

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF OCTOBER 21, 2005

Prepared on September 16, 2005

ITEM: 19

SUBJECT: SANTA BARBARA AREA LANDFILL UPDATE

SUMMARY

This report provides a review and status update on five active and several inactive and/or closed landfills located in Santa Barbara County, with regard to water quality-related issues. We provided a similar report at last years' Santa Barbara meeting. The updated text is in italics. Figure 1 depicts the five active landfills and most significant inactive and/or closed landfills in Santa Barbara County.

DISCUSSION

Landfill Sites: There are five active permitted landfills in Santa Barbara County, four of these sites continue to receive waste (Santa Maria, Lompoc, Vandenberg, and Tajiguas). The fifth landfill site, Foxen Canyon Landfill no longer receives waste and is transitioning to final closure. There are approximately twenty inactive sites that are classified as permitted and closed, unpermitted and closed, or simply as historic dumpsites.

***Program Staff:** Five Water Board technical staff combine to make up the Land Disposal unit. Hector Hernandez currently maintains oversight responsibilities for most of the landfill sites in Santa Barbara County, in addition to his oilfield cleanup work. Martin Fletcher recently assumed oversight responsibility of several Landfill sites in Santa Barbara County, including City of Lompoc Landfill, Vandenberg Air Force Base Landfill and Foxen Canyon Landfill. Martin also serves as the area engineer for point source discharge sites in the lower Salinas Valley. Dan Niles maintains oversight responsibility for the Casmalia Hazardous Waste facility, in addition to managing landfill sites in the northern portion of the region, and Unocal's Avila Beach sites.*

***Program Budget:** The Central Coast Water Board's landfill program is currently budgeted for approximately 3.1 staff Personnel Years (or PYs) working on landfill sites, although this work is spread over six individuals (five technical staff and one supervisor). This fiscal year, the landfill program is presently budgeted at \$380,000.*

General Santa Barbara Landfill Information:

Historically, all active landfills in Santa Barbara County have filled over unlined areas and have documented impacts to groundwater. Presently, the site posing the greatest threat to water quality is the City of Santa Maria Landfill (largest unlined area, least favorable siting conditions relative to groundwater resources). This Landfill completed construction of a 36-acre lined landfill unit (Cell I) in June 2003. The City is on track to close all unlined areas by the summer of 2008.

The next largest site (by footprint and tipping volume), Tajiguas landfill, received a revised permit in early 2003. The revised permit authorizes a vertical and horizontal expansion and requires closure of all unlined areas as soon as final elevation is reached.

The third-largest active site, Lompoc, also received a revised permit in early 2003 (Order No. R3-2003-0014). The fourth active site, Vandenberg AFB, received a revised permit in November 2004 (Order No. R3-2004-0151). The final active site, Foxen Canyon Landfill, suspended waste disposal operations as of July 2004, and is presently functioning only as a transfer station. The County recently submitted Final Closure and Postclosure Maintenance Plans for the landfill. Permit revision will be scheduled as soon as the plans are fully reviewed and approved by Water Board staff.

A varying amount of information is available for the inactive landfill/dump sites. The Former Casmalia site continues to receive priority attention and funding to oversee ongoing investigation, remediation, and closure. At some of the smaller dumpsites, we only know approximate locations.

Water quality impacts associated with landfills in Santa Barbara County are similar to what we see Region-wide. Plumes tend to be low concentration ["trace" to tens of parts per billion (ppb) volatile organic compounds (VOC)] and spatially constrained (quarter mile or less). Historically, the highest total VOC concentration in a groundwater sample has reached 97.5 ppb at Santa Maria Landfill (2002 data). The farthest distance off-site a plume has been measured is 2200 feet, again at Santa Maria Landfill (2002 data). *In all Santa Barbara County landfills where water quality impacts have been detected, the plumes appear stable or contracting. This is particularly apparent at the Santa Maria Landfill. Recent groundwater data indicates non-detection of VOCs from all, but two monitoring points.*

Landfill contaminants are carried out of waste and into groundwater by both leachate and landfill gas. Leachate and gas production are both directly proportional to the volume of moisture in waste. In lined waste units, migration of leachate and landfill gas is greatly reduced by the presence of the low-permeability liner barrier; however, migration is never considered eliminated.

Region-wide at both active and inactive sites, our focus is on minimizing infiltration of water, and removing landfill gas and leachate to remove the waste contaminant's concentration gradient. At all sites, Regional Board staff work closely with Santa Barbara County Public Health Department staff who, as the Local Enforcement Agent for the California Integrated Waste Board, implement a substantial portion of the State's landfill regulations (California Code of Regulations, Title 27).

At active landfills, staff's direction is to transition facilities to lined units and close unlined units, consistent with landfill regulations and provide the impetus for continual review and improvement of water quality protection efforts. At closed sites staff focuses on identifying and characterizing

groundwater impacts, applying and/or stabilizing final cover, and documenting the existence of the site in property records. Depending on the condition of waste (stable or decomposing) and magnitude of groundwater impacts, control systems such as gas recovery or groundwater extraction are required.

On February 6, 2004, the Regional Board adopted a General Closure Order that covers non-hazardous solid waste landfill sites, which were closed, abandoned, or became inactive (CAI Landfills) on or before November 27, 1984. The General Order establishes minimum standards for post-closure maintenance and monitoring, provides guidance for achieving compliance with necessary assessment and monitoring requirements, and requires a deed recording. The General Closure Order addresses CAI Landfills, which are suspected or believed to present a significant threat to water quality. CAI Landfills sites in Santa Barbara County covered by the General Closure Order include Santa Ynez Airport Landfill, Ballard Canyon Landfill, Santa Maria Airport Dump, Elings Park (formerly Las Positas Park) Landfill, Santa Barbara City Dump, Cathedral Oaks Dump, and Lompoc Burn Dump.

SITE SPECIFIC SUMMARIES

Following are site-by-site summaries for the active landfills and more significant CAI Landfills in Santa Barbara County.

City of Santa Maria Landfill

The City of Santa Maria Landfill serves the City of Santa Maria and surrounding communities. The 290-acre landfill site is located in northern Santa Barbara County along the Santa Maria River levee, northeast of the City in a regional groundwater recharge area. The landfill is divided into three basic areas: An older fill area comprised of 69-acres of the western-most portion of the site; the now inactive, 118-acre unlined area located in the central portion of the site; and a 36-acre landfill expansion area (Cell 1) located on the southeast portion of the site. Cell 1 is the first of a two-cell expansion of the existing 186-acre landfill footprint, and was completed on June 30, 2003. Cell I is equipped with a double composite base liner system. The expansion area (Cell I and proposed Cell II) provides approximately 10 to 12 additional years of landfill life.

As previously mentioned, this facility was the most challenging site in the County- and likely Region-wide, based on siting conditions. As such, the site has received staff's top priority for permit review and re-issuance, implementation of phased final closure construction of the 118-acre unlined landfill areas, and shifting all MSW disposal operations into the composite lined expansion area, as required in the permit issued by this Board in 2001.

Historically, several off site wells located down gradient from the unlined area have yielded chronic low-concentration (below maximum contaminant levels) VOC detections. Seasonally high groundwater elevations at the site contact waste in the lower portions of the unlined landfill areas. *Recent groundwater data indicates a significant decrease in measured VOCs from all groundwater-monitoring points. Except for sporadic, low-level detections of Tetrachloroethene (PCE) in groundwater samples from two offsite wells at this site, groundwater results indicate non-detects for all VOCs analyzed from all other monitoring points.* The general groundwater gradient throughout the Santa Maria basin trends toward the west-southwest.

Corrective Measures:

Enhanced landfill gas recovery, expedited installation of a final cover system using Non-hazardous Hydrocarbon Impacted Soils over the unlined landfill areas, and construction of a composite lined expansion area (Cell I) should decrease ongoing groundwater impacts. Landfill gas recovery system activation has yielded a significant decrease in VOC concentrations at both on- and off-site wells.

Recent Milestones:

- Permanent shift of all MSW disposal operations from unlined areas to a double composite lined area [February 1, 2003].
- The final cover completion for an approximately 45-acre landfill area within the 118-acre unlined landfill area (24-acres in 2000, 4-acres in 2003 and 17-acres in 2004). *The City is also proposing to close an additional 15-acres in 2005, for a total of 60 acres closed.*
- Continuing expedited implementation of the City's 2002 "Rolling Closure Plan" for the final closure for the remaining 58-acres of the

118-acre unlined landfill area after 2005. According to the Rolling Closure Plan, a large landfill area will be provided with a final cover system on a yearly basis, with rolling closure completion by 2008. The final cover configuration for the remaining unlined landfill area will include a thick cover foundation layer consisting of non-hazardous hydrocarbon impacted soil (NHIS) material. The NHIS project will serve to provide a single monitored disposal location for oil field waste, which are currently present throughout the valley and surrounding areas. Additionally, the project provides large quantities of low permeability, structurally sound material (impacted soils and drill muds) for cover construction. The impacted soils will be underlain by a liner system (high density poly-ethylene (HDPE) and leachate collection and removal system (LCRS)) and over-lain by a synthetic final cover system comprised of a geomembrane and a three-foot-thick vegetative layer.

- Development of plans for a recreational facility on the closed 68-acre older fill area on the western-most portion of the site.
- Approval of petroleum impacted soils (NHIS) acceptance plan.

Staff Direction:

- Implement the approved Rolling Closure Plan for the remaining portions of Inactive Area.
- Track NHIS program, filling operations within the lined area, and the construction activities for all landfill closure projects.
- Review monitoring and reporting program and improve as necessary.

Tajiguas Landfill

Tajiguas Landfill is operated by the County of Santa Barbara Public Works Department Resource Recovery & Waste Management Division and serves all of southern Santa Barbara County, and the Santa Ynez and Cuyama Valleys. The landfill was sited in 1967 and is located west of the City of Santa Barbara in a 450-acre coastal canyon watershed along the Gaviota Coast. The 78-acre landfill is mostly unlined however; it does include a small lined area contiguous with unlined waste areas. *A second, five-acre lined area has recently been completed that is an extension of the previously lined area.* Through the years, various concerned and involved local citizens and citizen

groups have kept environmental issues at Tajiguas at the top of staff priorities.

Revised waste discharge requirements (WDRs) were issued for the Tajiguas landfill on March 27, 2003 (Order No. R3-2003-0011). The revised WDRs allow an approximate 66-acre expansion consisting of a new 40-acre horizontal composite lined landfill and a 26-acre, 120-foot thick vertical expansion over existing waste. Based on present projections, the existing landfill and proposed expansion are anticipated to reach capacity in 2020. The WDR revision also updated the existing monitoring and reporting program.

Site groundwater has been monitored continuously since 1988. Historically, VOCs have been detected in several down gradient wells, with leachate being the likely source. Groundwater impacts are measured through both on- and off-site wells at this landfill. Corrective action control measures include: landfill gas extraction, groundwater interceptor trench, leachate collection and extraction from unlined area wells, up-canyon groundwater extraction, and leachate collection and removal (over lined area).

In response to Corrective Action, the total VOC concentrations and the number of detected compounds have declined. Recent data from down gradient wells indicate total VOC concentrations have declined to levels ranging between non-detect to below maximum contaminant levels. Groundwater impacts beyond the down gradient landfill boundary (landfill toe) have not been detected.

Recent Milestones:

- Investigations of leachate levels in the waste mass continue. This ongoing investigation will help determine whether existing landfill dewatering efforts are effective and if alternative/additional dewatering is necessary.
- Installation and monitoring of all required monitoring points for the unlined landfill area.
- Complete installation of an extension of the liner system [Completed Summer 2005].
- Replacement of the last section of old corrugated metal culvert with a new HDPE culvert. The culvert is one of the main culverts handling drainage from the upper and mid-canyon areas at the landfill. [Completed July 2005].

- *The landfill's environmental control systems (gas collection system, condensate collection system, trench interceptor system, and dewatering wells) removed over three tons of pollutants (volatile organic compounds) from within the landfill between January 1 and June 30, 2005. The majority of the pollutants were removed via the gas collection system (5,977 pounds or 96.5 percent of the total mass of VOCs removed). An additional 216 pounds of VOCs were removed via the condensate collection system, 0.19 pounds via the trench intercept system, and 0.14 pounds via the dewatering wells.*

Staff Direction:

- Review design reports concerning final closure of unlined areas and the composite lined expansion area, as the reports are generated.
- Review monitoring and reporting program and improve as necessary.

Vandenberg Air Force Base Landfill

Vandenberg Air Force Base Landfill is operated by the United States Air Force exclusively for the Air Force. The Landfill site originally served as an Army tank and artillery training area for the U.S. Army's Camp Cook and was operated by the U.S. Army from 1941 to 1958. The Air Force acquired Camp Cook in 1957, established Vandenberg AFB and assumed the operation of the Landfill in 1958. The Central Coast Water Board has regulated the Landfill since April 14, 1978. The Landfill is not open to the public and receives non-hazardous solid waste from Vandenberg AFB, the U.S. Penitentiary, and the Lompoc Correctional Facility only. This 172-acre canyon site is located on the north side of the Santa Ynez River valley. The site has a 46-acre unlined waste footprint (Subtitle D Footprint) and an estimated 78 years of remaining capacity in its current configuration.

The Regional Board adopted revised WDRs for Vandenberg Air Force Base Landfill, Order No. R3-2004-0151, on November 12, 2004. The revised WDRs address six recently identified locations where buried refuse exists within the permitted landfill property, but outside of the Subtitle D Footprint. These unlined refuse cells became inactive/abandoned prior to the promulgation of Title 27 requirements (November 27, 1984) and encompass an aggregate area of approximately 10-acres. The Discharger has

agreed to provide the cells with an Executive Officer-approved final cover system and has already provided an acceptable closure plan and implementation schedule.

Historically, groundwater impacts are measured on-site at this landfill. Volatile organic compounds (VOC) have been detected in several upgradient monitoring well locations, since 1984. Detected concentrations range from trace to above the constituent's established maximum contaminant levels (MCLs). However, since the impacted wells are located at up gradient landfill locations and were specifically installed to monitor groundwater entering the landfill from up gradient locations, the source of the VOC impacts is believed to be Installation Restoration Program (IRP) Site 3, located northwest of the landfill, on Burton Mesa. To date, no evidence of groundwater contamination from the landfill has been detected in detection monitoring wells at the landfill toe south of the slurry wall. Presently, there is no evidence to indicate that contaminated groundwater is leaving the landfill via unmonitored flow paths.

During certain times of the year (recharge events), alluvial groundwater may rise to a level that contacts buried waste in portions of the active disposal area. Thus, the landfill does not meet the five-foot separation requirement, pursuant to CCR Title 27, Section 20080(c) at all times. To achieve compliance with the five-foot separation requirement, the Discharger is implementing leachate controls to dewater the saturated alluvium and lower the groundwater level far below buried waste elevations. Ongoing implementation of appropriate leachate controls (groundwater/leachate extraction at the landfill toe and surface water diversion projects) should effectively control groundwater and migration pathways, and ensure the five-foot separation requirement is maintained at all times.

As part of its dewatering efforts, in 2003, the Air Force consultant completed a major source control project that is designed to intercept and divert 46.7 percent of the current watershed area runoff from approximately 175 acres to the north, east, and west of the landfill, and redirect the discharge around the landfill. *Pending approval and availability of funds, the Air Force plans to evaluate the feasibility of diverting all remaining surface water run-on over the next several years.*

Corrective Action Measures:

The Air Force has installed a groundwater interceptor trench and cutoff wall and continues to extract leachate, and control/divert surface water run-off and run-on away from landfill areas. These leachate control measures have helped to ensure groundwater remains far below the buried waste levels. The Air Force is continually evaluating and optimizing environmental control systems and engineered alternatives.

Recent Milestones:

- Improved surface water run on/off controls.
- Improved erosion controls.

Staff Direction:

- *Oversee efforts to divert all surface water run-on from upgradient watershed areas.*
- *Oversee final cover construction activities with regards to identified unlined landfill cells.*
- Review monitoring and reporting program and improve as necessary.

City of Lompoc Landfill

City of Lompoc Landfill is operated by the City for the exclusive use of the City. The 115-acre facility was sited in 1961 and is located in a canyon site on the south side of the Santa Ynez River valley, west of Lompoc. Waste filling occurs over a 40-acre unlined area. The Lompoc landfill has the most remaining space (8 million cubic yards) of any site in Santa Barbara County and an estimated 45 years of remaining capacity.

WDRs were reissued for the Lompoc Landfill permit on March 27, 2003 (Order No. R3-2003-0014). This is one of two active sites in the County, and one of the few in the Region, with no off-site groundwater impacts detected. Impacts to groundwater within the site boundary have been measured. A landfill gas collection system, installed in 1986, was removed in 1992 due to the low volume of methane gas being produced.

Staff Direction:

Review monitoring and reporting program and improve as necessary.

Foxen Canyon Road Landfill

The Foxen Canyon Road Landfill is operated by the County of Santa Barbara Public Works Department Resource Recovery & Waste Management Division and historically served

northern Santa Barbara County. The 35-acre facility was sited in 1970 and is located north of Los Olivos on Foxen Canyon Road. As of July 2004, the County ceased all MSW disposal operations and began using the site as a transfer station only. In January 2005, based on community concerns, the County decided not to clean close the Santa Ynez Airport Landfill and consolidate the waste at the Foxen Canyon Landfill. Consequently, the County is now proceeding with its plans for permanent final closure of the Foxen Canyon Landfill. In the interim, the County worked closely with Regional Board staff to develop a final cover system design for the Landfill.

Historically, groundwater impacts at this site have been at low to non-detect levels. However, the Foxen Canyon Landfill has an integrated gas collection and removal system, which has effectively reduced landfill gas migration to underlying groundwater, resulting in a significant decline in detected pollutants. The most recent groundwater monitoring report indicates no detections of VOCs in groundwater samples.

Recent Milestones:

- Submitted and received approval for an alternative engineered final cover system design.
- Submitted to the Regional Board, amendments to the Foxen Canyon Landfill, Final Closure and Postclosure Maintenance Plan (FCPMP).

Staff Direction:

- Work with the County to expedite final closure, requiring review and approval of the FCPMP by January 2006.
- Oversee all final landfill closure construction activities.
- Schedule the review and issuance of final closure WDRs.
- Review monitoring and reporting program and improve as necessary.

Former Casmalia Hazardous Waste Disposal Facility

The Casmalia Site is located in northwestern Santa Barbara County immediately north and east of Vandenberg Air Force Base, and approximately eight miles southwest of Santa Maria. The facility is no longer in operation and the Casmalia Resources Site Steering Committee (CSC) is

currently performing operations and maintenance activities under a consent decree with the United States Environmental Protection Agency (U.S. EPA) as lead agency. The CSC is a consortium of 53 entities that previously disposed a majority of wastes to the Casmalia Site.

Former hazardous waste disposal operations were carried out by Casmalia Resources from 1973 to 1989. During this period 5.5 billion pounds of waste were disposed. The Regional Board regulated the facility as a hazardous waste landfill until U.S. EPA took over regulatory authority for the Site in 1992. Pre-existing Regional Board orders for disposal operations remain in place, but have not been implemented nor enforced since U.S. EPA assumed lead agency responsibility.

During facility operations, liquid and solid wastes disposed at the Site ranged from heavy metals to organic solvents, pesticides, polychlorinated biphenyls, petroleum hydrocarbon and oil field wastes, and minor quantities of miscellaneous wastes. No radioactive wastes are known by the agencies to have been disposed at the Site. Historically, the Site contained numerous surface impoundments that were subsequently excavated under Regional Board orders and placed into six on-site landfills based on waste category. These remaining landfills are the primary focus of recent remedial efforts including the installation of final cover systems.

Groundwater contamination containment, identification and delineation of waste sources, and landfill leachate collection and control are key long-term remedial action measures that remain to be implemented by U.S. EPA as the lead oversight agency. These on-going efforts are occurring under a U.S. EPA lead multi-agency coordination effort, which involves Regional Board staff.

Pursuant to the consent decree between U.S. EPA and the CSC, during 2004, the CSC conducted a comprehensive data evaluation and collection effort for site characterization under an element of work called a "Remedial Investigation/Feasibility Study (RI/FS)." An Interim Progress Report was drafted by the CSC that was intended to summarize the fieldwork and identify additional data needs. The multi-agency working group coordinated comments to the CSC's report through U.S. EPA.

The comments requested further data evaluation and collection to fill data gaps, and recommendations for improvement in work quality and completeness. The outcome of the RI/FS process will be a "Remedial Design" aimed at containing wastes in place over many years.

One of the most significant aspects of the Casmalia Site is the presence of free-phase liquid contamination in groundwater that remains undefined and uncontained by current extraction programs implemented at the Site. The properties of these liquids are that they both float on top of groundwater and sink within groundwater; thus referred to as "light non-aqueous phase liquids" and "dense non-aqueous phase liquids" respectively.

The Regional Board is responsible for two active permits at the Casmalia Site: an industrial storm water permit and a National Pollutant Discharge Elimination System permit (NPDES permit). Both of these Orders are intended for managing water in five on-site ponds, which are excavation features that have since filled with water primarily from rainfall runoff, with minor contribution from groundwater infiltration. Rainfall accumulates in these ponds and there are currently no discharges of water from the site.

Storm water collected from the capped landfill area is segregated from site contamination and can be discharged as clean water under the storm water permit; water from this area however, is now being directed to one of the five ponds. The NPDES permit is a mechanism of managing pond water volumes if they accumulate to action levels set out in the Order; i.e. within two feet of the top of the pond berms. Discharges under the site-specific NPDES permit would require substantial treatment to remove contaminants and salts that have accumulated in pond waters.

Currently, no water is discharged from the site as a result of a United States Fish and Wildlife Service (U.S. FWS) determination that doing so would cause harm or harassment to species protected under the Endangered Species Act. Central Coast Water Board staff has long maintained that since the ponds are contaminated they should not be maintained and managed as species habitat. Resolution of pond water management related to species issues is on going

between U.S. FWS and U.S. EPA. Regional Water Board staff continues to provide recommendations and stress the importance of resolving this matter with both agencies to prevent the ponds from filling and causing an uncontrolled release by overtopping. In 1995, U.S. EPA initiated an emergency discharge of untreated pond water to Casmalia Creek in an effort to prevent the ponds from overtopping and/or failing as a result of water accumulating.

Staff Direction:

- Continue review and comment to work plans, reports of field activities, and remedial action plans.
- Ensure necessary site characterization through the RI/FS element of work to thoroughly identify sources of contamination to groundwater and surface water.
- Ensure that free-phase liquids delineation and source control are incorporated as part of U.S. EPA's remedial actions and management of the Site.
- Continue efforts towards U.S. EPA and U.S. FWS resolving pond water management issues related to protected species; and continue monitoring pond water volumes in the interim.
- Ensure the CSC maintains an updated industrial storm water permit and associated Storm Water Pollution Prevention Plan in the event a storm water discharge commences from the Site.
- Ensure the State's applicable or relevant and appropriate requirements (ARARs) are incorporated in the U.S. EPA's Remedial Design and Record of Decision processes addressing site remedies.
- Seek to acquire funding for staffs' project oversight costs by coordinating with U.S. EPA and other State agencies in cost recovery settlements with previous waste generators, including the CSC.

New Cuyama Landfill

The New Cuyama Landfill is the only individually permitted (Order No. 97-018) closed site in Santa Barbara County. The County of Santa Barbara Public Works Department Resource Recovery & Waste Management Division is responsible for the landfill. The 7.3-acre facility is located in the eastern foothills of the Sierra Madre Mountains,

approximately seven miles west of New Cuyama and the Cuyama River.

The Cuyama site was closed in 1995. In 1998 the County re-opened the landfill and incorporated waste from the "clean-closure" project at the nearby Ventucopa Landfill. The Ventucopa site was adjacent to the Cuyama River and considered unstable in regards to cover protection and surface water inflow. Following the project, the New Cuyama site was permanently closed.

Historically, low level groundwater impacts have been measured primarily in one on-site well.

Ballard Canyon Landfill

The landfill is located east of the city of Buellton, and northwest of the city of Solvang in central Santa Barbara County. Access to the landfill is by proceeding east on Ballard Canyon Road from its intersection with State Highway 246 near the town of Buellton. The landfill is located on two separate parcels at 940 and 942 Ballard Canyon Road.

Ballard Canyon Landfill was operated on leased property by Santa Barbara County between 1949 and 1969. The landfill occupies an area of approximately eight acres on the two parcels. The two parcels have a combined area of 18.79 acres, and an estimated in-place volume of 254,000 cubic yards of material.

Subsequent to operation, homes were built adjacent to the landfill site. In recent years, impact to local private supply wells and litigation issues have focused Regional Board staff attention on this site.

The County has effectively implemented a required long-term cleanup plan at the landfill, in accordance with Cleanup or Abatement Order No. 99-12. The cleanup plan included the implementation of extensive site assessment activities, the construction of a landfill final cover system, and the installation and operation of a gas extraction system. *To help expedite groundwater cleanup, the County voluntarily installed a Groundwater Extraction, Treatment, and Re-injection System. The treatment system began operating this summer.*

Project Milestones:

- Successful completion of all required site assessment activities including ground penetrating radar and trenching activities, health risk assessment and multiple gas surveys, installation of several groundwater and gas monitoring points, and waste consolidation activities.
- Resolution of litigation and settlement with several adjacent landowners.
- Construction of a final cover system, and installation of a gas collection system and a groundwater treatment and re-injection system.
- Deed Recording of the Landfill property.

Staff Direction:

- Continue working with County to ensure successful operation of the gas and groundwater systems.
- Address all public concerns pertaining to water quality.
- Rescind existing Cleanup Order.
- Review monitoring and reporting program and improve as necessary.

Santa Ynez Airport Landfill

The Santa Ynez Airport Landfill (landfill) was operated by Santa Barbara County as a municipal solid waste landfill and accepted waste material generated in the Santa Ynez Valley during an approximately 11-month period, between 1969 and 1970. Land disposal operations at the landfill began upon closure of the Ballard Canyon Landfill and ceased when land disposal operations were shifted to the Foxen Canyon Landfill. Thus, it can be reasonably assumed that these three landfill sites accepted similar waste material (i.e., municipal solid waste). The landfill became inactive prior to the promulgation of the Title 27 landfill regulations and has never been issued individual WDRs by the Regional Board, however the site is enrolled under the General Closure Order.

The landfill is located approximately one mile southeast of the community of Santa Ynez in an undeveloped, open space setting approximately 500 feet south of State Highway 246, on land leased and operated by the Santa Ynez Airport Authority. The landfill site is comprised of three separate waste filled trenches, occupies a total area

of approximately 1.6 acres, and is estimated to contain up to 55,000 cubic yards of waste material.

The principal aquifer beneath the site is unconfined. Groundwater has been measured between 52 and 79 feet below ground surface in monitoring wells around the landfill. Monitoring of groundwater elevations in site wells indicates a relatively consistent flow direction to the north to northwest.

Groundwater Monitoring, Degradation and Remediation:

Groundwater-monitoring requirements were established through the issuance of a Monitoring and Reporting Program (MRP) in April 2003. The present water quality monitoring system consists of eight groundwater-monitoring wells, which are sampled on a semi-annual basis.

Historically, groundwater impacts are measured off-site at this landfill. VOCs have been detected in down-gradient and side-gradient monitoring wells. Down-gradient impacts were first identified in 1998, when groundwater monitoring was implemented. Concentrations of VOCs detections range from trace to above the constituents' established maximum contaminant levels (MCLs). The existing groundwater plume extends approximately 500 feet beyond the northern-most boundary of the waste trenches. There are no known water supply or irrigation wells directly down gradient from the landfill. Existing groundwater pollution is attributed to landfill gas migration and/or the infiltration of leachate to underlying groundwater.

Corrective Measures:

Following the County's decision not to clean close the Santa Ynez Airport Landfill, the County submitted a groundwater remediation and capping proposal. The proposal included a phased approach. Phase I of the proposed remediation consists of three tasks: Task 1- Installation of a landfill gas extraction system, Task 2- Installation of a vapor recovery system, and Task 3- Installation of an air sparging system. The County applied for, and received a 50% matching grant from the California Integrated Waste Management Board for the landfill gas extraction system. The County anticipates Task I will be completed by the time of this Water Board meeting. Phase II includes the installation of a final cover system.

The timing for completion of the Phase II portion of the corrective measures will depend on the Airport Authority's plans for development near the landfill area. The County is working closely with the Airport Authority to determine the timing for implementing Phase II activities.

Staff Direction:

- *Staff will continue to work closely with the County to implement groundwater remediation and capping to address remnant groundwater pollutants.*
- *Staff will work with the County and LEA to ensure all corrective measures are implemented in accordance with applicable regulations and are protective of water quality and the environment.*

OTHER INACTIVE SITES AND DUMPS

The Santa Maria Airport Landfill

The landfill consists of two separate landfill areas within the Santa Maria Airport's property, and totaling approximately 34-acres. The "Younger" landfill is approximately 20-acres. The "Older" landfill area is approximately 14-acres. The County, in close coordination with the Santa Maria Airport Authority, is completing environmental review on a re-grading project to improve conditions on the top deck of the younger of these two landfills. Water Board staff will continue its close coordination with County and Airport District staff to ensure water quality related aspects of the environmental review process are appropriately addressed.

Carpinteria Burn Dump

The former Carpinteria Burn Dump is located in the City of Carpinteria, on a bluff overlooking the Pacific Ocean. The site consists of a 10.02-acre parcel identified as assessors parcel number 001-170-021. A portion of the landfill property is owned by Venoco, Inc. and Exxon Mobile. The other portion is owned by the City of Carpinteria. The County of Santa Barbara, as former landfill operator, remains as a responsible party. During this past summer the County completed a grading, waste consolidation, and re-capping project that placed soil over portions of the landfill surface that had been eroded. The capping project included hydro seeding. Other than long-term maintenance of the landfill cover, no additional work at this site is required.

Lompoc Burn Dump

The Lompoc Burn Site is located in the west-central portion of Santa Barbara County, approximately two miles northeast of the city of Lompoc and west of the unincorporated community of Vandenberg Village. The Lompoc Burn Site occupies an area of approximately 3.6 acres and is located within a 6.25-acre parcel (APN 97-250-45).

The Lompoc Burn Site was operated by the County as a burn dump in the 1950's to early 1960's, and served the residents of the City of Lompoc and County areas surrounding the City. The County and the City of Lompoc installed a cap over a portion of the landfill in 1998. Presently, there is no known activity at this site.

Elings Park (formerly Las Positas Park) Landfill

The Elings Park landfill consists of an approximately 26-acre property located within the current Elings Park property boundary, and within the City of Santa Barbara city limits. Reportedly, the site was used as a land disposal site from the 1940's to 1979 and was abandoned prior to the promulgation of landfill requirements. The City of Santa Barbara is in the process of completing site assessment activities at this site. Recent groundwater monitoring data indicate volatile organic compounds are present above water quality objectives. The City anticipates a final assessment report will be available shortly. Water Board staff intends to work closely with the City to complete the extent and degree of groundwater impacts and to implement any necessary corrective action measures.

Other Dump Sites

Vandenberg Air Force Base and the Lompoc Federal Prison (a former Army base) have a number of old landfill sites that are being investigated under the Region's Department of Defense Program. The remaining closed, inactive or abandoned landfill sites including, Santa Barbara City Dump and Cathedral Oaks Dump, have had some level of review by Regional Board Staff and/or the Local Enforcement Agent.

FOLLOW UP

Regional Board Land Disposal Unit staff will continue water quality protection efforts at all existing landfill sites in Santa Barbara County and throughout the Region. We will provide updates for landfill sites elsewhere in the region at future Regional Board meetings.

ATTACHMENT

1. Location Map

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