

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

STAFF REPORT FOR REGULAR MEETING OF DECEMBER 5, 2008

Prepared on November 7, 2008

ITEM NUMBER: 29

**SUBJECT: Paso Robles Class III Landfill, San Luis Obispo County—Revised
Waste Discharge Requirements Order No. R3-2008-0050**

KEY INFORMATION

Location: Nine miles east of the City of Paso Robles adjacent to, and north of Highway 46
Owner/Operator The City of Paso Robles (City) owns the Landfill. Pacific Waste Services, Inc. (PWS) operates the landfill under contract with the City.
Type of Waste: Non-hazardous municipal solid wastes
Design Capacity: 6.5 million cubic yards of waste
Remaining Capacity: 5.3 million cubic yards (based on 75,000 tons per year of waste disposed); estimated closure date of 2051
Disposal: Land, based on fill module method
Existing Orders: Waste Discharge Requirements, Order No. 01-112; Landfill Super Order 93-84
This Action: Adopt proposed Waste Discharge Requirements Order No. R3-2008-0050

SUMMARY

The proposed Waste Discharge Requirements Order No. R3-2008-0050 (“Order” or “Order No. R3-2008-0050”) for the Paso Robles Class III Landfill (Attachment 1) specify landfill design and operation modifications to protect water quality for the existing Landfill. The revisions proposed in Order No. R3-2008-0050 and Monitoring and Reporting Program (MRP) No. R3-2008-0050 (Attachment 2) update the groundwater monitoring network and regulatory and operational status of the Paso Robles Class III Landfill (Landfill). The proposed Order includes:

1. Provisions that require the Discharger to address groundwater monitoring data gaps.
2. Compliance review of the 80-acre landfill facility.
3. Description of Landfill operations including changes to the construction of waste management units.
4. Updated environmental monitoring information.
5. Specifications for disposal of treated wood waste.

The proposed Order benefits and protects groundwater and surface water through required engineering controls, corrective action, and monitoring. For instance, the proposed Order includes a provision for the Discharger to replace downgradient detection monitoring wells that are dry as a result of declining water levels. Detection monitoring is an important control mechanism to ensure that landfill containment systems (e.g., bottom liners, leachate collection and removal systems, and landfill gas recovery systems) are operating as designed to eliminate waste constituent migration to waters of the state.

DISCUSSION

The proposed Order updates and replaces Waste Discharge Requirements Order No. 01-112, adopted by the Water Board in October 2001. The proposed Order covers the current landfill operations and provides requirements for planned changes at the Landfill. For the lined portion of the facility, design and construction specifications within the proposed Order meet or exceed requirements in both the California Code of Regulations (CCR) Title 27, and 40 Code of Federal Regulations, Parts 257 and 258, both of which pertain to design of solid waste management facilities.

Since 2001, the Landfill has undergone a number of operational changes and environmental control improvements that include, in part, the following:

- Enhancement of the landfill gas recovery system via installation of new landfill gas recovery wells;
- Installation of new groundwater monitoring well and two new vapor monitoring probes;
- Improved stormwater monitoring program;
- Improved stormwater runoff to reduce the generation of leachate;
- Additional hydrogeologic investigations to define the location of perched groundwater beneath the Landfill; and
- Development of a household hazardous waste collection facility.

Facility Description: The Landfill is located approximately 32 miles inland from the Pacific Ocean, and within the southern Salinas River Valley (Figure 1 of Order No. R3-2008-0050). The Discharger opened the Landfill to the general public in 1970. The area served by the Landfill to includes all of San Luis Obispo County, and portions of Santa Barbara County.

The Landfill's property encompasses about 80 acres. The total area for existing or future waste disposal covers approximately 65 acres (80 acres less a 50-foot setback from the Landfill's boundary plus acreage needed for other improvements such as roads, buildings, basins, etc.).

The Landfill currently accepts approximately 160 tons per day of waste and the Landfill is expected to reach its full capacity by the year 2051.

From 1970 to 1993, the City utilized the trench and the area-fill method of landfilling for disposal operations. In 1993, the Discharger began constructing and landfilling in 40 CFR-compliant, composite lined cells, starting with Module 1.

Land surrounding the Landfill is zoned for agriculture (vineyards, row crops, and grazing) and open space. Two wineries are located to the south, across Highway 46 from the Landfill, and an airport is located approximately five miles west of the Landfill. There are 13 water supply wells (primarily for agricultural and industrial use) and eight Landfill-related groundwater monitoring wells located within a mile of the Landfill.

A 100-year Floodplain Map shows the Landfill is not within a 100-year floodplain. The Landfill is located about 2,000-feet west-southwest of the intermittent flowing Estrella River (Figure 2 of the draft Order).

Geology and Hydrogeology: The Landfill is located within the Upper Salinas River Basin in an elevated area typified by small plains and rolling hills. The natural ground surface at the Landfill ranges in elevation from 990 to 1,120-feet above mean sea level.

The geology beneath the Landfill area is characterized by fine- to coarse-grained non-marine Paso Robles Formation overlying fine-grained sediments of the Pancho Rico Formation of marine origin. The Paso Robles Formation was deposited in alluvial fan, flood plain, and lake depositional environments and consists of relatively thin sand and gravel layers interbedded with thicker layers of silt and clay. In the vicinity of the Landfill, the Paso Robles Formation is approximately 1,400-feet thick. Quarternary-age alluvium deposits consisting of unconsolidated gravel, sand and silt from 0 to 30 feet thick in thickness, locally overly the Paso Robles Formation. Boring logs for onsite wells describe the lithology beneath the site as consisting of unconsolidated clayey sand to gravelly sand, sandy clay, and clay to a depth of 355 feet below ground surface.

The Landfill is located within the Paso Robles Subbasin of the Salinas Valley Groundwater Basin. The upper aquifer beneath the Landfill occurs in the Paso Robles Formation, with groundwater encountered at depths of between 250 and 350 feet below ground surface. Groundwater potentiometric surface maps indicate groundwater flows in a west to northwesterly direction at the Landfill site. Since 2005, the Discharger has not collected samples from downgradient monitoring wells MW-3 and MW-8 because these wells are dry due to falling groundwater levels.

First encountered groundwater beneath the Landfill occurs in discontinuous perched zones at approximately 75 to 180 feet below ground surface. Investigations in 2002 through 2003 indicate that perched groundwater is absent on the west side of the Landfill property boundary. The Discharger reports that the lateral extent of the perched groundwater is restricted to the eastern and southern boundaries of the Landfill facility property.

Control Systems and Monitoring: The 65-acre permitted Landfill footprint is divided into several existing and proposed “waste management units” or modules, which are detailed in Table 1 below (and shown in Figure 3 of proposed WDR No. R3-2008-0050). The north and south existing waste fill areas predate state and federal liner requirements and consequently are unlined. Modules 1, 2A, 2B, 3A and proposed Modules 3B, 3C, 4 and 5 (when constructed) will include Title 27- and 40 CFR-compliant liners and leachate collection systems. The Discharger’s proposed final grading plan calls for waste to be placed above existing modules, both lined and unlined, to achieve final grading contours.

TABLE 1: Paso Robles Class III Landfill Waste Management Unit Summary

Module	Acres	Design	Status
North-Existing Refuse Fill Area	4.7	Unlined	Interim Cover
South-Existing Refuse Fill Area	14.8	Unlined	Interim Cover
1	2.1	Lined/LCRS	Interim Cover/Used as Wet Weather Area
2A	3.2	Lined/LCRS	Interim Cover/Used as Wet Weather Area
2B	2.5	Lined/LCRS	Active Fill Area
3A	2.6	Lined/LCRS	Active Fill Area
3B	3.4	Lined/LCRS	Proposed
3C	3.2	Lined/LCRS	Proposed
4	19.3	Lined/LCRS	Proposed
5	12.7	Lined/LCRS	Proposed

LCRS = leachate collection and removal system.

Leachate captured by the liners flows by gravity to two aboveground leachate storage tanks. Leachate collected in the leachate tanks is either hauled to the Discharger’s wastewater treatment

plant, or used for dust control and soil compaction within lined modules. Monitoring requirements for the leachate system are detailed in Monitoring and Reporting Program No. R3-2008-0050 (MRP No. R3-2008-0050).

Future modules will be designed and constructed to meet or exceed minimum standards established in Title 27, §20240 (c), (d), §20260, and §20310, and 40 CFR 258.40 and 258.60 et al., and any additional requirements of this Water Board. For future module liner designs, the Executive Officer will evaluate engineered alternative designs on a module by module basis with respect to performance standards of the prescriptive design cited in the Order.

Landfill Gas: The Discharger installed and began operating a landfill gas recovery system in 1998. The Discharger enhanced the system in December 2003 by adding five vertical and 10 horizontal gas recovery wells, improving the landfill gas recovery rate from approximately 117 to 155 standard cubic feet per minute. The gas recovery system has successfully addressed downward migration of volatile organic carbon compounds (VOCs) from the southern unlined area, as demonstrated by declining VOC trends for samples collected from adjacent lysimeters (discussed further below). The City burns recovered landfill gas in an onsite flare per San Luis Obispo Unified Air Pollution Control District requirements. Condensate from the gas system is handled the same way as leachate.

Stormwater: There are four sediment retention basins associated with the Landfill: two terminal basins that ultimately drain offsite, and two internal basins located on the east side of the facility, (Figure 3 of the proposed Order). The two terminal basins are monitored according to Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities (General Stormwater Permit for Industrial Activities), under State Water Resources Control Board Water Quality Order No. 97-03-DWQ and National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001.

Groundwater Impacts:

To date, monitoring in accordance with the MRP indicates this Landfill has not caused a release to groundwater.

In 1996, Water Board staff directed the Discharger to address a release to the vadose zone, as indicated by VOC concentrations detected in leachate from soil moisture monitoring probes (lysimeters), located on the southwest side (unlined refuse area) of the Landfill.

With the installation and startup of the landfill gas recovery system in 1998, and enhancements made in 2003, the Discharger appears to have stopped the migration of VOCs, as indicated by the overall declining VOC trends illustrated in the graph below.

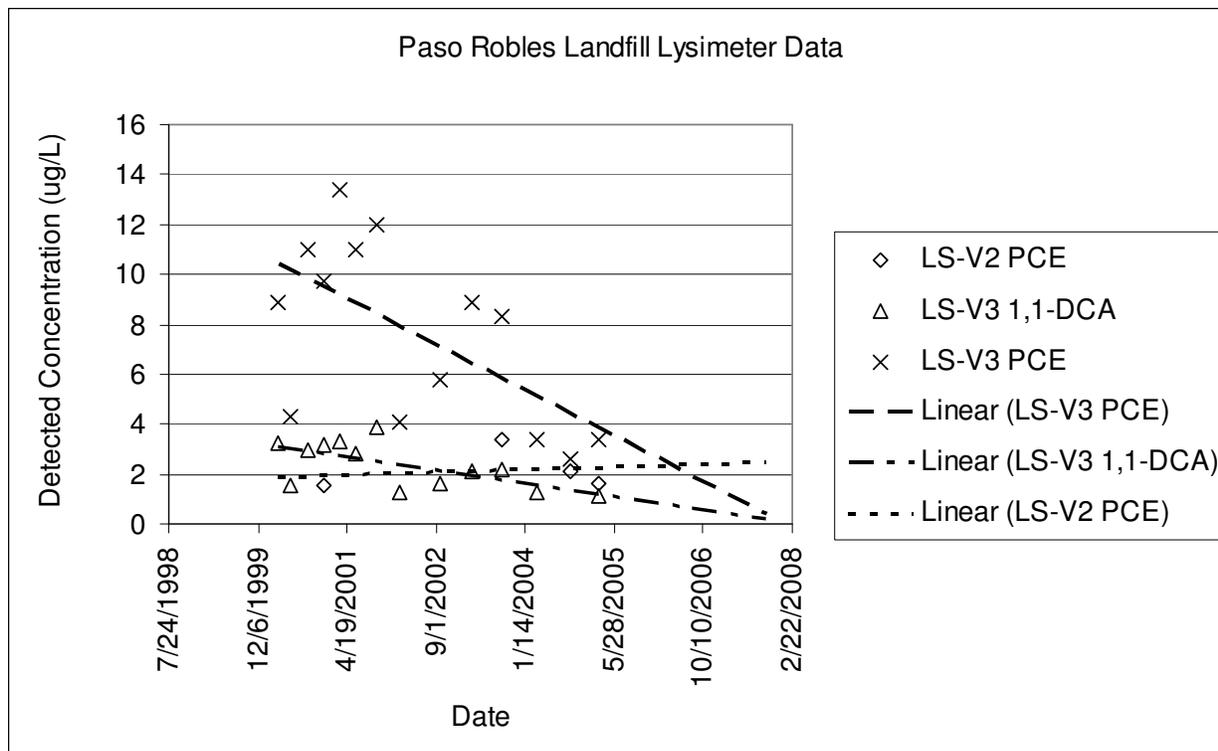


FIGURE 1. Select VOC concentration trends since 2000 from Landfill lysimeter Monitoring Points. LS-V2= Lysimeter Monitoring Point No. 2; PCE= perchloroethene; DCA= dichloroethane

The Maximum Contaminant Levels (MCL) for PCE and 1,1-DCA are both 5 micrograms per liter ($\mu\text{g/L}$). Unsaturated zone monitoring since 2005 indicates either VOC concentrations in soil pore water are below MCLs or dry conditions within the lysimeter.

Because the upper aquifer is relatively deep (approximately 250 feet below ground surface), perched groundwater and vadose (unsaturated zone) monitoring are critical for early detection of a landfill release. In 1999, Water Board staff required the Discharger to:

- Assess the vertical and lateral extent of perched groundwater beneath the Landfill. CCR Title 27 §20415 b.B.4 requires that perched groundwater be monitored in order to get the earliest possible detection of a release.

Since 1999, the Discharger has characterized the the perched zone through the installation of groundwater monitoring wells MW-V10, MW-8, MW-9, and MW-11. In addition, the discharger conducted down-hole geophysical surveys (neutron log in addition to other techniques) to delineate the perched zone. The investigation results indicate the perched zone is laterally discontinuous and restricted to the eastern and southern portions beneath the Landfill.

COMPLIANCE HISTORY

On February 10, 2003, Water Board staff issued the Landfill a notice of violation for excessive erosion and offsite discharge of sediment from the Landfill's western haul road during an intense storm event. The Discharger reported that the erosion was caused by intense rainfall that may have exceeded the predicted 100-year return period design of the stormwater control system. The Discharger addressed the problem by clearing out accumulated debris from the drainages and

directing flow off of the road to the stormwater retention basin. In addition, the Discharger installed sampling devices that automatically collect a sample from the first release from the sediment collection basins. These response actions satisfy the notice of violation.

On July 5, 2007, Water Board staff issued a notice of violation for failure to:

- 1) Submit the Joint Technical Document/Report of Waste Discharge, and
- 2) Collect confirmation samples, following a preliminary detection of VOCs in a groundwater well. Existing MRP No. 01-112 requires that the Discharger A) notify the Executive Officer when groundwater sample results tentatively indicate a release from the Landfill, and B) collect confirmation groundwater samples from the well with the initial detection. The Discharger did not do either of these things.

In response to the notice of violation, the Discharger submitted their Joint Technical Document in August 2007. Additionally, the Discharger collected confirmation samples and submitted results to the Water Board. Sample results indicated the initial VOC detection of PCE was a false positive. These combined response actions satisfy the notice of violation.

Other than violations discussed above, according to Water Board staff's review of the Landfill's correspondence files, the Discharger has met all other WDR and MRP requirements since issuance of the last WDR.

MONITORING AND REPORTING PROGRAM

The Landfill's current monitoring system includes:

- Eight groundwater monitoring points (wells MW-2, MW-3, MW-V4, MW-V5, MW-8, MW-9, MW-11, and MW-V10);
- Two stormwater monitoring points (western and eastern stormwater sediment basins);
- Six Lysimeters (LS-V1 through -V6);
- Seven gas probes (GP-V1, -2, -3, -4, -5, -7, and -8)

Water Board staff updated the Landfill's MRP; these changes are reflected in the proposed MRP (Attachment 2) and summarized below:

- Deleted iron, chromium, lead, and zinc: These parameters are not good indicators of a landfill release to groundwater because they are either not detected or their concentrations are not sufficiently elevated in leachate collected from the Landfill. Water Board staff added total alkalinity because landfill gas or leachate can cause significant increases in concentrations of alkalinity in groundwater.
- Modified stormwater sampling parameters to be consistent with the General Stormwater Permit for Industrial Activities and to also monitor runoff from stockpiled waste metals and biosolids at the Landfill. The proposed MRP includes the stormwater parameters defined for landfill operations (per Standard Industrial Code [SIC]), including pH, total suspended solids, specific conductance, total organic carbon, and iron. In addition, the proposed MRP requires analyses of stormwater samples for zinc, cadmium, nickel, and nitrate for purposes of monitoring the stockpiled waste metals and biosolids.
- Added organophosphorous pesticides and chlorinated herbicides: these parameters were added to the COC list (monitored every five years) because of their significant potential to be in landfill wastes.
- Addition of monitoring well MW-11: In 2006, Under requirement from the Water Board, the Discharger installed groundwater monitoring well MW-11, and soil vapor probes GP-7 and GP-8, to assess repair of a torn bottom liner. The MRP now includes monitoring well MW-11.

COMMENTS ON ORDER NO. R3-2008-0050

Water Board staff distributed the draft Order No. R3-2008-0050 and MRP No. R3-2008-0050 to interested parties and agencies involved with the Landfill. Comments received on the draft Order and MRP are included as Attachment 3. All submitted comments were considered and nearly all are either included herein or had previously been addressed in the original draft versions.

Comments from SCS Engineers, the City of Paso Robles' contractor:

1) The draft Staff Report suggests that geocomposite clay liners (GCL) do not perform as well as the prescriptive design for base liners and cover systems and that alternate materials will be required. This is an important consideration for future design, environmental protection and costs. GCLs are commonly employed and have been permitted for Title 27 / 40 CFR landfills throughout California and the U.S. We are aware of some agency concerns in this regard. However, in SCS's experience, perceived performance deficiencies may be attributed to construction practices, rather than material properties. Problems can be alleviated by specifying and installing appropriate overlap between GCL panels (to prevent subsequent shrinkage/creep of GCL materials and ensure a uniform barrier surface). In the absence of supporting data suggesting GCL performance problems, we respectfully request that the Staff Report be modified to allow the City to retain the right to petition for use of GCL in future base liner design and construction.

Water Board staff's Response: The draft Staff Report and the proposed WDR cite the federal and state regulations as the minimum standards for base liner designs (prescriptive design). This does not mean that future landfill modules have to be constructed using the prescriptive design; rather, for future module liner designs, the Executive Officer will evaluate engineered alternative designs (as allowed by the regulations) on a module by module basis with respect to performance standards of the prescriptive design. This issue will be further addressed when the City submits their design report for the next module build-out. At that time, staff will evaluate the proposed design with respect to the prescriptive standards.

In response to this comment, Water Board staff also revised Specification C.3 of the proposed WDR regarding liner and leachate collection system and removal system. The cited requirements for the system were not prescriptive standards. Water Board staff changed the language to reflect the prescriptive standards in the California CCR Title 27 and Federal 40 CFR regulations for leachate collection and removal systems.

2) The pre-draft Staff Report suggests that existing lysimeters be retained and incorporated in the monitoring program. Historically, sampling (via vacuum pumping) has not produced sufficient liquids volumes to analyze for all required monitoring parameters. Since 2005, the majority of the lysimeters have been dry. It is recommended that the need for continued semi-annual lysimeter monitoring be reconsidered as part of the proposed WDRs.

Water Board staff's response: We recommend retaining the lysimeters in the monitoring program because the information obtained from them is useful for assessing potential release or cleanup of a release from the landfill, as indicated by the graph in this staff report. The groundwater is very deep (greater than 250 feet below ground surface), so there is a very thick unsaturated zone beneath the site. Therefore, a significant amount of contaminant mass could potentially "load up" the unsaturated zone before an impact is detected by the groundwater monitoring wells. The lysimeters, along with the soil-gas monitoring probes, provide a good early warning system. As for the lysimeters going dry, wetter years may produce sufficient water for sample collection and there are also procedures that would improve the performance of the lysimeters. In addition, the lysimeter's dry

condition may suggest the landfill gas extraction system is drying out the local unsaturated zone. This is useful information provided by lysimeter monitoring. However, historical monitoring shows that VOCs were primarily the only constituents analyzed by the laboratory from the lysimeter samples. As a result, Water Board staff added an analyte priorities list in the MRP that places VOC sampling as the top priority, followed by general minerals and metals, etc.

3) We request that reasonable notice be given in advance of any agency inspections. Further, all personnel on-site shall be responsible for their own worker health and safety.

Water Board staff's response: An important part (and a legal right) of the Water Board's ability to effectively regulate any activity that could potentially pollute waters of the state is the element of unannounced visits. The Water Board is ultimately responsible for their own worker's health and safety; however, facilities are responsible for running safe operations and alerting employees and visitors of potentially dangerous situations. The Water Board staff, however, recognizes the health and safety issues and will provide notice as appropriate.

4) Section F of the MRP, Analytical Monitoring and Monitoring Locations, Item 5, Table 3, Page 5-Metals should be analyzed for dissolved constituents.

Water Board staff's response: Staff concurs with this request because total metals results can vary depending on the turbidity in the groundwater produced from a monitoring well during purging. The amount of turbidity varies depending on well construction, monitored geologic units, purge rate, and water level. Total metal results include both the metals in the sediment that creates the turbidity and the dissolved metals in the groundwater so that the results can be highly variable from sample to sample. Hence, dissolved metal results from filtered samples generally provide more statistically meaningful trends for evaluating whether there has been a release from the landfill. Tables 1 and 3 of the MRP were revised accordingly.

Comments from Mr. Michael Hoover, Chicago Grade Landfill:

1) General Finding No. 41 requires the landfill operator to provide the Executive Officer with reports that are on file (and required) by another public agency. As I recall, AB 1220 divides the authority for the implementation of title 27 between the SWRCB and the California Integrated Waste Management Board (CIWMB). The intent of AB 1220, in part is to keep the landfill operator from having to respond to two public agencies over the same manner. Thus General Finding No.41, which requires the operator to provide the CIWMB's annual approval of the operator's financial assurance mechanism to the Water Board, should be deleted from the order.

Water Board staff's response: The proposed WDR Order will retain reference to the discharger's responsibility of maintaining financial assurances pursuant to Title 27 Section 20380(b) "...waste discharge requirements (WDRs) for a Unit subject to this section shall contain a provision which requires the discharger to obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the Unit." However, Water Board staff agrees that it is CIWMB's responsibility to track and ensure that the financial assurance mechanisms meet regulatory requirements but it is the Water Board's responsibility to coordinate with the CIWMB on these matters. In addition, pursuant to Sections 22220 and 20950(f) of Title 27, the Water Board shall assist the CIWMB by verifying the amount of coverage proposed by the discharger to meet applicable State Water Resources Control Board-promulgated requirements. Therefore, the proposed WDR includes a requirement for the Discharger to submit a report estimating the amount of financial assurance necessary for corrective action, as landfill conditions significantly change or as requested by the Executive Officer. The CIWMB determines compliance with all the financial assurance mechanisms and the Water Board Executive Officer approves existing or potential future corrective action scenarios and associated cost

estimates. In addition, the Executive Officer assists the CIWMB in determining reasonableness of closure and post-closure cost estimates.

Based on this comment, Water Board staff removed the requirement that the discharger demonstrate compliance with financial assurance on a yearly basis. Instead, Provision E.18 of the proposed WDR requires that the discharger demonstrates compliance either A) every five years, or B) when the discharger submits a revised cost estimate to the CIWMB, or C) when the discharger submits a revised JTD. The Joint Technical Document (JTD) is due for submittal every 5-years. The JTD is a good vehicle for documenting financial assurance compliance because it includes both CIWMB's and the Water Board's portion of Title 27 Regulations (i.e., streamlining of regulatory reporting).

2) Reporting Requirement No. 22 requires a new Compliance Report every year. In the past, the Compliance Report was required every 5 years, immediately after the issuance of new WDRs. It was the intent of the Technical compliance Report to make sure that the discharger understood the new Water [Waste] Discharge order. Reporting Requirement No. 22 should be changed back to every 5 years, or September 30, 2013 in this case.

Water Board staff's response: Water Board staff agrees that a Compliance Report is redundant as long as the Annual Summary Report (that is required in accordance with the MRP) includes details on noncompliance issues regarding monitoring and all other aspects of landfill maintenance. As such, Water Board staff removed the Compliance Report requirement.

3) The M&RPs order discusses the need to perform site inspections when a storm "produces storm water runoff and discharge." It is assumed that this requirement refers to discharge from a storm water basin to the waters of the State, not storm water runoff that occurs only within the facility. The definition of a storm event is appears most clearly defined in Part 1 F6, which discusses sampling requirements for the State Water Resources Control Board Order 97-03-DWQ (Industrial Stormwater Permit); however it is inconsistent with other sections in the MRP that address stormwater inspections. In Order 97-03-DWQ, new storm events (and therefore new inspections) are defined as being preceded by three working days without a stormwater discharge, yet this is not included in the MRP's definition of a storm event. Is the MRP's definition of a storm event, as it pertains to inspections, the same as the definition of a "storm event" in Order 97-03-DWQ? When considering your response, please consider that the MRPs at this site already require 29 facility inspections, plus additional (drainage system) inspection for "runoff-producing storm events," which result in additional cost that will have to be passed on to the business community during these financially difficult times. These inspections do not add a commensurate level of protection of the state's waters.

Water Board staff's response: The objective of the Landfill's MRP monitoring program is different from that of the Industrial Stormwater Permit; therefore, the definition of runoff is different. The intent of the inspections required by the MRP is to observe potential onsite facility and waste containment problems caused by surface water flow such as cover erosion, leachate seeps, ponding, and sediment basin damage before these problems cause impacts to groundwater and surface water. The objective of the Industrial Stormwater Permit is to monitor discharges that leave the facility, and ensure that best management practices are used to minimize contamination in stormwater discharges that might result from landfill activities. The MRP cites the 97-03-DWQ monitoring requirements, but the permit functions separately from the MRP. Inspections performed in accordance with the MRP and Stormwater Permit, followed by proper maintenance, can potentially save the operator money by preventing erosion and catastrophic failures of facility structures like sediment retention basins. The inspections are an essential part of successful landfill operation, take minimal time, and can be performed in conjunction with other landfill inspections and tasks.

Based on this comment, Water Board staff added a definition for onsite runoff as follows, "onsite runoff is defined as: 1) surface water flow that produces a discharge to a sediment retention basin or 2) surface water flow that results from a minimum of 1-inch of rain within a 24-hour period." This definition applies to the trigger for facility inspection in Part I A.1.a and B.1 if the MRP. As for Part I.F.6 that applies to 97-03-DWQ, a storm event "is an event that produces discharge from the sediment retention basin(s)." The following text was added to the above quote for clarification: "to waters of the state." In addition, under Part I.F.6, per this comment, the second bullet was changed to "During at least one other wet-season storm event, following a minimum of three working days without a stormwater discharge from the first storm event."

4) In Part 1 F6, the discharger is required to install or at least utilize automatic storm water sampling devices. This requirement is in conflict with SWRCB Order 97-03-DWQ which requires hand samples during the first hour of discharge or the first hour the facility is open if the discharge occurs at night. Automatic storm water sampling devices are inferior to hand samples because certain monitoring parameters like dissolved oxygen, turbidity, and pH need to be measured immediately. There is also a substantial cost of installing automatic storm water samplers. The operator should be given the option of using automatic sampling equipment or obtain grab samples.

Water Board staff's response: The automatic stormwater samplers are already installed at this landfill. The Discharger may use automatic storm water sampling devices to comply with the requirements of the General Stormwater Permit for Industrial Activities. The Water Board required the discharger to install the samplers in order to better "catch" the first storm event of the season. In regards to the concerns over the sample quality, 1) the required monitoring parameters do not include turbidity and dissolved oxygen, so these parameters are not relevant, 2) pH can be a field measured parameter, therefore by its nature it is a qualitative measurement, and 3) the automatic sampler chamber seals after it fills, therefore dissolved gases that influence pH, such as carbon dioxide, are preserved such that the pH measurement should be relatively accurate.

To clarify the fourth bullet of Part 1 F6, Water Board staff added text requiring that samples be shipped to the laboratory within holding times. Nitrate analysis was changed to nitrate & nitrite to increase holding times. Therefore, the shortest holding time is for total suspended solids (7 days). Water Board staff agrees that for facilities that do not have auto-samplers, grab sampling is allowed provided that 97-03-DWQ collection times are met.

5) Part I F7 addresses perimeter gas monitoring probe sampling. Beginning in September 2008, the number of perimeter gas probes at each landfill will increase in response to new regulations passed by CIWMB. It is desirable to make the perimeter gas monitoring as cost efficient as possible. Section F7 of the M&RP requires analysis of landfill gas for VOCs by "method TO-14 (or equivalent)." Does this mean that method EPA 8260 will suffice?

Water Board staff's response: No, EPA 8260 will not suffice because this method is intended for solids and liquids. However, TO-15 can be used in place of TO-14.

CONCLUSION

To date, monitoring in accordance with the approved monitoring program indicates this Landfill has not caused a release to groundwater.

As the Landfill progresses towards design capacity, with expansion of the waste to the north, additional monitoring wells will likely be needed. Water Board staff will continue to work with the Discharger to make sure the Landfill's groundwater monitoring program is adequate to measure a potential release from the Landfill.

The proposed Order benefits and protects groundwater and surface water through required engineering controls, corrective action, preventative inspections, and monitoring.

RECOMMENDATION

Water Board staff recommends adoption of proposed Waste Discharge Requirements Order No. R3-2008-0050.

ATTACHMENTS

1. Proposed Waste Discharge Requirements Order No. R3-2008-0050
2. Proposed Monitoring and Reporting Program No. R3-2008-0050
3. Comments Received on Draft Order and MRP No. R3-2008-0050

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Attachment 3 Comments Received on Draft Order

SCS ENGINEERS

June 12, 2008
Project No. 01205150.00

Mr. Roger Briggs, Executive Officer
California Regional Water Quality Control Board,
Central Coast Region
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401

Attention: Dean Thomas

**Subject: Pre-Draft WDR Comments
Paso Robles Sanitary Landfill
Paso Robles, California**

Dear Mr. Briggs:

On behalf of the City of Paso Robles this letter presents comments on the pre-draft Staff Report, Waste Discharge Requirements (WDRs), and Monitoring and Reporting Program (MRP) for the Paso Robles Sanitary Landfill. This response has been prepared by SCS Engineers (SCS) based on discussions with representatives from the City of Paso Robles and Pacific Waste Services (PWS).

OVERALL

Overall the pre-draft WDRs and staff report are complete and thorough and appear to be comparable to the existing permit, with exceptions as noted below.

PRE-DRAFT STAFF REPORT

- **Summary Section, Page 1** - Landfill parcel is 80 acres, not 82 as stated.
- **Facility Description, Page 2** - The hazardous waste management facility is operated under a separate permit issued to the San Luis Obispo County IWMA.
- **Control Systems and Monitoring, Page 3** - The pre-draft Staff Report suggests that geocomposite clay liners (GCL) do not perform as well as the prescriptive design for base liners and cover systems and that alternate materials will be required. This is an important consideration for future design, environmental protection and costs. GCLs are commonly employed and have been permitted for Title 27 / 40 CFR landfills throughout California and the U.S. We are aware of some agency concerns in this regard. However, in SCS's experience, perceived performance deficiencies may be attributed to construction practices, rather than material properties. Problems can be alleviated by specifying and installing appropriate overlap between GCL panels (to prevent subsequent shrinkage/creep of GCL materials and ensure a uniform barrier surface). In the absence of supporting data



suggesting GCL performance problems, we respectfully request that the Staff Report be modified to allow the City to retain the right to petition for use of GCL in future base liner design and construction.

- **Control Systems and Monitoring, Page 4** – The pre-draft Staff Report suggests that existing lysimeters be retained and incorporated in the monitoring program. Historically, sampling (via vacuum pumping) has not produced sufficient liquids volumes to analyze for all required monitoring parameters. Since 2005, the majority of the lysimeters have been dry. It is recommended that the need for continued semi-annual lysimeter monitoring be reconsidered as part of the revised WDRs.
- **Compliance History, Page 5** – The pre-draft Staff Report states that “... with the installation and start-up of the landfill gas system in 1998... the Discharger appears to be successfully correcting the leachate problem, as indicated by the declining VOC trends.” We recommend this statement be re-worded. To date, we are unaware of a leachate release or any leachate-related impacts to groundwater. Note that proper operation of LFG control systems can be effective in controlling VOC impacts to underlying water quality.

PRE-DRAFT WASTE DISCHARGE REQUIREMENTS (WDRS)

- **Purpose of This Order, Item 5, Page 1** – See above comment regarding landfill parcel acreage.
- **Site Description and History, Item 25, Page 4** – Results of monitoring data suggest that perchlorate detected may be from natural sources or sources other than the landfill. This should be stated.
- **Control Systems and Monitoring Program, Item 32, Page 4** - The landfill gas control system is also operated under federal Title V permit requirements.
- **California Environmental Quality Act, Item 36, Page 5** – See above comment regarding landfill parcel acreage.
- **Section C, Specifications, Item 3. ii, Page 8** - The pre-draft WDR requires a 2-foot thick layer of compacted clay having a permeability less than or equal to 10^{-7} centimeter per second (cm/sec) and a minimum 40 mil synthetic flexible membrane liner or a minimum 60-mil high-density polyethylene. This condition has been changed from WDR Order No. 01-112 where the GCL was acceptable instead of new requirement of 2-foot of clay. Please see the above comments regarding the GCL component of the liner system. Again, we request the City retain the right to petition for use of GCL in the future base liner design and construction.
- **Section C, Specifications, Item 3. iii, Page 8** – the pre-draft WDR requires an upper component of 12-inches of sand drainage layer for leachate collection, covered with 12-inch protective soil layer. This condition has been changed from WDR Order No. 01-112 which allowed use of drain rock or a geocomposite drain layer. Industry convention is to

use drain rock and geocomposite drain net materials. Use of sand could present operations problems meeting performance requirements for liquid head buildup (it is less permeable than drain rock) and the sand material could be significantly more costly than drain rock or geocomposite. In the absence of supporting data suggesting the need to use sand in the drainage layer, we recommend that the pre-draft WDR be modified to allow the City the right to petition for use of drain rock or geocomposites, to be consistent with industry convention.

- **Section C, Specifications, Item 8, Page 9** – RWQCB approval for use of alternate daily cover is required. The City currently has CIWMB and RWQCB approval for use of ADC (tarps). We understand that RWQCB approval was obtained prior to issuance of the existing WDRs.
- **Section E, Provisions, Item 6, Page 11** – We request that reasonable notice be given in advance of any agency inspections. Further, all personnel on-site shall be responsible for their own worker health and safety.
- **Reporting Requirements, Item 22, Page 13** – the pre-draft WDR requires by January 31 of every year, the Discharger submit an Annual Compliance Report. This condition is not consistent with the Tentative MRP, Part IV., B. Annual Summary Report that allows the Annual Summary Report to be submitted with the Second Semiannual Monitoring Report submitted no later than April 30 each year. We respectfully request Provision 22 be changed to “April 30 of every year” to match the Tentative MRP Annual Summary Report submittal due date. The associated table under E. Provision 40 should be changed accordingly.

PRE-DRAFT MONITORING AND REPORTING PROGRAM (MRP)

- **Section A, Site Inspections, Item 1. a.** – The pre-draft MRP lists the Wet Season as October through April. However, the General Industrial Stormwater Permit lists the Wet Season as October through May. Please address this discrepancy.
- **Section F, Analytical Monitoring and Monitoring Locations, Item 2, Table 1, Page 3** – The following analytical methods are commonly used, appropriate, and we request that they be added to the list of Monitoring Parameters (Table 1):

Chloride – 300.0
Manganese - 6010
Nitrate Nitrogen – 300.0
Sulfate – 300.0

- **Section F, Analytical Monitoring and Monitoring Locations, Item 2, Table 1, Page 3** – Manganese analysis should be for dissolved constituents.

- **Section F, Analytical Monitoring and Monitoring Locations, Item 3. b, Page 4** – Semi-annual monitoring of the Lysimeters (LS-V1 through LS-V6) should be reconsidered. See above comment under pre-draft Staff Report.
- **Section F, Analytical Monitoring and Monitoring Locations, Item 3. d, Page 4** – Existing landfill gas monitoring probes are designated GP-1 through GP-5, GP-7, and GP-8 (there is no GP-6).
- **Section F, Analytical Monitoring and Monitoring Locations, Item 5, Table 3, Page 5** – The following analytical methods are commonly used, appropriate, and we request that they be added to the list of COCs:

Arsenic - 6010
Cyanide – 335.4
Lead - 6010
Selenium - 6010
Sulfide – 376.2
Thallium - 6010

- **Section F, Analytical Monitoring and Monitoring Locations, Item 5, Table 3, Page 5** – Metals (i.e., antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, tin, vanadium, and zinc) should be analyzed for dissolved constituents.
- **Section F Analytical Monitoring and Monitoring Locations, Item 6, Table 4, Page 6** – The following analytical methods are commonly used, appropriate, and we request that they be added to the list of Stormwater Monitoring Parameters:

Specific Conductance – 120.1
Nitrate Nitrogen – 300.0
Total Suspended Solids – 160.2

- **Section F, Analytical Monitoring and Monitoring Locations, Item 7, Page 6** – Landfill gas monitoring probes should be labeled GP-1 through GP-5, GP-7, and GP-8 (there is no GP-6).
- **Section F, Analytical Monitoring and Monitoring Locations, Item 3, Page 3, a** – First Bullet – Identifies *Well MW-3, MW-8 and MW-11 shall serve as DMPs*. We respectively request the RWQCB revise this by identifying “Well MW-3, MW-9 and MW-11 shall serve as DMPs”. It is our intent to replace former Well MW-8 with MW-11 and to correct previous MRP to classify MW-9 as a DMP. Further supporting information of MW-9 is presented in the next response. Well MW-8 has been dry for several monitoring events and will be replaced with MW-11.

- **Section F, Analytical Monitoring and Monitoring Locations, Item 3. a, Page 4** – Identifies that *Well MW-9 is about 240-feet from WMUB; and consequently, does not comply with 40 CFR 258.40(d), but shall be included as a monitoring point.* This statement is consistent with MRP Order No. 01-112, but we request a change. MW-9 was installed in the 1990's as a planned expansion of the "Groundwater Detection Monitoring Point" and investigation for perched groundwater in a monitoring plan submitted by Conor Pacific/EFW and approved by the RWQCB. Subsequent monitoring has shown that Well MW-9 is consistently monitoring groundwater downgradient of the Paso Robles Landfill Module 2B. Compliance with Title 27 appears to have been achieved by using Well MW-9 as a "Groundwater Detection Monitoring Point" and request the RWQCB's consideration for listing this well as such.

Also, it should be noted that U.S. EPA guidance for groundwater monitoring in accordance with 40 CFR generally allows that points of compliance be established within 150 meters of the waste unit boundary (approximately 460 feet). Well MW-9 is well within this allowable setback limit.

This response has been prepared by SCS for the City of Paso Robles, Department of Public Works. Please contact either of the undersigned with questions or comments regarding this submittal.

Sincerely,



Steve Clements, P.G., R.E.A.
Project Manager
SCS ENGINEERS



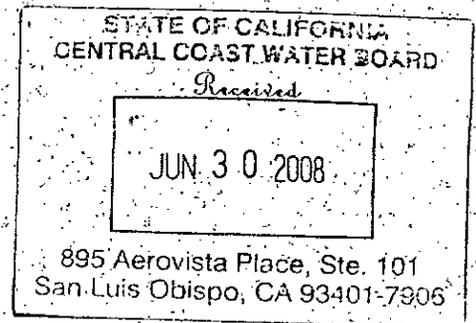
Joseph Miller, P.E.
Project Director

cc: Doug Monn, City of Paso Robles
James Wyse, PWS

Chicago Grade Landfill, Inc.

2290 Homestead Road ♦ Templeton, CA 93465

Phone 805 466-2985 ♦ Fax 805 466-6155



June 26, 2008

Mr. Dean Thomas
Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

Subject: Comments Concerning Revised Waste Discharge Requirements
R3-2008-0056
Paso Robles Class III Landfill

Dear Mr. Thomas,

Thank you for providing us with the draft Waste Discharge Requirements ("WDRs") and Monitoring & Reporting Program ("M&RP") for the Paso Robles Landfill. As you know, I have operated a landfill near Paso Robles' site for 14 years. Chicago Grade Landfill's site is similar in geology, hydrology and operations to the Paso Robles Landfill; the two landfills are approximately 9 miles apart. Over the last 5 or 6 years I have become increasingly concerned about the escalation of new regulations, particularly new regulations that raise the cost of doing business but fail to achieve significant environmental benefit. It is with that thought in mind that I comment on Waste Discharge Order R3-2008-0056.

WDRs

1. General Finding #41 requires the landfill operator to provide the Executive Officer with reports that are on file (and required by) another public agency, the California Integrated Waste Management Board ("CIWMB"). As I recall, AB 1220 divides the authority for the implementation of Title 27 between the SWRCB and the CIWMB. The intent of AB 1220, in part, is to keep the landfill operator from having to respond to two

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two public agencies over the same matter. Compliance with Financial Assurance, which is what General Finding #41 addresses, is already evaluated on an annual basis by the CIWMB pursuant to Title 27 Section 22220 et. sec. The landfill's compliance with Financial Assurance reporting to the CIWMB is mandatory, and since the CIWMB performs an annual review, compliance is assured. If RWQCB staff wishes to check on the CIWMB's performance with respect to Financial Assurance, RWQCB staff should contact the CIWMB directly. Thus General Finding #41, which requires the operator to provide the CIWMB's annual approval of the operator's Financial Assurance mechanism to the RWQCB should be deleted from the order.

2. It seems like a small matter, but "freeboard" is not defined in the draft order. I actually had one of your fellow staff members tell me that Specification #15 (which is similar to one in our WDRs), required a constant 2 foot separation between the water surface and the spillway, meaning that a sediment basin could never overflow. Clearly this is not the intent of Specification #15. Including the definition of freeboard may be appropriate in the WDRs.

3. Reporting Requirement #22 requires a new Technical Compliance Report every year. In the past, the Technical Compliance Report was required every 5 years, immediately after the issuance of new WDRs. It was the intent of the Technical Compliance Report to make sure that the discharger understood the new Waste Discharge order. Requiring a Compliance Report annually, even though the WDRs don't change, serves no purpose. Reporting Requirement #22 should be changed back to every 5 years, or September 30, 2013 in this case.

M&RPs

4. Part 1 A1 of the M&RPs order discusses the need to perform site inspections when a storm "produces storm water runoff and discharge". It is assumed that this requirement

refers to discharge from a storm water basin to the waters of the State, not storm water runoff that occurs only within the facility. If that is what is meant, then the wording should more precisely reflect that intent. See also Part 1 B1. The wording describing storm water runoff in Part 1 B1 is different than the wording in Part 1 A1. Are we to assume that the meaning is the same? See also Part 1, F6. The definition of a storm event is more clearly defined in Part 1 F6; is the intent the same in Part 1 F6 as in Part 1 B1 and Part 1 A1?

An important provision of 97-03-DWQ is left out of the various definitions of what is collectively referred to as "storm water runoff" in the M&RP. In 97-03-DWQ new storm events (and therefore new inspections) are defined as being preceded by 3 working days without a storm water discharge. Is the definition of a "storm event" in MRP Order R3-2008-0056, as it pertains to inspections, the same as the definition of a "storm event" in State Water Resources Control Board Order 97-03-DWQ? When considering your response, please consider that the MRPs at this site already require 29 storm inspections, plus additional (drainage system) inspections for "runoff-producing storm events". Add to this the regular monthly CIWMB and RWQCB staff inspections, and there are already over 50 erosion control/runoff-related inspections required per year. If additional inspections are required for every storm (storms that are not preceded by 3 days with no discharge and storms that cause no discharge to waters of the State), then storm water inspections would number 75 to 100 per year, depending on the weather. These additional costs would have to be passed on to the business community during the current time of financial difficulty, and would not yield in my opinion, a commensurate level of protection of the State's waters.

5. In Part 1 F6, the discharger is required to install or at least utilize automatic storm water sampling devices. This requirement is in conflict with SWRCB Order 97-03-DWQ which requires hand samples during the first hour of discharge or the first hour the facility is open if the discharge occurs at night.

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It has been my experience that automatic storm water sampling devices are inferior to hand samples because certain monitoring parameters like dissolved oxygen, turbidity and pH need to be measured immediately, not in 30 days or, at a minimum, many hours after the sample is taken. There is also the substantial cost of installing automatic storm water samplers, and the problem of damage to the sampling equipment during a storm (or by animals). At a minimum, the operator needs to be given the option of using the automatic sampling equipment or to obtain grab samples, as is allowed by Order 97-03-DWQ.

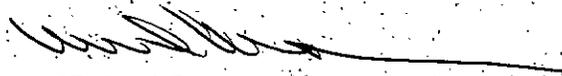
6. Part 1 F7 addresses perimeter gas monitoring probe sampling. Beginning in September, 2008, the number of perimeter gas probes at each landfill will increase dramatically in response to new regulations passed by the CIWMB. Considering that approximately 18 gas samples must be analyzed for VOCs (instead of 3 gas samples previously required) each year, it is desirable to make the perimeter gas monitoring as cost efficient as possible. Section F7 of the M&RP requires analysis of landfill gas for VOCs by "method TO-14 (or equivalent)". Does the "or equivalent mean EPA 8260 will suffice?

7. Lastly, the laboratory test for metals in the MRP requires water samples to be unfiltered. Analyzing unfiltered water samples for metals leads to false positive results, since the acid preservative added to the water sample dissolves the metals in the sediments suspended in the water sample. While it is acceptable to use unfiltered water samples for the analysis of most constituents, it is inappropriate to use preserved and unfiltered water samples for the analysis of metals. The EPA test (or sample preparation

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method) for metals specified in the MR&Ps needs to be changed to allow filtering of the samples.

Sincerely,
CHICAGO GRADE LANDFILL



Michael F. Hoover
General Manager

cc: State Senator – Honorable Abel Maldonado
Mr. Doug Moen – City of Paso Robles

MFH:ra