRECIPITATION REPORT

Station Name and no. SLO Airport # 205.4

*** All units are in inches ***

Water Year	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
2006-2007	0.00	0.00	0.00	0.00	0.45	2.20	1.55	2.72	0.45	1.50	0.10	0.00	8.97
2005-2006	0.00	0.00	0.00	0.00	1.30	2.09	7.90	1.95	5.94	5.94	1.60	0.00	26.72
2004-2005	0.00	0.00	0.00	5.05	2.45	8.55	8.58	5.35	4.70	0.35	0.65	0.00	35.68
2003-2004	0.00	0.00	0.00	0.00	2.30	4.70	1.30	8.36	0.75	0.00	0.00	0.00	17.41
2002-2003	0.00	0.00	0.00	0.00	4.05	5.45	0.55	2.98	2.40	1.00	0.00	0.00	16.43
1999-2000	0.00	0.00	0.00	0.00	0.00	2.25	3.97	10.55	2.00	2.25	0.20	0.25	21.47
1998-1999	0.00	0.00	0.44	0.30	1.15	0.92	2.60	1.65	4.50	2.20	0.00	0.00	13.76
1997-1998	0.00	0.00	0.00	0.00	5.50	4.75	5.35	14.82	5.50	3.15	3.10	0.00	42.17
1996-1997	0.00	0.00	0.00	2.75	4.10	12.55	11.70	0.30	0.00	0.00	0.00	0.00	31.40
1995-1996	0.00	0.00	0.00	0.00	0.50	3.60	2.85	9.60	1.70	1.35	0.75	0.00	20.35
1994-1995	0.00	0.00	1.99	1.64	1.70	1.14	14.80	2.30	13.70	0.80	1.15	0.00	39.22
1993-1994	0.35	0.00	0.00	0.00	2.15	1.80	3.05	5.90	1.75	0.95	0.45	0.00	16.40
1992-1993	0.25	0.00	0.00	1.60	0.00	6.17	9.10	8.05	4.92	0.10	0.25	0.00	30.44
1991-1992	0.00	0.00	0.00	0.51	1.60	4.70	3.55	9.40	2.67	0.05	0.00	0.00	22.48
1990-1991	0.00	0.00	0.40	0.00	0.40	1.05	0.90	2.50	11.90	0.40	0.00	0.50	18.05
1989-1990	0.00	0.00	1.51	1.10	0.55	0.00	1.72	2.40	0.65	0.12	1.20	0.00	9.25
1988-1989	0.00	0.00	0.00	0.00	1.75	7.06	0.85	1.90	1.45	0.25	0.20	0.00	13.46
1987-1988	0.00	0.00	0.00	1.59	0.67	4.70	2.38	2.95	0.80	2.06	0.31	0.00	15.46
1986-1987	0.00	0.00	0.97	0.00	0.30	1.08	3.12	2.42	3.60	0.45	0.00	0.00	11.94
1985-1986	0.03	0.00	0.03	1.03	3.70	1.84	2.02	7.76	6.17	0.17	0.00	0.00	22.75
1984-1985	0.00	0.05	0.00	0.96	4.08	3.76	1.11	1.77	3.32	0.15	0.00	0.00	15.20
1983-1984	0.00	0.63	2.00	0.32	4.15	5.16	0.09	0.55	0.08	0.64	0.00	0.00	13.62
1982-1983	0.00	0.30	0.73	1.44	5.96	4.90	8.61	9.91	8.42	3.16	0.71	0.00	44.14
1981-1982	0.00	0.00	0.00	1.55	2.57	1.13	4.40	1.41	7.47	5.89	0.00	0.00	24.42

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **2006-2007**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1													1
2													2
3											0.10		3
4													4
5							0.10						5
6													6
7													7
8								0.20					8
9						0.25							9
10						1.00							10
11						0.30		1.10					11
12					0.05								12
13													13
14					0.30					0.10			14
15													15
16													16
17							0.15						17
18													18
19													19
20										1.00			20
21									0.35				21
22						0.10		0.01		0.05			22
23								0.75		0.35			23
24													24
25								0.10					25
26													26
27					0.10	0.55	0.50	0.30	0.10				27
28							0.60	0.26					28
29							0.20						29
30													30
31													31
Total	0.00	0.00	0.00	0.00	0.45	2.20	1.55	2.72	0.45	1.50	0.10	0.00	
Cum. Total	0.00	0.00	0.00	0.00	0.45	2.65	4.20	6.92	7.37	8.87	8.97	8.97	

Season Total 8.97

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **2005-2006**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1							1.30			0.70			1
2						0.49	5.65						2
3							0.45		0.50	2.10			3
4										0.80			4
5										0.70			5
6									0.80				6
7					0.15				0.30				7
8					0.15								8
9					0.70	0.15							9
10					0.25				0.25				10
11									0.40	0.35			11
12									0.20	0.10			12
13							0.30		0.10				13
14													14
15										0.20			15
16										0.05			16
17									0.25	0.14			17
18						0.50	0.20	0.30	0.15				18
19						0.20		0.65					19
20								0.10					20
21									0.35	0.05	1.60		21
22													22
23													23
24													24
25										0.60			25
26					0.05	0.25			0.21	0.15			26
27								0.15					27
28								0.75	1.35				28
29						0.25			0.65				29
30									0.13				30
31						0.25			0.30				31

Total	0.00	0.00	0.00	0.00	1.30	2.09	7.90	1.95	5.94	5.94	1.60	0.00	
Cum. Total	0.00	0.00	0.00	0.00	1.30	3.39	11.29	13.24	19.18	25.12	26.72	26.72	

Season Total **26.72**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **2004-2005**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1							0.20						1
2													2
3							1.60						3
4					0.50		0.10		0.25	0.10			4
5					1.75				0.20		0.65		5
6													6
7						0.30	0.10						7
8						1.60	1.75			0.10			8
9							2.20			0.15			9
10							0.55						10
11							1.20	0.30					11
12					0.10								12
13								0.10					13
14													14
15													15
16								0.60					16
17				0.70				1.00					17
18				0.35				0.05					18
19				2.10				0.55	0.50				19
20								0.65					20
21								1.25	0.55				21
22								0.10	1.40				22
23									1.55				23
24													24
25													25
26				1.90									26
27					0.10	0.40	0.23						27
28						2.35	0.40	0.75	0.25				28
29						0.75	0.25						29
30													30
31						3.15							31
Total	0.00	0.00	0.00	5.05	2.45	8.55	8.58	5.35	4.70	0.35	0.65	0.00	
Cum. Total	0.00	0.00	0.00	5.05	7.50	16.05	24.63	29.98	34.68	35.03	35.68	35.68	

Season Total 35.68

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **2003-2004**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1					0.20								1
2							1.00	0.85	0.50				2
3					0.20		0.15						3
4													4
5													5
6													6
7						0.20							7
8					0.10								8
9					1.60								9
10						0.75							10
11													11
12					0.10								12
13													13
14						0.50							14
15													15
16					0.10								16
17													17
18								1.01					18
19													19
20						0.50							20
21						0.15		0.30					21
22								0.40					22
23								0.50					23
24						0.15	0.05						24
25						1.30		2.80					25
26						0.50			0.25				26
27								2.50					27
28							0.10						28
29													29
30						0.65							30
31													31

Total	0.00	0.00	0.00	0.00	2.30	4.70	1.30	8.36	0.75	0.00	0.00	0.00	
Cum. Total	0.00	0.00	0.00	0.00	2.30	7.00	8.30	16.66	17.41	17.41	17.41	17.41	

Season Total 17.41

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **2002-2003**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1							0.35						1
2													2
3													3
4													4
5										0.15			5
6													6
7					2.90								7
8					1.00								8
9					0.15								9
10													10
11							0.20	0.15					11
12								0.40		0.85			12
13								1.25					13
14						1.65		0.10					14
15								0.40	2.40				15
16													16
17						0.25							17
18													18
19													19
20						1.35							20
21						0.50							21
22						0.50							22
23													23
24													24
25								0.35					25
26													26
27								0.33					27
28						0.85							28
29													29
30													30
31						0.35							31

Total	0.00	0.00	0.00	0.00	4.05	5.45	0.55	2.98	2.40	1.00	0.00	0.00	
Cum. Total	0.00	0.00	0.00	0.00	4.05	9.50	10.05	13.03	15.43	16.43	16.43	16.43	

Season Total **16.43**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1999-2000**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1													1
2													2
3									0.15				3
4								0.40					4
5									0.65				5
6									0.30				6
7													7
8									0.65		0.05	0.25	8
9									0.25				9
10								0.50					10
11								0.50					11
12								0.70					12
13								0.70					13
14								2.00		1.35			14
15								0.70		0.90	0.05		15
16							0.27	0.20			0.10		16
17							0.30						17
18							1.05						18
19							0.10						19
20							0.10	1.60					20
21							0.10						21
22								1.00					22
23							0.15	1.15					23
24							0.60						24
25							0.65	0.10					25
26							0.15						26
27								0.75					27
28								0.25					28
29													29
30													30
31							0.50						31

Daily Rainfall Data Not Recorded

Total	0.00	0.00	0.00	0.00	0.00	2.25	3.97	10.55	2.00	2.25	0.20	0.25	
Cum. Total	0.00	0.00	0.00	0.00	0.00	2.25	6.22	16.77	18.77	21.02	21.22	21.47	

Season Total **21.47**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1998-1999**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1						0.40		0.05					1
2													2
3													3
4													4
5			0.25										5
6						0.40				0.60			6
7								0.25		0.25			7
8								0.15	0.35				8
9								0.45					9
10								0.50					10
11					0.10				0.25	0.40			11
12										0.95			12
13													13
14													14
15									0.50				15
16									0.50				16
17					0.10								17
18													18
19													19
20							0.75		1.35				20
21						0.12	0.10	0.20	0.60				21
22													22
23													23
24					0.10		0.40						24
25				0.30			0.05	0.05	0.80				25
26							0.30		0.05				26
27			0.19				0.25						27
28					0.55								28
29					0.10								29
30					0.20								30
31							0.75		0.10				31

Total	0.00	0.00	0.44	0.30	1.15	0.92	2.60	1.65	4.50	2.20	0.00	0.00	
Cum. Total	0.00	0.00	0.44	0.74	1.89	2.81	5.41	7.06	11.56	13.76	13.76	13.76	

Season Total **13.76**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1997-1998**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1						0.15		0.05		1.50	0.30		1
2							0.60	2.25		0.10	0.15		2
3								1.25		0.50	0.25		3
4						0.80	0.60	0.50			1.00		4
5						2.00	0.25				0.15		5
6						0.25		1.45	0.40				6
7						0.80							7
8						0.25		1.25					8
9							0.60	0.75					9
10					0.30		0.25	0.05					10
11					0.90					0.60			11
12							0.05	0.10		0.20	0.25		12
13					0.30		0.55	1.35		0.10	0.50		13
14					0.30		0.25	1.40	0.50	0.05			14
15					0.25	0.50							15
16					0.50			1.15					16
17													17
18													18
19					0.60		0.75						19
20					0.30			1.23					20
21								1.25					21
22													22
23								0.55		0.10			23
24								0.24					24
25									2.30				25
26					1.15								26
27									0.65				27
28									0.10		0.50		28
29							0.90						29
30					0.90		0.30		0.30				30
31							0.25		1.25				31
Total	0.00	0.00	0.00	0.00	5.50	4.75	5.35	14.82	5.50	3.15	3.10	0.00	
Cum. Total	0.00	0.00	0.00	0.00	5.50	10.25	15.60	30.42	35.92	39.07	42.17	42.17	

Season Total **42.17**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1996-1997**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1							0.25						1
2							1.90						2
3							1.20						3
4						0.10	0.25						4
5													5
6						0.30							6
7													7
8													8
9						0.20							9
10						3.05		0.20					10
11						3.10							11
12						0.40							12
13						0.25	0.50						13
14													14
15							1.40						15
16					1.10		0.15						16
17					0.75			0.05					17
18								0.05					18
19					0.25								19
20							0.75						20
21					0.70	1.30	0.60						21
22					0.80	0.30	0.40						22
23					0.50		1.00						23
24													24
25							0.35						25
26				0.10			2.20						26
27						1.60	0.75						27
28													28
29													29
30				2.50		1.25							30
31				0.15		0.70							31

Total	0.00	0.00	0.00	2.75	4.10	12.55	11.70	0.30	0.00	0.00	0.00	0.00	
Cum. Total	0.00	0.00	0.00	2.75	6.85	19.40	31.10	31.40	31.40	31.40	31.40	31.40	

Season Total **31.40**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1995-1996**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1					0.50			1.05					1
2										0.25			2
3								0.60					3
4								0.55					4
5								1.25	0.20				5
6								0.75	0.50				6
7									0.10				7
8													8
9													9
10													10
11													11
12						0.20			0.55				12
13						2.10			0.20				13
14						0.85			0.10				14
15											0.75		15
16								0.25		0.50			16
17							0.75	0.10					17
18										0.60			18
19							0.25	0.10					19
20								2.60					20
21							0.40	1.00					21
22							0.30	0.35					22
23						0.35		TR					23
24						0.05							24
25						0.05	0.50	0.15					25
26								0.10					26
27								0.25					27
28							0.65	0.25	0.05				28
29								0.25					29
30													30
31													31
Total	0.00	0.00	0.00	0.00	0.50	3.60	2.85	9.60	1.70	1.35	0.75	0.00	
Cum. Total	0.00	0.00	0.00	0.00	0.50	4.10	6.95	16.55	18.25	19.60	20.35	20.35	

Season Total **20.35**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1994-1995**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1													1
2									1.30		0.10		2
3							1.05		0.40				3
4				0.49			0.60		0.90				4
5				1.15			1.35		0.40				5
6							0.15						6
7							0.50						7
8							0.10	0.50					8
9							0.50		3.75				9
10							3.30		3.25				10
11					0.90		0.85		0.55				11
12							0.75						12
13						0.20	0.25				0.15		13
14							0.50	1.80			0.10		14
15						0.24	0.50				0.25		15
16					0.60		0.25			0.25	0.55		16
17													17
18					0.20					0.05			18
19													19
20													20
21							0.65		1.25				21
22									0.15				22
23							0.70		1.60				23
24							0.90		0.15				24
25						0.60	1.80						25
26							0.10						26
27													27
28			0.49										28
29			1.50			0.10				0.50			29
30													30
31													31

Total	0.00	0.00	1.99	1.64	1.70	1.14	14.80	2.30	13.70	0.80	1.15	0.00	
Cum. Total	0.00	0.00	1.99	3.63	5.33	6.47	21.27	23.57	37.27	38.07	39.22	39.22	

Season Total **39.22**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1993-1994**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1													1
2													2
3													3
4								0.20					4
5													5
6								0.60					6
7								1.80	0.35				7
8									0.15				8
9													9
10													10
11					1.25	0.05		0.05					11
12	0.20				0.15	1.15							12
13													13
14						0.25							14
15						0.35							15
16	0.15												16
17								1.10			0.20		17
18								0.45			0.20		18
19								1.55			0.05		19
20								0.15					20
21													21
22													22
23							1.25						23
24							0.10			0.25			24
25							1.50		1.25	0.30			25
26							0.20			0.40			26
27													27
28													28
29													29
30					0.75								30
31													31

Total	0.35	0.00	0.00	0.00	2.15	1.80	3.05	5.90	1.75	0.95	0.45	0.00	
Cum. Total	0.35	0.35	0.35	0.35	2.50	4.30	7.35	13.25	15.00	15.95	16.40	16.40	

Season Total **16.40**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1992-1993**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1													1
2							0.65						2
3						0.10							3
4						0.10							4
5													5
6							0.10	0.25					6
7						3.10	1.25						7
8							0.55	1.80					8
9						0.15	0.05	0.65					9
10							0.90	0.35					10
11						0.55	0.15						11
12	0.10					0.10		0.05					12
13	0.15						0.85						13
14							1.70		0.20				14
15							0.35						15
16							0.15						16
17							0.65		0.10				17
18						0.27	0.85	0.25	0.10	0.10			18
19							0.55	0.50					19
20							0.10	0.30					20
21							0.25	0.40					21
22													22
23								2.20					23
24								0.25	0.30				24
25									1.15		0.25		25
26								0.80	1.75				26
27									0.25				27
28						0.05		0.25	1.07				28
29						1.25							29
30				1.35		0.50							30
31				0.25									31
Total	0.25	0.00	0.00	1.60	0.00	6.17	9.10	8.05	4.92	0.10	0.25	0.00	
Cum. Total	0.25	0.25	0.25	1.85	1.85	8.02	17.12	25.17	30.09	30.19	30.44	30.44	

Season Total **30.44**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1991-1992**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1									0.15				1
2									0.15				2
3													3
4							0.10						4
5							1.95						5
6							0.90	0.60	0.65				6
7						TR	0.25	0.40	0.24				7
8						0.20	0.35	0.20	0.15				8
9								1.55					9
10								0.30					10
11								1.60					11
12								1.25		0.05			12
13													13
14								0.15					14
15								1.85	0.15				15
16								0.85					16
17								0.15					17
18					1.60								18
19													19
20								0.40	0.28				20
21								0.10	0.30				21
22									0.05				22
23									0.45				23
24													24
25				0.01									25
26				0.50					0.10				26
27													27
28						2.70							28
29						1.05							29
30						0.55							30
31						0.20							31

Total	0.00	0.00	0.00	0.51	1.60	4.70	3.55	9.40	2.67	0.05	0.00	0.00	
Cum. Total	0.00	0.00	0.00	0.51	2.11	6.81	10.36	19.76	22.43	22.48	22.48	22.48	

Season Total **22.48**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1990-1991**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1									1.00	0.25			1
2									0.30				2
3							0.05	0.20					3
4							0.50		0.65				4
5								0.10	1.75				5
6													6
7													7
8													8
9							0.30						9
10							0.05		0.20				10
11													11
12													12
13									0.25				13
14						TR							14
15						0.40			0.05				15
16									0.25				16
17									1.70				17
18						0.20			2.05				18
19									1.15				19
20						0.45			0.05	0.15			20
21			TR			TR							21
22			0.40										22
23													23
24									1.30				24
25									0.20				25
26									1.00				26
27					0.40			0.25				TR	27
28								1.95				0.40	28
29												0.10	29
30													30
31													31
Total	0.00	0.00	0.40	0.00	0.40	1.05	0.90	2.50	11.90	0.40	0.00	0.50	
Cum. Total	0.00	0.00	0.40	0.40	0.80	1.85	2.75	5.25	17.15	17.55	17.55	18.05	

Season Total **18.05**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1989-1990**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1								0.20					1
2							0.02						2
3									0.20				3
4								0.70					4
5									0.25				5
6													6
7													7
8													8
9													9
10													10
11									0.20				11
12													12
13							1.10						13
14							0.20						14
15							0.40						15
16			TR										16
17			0.40					1.30		0.10			17
18								0.20					18
19			0.01										19
20													20
21													21
22				0.30									22
23										0.02			23
24				0.80							0.35		24
25				TR									25
26					0.55								26
27													27
28											0.85		28
29			1.10										29
30													30
31													31

Total	0.00	0.00	1.51	1.10	0.55	0.00	1.72	2.40	0.65	0.12	1.20	0.00	
Cum. Total	0.00	0.00	1.51	2.61	3.16	3.16	4.88	7.28	7.93	8.05	9.25	9.25	

Season Total 9.25

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1988-1989**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1													1
2								TR	0.85				2
3									0.30				3
4								0.80					4
5							0.10						5
6							0.45						6
7													7
8								0.10					8
9								0.90			0.10		9
10								0.10			0.10		10
11													11
12													12
13													13
14					0.60								14
15						1.50							15
16						1.30							16
17					0.15								17
18						0.15							18
19													19
20						0.10							20
21						1.45							21
22													22
23						0.50							23
24					0.50	0.35							24
25					0.50	1.50	0.30		0.30	0.15			25
26						0.01				0.10			26
27													27
28													28
29													29
30													30
31						0.20							31

Total	0.00	0.00	0.00	0.00	1.75	7.06	0.85	1.90	1.45	0.25	0.20	0.00	
Cum. Total	0.00	0.00	0.00	0.00	1.75	8.81	9.66	11.56	13.01	13.26	13.46	13.46	

Season Total **13.46**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1987-1988**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1									0.80				1
2													2
3													3
4													4
5					0.35	1.10	1.10						5
6						0.05					0.20		6
7						1.20					0.01		7
8											0.10		8
9													9
10													10
11							0.10						11
12													12
13													13
14					0.02					0.20			14
15										0.20			15
16						0.25							16
17							0.68						17
18					0.30		0.50						18
19										0.21			19
20										1.35			20
21										0.10			21
22													22
23				1.30									23
24				0.02									24
25													25
26								0.80					26
27								0.15					27
28				0.20		1.00		2.00					28
29				0.05		0.60							29
30						0.50							30
31				0.02									31

Total	0.00	0.00	0.00	1.59	0.67	4.70	2.38	2.95	0.80	2.06	0.31	0.00	
Cum. Total	0.00	0.00	0.00	1.59	2.26	6.96	9.34	12.29	13.09	15.15	15.46	15.46	

Season Total **15.46**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1986-1987**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1													1
2													2
3								0.16		0.20			3
4							1.35						4
5						0.70			1.46				5
6							0.08		1.75				6
7							0.89		0.10				7
8													8
9								0.04					9
10								0.35					10
11								0.09	0.05				11
12													12
13								0.70					13
14								0.90					14
15													15
16						0.35							16
17													17
18					0.30								18
19													19
20													20
21								0.16	0.06				21
22									0.14				22
23			0.30			0.03	0.25		0.04				23
24			0.52										24
25													25
26								0.02					26
27													27
28			0.15				0.25						28
29							0.20						29
30										0.25			30
31							0.10						31
Total	0.00	0.00	0.97	0.00	0.30	1.08	3.12	2.42	3.60	0.45	0.00	0.00	
Cum. Total	0.00	0.00	0.97	0.97	1.27	2.35	5.47	7.89	11.49	11.94	11.94	11.94	

Season Total 11.94

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1985-1986**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1								0.22					1
2						1.25		0.15					2
3						0.45		0.22					3
4							0.35	0.05					4
5							0.50			0.17			5
6							0.05						6
7													7
8			0.01						1.05				8
9									1.10				9
10					0.10				1.10				10
11					1.30				0.50				11
12					0.20			0.22	0.52				12
13								3.70					13
14								1.40					14
15							0.55	1.25					15
16								0.15	1.75				16
17									0.15				17
18								0.40					18
19													19
20	0.03												20
21				0.85	0.05								21
22				0.18									22
23													23
24													24
25					0.60								25
26			0.02										26
27					0.20								27
28													28
29					0.70	0.04							29
30					0.55	0.10	0.25						30
31							0.32						31

Total	0.03	0.00	0.03	1.03	3.70	1.84	2.02	7.76	6.17	0.17	0.00	0.00	
Cum. Total	0.03	0.03	0.06	1.09	4.79	6.63	8.65	16.41	22.58	22.75	22.75	22.75	

Season Total 22.75

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1984-1985**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1													1
2								0.20					2
3						0.26							3
4													4
5									0.18				5
6						0.12			0.96				6
7							0.05						7
8					0.90		0.82	0.32					8
9								1.25					9
10						1.10	0.02		0.13				10
11				0.21					0.30				11
12				0.15					0.05				12
13					0.70								13
14													14
15		0.05				1.00							15
16					0.04								16
17				0.60	0.15					0.10			17
18					0.06	0.24			0.30				18
19						0.30							19
20					0.08	0.70							20
21										0.05			21
22													22
23													23
24					0.40								24
25					0.40								25
26					0.10								26
27						0.04			0.70				27
28					1.25				0.70				28
29							0.22						29
30													30
31													31
Total	0.00	0.05	0.00	0.96	4.08	3.76	1.11	1.77	3.32	0.15	0.00	0.00	
Cum. Total	0.00	0.05	0.05	1.01	5.09	8.85	9.96	11.73	15.05	15.20	15.20	15.20	

Season Total 15.20

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1983-1984**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1					0.40	0.03		TR					1
2													2
3						0.28							3
4						0.58							4
5													5
6										0.26			6
7													7
8													8
9						0.40							9
10						0.24		0.20					10
11					1.25	0.03							11
12					0.03	0.50							12
13					0.13								13
14					0.10			0.10					14
15													15
16							0.06	0.12					16
17					0.23		0.03	0.11	0.08				17
18					0.30								18
19		0.50								0.38			19
20		0.10			0.28								20
21					0.17			0.02					21
22													22
23													23
24					0.46								24
25					0.80	2.78							25
26						0.32							26
27													27
28													28
29													29
30		0.03	2.00	0.28									30
31				0.04									31

Total	0.00	0.63	2.00	0.32	4.15	5.16	0.09	0.55	0.08	0.64	0.00	0.00	
Cum. Total	0.00	0.63	2.63	2.95	7.10	12.26	12.35	12.90	12.98	13.62	13.62	13.62	

Season Total 13.62

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1982-1983**

Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1						0.85			1.35		0.58		1
2									0.58		0.10		2
3								0.70	0.88				3
4									0.60				4
5									0.02		0.03		5
6								0.35	0.07	0.03			6
7								1.24	0.32				7
8								0.88					8
9					0.65			0.05					9
10					0.96				0.04				10
11					0.35								11
12								0.10					12
13								2.46	0.15				13
14									0.50				14
15			0.15										15
16			0.01					0.04					16
17									0.72				17
18					0.94			0.22	0.62	1.00			18
19							1.35	0.06	0.05	0.18			19
20							0.04			0.35			20
21									0.75	0.38			21
22						2.05							22
23			0.04		0.30	2.00	2.85		0.72				23
24			0.04		0.02		0.90	0.21	0.79	0.32			24
25			0.49	0.01			0.10	0.03	0.15	0.03			25
26				0.71				1.98					26
27		0.30					2.75	1.15					27
28					0.04		0.18	0.44	0.11	0.59			28
29					0.70		0.41						29
30				0.55	2.00		0.03			0.28			30
31				0.17									31
Total	0.00	0.30	0.73	1.44	5.96	4.90	8.61	9.91	8.42	3.16	0.71	0.00	
Cum. Total	0.00	0.30	1.03	2.47	8.43	13.33	21.94	31.85	40.27	43.43	44.14	44.14	

Season Total **44.14**

San Luis Obispo County Public Works

DAILY PRECIPITATION

(inches)

Station Name and no. **SLO Airport # 205.4** Season **1981-1982**

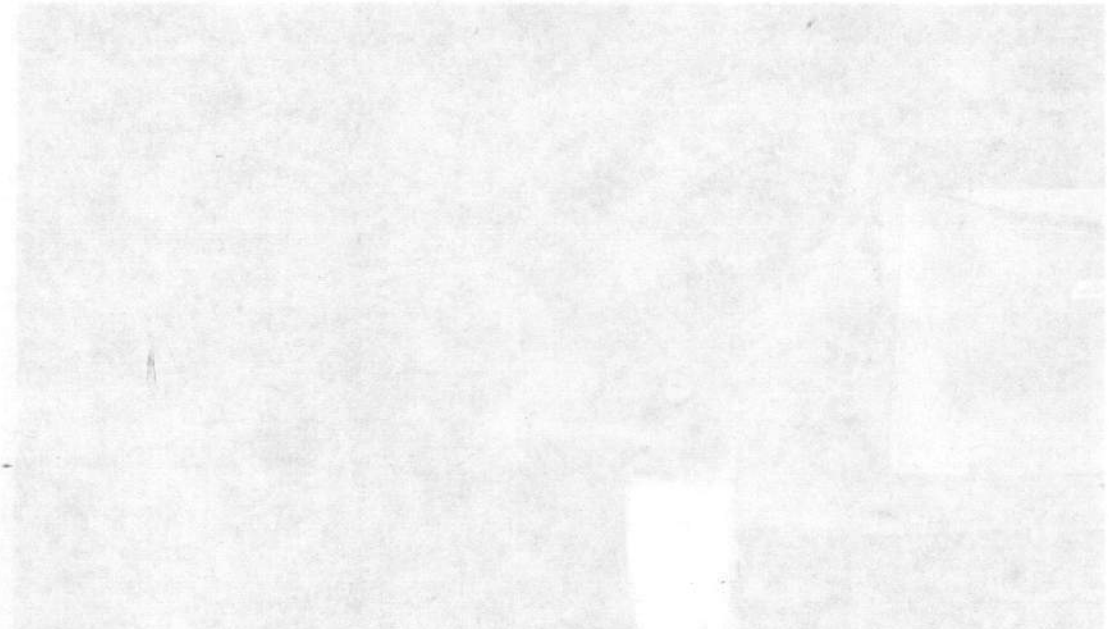
Day	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Day
1							0.50		0.25	1.90			1
2							0.32		1.40	0.18			2
3							0.09		0.20				3
4													4
5					0.02		1.50						5
6							0.04						6
7													7
8									0.04				8
9													9
10						0.03		0.14	0.08	0.38			10
11								0.60		3.28			11
12									0.19	0.15			12
13					0.04	0.01							13
14					1.24			0.03	0.32				14
15					0.02			0.13	0.48				15
16								0.51	0.69				16
17					0.32				1.05				17
18									0.49				18
19							0.18		0.20				19
20						0.36	0.54						20
21							0.92						21
22													22
23													23
24					0.07								24
25													25
26					0.70		0.03		0.40				26
27					0.14		0.04						27
28				0.95			0.22		0.27				28
29				0.60	0.02		0.02		0.64				29
30						0.70			0.58				30
31						0.03			0.19				31

Total	0.00	0.00	0.00	1.55	2.57	1.13	4.40	1.41	7.47	5.89	0.00	0.00	
Cum. Total	0.00	0.00	0.00	1.55	4.12	5.25	9.65	11.06	18.53	24.42	24.42	24.42	

Season Total **24.42**

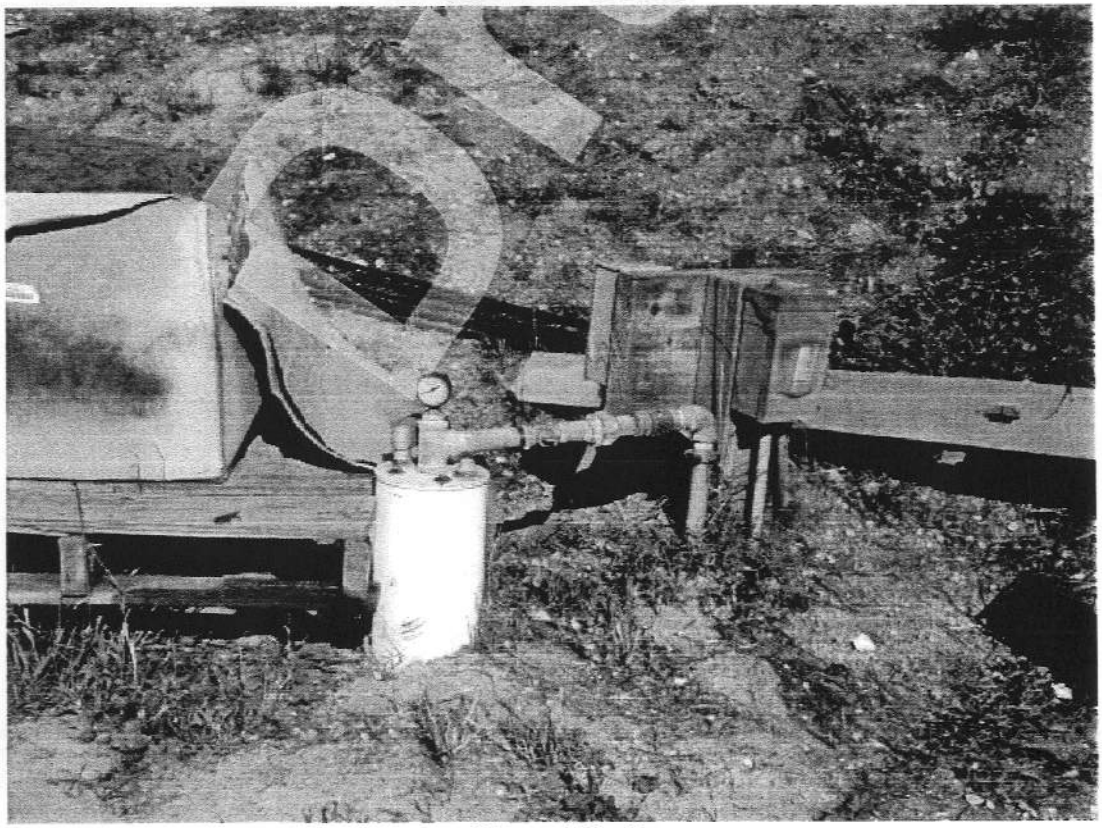
Landfill From West

APPENDIX B
SITE PHOTOGRAPHS

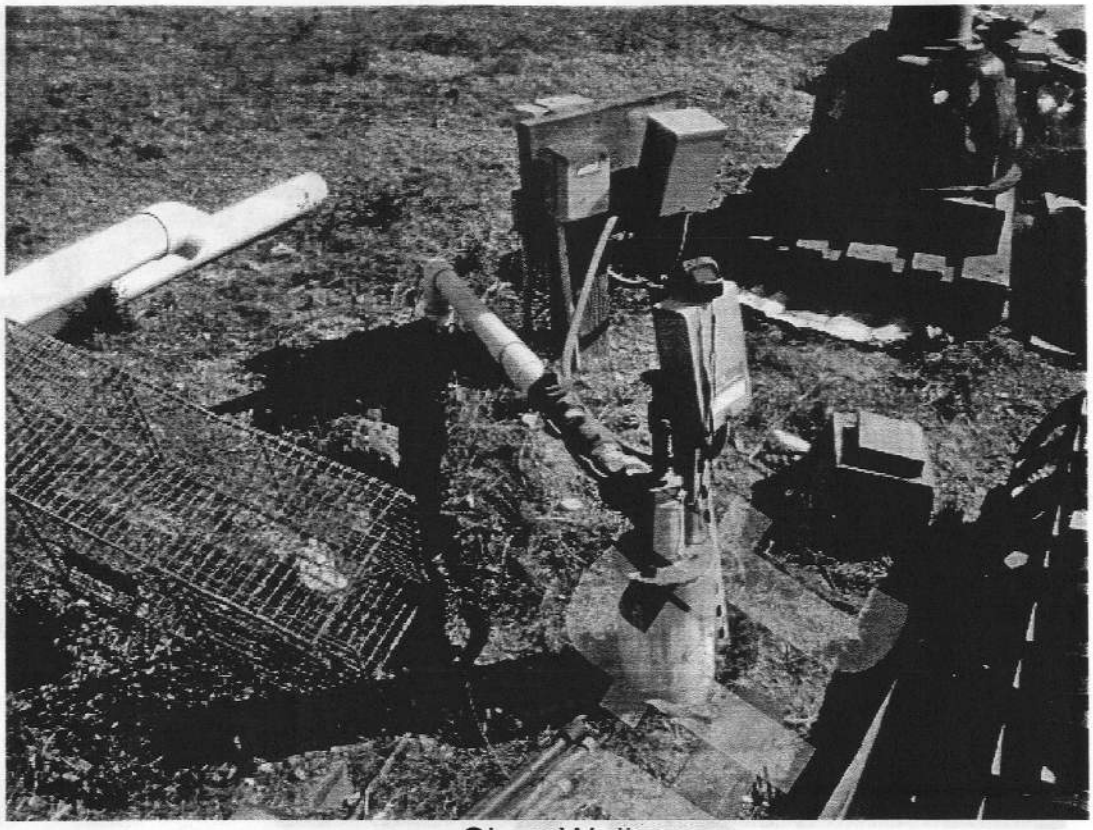


Snco Well

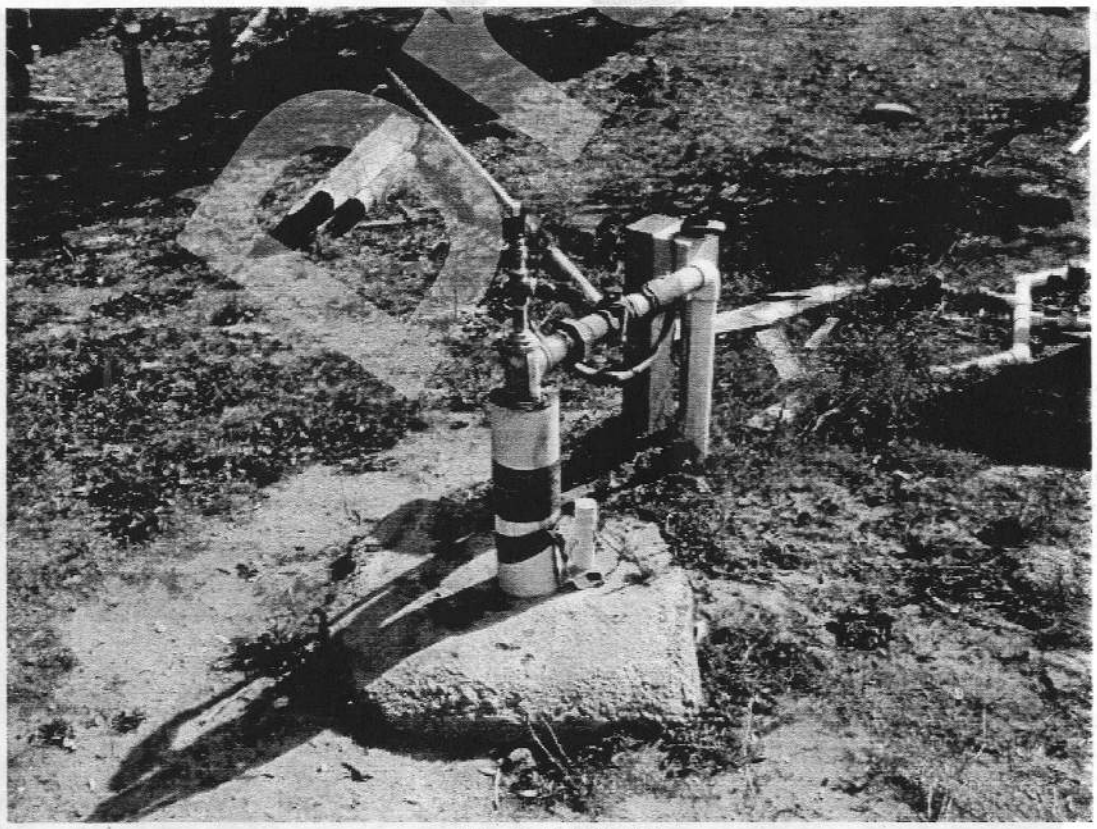
Landfill From West



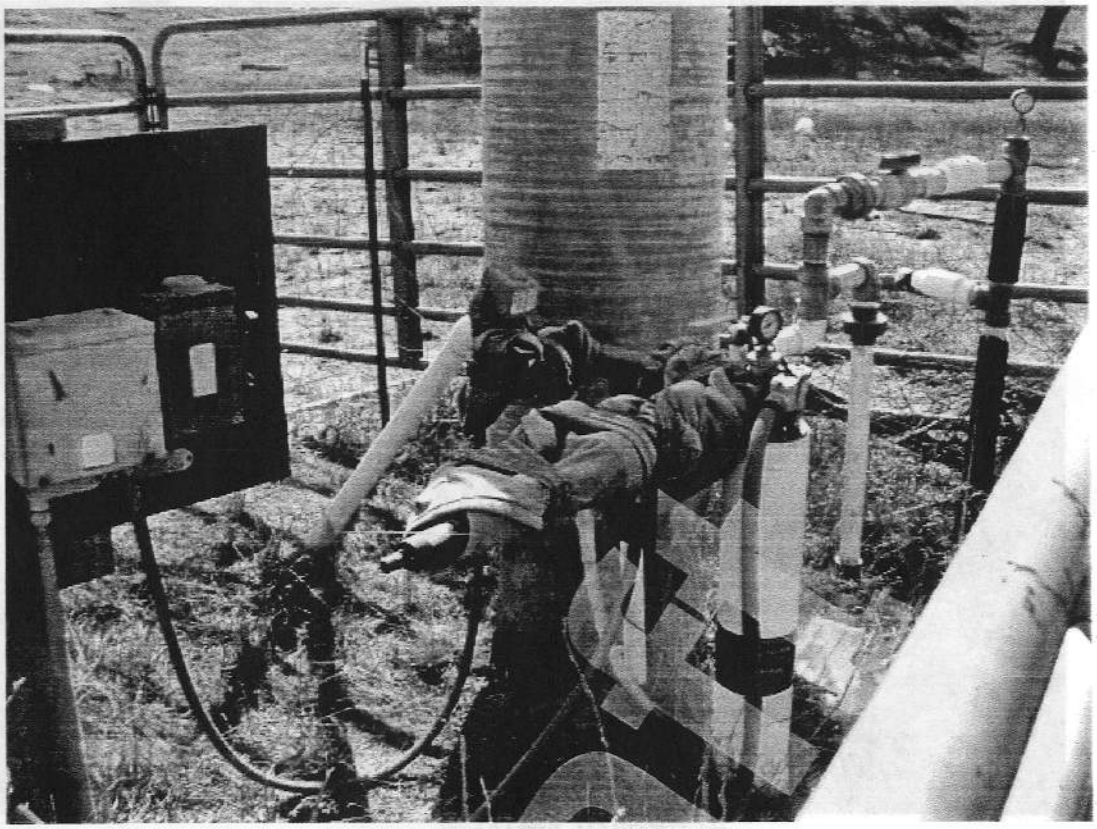
Shop Well



Shop Well



Weir Well #1



Weir Well #2

Weir Well #3

APPENDIX C
ON-SITE WELL INFORMATION

Well site information is confidential, but is available for review by qualified persons at the County of San Luis Obispo.

APPENDIX D
SUMMARY OF RECENT LEACHATE ANALYTICAL RESULTS

Table 3-2
SUMMARY OF RECENT LEACHATE ANALYTICAL RESULTS
Cold Canyon Landfill, San Luis Obispo County

CONSTITUENT	UNITS	2001	2002	2003	2005	2006
Chloride	mg/L	730	810	400	NA	660
Sulfate	mg/L	200	150	120	NA	3.5
Arsenic	mg/L	ND	ND	ND	NA	0.036
Manganese	mg/L	4.8	2.1	1.8	NA	1.4
Acetone	ug/L	NA	NA	NA	9.9	NA
Benzene	ug/L	7.9	8.7	13	0.25	2.5
Toluene	ug/L	14	5.7	1.8	ND	ND
Ethybenzene	ug/L	5.1	5.7	9.2	ND	5.5
m,p-Xylene	ug/L	NA	NA	NA	ND	4.8
o-Xylene	ug/L	NA	NA	NA	ND	12.3
Total Xylenes	ug/L	8.7	7.5	6	ND	NA
MTBE	ug/L	NA	NA	NA	67	40
1,4-Dichlorobenzene	ug/L	ND	ND	ND	0.81	0.8
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	0.6
2-Butanone (MEK)	ug/L	NA	NA	NA	1.6	NA
Chloroethane	ug/L	21	53	15	1.7	0.6
1,1-Dichloroethane	ug/L	27	37	27	0.92	0.6
1,2-Dichloroethane	ug/L	1.3	3.8	8.8	0.41	0.6
1,1-Dichloroethene	ug/L	0.7	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	4.7	5.7	8.1	ND	0.6
Isopropylbenzene	ug/L	ND	0.5	ND	ND	1.6
4-Isopropyl toluene	ug/L	0.5	0.6	ND	ND	ND
Methylene Chloride	ug/L	3.8	7.2	4.9	0.45	ND
1,2,4-Trichlorobenzene	ug/L	ND	ND	1.3	ND	ND
Trichloroethene	ug/L	2.8	1.6	ND	ND	ND
1,2,4-Trimethylbenzene	ug/L	0.9	0.8	ND	ND	1.6
Vinyl Chloride	ug/L	14	ND	ND	7.6	1.4
TOTAL VOCs	*ug/L*	*112.4*	*137.8*	*95.1*	*90.64*	*73.5*

Notes:
1. ND - Not detected.
2. NA - Not analyzed/reported.
3. Table only includes VOCs detected in one or more sampling round.