



California Regional Water Quality Control Board

Central Coast Region



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October 26, 2007

Mr. Brad Hagemann
Utilities Manager
City of Santa Maria
2065 East Main Street
Santa Maria, CA 93454-8026

Dear Mr. Hagemann:

ADOPTION OF WASTE DISCHARGE REQUIREMENTS ORDER NUMBER R3-2007-0045 FOR THE SANTA MARIA REGIONAL CLASS III LANDFILL; SANTA BARBARA COUNTY

Enclosed is a signed copy of Waste Discharge Requirements Order No. R3-2007-0045, and Monitoring and Reporting Program No. R3-2007-0045 (collectively, "Order") that were adopted by the Central Coast Water Board at its October 19, 2007 meeting.

Water Board staff have also posted a copy of the Order on our Website for other interested parties to view and print should they wish to do so. The Order is available at the following Web address:

<http://www.waterboards.ca.gov/centralcoast/Permits/Index.htm>

If you have questions please contact **Dean Thomas at 805-549-3690.**

Sincerely,

Roger W. Briggs
Executive Officer

Enclosure:
Order No. R3-2007-0045

California Environmental Protection Agency



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CC:

(without enclosure)

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REVISED WASTE DISCHARGE REQUIREMENTS ORDER NO. R3-2007-0045
Waste Discharger Identification No. 3420304001

For
CITY OF SANTA MARIA
SANTA MARIA REGIONAL LANDFILL
Santa Barbara County

The California Regional Water Quality Control Board, Central Coast Region ("Water Board") finds that:

SITE OWNER AND LOCATION

1. The City of Santa Maria ("Discharger") owns and operates the Santa Maria Regional Landfill ("landfill"). This site has also been historically referred to as the Santa Maria City Landfill or Santa Maria Landfill.
2. The landfill located is east of Santa Maria, approximately one mile east of Highway 101 at 2065 East Main Street, as shown on Figures 1 and 2. The site encompasses portions of Sections 7, 8, 16, and 17 of Township 10 North, Range 34 West, San Bernardino Baseline & Meridian. The site is on Santa Barbara County Assessor's Parcel No's. 128-033-08, 128-094-15, 128-094-40, 128-094-08, and 128-094-09

PURPOSE OF ORDER

3. The Discharger submitted a Joint Technical Document/Report of Waste Discharge ("ROWD") on June 9, 2006, later revised on January 5, 2007. Within the ROWD, the Discharger proposes several minor changes to the landfill operations. The Discharger is currently regulated by Waste Discharge Requirements Order No. 01-041 ("Order 01-041"). The purpose of proposed Order No. R3-2007-0045 ("Order") is to revise and update requirements for discharging waste to land at the landfill. This update includes changes for the following portions of the landfill:
 - 68-acre Inactive Area final cover system combined with irrigated re-use of cap as recreational complex.
 - Ongoing "rolling" final closure for 118-acre, unlined Closed Active Area of the facility; and
 - The 61-acre composite-lined active area (Lined Area) comprised of two cells
4. The discharger proposed several changes to the landfill, including: increase the landfill's finished elevation, add a concrete and asphalt grinding operation, add agricultural plastic bailing and recycling, conduct greenwaste diversion and use as alternative daily cover (ADC), use of biosolids as cover soil amendment and ADC, increase peak waste tonnage to 1,669 tons per day, expand the Household Hazardous Waste Collection Facility, accept treated wood waste, and conceptual changes to post-closure land use of the Inactive Area.

SITE DESCRIPTION AND HISTORY

5. The 290-acre site is located along the southern margin of the Santa Maria River, immediately behind a Corps of Engineer-built levee that bounds the river's margin. The Corps of Engineer's (COE) levee was designed to contain a 500-year flood event; however, preliminary revised flood maps from the Federal Emergency Management Agency (FEMA) would place the landfill area within the 100-year flood zone. Land use within a mile of the landfill includes agricultural, commercial, recreational, and residential. For the purpose of this Order, the landfill is divided into three basic areas (Figure 3):

- **Inactive Area:** This area comprises 68 acres of the western-most portion of the site. This area was landfilled in the 1950's and 1960's and has an interim soil cover ranging in thickness from 3 to 10 feet. There is no bottom liner or leachate collection system beneath waste in this area, however, waste was placed and burned at the preexisting ground surface (approximately 240 to 260 feet above mean sea level (ft msl)).
- **Closed Active Area:** This central portion of the site is comprised of 118 acres where waste was placed using trench and fill method. There is no bottom liner or leachate collection system between municipal solid waste (MSW) and underlying river sediments in this area, resulting in the contact between groundwater and waste during high stands in groundwater. The minimum elevation of waste is estimated at between 255 and 265 ft msl. The area began receiving waste in the 1960's and last received MSW on November 30, 2002. Sixty acres of the northwest portion of this area have received a final cover, with the remaining approximately 58 acres awaiting foundation layer soil to bring the landfill slopes to final grade. Nonhazardous hydrocarbon impacted soils (NHIS) are used as foundation layer soils (NHIS discussed further in Findings 7 and 8).
- **Lined Area:** The Lined Area consists of two cells totaling 61 acres on the southeast portion of the site. Cell No. 1 has been active since December 2002 and covers 36 acres; as yet unconstructed Cell No. 2 covers 25 acres. Minimum elevation of waste is 265 ft msl. The capacity of Cell No. 1 will be reached by early 2014; incorporating Cell No. 2 extends the estimated life of the landfill to early 2018. However, the Discharger plans to move operations to a new regional facility before 2014. The design of the cells in the Lined Area includes a double-liner system, complete with an underdrain for shallow groundwater, a leak detection system, and geocomposite clay liner at the base of the leachate collection and removal system.

WASTE TYPE & CLASSIFICATION

6. The Lined Area receives non-hazardous, municipal, commercial, treated medical, and agricultural solid waste at a rate of approximately 800 cubic yards, or about 400 tons per day. Municipal waste includes residential wastes, sewage sludge, construction and demolition debris, and green waste. Commercial waste includes roofing, paper, wood, wire, plastic, and building materials. Agricultural wastes include citrus, fruit pulp, manure, plant residue, and agricultural plastics.
7. Large quantities of hydrocarbon-contaminated soil exist in the Santa Maria area, remaining from the oil production era during the 1900s. Most of this soil still sits on the lease sites where it was generated. Redevelopment of the former exploration properties surrounding Santa Maria requires that these soils be removed and disposed of in an appropriate manner. Disposal of low-concentration hydrocarbon-impacted waste at the landfill enables the waste soils to be entombed under a protective final cover and accelerate closure for the unlined Closed Active Area. This accelerated closure has improved groundwater quality beneath the landfill.

8. To expedite closure and achieve final cover slopes of the Closed Active Area, nonhazardous hydrocarbon impacted soils (NHIS) are used as a foundation layer for the final cover. These soils are placed in the uppermost portion of remaining capacity in the Closed Active Area, and separated from underlying MSW by a linear low density polyethylene (LLDPE) plastic liner. This liner greatly reduces the possibility of downward migration of any leachate from NHIS soils. The thickness of the NHIS used to crown the landfill ranges between 5 and 40 feet, which achieves the necessary slopes to promote drainage from the Closed Active Area final cover, and minimizes percolation of rainwater into the MSW below.

Acceptance of NHIS for disposal at the landfill requires that the soil generator and Discharger follow a sampling and analysis protocol outlined in the Hydrocarbon Soils Management and Disposal Plan (Disposal Plan), July 2002, which was approved by the Executive Officer at that time. Accepted NHIS soil must not be hazardous as defined in Title 22 regulations, and meet groundwater protection standards based on soil concentration, leachability, and mobility of hydrocarbon constituents in the soil. The Disposal Plan includes the "NHIS acceptance criteria" that is a set of quantitative analytical standards for accepting NHIS; however, the Disposal Plan does not clearly specify the quantity of samples and how soil samples are to be spatially collected. The Discharger does, however, employ a load checking program consisting of collecting samples from a minimum of 5% of the incoming truck loads from a site and analyzing the samples for select analytes. The original NHIS acceptance criteria have been modified three times based on the Discharger's request and demonstration that specific alternative standards ensure soil hydrocarbon concentrations remain protective of groundwater and are below hazardous levels.

In 2000, the Discharger provided a final cover for 24 acres of the Closed Active Area, followed by the commencement of the NHIS program in late 2002. As of June 2007, the Discharger has accepted and disposed approximately 1.87 million tons of NHIS, and provided a final cover for an additional 36 acres in the Closed Active Area. Fifty-eight acres of the Closed Active Area are still in need of a final cover. However, the Discharger has covered all but 15 of the 58 remaining acres with LLDPE (bottom liner for future NHIS placement). Complete final cover placement in the Closed Active Area had been scheduled for June 2008. However, at current disposal rates, this schedule will not be achieved.

9. Waste was found on the former DeBernardi property, located adjacent to and immediately southwest of the landfill's Inactive Area. Approximately 2.5 acres of waste or roughly 50,000 cubic yards were filled in this area during the 1950's and 1960's. There is no record that the City of Santa Maria placed this waste, however the waste is contiguous with the landfill. The Discharger purchased the property in 2001, annexed it to the Inactive Area of the landfill, covered the waste with 3 feet of soil, and is currently working to implement a final cover system.
10. Ancillary facilities at the landfill include: 1) scalehouse/entrance facility, 2) Utilities Administration Building, 3) household hazardous waste collection and storage area, 4) landfill gas control and collection system, 5) leachate collection system, 6) collection bunkers for electronic waste, tires, metals, etc., and 7) greenwaste and construction/demolition storage and processing areas.

GEOLOGY

11. **Setting** - The landfill is located in the Coast Range geomorphic province, in the Santa Maria Valley. The landfill is situated on the southern margin of the Santa Maria River. The river in this area serves as a primary recharge source for the Santa Maria groundwater basin to the south.

12. **Topography** - The landfill topography is nearly flat with a very slight slope to the northwest. The preexisting topography had approximately 60 feet of elevation difference across the nearly two-mile length of the site.
13. **Stratigraphy** - The Inactive, Closed Active, and Active Areas are all underlain by coarse-grained, highly-permeable alluvial sediments deposited by the Santa Maria River. The sediments are Holocene in age and composed of primarily sands and gravels with subordinate sandy clays and silts. All soils on site (Metz loamy sand, Mocho sandy loam, and Metz sandy alluvial soil) are characterized by high permeability. Borrow material, used for daily cover and the final cover vegetative layers, is mined from the Santa Maria River and has extremely high permeability and erosion potential.

Underlying the alluvium are the Orcutt Sand and the Paso Robles Formation, both Pleistocene in age. The Orcutt Sand consists of interbedded sands and gravels. The Paso Robles Formation underlies the Orcutt Sand, and is composed of sand, silt, and claystone with some gravelly conglomerate.

Geologic characterization of materials beneath the site indicates that these sediments do not provide adequate protection for water quality. Thus, an engineered liner system was required for the Active Area.

14. **Structure** - There are no known active faults on the site. The closest known potentially active fault is the Santa Maria River Fault. This fault is located approximately two miles west of the site and offsets Pleistocene-age Paso Robles Formation sediments. The estimated peak ground acceleration expected to occur at the site from the Santa Maria River Fault is 0.111g from a Maximum Probable Earthquake (MPE) of Richter Magnitude 4.5. According to the 2000 Joint Technical Document (JTD) the highest estimated peak ground acceleration expected to occur at the site is 0.445 g, produced by a MPE of Richter Magnitude 6.5 quake on the Point San Luis Fault. The Point San Luis is a blind thrust fault estimated to be approximately three miles west of the site. In contrast, the 2006 JTD reports that the MPE event is controlled by an 8.0 magnitude event occurring on the Carrizo Plain segment of the San Andreas Fault, with corresponding ground motion of 0.12 g. This was used as the design MPE for Cell No. 1 at the landfill. It is unclear why the Point San Luis fault was not considered in the Cell No. 1 design and 2006 JTD.

GROUND, STORM & SURFACE WATER

15. **Groundwater** - There are two general aquifer systems beneath the landfill. The first is the shallow zone and is contained within the younger alluvium and Orcutt Sand. The shallow zone covers approximately 0 to 150 feet below ground surface (bgs). Underlying the shallow zone aquifer, and beginning at approximately 150 feet bgs, is the Paso Robles Formation aquifer. The Paso Robles Formation aquifer is separated from the overlying shallow aquifer by a clay aquitard. Production wells in the Paso Robles aquifer are generally 1,000 feet deep. The general groundwater flow direction in this area is toward the west. The natural groundwater gradients in the area are 35 feet per mile. The aquifer is characterized by high permeability, with a typical hydraulic conductivity of 250 feet per day (determined from onsite aquifer testing).
16. **Supply Wells** - According to the Solid Waste Assessment Test, Water Quality Assessment (1990), there are approximately 90 water wells within a one-mile radius of the landfill. Most of these wells are used for agricultural supply.
17. **Groundwater Separation** - High groundwater elevations at the site periodically reach the bottom of waste in portions of the Closed Active Area. Periods of high groundwater generally correlate with high flows from the Santa Maria River that are controlled by releases from

Twitchell Reservoir. Groundwater elevations are also influenced by pumping rates from local supply wells.

Cell No. 1 of the Lined Area is protected by a high density polyethylene liner and subdrain that provides the minimum five-foot separation required by Title 27. Groundwater levels in the vicinity of the site have historically fluctuated by approximately 70-80 feet in response to variations in groundwater recharge and pumping. Groundwater levels were at near historic high levels in 2001, and subsequently gradually declined by approximately 70-80 feet until fall of 2004, when a period of recovery began. By December 2006, groundwater levels had nearly recovered to historic high levels.

18. **Groundwater Contamination** – Groundwater has been monitored at the landfill since late 1987. Low-concentration volatile organic compounds (VOCs) have been detected on the downgradient edge of the Closed Active Area since 1992. Historical trends for VOCs indicate moderate fluctuation, probably in response to fluctuations in groundwater elevation, landfill gas, and/or leachate flux.

Cleanup and Abatement Order (CAO) 96-27 was issued to the Discharger in 1996 and required delineation of the VOC plume offsite. The Water Board issued CAO No. 96-027 in July 1996. The CAO required the Discharger to define the downgradient edge of the contaminant plume and to define and implement appropriate corrective action. The CAO requirement to define the plume has been satisfied as the perimeter of the plume, defined by VOCs less than 1 $\mu\text{g/L}$, has been delineated. Both infiltration of water through waste and groundwater contacting the bottom of waste are contaminant source mechanisms for VOCs and inorganics. Landfill gas migration is also a likely source for VOC impacts. The Discharger has also reported the inorganic impacts are caused by leaching of the vadose zone by acidic landfill gases. Former Active Area closure (including the installation of a low-permeability cover) limits the infiltration of moisture into waste, generation of landfill gas, and corresponding impacts to groundwater. Therefore, the Water Board required cessation of landfilling MSW, and approved the groundwater corrective action measure of enhanced landfill gas recovery, and final cover installation as the most effective means to improve downgradient water quality. The Water Board rescinded CAO Order No. 96-027 in 2001.

Historically, low-concentrations of volatile organic compounds (VOCs) have been detected in three landfill perimeter and eight offsite (MWO 13 through MWO-18d) groundwater monitoring wells located adjacent to the Closed Active Area. The VOC plume distribution coupled with groundwater gradient information indicate that the source of the VOCs is primarily the unlined Closed Active Area. Historically, VOC compounds including tetrachloroethene (PCE), 1,1-dichloroethane (DCA), trichloroethene (TCE), cis-1,2-dichloroethene, methylene chloride, and vinyl chloride were routinely detected at concentrations ranging from 0.1 $\mu\text{g/L}$ to 6.9 $\mu\text{g/L}$ at the downgradient landfill perimeter wells and 0.1 $\mu\text{g/L}$ to 2.3 $\mu\text{g/L}$ in downgradient offsite wells. PCE was the most consistently detected compound in the downgradient monitoring wells. For reference, the primary maximum contaminant level (MCL) for PCE is 5 $\mu\text{g/L}$. Monitoring data collected since 2001 indicate that number and frequency of detected VOC compounds have declined since commencement of corrective action (discussed below). According to late 2006 monitoring data, only 1,1-DCA and PCE are commonly detected, and PCE concentrations have declined to below detection levels in wells near the landfill, and declined to concentrations of between 0.5 and 1 $\mu\text{g/L}$ at the toe of the plume. 1,1-DCA is detected sporadically at less than 1 $\mu\text{g/L}$ in monitoring wells near the Closed Active Area landfill boundary (the MCL for 1,1-DCA is 5.0 $\mu\text{g/L}$).

Some inorganic constituents (manganese, iron, chloride, and nitrate) are detected above statistically calculated background levels (based on monitoring results from upgradient

background wells MWO-9 and -10). In addition, manganese is routinely detected above the secondary maximum contaminant level of 0.05 mg/L. However, the inorganic groundwater quality has also improved since commencement of final cover placement, although contaminant time-trend plots indicate that pulses of elevated inorganic constituents (e.g., manganese, iron, nitrate, chloride) have occurred in some monitoring wells located downgradient of both the Inactive Area and Closed Inactive Areas.

The Corrective Action Plan suggests that the source of iron and manganese in the groundwater is from the interaction of acidic landfill gas and aquifer materials. However, a detailed geochemical basis was not provided. Although concentrations have significantly declined since the startup of corrective action, manganese, iron, chloride, and nitrate continue to be routinely or sporadically detected at concentrations above background levels.

19. **Precipitation** -- Daily and quarterly rainfall data for the landfill are reported in the semiannual detection monitoring reports, which are submitted to the Water Board. The Santa Maria area receives an average annual precipitation of approximately 14 inches, based on data collected between 1971 and 2000. Based on the National Oceanic and Atmospheric Administration data, the design storm of 100-year, 24-hour precipitation is approximately 4.8 inches for the landfill.
20. **Storm Water** -- This site is covered under the State Water Resources Control Board's (SWRCB) industrial activities stormwater general permit. Storm water from the landfill discharges to the ephemeral Santa Maria River at four locations. Drainage from the Lined Area of the landfill will ultimately flow to a sediment retention pond when the area is closed.
21. **Surface Water** -- The Santa Maria River channel is located immediately north of the landfill, and is separated from the site by the Santa Maria River levee, which is designed to protect against a 500-year flood event; however, a preliminary revised FEMA flood map indicates that it may be susceptible to a 100-year flood event. The levee is reported to be relatively strong where it is bolstered adjacent to the landfill. River flow is ephemeral and controlled by the Twitchell Reservoir. In addition, an agricultural drainage ditch flows on the southwest boundary of the Closed Active Area. The Discharger voluntarily monitors surface water from the river at a location upgradient from the landfill. The river is a losing stream in the area of the landfill.

CONTROL SYSTEMS AND MONITORING PROGRAMS

22. **Groundwater Detection Monitoring** -- The first groundwater monitoring wells were installed at the landfill in 1987. The present monitoring systems consists of 9 wells sampled on a quarterly basis, including three upgradient wells. Six additional wells (piezometers) are used for water level measurements. As previously discussed, 16 wells located downgradient from the Inactive and Closed Active Areas have historically yielded low-concentration VOC detections. These are part of the groundwater corrective action monitoring. A total of 25 monitoring wells and one supply well are currently part of the monitoring program at the landfill.
23. **Groundwater Corrective Action** -- In compliance with CAO No. 96-027, the Discharger installed eleven groundwater monitoring wells to delineate the VOC plume downgradient of the Closed Active Area. As part of the 2001 Corrective Action Plan, several measures were evaluated to address the groundwater impacts. Retained measures include final closure of the Inactive and Closed Active Areas, and enhanced landfill gas recovery. Phase II of the landfill gas extraction system was installed in 1998, which enhanced the gas recovery system. Further enhancements to the landfill gas recovery are scheduled for late 2007 in the northeast portion of the Closed Active Area. Rolling final closure in the Closed Active Area is ongoing (Finding 8).

24. **Leachate Monitoring** – There is no leachate recovery system or leachate monitoring in the Inactive Area. The Closed Active Area includes a leachate recovery system located at the base of the NHIS, above the municipal solid waste and LLDPE liner. The Active Area is equipped with both leachate collection and leak detection recovery systems.
25. **Surface Water Monitoring** – Surface water monitoring has historically been conducted at two locations on the site. These locations are the surface water discharge points from the site to the Santa Maria River basin. A third location was added as part of this WDR update (Figure 1 of the Monitoring and Reporting Program).
26. **Landfill Gas Control**- The landfill gas control and recovery system consists of 50 vertical and 3 horizontal extraction wells, located in the Closed Active Area of the landfill. Recovered landfill gas is combusted at the onsite 13.5 million BTU/hr flare. The Discharger is adding 20 million BTU/hr flare capacity. Up to 100 percent of the gas can be exported to an offsite facility that generates electricity from the gas. Expanding of the system to the Lined Area will nearly double the extraction rate from the current 300 cubic feet per minute capacity.
27. **Vadose Zone Monitoring** - Vadose zone monitoring is required by Section 20415 (Title 27) unless demonstrated by representative soil suction curves that soil pore liquid cannot be extracted. A vadose zone soil investigation conducted in 1995 indicated that the coarse-grained alluvium at the site does not provide enough moisture retention capacity for sampling purposes. The Discharger installed a vadose zone landfill gas monitoring system around the perimeter of the landfill in accordance with Order 94-063 Monitoring and Reporting Program. This system consists of 50 monitoring probes at 26 locations. 2006 monitoring results were trace to nondetect for VOCs in perimeter gas monitoring probes. These results suggest the gas recovery system is effective.

Basin Plan

28. The Water Quality Control Plan, Central Coast Basin (Basin Plan), was adopted by the Water Board on September 8, 1994, and approved by the State Water Resources Control Board (SWRCB) on November 17, 1994. The Basin Plan incorporates statewide plans and policies by reference and contains a strategy for protecting beneficial uses of State Waters. This Order implements the water quality objectives stated in that Plan.
29. The Basin Plan (1994) identifies the following present and anticipated beneficial uses of the Santa Maria River in the landfill vicinity:
 - a. Municipal and domestic supply;
 - b. Agricultural supply;
 - c. Industrial supply;
 - d. Groundwater recharge;
 - e. Water contact recreation;
 - f. Non-contact water recreation;
 - g. Wildlife habitat
 - h. Cold and warm, fresh water habitat;
 - i. Fish migration; and
 - j. Commercial and sport fishing.
30. Present and anticipated beneficial uses of groundwater in the landfill vicinity include:
 - a. Agricultural supply;
 - b. Municipal and domestic supply; and

- c. Industrial use.

California Environmental Quality Act

31. On December 7, 1993, the Santa Maria City Council certified a Final Environmental Impact Report (EIR) and adopted the CEQA findings in accordance with the California Environmental Quality Act (Public Resources Code, Section 21000, et. seq.) and the California Code of Regulations. The EIR addressed potential environmental impacts of continued operation (Active areas) and the Expansion Area. A supplement to the EIR was later certified in August 1995.
32. On May 1, 2000, the Santa Maria City Council certified an addendum to the 1995 EIR and adopted the CEQA findings in accordance with the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) and the California Code of Regulations. This addendum covered minor design and operational changes proposed in the Joint Technical Document, submitted to the Water Board in August 2000. These changes were not covered under the original 1993 EIR. Disposal of low-concentration hydrocarbon-impacted soils are included in the EIR addendum.

A second supplemental EIR was prepared by the Discharger in May 2004 to address the potential environmental impacts resulting from proposed changes to the landfill (Finding No. 4). The supplemental EIR was certified by the Santa Maria City Council in July 2004. The second supplemental EIR found several potentially significant impacts to water quality, but required mitigation that will reduce all impacts to less-than-significant. If implemented as required in the supplemental EIR, the mitigation measures identified below will reduce the potential impacts to less-than-significant.

Impact WR-1: Potential increase in pollutants in stormwater runoff.

Mitigation Measures: Pollutant Removal Techniques and Bottom Liner Containment System in all NHIS Disposal Areas (Mitigation Measures WR-1(a) and 1(b).)

Stormwater runoff from the facility is regulated through the NPDES program (see Finding 20) and not this Order. The stormwater permit includes additional requirements to protect surface water quality. The bottom liner system in NHIS disposal areas is inspected by independent third party and reported following construction quality assurance procedures.

Impact WR-3: Increase in stormwater due to paved and roofed areas.

Mitigation Measures: Storm Water Drainage Systems Design and Inspection of Site Conditions. (Mitigation Measures WR-3(a) and 3(b).)

Stormwater runoff from the facility is regulated through the NPDES program (see Finding 20) and not this Order. The stormwater permit includes additional requirements to protect surface water quality.

Impact WR-5: Percolation rate of on-site soils in design of proposed sports complex over Inactive Area. This potential impact would have resulted from septic systems over the landfill. This is no longer a potential adverse impact because the Executive Officer will not approve the proposed septic system due to the potential for mobilizing waste constituents.

Except as discussed above, all potential impacts identified in the second supplemental EIR are not within the responsibility and jurisdiction of the Water Board. Those other impacts and mitigation measures do not relate to water quality or pollution or nuisance attendant with discharges of waste.

33. Except with respect to the proposed changes (Finding No. 32), this Order is for an existing facility and therefore is exempt from provisions of the California Environmental Quality Act (Public Resources Code, §21000, et seq.) in accordance with Title 14, Chapter 3, §15301.

General Findings

34. The Discharger has funded its closure fund for the Inactive and Closed Active Areas. The Discharger's current estimated total required for closure and postclosure maintenance is \$17,413,055. In their March 28, 2007 memorandum, the Integrated Waste Management Board (Waste Board) determined that the Discharger has met Title 27 funding requirements for closure and postclosure maintenance. However, the Discharger has not submitted evidence of funding for corrective action for a known or foreseeable release to groundwater.
35. Discharge of waste is a privilege, not a right, and authorization to discharge waste is conditioned upon the Discharger complying with provisions of Division 7 of the California Water Code and with any more stringent limitations necessary to implement the Basin Plan, to protect beneficial uses, and to prevent nuisance. Compliance with this Order should assure conditions are met and mitigate any potential changes in water quality due to the project.
36. The landfill operates under the California Integrated Waste Board's Solid Waste Facilities Permit (SWFP) No. 42-AA-016, updated May 2007. The landfill is included in Santa Barbara County's Solid Waste Management Plan, completed in 1998.
37. This Order implements the prescriptive standards and performance goals of CCR Title 27.
38. On August 2, 2007, the Water Board notified the Discharger and interested agencies and persons of its intention to update the waste discharge requirements for the discharge and has provided them with a copy of the proposed Order and an opportunity to submit written views and comments.
39. After considering all comments pertaining to this discharge during a public hearing on October 19, 2007, this Order was found consistent with the above findings.

IT IS HEREBY ORDERED pursuant to authority in §13263 of the California Water Code, the City of Santa Maria, its agents, successors, and assigns may discharge wastes at the Santa Maria Class III landfill, providing compliance is maintained with the following:

A. COMPLIANCE WITH OTHER REGULATIONS, ORDERS AND STANDARD PROVISIONS

1. Discharge of waste shall comply with all applicable requirements contained in the California Code of Regulations Title 27, Division 2 Solid Waste and 40 CFR Parts 257 and 258 Solid Waste Facility Disposal Criteria. If any applicable regulation requirements overlap or conflict in any manner, the most water quality protective requirement shall govern in all cases, unless specifically stated otherwise in this Order, or as directed by the Executive Officer.
2. The Discharger shall monitor potential releases from the landfill related to surface water runoff by complying with all requirements contained in the "State Water Resources Control Board Water Quality Order No. 97-03-DWQ National Pollutant Discharge Elimination System General Permit No. CAS000001 Waste Discharge Requirements for Discharge of Storm Water Associated with Industrial Activities Excluding Construction Activities (General Permit)".

B. PROHIBITIONS

1. Discharge of waste to areas outside the approved boundary of the landfill, as identified in this Order, is prohibited. The submittal required in Provision E.6 will provide survey locations for the limit of waste in each landfill unit. When these limits are identified to the satisfaction of the Executive Officer, these coordinates will define the limits of the corresponding landfill unit, for the purposes of this prohibition. Fill beyond defined survey limits is prohibited.
2. Discharge of wastes onto a liner system that is not approved by the Executive Officer of the Water Board is prohibited.
3. The discharge of hazardous waste or hazardous constituents, except for treated wood or waste that is hazardous due only to its asbestos content, is prohibited.
4. The discharge of solid or liquid waste or leachate to ponded water or waters of the State, including groundwater, is prohibited.
5. The discharge of waste, meaning any waste materials that are determined to contain free liquid through visual inspection, or as defined by EPA Method 9095 (Paint Filter Liquids Test), is prohibited, unless the waste is sewage sludge, as described in Provision No. 18.

C. SPECIFICATIONS

1. Discharge of waste shall not cause a condition of pollution or contamination to occur through a statistically significant release of pollutants and/or contaminants, or waste constituents, as indicated by the most appropriate statistical [or non-statistical] data analysis method and retest method listed in MRP No. R3-2007-0045.
2. The Discharger shall implement the attached MRP No. 07-0045, including any addendum thereof, in order to detect, at the earliest opportunity, any unauthorized discharge of waste constituents, or any unreasonable beneficial use impairment associated with and or caused by the discharge of waste. The Executive Officer may amend the Monitoring Reporting Program at any time to determine compliance with Order No. R3-2007-0045.
3. Discharge, collection and treatment of waste shall not create nuisance, as defined by California Water Code Section 13050(m).
4. Groundwater Separation—California Code of Regulations Title 27, Section 20240(c), requires the Discharger to operate the landfill to ensure that wastes will be a minimum of five feet above highest anticipated groundwater, or engineered alternative. This operational requirement reduces leachate generation and impairment of beneficial uses.
5. Final Closure System: Onsite materials have extremely high permeabilities, as demonstrated by high runoff at base of vegetative layer in the Closed Active Area during storm events. For landfill areas having decomposable waste, the use of a monocover system comprised of mainly onsite soil is insufficient to protect underlying waste from infiltration. The final cover system, detailed below, is for portions of the landfill that will not utilize irrigation for any post-closure re-use choices. The non-irrigated, future closure areas shall, at a minimum, include:
 - a. Foundation Layer: A foundation layer with a minimum thickness of two feet;
 - b. Low Permeability Layer: A minimum one-foot thick layer of soil with permeability less than or equal to 1×10^{-6} cm/sec.

- c. Vegetative Layer: A minimum three-foot thick layer of soil. This layer shall be resistant to erosion while maximizing sheet flow runoff from the site. This layer shall also be planted and maintained to minimize erosion and protect the underlying low permeability layer.

An engineered alternative design, as approved by the Executive Officer, will substitute for the above cover system. The alternative design must be as protective of water quality and satisfy cover design requirements stated in Title 27 and 40 CFR § 258.

6. Nonhazardous hydrocarbon impacted soils (NHIS) will be permissible for use in the landfill's Active and Closed Active Areas, with the following conditions:
 - a. Hydrocarbon soil must be placed a minimum of 20 feet above any historic or anticipated leachate or groundwater elevation;
 - b. The Discharger shall not begin using hydrocarbon soil as an alternative daily cover without prior approval from the Executive Officer;
 - c. Waste soil shall contain no free liquids;
 - d. No hazardous waste shall be accepted for disposal;
 - e. Soils must meet acceptance criteria in the hydrocarbon soils management plan/program, as approved by the Executive Officer. The hydrocarbon soils management plan contains minimum criteria for allowing no degradation of groundwater. The criteria are based on conservative assumptions on hydrocarbon leachability, transport, and mixing with underlying groundwater. The minimum criteria may be changed if the Discharger can demonstrate to the satisfaction of the Executive Officer, via modeling, laboratory testing, or equivalent, that the new criteria will result in no degradation of groundwater. The Discharger must clearly demonstrate to the Executive Officer, in an annual (or more frequent, as necessary) Construction Quality Assurance Report, that the soils meet the acceptance criteria;
 - f. Groundwater downgradient of the landfill does not show impairment resulting from NHIS activities.
7. Wastes shall not be discharged to areas outside the present Lined Area footprint, unless discharged to an area equipped with a containment system, as follows:
 - a. A groundwater break/subdrain will underlie all Expansion Area cells. This subdrain shall be placed beneath and protect the liner system from contact with the highest historic and anticipated groundwater elevations for this location. This subdrain shall be considered the top of the groundwater surface, above which will be the requisite five-foot separation between groundwater and waste as stated in Section 20240, Title 27. The subdrain will be designed such that collected groundwater can be sampled from the system;
 - b. Above the subdrain system, a composite liner with a leak detection layer and a leachate collection and removal system shall be constructed. The liner shall consist of the following components:
 1. Lower Component: a minimum two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec; and,
 2. Upper Component: a minimum 80-mils high-density polyethylene (HDPE). The upper component must be installed in direct and uniform contact with the lower component;
 3. A Leak Detection and Removal System (LDRS), comprised of a drainage layer underlain by a 60-mil thick HDPE geomembrane. Drainage from the LDRS will be directed to a collection pipe, which in turn, will gravity drain or be pumped to a holding tank for removal, volume measurement and testing. The LDRS shall be designed such that there is no standing leachate head on the underlying system. If liquid is found in the LDRS, the Discharger shall notify the Water Board immediately and develop a corrective action plan

- (CAP) to remediate the potential discharge. This CAP will be submitted to the Water Board within 45 days of first encountering the leak;
4. A Leachate Collection and Removal System (LCRS), designed such that any leachate gravity drains to a collection point/sump and is removed through either gravity or pumping to a holding tank for removal, volume measurement and testing. The LCRS shall be designed such that there is no standing leachate head on the underlying system. A protective soil layer shall be placed above the LCRS and liner system. This shall be a minimum of 24 inches thick;
 5. An engineered alternative design, approved by the Executive Officer, will be considered for bottom and side slope liner areas. Engineered alternative designs must satisfy the performance criteria in 40 CFR § 258.40(a)(1) and (c), and satisfy the criteria for an engineered alternative to the above Prescriptive Design, as provided by CCR Title 27 § 20080 (b). Performance of the alternative composite liners' components, in combination, shall equal or exceed the waste containment capability of the Prescriptive Design, as outlined above.

While the redundant composite liner system detailed above is restrictive, it provides enhanced water quality protection appropriate for the challenging geologic and hydrogeologic conditions specific to this site. This system is also consistent with requirements for sites with similarly extreme siting conditions throughout the state.

Prior to construction of any new cell, the Discharger shall evaluate basic critical siting conditions, including, but not limited to, liquefaction potential, seismicity and active faulting, and seismic stability. These evaluations shall be included with a design report submittal and completed to the satisfaction of the Executive Officer.

8. The Closed Active Area shall not receive municipal solid waste. Soil and non-decomposable wastes may be acceptable, as approved by the Executive Officer [Specification No. 6].
9. Discharge of condensate or leachate to a waste management unit shall:
 - a. Be returned to only a waste management unit equipped with a containment system that meets or exceeds the performance standard of CCR Title 27, CFR, Part 258.40(a)(2), or in this Order, whichever is more protective of water quality;
 - b. Each be measured by volume and recorded on a monthly basis. These monthly volumes shall be included as a part of monitoring submittals as required in the most recent Monitoring and Reporting Program;
 - c. Have a second containment system sized to hold 100% of the primary containment system holding capacity;
 - d. Be discharged in compliance with this Order; and
 - e. Not discharge leachate within 48 hours of any forecasted rain event.
10. Condensate or leachate handling shall:
 - a. Ensure that operation of the primary containment includes an alarm system that notifies operations personnel of an imminent or occurring leachate collection and storage system failure;
 - b. Have a secondary containment system that is acceptable to the Executive Officer; and
 - c. Not spread leachate within 48 hours of any forecasted rain events.
11. The Discharger shall prevent formation of a habitat for carriers of pathogenic microorganisms.

12. Wastes containing greater than one percent (>1%) friable asbestos are classified as hazardous under CCR, Title 22. Since such wastes do not pose a threat to water quality, Section 25143.7 of the Health and Safety Code permits their disposal in any landfill, providing waste discharge requirements specifically permit the discharge and the wastes are handled and disposed of in accordance with other applicable State and Federal statutes and regulations. Disposal of friable asbestos waste is permitted in the southwestern and northwestern corners of the Closed Active Area and Active areas of the landfill, respectively.
13. Incinerator ash wastes may be discharged in the landfill only when chemical analyses demonstrate, to the Executive Officer's satisfaction, that the waste is not hazardous as defined in Title 22 regulations.
14. "Treated wood" wastes may be discharged, but only to an area equipped with a composite liner and leachate collection and removal system, and shall be handled in accordance with California Health and Safety Code Sections 25143.1.5 and 250150.7. "Treated wood" means wood that has been treated with a chemical preservative for purposes of protecting the wood against attacks from insects, microorganisms, fungi, and other environmental conditions that can lead to decay of the wood and the chemical preservative is registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code, Sec. 136 and following). This may include but is not limited to waste wood that has been treated with chromated copper arsenate, pentachlorophenol, creosote, acid copper chromate, ammoniacal copper arsenate, ammoniacal copper zinc arsenate, or chromated zinc chloride.
15. Daily cover shall prevent nuisance and excess leachate generation, and promote lateral runoff of rainfall away from the active disposal area. Upon Executive Officer approval, alternative daily cover materials may be utilized.
16. Waste shall not be discharged to a wetland, as defined in 40 CFR §232.2(r), or to any portion thereof, unless the Discharger successfully completes all demonstrations pursuant to 40 CFR §258.12(a). Such demonstration is subject to Executive Officer approval.
17. Wastes discharged in violation of this Order, shall be removed and relocated.
18. The Discharger shall operate the landfill and configure the final landfill contours, in conformance with the most recent Executive Officer approved Facility Development Plan. In the event of conflict, this Order shall govern in cases where it is more protective of water quality. Any changes to the Plan(s) that may affect compliance with this Order shall be approved in writing by the Executive Officer.
19. If adequate daily cover material is not accessible during inclement weather, such material shall be stockpiled during favorable weather to ensure year-round compliance.
20. All landfill surfaces and working faces shall be graded and operated to minimize rainfall infiltration into wastes, to prevent ponding of water, and to resist erosion. Positive drainage to divert rainfall runoff from areas containing waste shall be provided.
21. Rills in the cover (final or interim) exceeding six inches in depth must be backfilled throughout the entire year.
22. Storage facilities associated with precipitation and drainage control systems shall be emptied immediately following each storm, or otherwise managed, to maintain the design capacity of the system.

23. A minimum of two feet of freeboard shall be maintained in all stormwater/sediment containment ponds.
24. Waste management units, containment structures, and drainage facilities shall be designed, constructed and maintained to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, overtopping, and damage due to natural disasters (e.g., floods with a predicted frequency of once in 100 years, the maximum probable earthquake, and severe wind storms).
25. All landfill areas that have not reached final fill elevation, but will remain inactive over one-year, shall be provided with an approved long-term intermediate cover. The cover must be approved by the Executive Officer. The thickness and permeability of the long-term intermediate cover shall be based primarily on site-specific conditions including, but not limited to length of exposure time; volume of underlying material, permeability, thickness and composition of existing cover; amount of yearly rainfall; depth to groundwater; beneficial uses of underlying groundwater; site-specific geologic and hydrogeologic conditions; and effectiveness of existing monitoring system.
26. Each area of the landfill, when closed shall have at least two permanent survey monuments. The monuments shall be installed by a licensed land surveyor, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure monitoring and maintenance period.
27. Water used over areas underlain by waste within unlined landfill areas shall be limited to the minimum amount necessary for dust control and construction.
28. To prevent erosion and percolation through the waste, permanent drainage ditches crossing over landfill areas shall be lined with either a synthetic liner or at least a one-foot-thick layer of soil having an in-place hydraulic conductivity of 1×10^{-6} centimeter/second or less, or an alternative material that restricts infiltration of surface waters into the underlying waste as approved by the Executive Officer.

D. WATER QUALITY PROTECTION STANDARDS

1. Discharge of waste shall not cause the concentration of any Constituents of Concern (COC) or Monitoring Parameter to exceed its respective background value in any monitored media (i.e. soil, or groundwater) at any Monitoring Point pursuant to the Monitoring and Reporting Program No. R3-2007-0045 ("MRP No. 07-0045").
2. Constituents Of Concern ("COC") and monitoring parameters for ground water and surface water are listed in MRP No. 07-0045. Monitoring points and background monitoring points for Detection and Corrective Action monitoring shall be those specified in MRP No. 07-0045.
3. The discharge of waste shall not cause a statistically significant difference in water quality over background concentrations for Concentration Limit for each COC or Monitoring Parameter (per MRP No. 07-0045) at the Point of Compliance. The Concentration Limits shall be maintained for as long as the waste poses a threat to water quality. Discharge of waste shall not adversely impact the quality of State waters.
4. Discharge of waste shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Water Board or the State Water Resources Control Board.
5. Discharge of waste shall not cause concentrations of chemicals and radionuclides in groundwater underlying in down-gradient of the landfill to exceed the State Department of Health

Services latest recommended Drinking Water Action Levels or Maximum Contaminant Levels of the California Code of Regulations Title 22, Division 4, Chapter 15, Article 5.5.

6. The Discharger is responsible for containment of waste and monitoring as long as the waste poses a threat to water quality.
7. The Discharger shall, in a timely fashion, install any additional groundwater, soil pore liquid, soil pore gas, surface water, and leachate monitoring devices as required by the Executive Officer.

E. PROVISIONS

1. WDR Order No. 01-041 for the City of Santa Maria, is hereby rescinded, except for purposes of enforcement.
2. By **February 16, 2008**, the Discharger shall submit a final closure and post-closure maintenance plan providing the final cover system design for the Inactive Area and portions of the Closed Active Area. This includes a specific design for portions of the areas that are planned for irrigated re-use. This report shall include: areas of the landfill that will be re-used with corresponding re-use designations; areas of irrigation coverage; design components of the cover system; details for long term facility maintenance; locations of additional landfill gas recovery wells; and protective elements that will prevent irrigation infiltration to waste. The irrigated re-use final cover system design shall be more protective than the final closure system described above. A proposed schedule for construction activities with real calendar dates shall be included with this report. Each final cover system design shall be deemed acceptable by the Executive Officer prior to installation. In addition, the Discharger shall submit a preliminary closure and post-closure maintenance plan for the Lined Area of the landfill.
3. By **February 28** of each year, the Discharger shall submit a Compliance Report addressing compliance with all terms of this Order. The report can be included in the landfill's Annual Self Monitoring Report to the Executive Officer. The Discharger shall maintain a copy of this Order at the landfill and make it available at all times to the regulatory agency personnel and to landfill operating personnel, who shall be familiar with its contents.
4. By **February 28** of each year, the Discharger shall submit a Construction Quality Assurance report that documents yearly cover placement over the NHIS foundation layer, and the NHIS used in the foundation layer in the Closed Active Area. This report shall include, but is not limited to, a summary table having specific details for each accepted NHIS profile to include:
 - a. type of generator (i.e., tank farm, pipeline, etc.)
 - b. source location of soil
 - c. volume of soil
 - d. method of characterizing the source constituents (e.g., SW-846, volumetric per Santa Barbara County requirements)
 - e. number of samples
 - f. sample collection method (discrete, composite, etc.)
5. By **November 30** of each year, Discharger shall submit a Facility Development Plan. This plan is intended as a letter report and shall include maps depicting areas of excavation, final cover, and liner construction on a year-by-year basis until the final covers are installed over the Inactive and Closed Active Areas. This report submittal will be used as a planning tool for both the Discharger and Water Board staff to help prioritize forthcoming landfill work. This submittal should be in the form of a letter report accompanied by maps to include five-year future planning. The report shall

- explain key developmental events for the facility on a year-by year basis and changes to the previous year's submittals.
6. By **February 28, 2008**, the Discharger shall submit a letter report providing survey coordinates for the edge of waste perimeter surrounding both the Active, Closed Active, and Inactive Areas. Additionally, the Discharger shall include survey coordinates for the waste parcel on the DeBernardi property. Survey coordinates shall also be established for the perimeter of proposed Expansion Area Cell No. 2.
 7. The Discharger shall have a continuing responsibility for correcting any problems, which may arise in the future as a result of this waste discharge. This responsibility continues as long as the waste poses a threat to water quality.
 8. The Discharger shall maintain legible records of the volume and type of each waste discharged at each waste management unit and the manner and location of discharge. Such records shall be maintained at the landfill until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Water Board and of the State Water Resources Control Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Water Board.
 9. The Discharger shall submit a Financial Assurance Report for both closure and postclosure maintenance costs every five years that either validates the instrument's ongoing financial viability or proposes and substantiates any needed changes. The next report is due **October 31, 2011**, and every five years thereafter.
 10. By **August 31, 2008**, the Discharger shall submit to the CIWMB, in accordance with 27 CCR section 22222, assurance of financial responsibility in an amount acceptable to the Executive Officer for initiating and completing corrective action for all known or reasonably foreseeable releases from the Landfill.
 11. Pursuant to Findings Nos. 16, 18, and 21, by **January 31, 2008**, the Discharger shall submit an amendment to the Joint Technical Document/Report of Waste Discharge pursuant to CCR Title 27 §21710, to the Executive Officer. The ROWD shall contain, but is not limited to, the following:
 - a. Information on waste nature and extent; geochemical, geologic and hydrogeologic characteristics of the Inactive and Closed Active Areas, including background surface water and groundwater quality (e.g., dissolved oxygen, pH, oxidation/reduction potential, dissolved minerals) that could potentially lead to the elevated inorganic constituents in groundwater. The report shall include appropriate hydrogeologic cross sections and graphical tools such as piper and stiff diagrams to illustrate the findings.
 - b. Updated supply well database, including well construction information, map locations, and operational information for all wells within a one-mile radius of the landfill (Finding No. 16).
 - c. The preliminary revised flood map for the Santa Maria area indicates that the landfill may be susceptible to a 100-year flood event. If the landfill is susceptible, the Discharger shall demonstrate how inundation or washout due to 100-year flood will be prevented, and how the landfill will not restrict the flow of the 100-year flood or reduce the temporary water storage capacity of the floodplain.

In addition, by **January 15, 2012**, the Discharger shall submit an amendment to the Joint Technical Document/Report of Waste Discharge pursuant to CCR Title 27 §21710, to the Executive Officer. The ROWD shall contain, but is not limited to, the following:

- d. Information on waste characteristics, geologic and climatologic characteristics of the Unit and the surrounding region, installed features, operation plans for waste containment, precipitation and drainage controls, and closure and post closure maintenance plans, in accordance with CCR Title 27 §21740, §21750, §21760, and §21769.
 - e. The ROWD is to be submitted in the form of a Joint Technical Document ("JTD"), in accordance with CCR Title 27 §21585 et al.
 - f. Includes a completed SWRCB JTD Index, in accordance with CCR Title 27 21585(b), with your JTD addendum.
 - g. Discusses whether, in the Discharger's opinion, there is any portion of this Order that is incorrect, obsolete, or otherwise in need of revision;
 - h. Includes any other technical documents needed to demonstrate continued compliance with this Order and all pertinent State and Federal requirements;
 - i. Include detailed information regarding regulatory considerations; design, construction and operating provisions; environmental monitoring; and closure and postclosure;
 - j. Include a Fill Sequencing Plan, including detailed maps. The Fill Sequencing Plan should describe in detail the overall development of the entire landfill;
 - k. Include a detailed description of the lateral and vertical extent of refuse within all existing Modules. It must include an accurate estimate of waste volumes within each existing landfill module and an approximation of the remaining volume and years of capacity for each existing module and all new proposed modules within currently permitted landfill boundaries. It must also describe all existing available space within currently permitted landfill areas (i.e., modules where refuse has been placed in the past, but have not reached final permitted elevation and modules or portions of modules where refuse has never been placed); and
 - l. Discuss any plans/proposals to close or partially close any modules or portions of modules, any proposed liner systems and respective design components, any proposed plans for long-term intermediate cover for landfill areas which may remain inactive for long periods of time.
12. By **October 1 of each year** and throughout the rainy season of each year, a minimum one (1) foot thick compacted soil cover designed and constructed to minimize percolation of precipitation through wastes, shall be maintained over the entire active landfill area. The only exception to this specification is the working face. The working face shall be confined to the smallest area practicable based on the anticipated quantity of waste discharged and required waste management facility operations. Based on site-specific conditions, the Executive Officer may require a thicker soil cover for any portion of the landfill's active waste management unit prior to the rainy season.
13. By **October 1, of each year**, vegetation shall be planted and maintained over all slopes within the entire landfill area to prevent erosion. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have a rooting depth not in excess of the vegetative layer thickness. Upon Executive Officer approval, non-hazardous sludge may be utilized as a soil amendment to promote vegetation. Soil amendments and fertilizers (including biosolids) used to establish vegetation shall not exceed the vegetation's agronomic rates (i.e., annual nutrient needs), unless approved by the Executive Officer.
14. By **October 1 of each year**, all necessary runoff diversion and erosion prevention measures shall be implemented. All necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or landfill flooding and to prevent surface drainage from contacting or percolating through wastes.
15. By **October 1 of every year**, the Discharger shall submit a report of Wet Weather Preparedness. The report shall detail preparedness actions taken (as above) to (1) ensure discharges to surface or groundwater do not occur during the impending rainy season, and (2) all other relevant Title 27 and 40 CFR 258 criteria. In addition, the report shall provide details of

- nutrient application, including calculations of soil and plant nitrogen uptake (agronomic rates) versus actual mass of nitrogen applied to the soil to encourage vegetative growth.
16. According to Finding No. 16, It is unclear why the Point San Luis fault was not considered in the Cell No. 1 design and 2006 JTD. By **January 31, 2008**, the Discharger shall provide an amended ROWD that addresses the issue to the satisfaction of the Executive Officer.
 17. Finding No. 8 states that the NHIS Disposal Plan does not have specific procedures for spatially characterizing stockpiled soil proposed for disposal at the landfill. Two characterization methods are referenced: sample collection according to Santa Barbara County requirements (volumetric method) and EPA Method SW-846 (statistical method). Therefore, by **December 19, 2007**, the Discharger shall submit to the Executive Officer for review and approval, a revised NHIS Disposal Plan that includes, but is not limited to:
 - a. decision logic as to when statistical or volumetric stockpile sampling methods are utilized,
 - b. requirements that submitted soil profiles include a map showing the stockpile or extent of excavation, sample collection locations, collection methods, and rationale for sampling procedure, and
 - c. description of soil characterization procedure outlined in EPA Method SW-846.
 18. Sewage sludge or water treatment sludge with greater than 50 percent moisture content may be discharged to the waste management unit **only if** all the following criteria are met:
 - a. the City provides calculations showing that disposed material in the landfill has the moisture retention capacity to handle the extra moisture from disposed sludge,
 - b. sludge shall be discharged only to lined modules that have a LCRS, designed so that leachate drains by gravity to a collection point/sump and is removed through gravity or pumping to a holding tank or sanitary sewer for volume measurement, testing and disposal; (Discharger must demonstrate LCRS is managed properly),
 - c. a daily minimum solids-to-sludge ratio of 5 to 1, based on weight, shall be maintained when co-disposing sludge with solid waste, and
 - d. primary and mixtures of primary and secondary sewage sludge shall contain at least 20 percent solids by weight. Secondary sewage sludge and water treatment sludge shall contain at least 15 percent solids by weight.
 19. The Discharger shall notify the Water Board with a written request of any proposed change in ownership or responsibility for construction or operation of the landfill in accordance with Title 27, §21710 (c)(1). Failure to submit the written request shall be considered a violation of §13264 of the Water Code. The written request shall be given at least 90 days prior to the effective date of change in ownership or responsibility and shall:
 - a. Be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with these Waste Discharge Requirements;
 - b. Contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Water Board; and
 - c. Contain a statement indicating that the new owner or operator assumes full responsibility for compliance with this Order.

Request for change in ownership or responsibility may be approved or disapproved in writing by the Executive Officer. In the event of any change in ownership of this landfill, the Discharger shall notify the succeeding owner or operator, in writing, of the existence of this Order. A copy of that notification shall be sent to the Executive Officer.

20. The Discharger shall furnish, within a reasonable time, any information the Executive Officer may request to determine compliance with this Order or to determine whether cause exists for modifying or terminating this Order.
21. The Executive Officer may modify the monitoring and reporting program at any time. At any time, the Discharger may file a written request (including appropriate supporting documents) with the Water Board Executive Officer, proposing appropriate modifications to the monitoring and reporting program. The Executive Officer either shall reject the proposal for reasons listed, or shall incorporate it into a revised monitoring and reporting program. The Discharger shall implement any changes in the monitoring and reporting program required by the Executive Officer (whether or not the change is in response to a request of the Discharger) upon receipt of a revised monitoring and reporting program.
22. Reports shall be submitted in advance of any planned changes in the permitted landfill or in an activity, which could potentially result in noncompliance. Advance submittal should reflect relative need for Water Board review and concurrence.
23. Any noncompliance, which threatens the landfill's containment integrity, shall be promptly corrected. Correction schedules are subject to the approval of the Executive Officer, except when delays will threaten the environment and/or the landfill's integrity (i.e., emergency corrective measures). Corrections initiated prior to Executive Officer approval shall be so stated in the above described written report that is to be submitted within 7-days.
24. Discharger shall notify the Executive Officer, within 24 hours by telephone and within 14 days in writing, of:
 - a. Any noncompliance potentially or actually endangering health or the environment;
 - b. Any flooding, equipment failure, slope failure, or other change in landfill conditions which could impair the integrity of waste containment facilities or of precipitation and drainage control structures;
 - c. Leachate seep occurring on or in proximity to the landfill;
 - d. Violation of a discharge prohibition; and
 - e. Violation of any treatment system's discharge limitation.
25. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule shall be submitted within 14-days following each scheduled date unless otherwise specified within this Order. If reporting noncompliance, the report shall include a description of:
 - a. The reason for non-compliance;
 - b. A description of the non-compliance;
 - c. Schedule of tasks necessary to achieve compliance; and
 - d. An estimated date for achieving full compliance.
26. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the State Department of Water Resources and with concurrence of the Executive Officer regarding the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with the MRP No. 07-0045, as required by §13750.5 through §13755 and §13267 of the California Water Code.
27. The Discharger shall notify the Executive Officer at least 180 days prior to beginning any partial or final landfill closure activities. The notice shall include a statement that all closure activities will conform to the most recently approved Closure Plan and that the Plan provides for closure in compliance with all applicable State and Federal regulations. If there is no approved Closure

- Plan, the Discharger must submit a complete Closure Plan at least 240 days prior to beginning any landfill closure activities.
28. The Discharger shall file with the Water Board a ROWD or secure a waiver from the Executive Officer at least 120-days before making any material change or proposed change in the character, location, or volume of the waste being discharged to land.
 29. Should the Discharge discover that it failed to submit any relevant facts or that it submitted incorrect information in a report, it shall promptly submit the missing or corrected information.
 30. Should additional data become available through monitoring or investigation that indicates compliance with this Order is not adequately protective of water quality, the Water Board will review and revise this Order as appropriate.
 31. The Discharger shall maintain a program for periodic intake load checking. The load-checking program shall be adequately designed to ensure that "hazardous wastes" and "unauthorized designated wastes" are not discharged to the landfill. The load-checking program shall be available for review by representatives of the Water Board and of the SWRCB at any time during normal business hours.
 32. The Executive Officer may require partial and/or final closure of any landfill unit regardless of whether such waste management unit has reached final capacity laterally and/or vertically for the protection of water quality. Such a requirement will be requested in writing and in accordance with CCR Title 27 Section 22190.
 33. For the Active Area cells, the leachate collection and removal system shall be tested annually to demonstrate proper operation. The results of the test shall be compared with earlier tests made under comparable conditions and included in the Compliance Report.
 34. The Water Board shall be allowed, at any time and without prior notification:
 - a. Entry upon the Waste Management Facility or where records must be kept under the conditions of this Order and MRP No. 07-0045;
 - b. Access to copy any records that must be kept under the conditions of this Order and MRP No. 07-0045;
 - c. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order and MRP No. 07-0045; and,
 - d. To photograph, sample, and monitor for the purpose of showing compliance with this Order.
 35. All reports shall be signed as follows:
 - a. For a corporation: by a principal executive officer of at least the level of vice president;
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
 - c. For a public agency: by either a principal executive officer or ranking elected official; or,
 - d. Their "duly authorized representative."
 - e. A California Registered Civil Engineer or Certified Engineering Geologist must sign engineering reports.
 36. Any person signing a report makes the following certification, whether its expressed or implied:

"I certify under penalty of perjury I have personally examined and am familiar with the information submitted in this document and all attachments and, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true,

- accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."
37. The Discharger must comply with all conditions of this Order. Non-compliance violates state law and is grounds for enforcement action or modification of the existing Order.
 38. Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267 of the California Water Code, or falsifying any information provided therein, is guilty of a misdemeanor.
 39. The Discharger and any person who violates Waste Discharge Requirements and/or who intentionally or negligently discharges waste or causes or permits waste to be deposited where it is discharged into surface waters of the state may be liable for civil and/or criminal remedies, as appropriate, pursuant to Section 13350, 13385, and 13387 of the California Water Code.
 40. The Discharger shall take all reasonable steps to minimize or correct adverse impacts on the environment resulting from non-compliance with this Order.
 41. Provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.
 42. This Order does not authorize commission of any act causing injury to the property of another, does not convey any property rights of any sort, does not remove liability under federal, state, or local laws, and does not guarantee a capacity right.
 43. All technical and monitoring reports submitted pursuant to this Order are being requested pursuant to Section 13267 of the California Water Code. Failure to submit reports in accordance with schedules established by this Order, attachments to this Order, or failure to submit a report of sufficient technical quality to be acceptable to the Executive Officer may subject the discharger to enforcement action pursuant to Section 13268 of the California Water Code.
 44. No provision or requirement of Order No. 07-0045 or Monitoring or Reporting Program No. 07-0045 is a limit on the Discharger's responsibility to comply with other federal, state and local laws, regulations or ordinances.
 45. The Discharger must comply with all conditions of these Waste Discharge Requirements. Violations may result in enforcement actions, including Water Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these Waste Discharge Requirements by the Water Board. [CWC Section 13261, 13267, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350].
 46. The Discharger shall comply with the following submittal and implementation schedule for all tasks and/or reports required by this Order:

REPORT AND TASK IMPLEMENTATION DATE SUMMARY

REPORT/TASK	IMPLEMENTATION DATE
Closure and Post-Closure Maintenance Plan [Provision E.2]	February 16, 2008
Wet Weather Preparedness Report [Provision No. E.15]	October 1, of each year
Annual Compliance Report [Provision No. E.3]	February 28, of each year
Quality Assurance Report, Closed Active Area [Provision E.4]	February 28, of each year
Facility Development Plan [Provision No. E.5]	November 30, each year
Survey Coordinate Report [Provision No. E.6]	February 28, 2008
Financial Assurance Report for Closure and Postclosure Care [Standard Provision No. E.9]	October 31, 2011 and every five years thereafter
Amended ROWD; ROWD [Standard Provisions No. E.11 and E.16]	January 31, 2008; January 15, 2012
Interim Cover Requirement [Standard Provision No. E.12]	October 1, of each year
Vegetation Program [Standard Provision No. E.13]	October 1, of each year
Runoff Diversion and Erosion Prevention [Standard Provision No. E.14]	October 1, of each year
Revised Hydrocarbon Soils Management and Disposal Plan [Standard Provision No. E17]	December 19, 2007
Certificate of Financial Assurance for Corrective Action for a Foreseeable Release to Groundwater [Standard Provision E10]	August 31, 2008

I, **ROGER W. BRIGGS**, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coast Region, on October 19, 2007.


Executive Officer

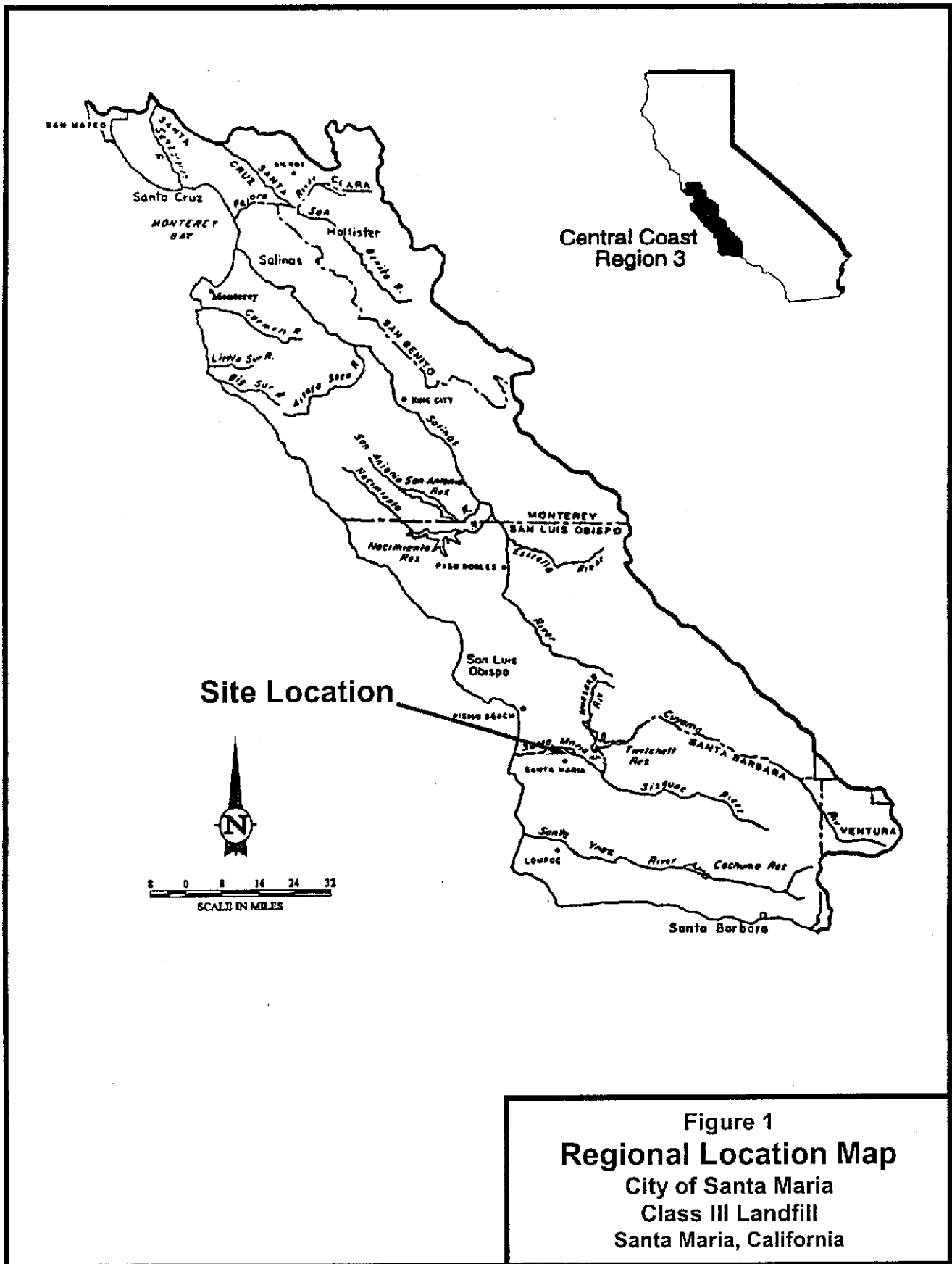


Figure 1
 Regional Location Map
 City of Santa Maria
 Class III Landfill
 Santa Maria, California

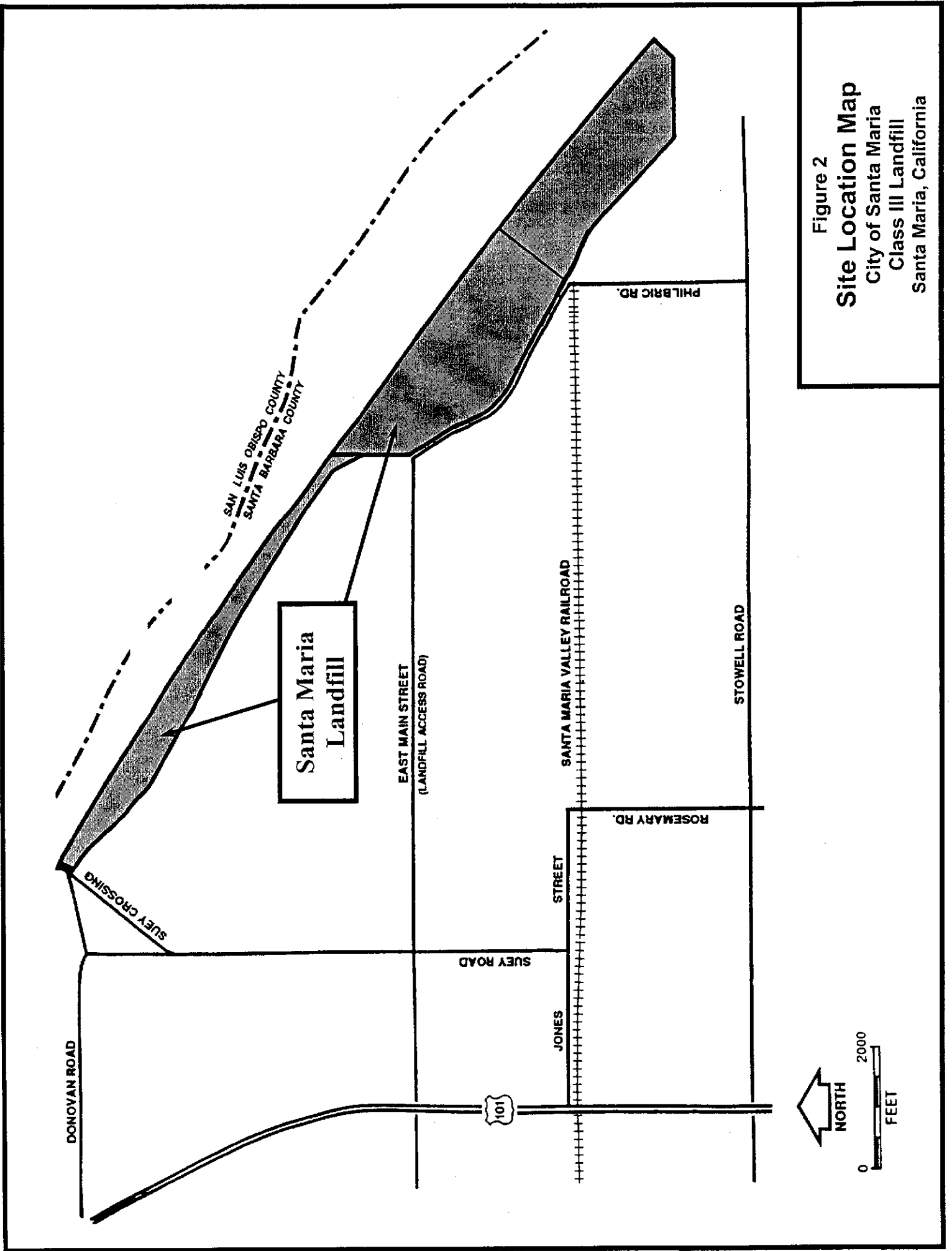


Figure 2
Site Location Map
 City of Santa Maria
 Class III Landfill
 Santa Maria, California

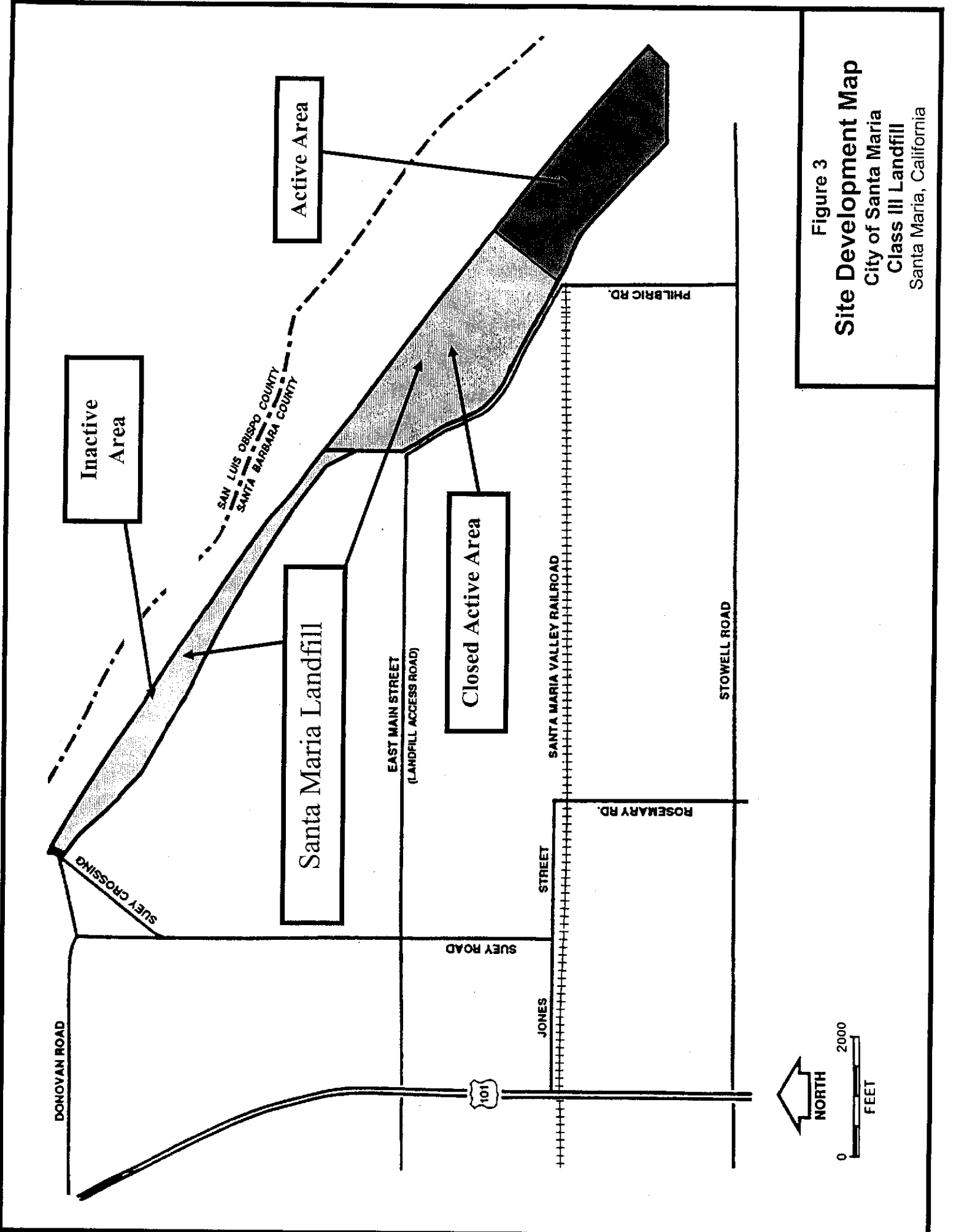
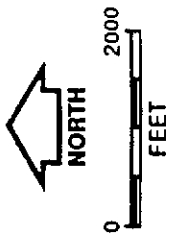


Figure 3
Site Development Map
 City of Santa Maria
 Class III Landfill
 Santa Maria, California



STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401-7906

MONITORING AND REPORTING PROGRAM NO. R3-2007-0045
Waste Discharger Identification No. 3420304001

FOR
THE CITY OF SANTA MARIA
SANTA MARIA REGIONAL LANDFILL
Santa Barbara County

PART I: MONITORING AND OBSERVATION SCHEDULE

Unless otherwise indicated, all monitoring and observations shall be reported as outlined in **Part IV**.

A. SITE INSPECTIONS

The Discharger shall inspect the Santa Maria Class III Regional Landfill (hereafter "landfill"), in accordance with the following schedule, and record (including photographs, when appropriate) at a minimum, the **Standard Observations** as defined in **Part V**.

Site Inspection Schedule:

1. During the wet season (October through April), following each storm that produces storm water runoff and discharge, with inspections performed at least monthly.
2. During the dry season, a minimum one inspection each **three month period**.

B. INTAKE MONITORING

The Discharger shall maintain a daily record of the waste stream. The record shall include the following:

1. Weight (in tons) of waste received;
2. Running totals of tons received, tons remaining for waste placement, and remaining site life expectancy (in years);
3. Current fill area (in acres);
4. Waste type and diversion quantities; and
5. Log of random load checking program. The log shall contain a record of refused loads, including the type of waste refused, and the date, name, address, and phone number of the party attempting to dispose of the waste.

The intake daily records are not to be submitted to this Water Board, but are to be maintained at the Discharger's offices in accordance with Part II.C. of this Monitoring and Reporting Program (MRP), and are to be made available to Water Board staff upon request to review and/or copy.

C. LEACHATE AND DRAINAGE SYSTEMS INSPECTIONS

The Discharger shall inspect all Leachate Collection and Removal Systems (LCRS), Leak Detection

and Removal System (LDRS), and groundwater subdrain, and record the following information:

1. **Bi-weekly** - leachate containment and collection system integrity, surface water collection and drainage system integrity, record volume of leachate collected (in gallons) and disposal method used;
2. **Monthly** - pumping system and fluid level operational check for all drainage systems. Operational checks, dates, and estimated volumes are to be included with semi-annual monitoring report; and
3. **Annually** - LCRS, LDRS, and groundwater subdrain testing and demonstration, per Title 27 §20340(d). Include results as part of the Annual Summary Report required by this MRP, Part IV.B. Results of annual testing shall be developed in a manner that makes one year's test comparable to previous and subsequent test. The absence or presence of biofouling shall be specifically addressed in the inspection report. For LCRS, LDRS, and groundwater subdrain: check water level transducer calibrations per manufacturer's specifications.

Additionally, the Discharger shall inspect all drainage control systems following each runoff-producing storm event and record the following information:

- a. Whether stormwater storage basins and drainage ditches contain liquids and if so, what levels;
- b. Any apparent seepage from the storage basins;
- c. General conditions of the stormwater facilities; and
- d. Steps taken to correct any problems found during inspection and date(s) when corrective action was taken.

D. RAINFALL DATA

The Discharger shall record the following information:

1. Total precipitation, in inches, during each **three month period**; and
2. Precipitation, in inches, during the most intense twenty-four hour interval of each **three-month period**.

E. ANALYTICAL MONITORING AND MONITORING LOCATIONS

The Discharger shall monitor the landfill in accordance with the following schedule(s). Monitoring locations are shown on **Figure A-1**.

1. Monitoring Parameters
 - a. **Groundwater, LCRS, LDRS, and subdrain:** The Discharger shall analyze all samples from all groundwater Monitoring Points at the landfill for the Monitoring Parameters listed in **Table 1**.

Table 1. Monitoring Parameters

<u>Monitoring Parameter</u>	<u>USEPA Method</u>	<u>Units</u>
Volatile Organic Compounds ¹ (VOCs) -- Include MTBE	8260	µg/L
pH ²	Field	Units
Temperature ²	Field	°F/C
Turbidity ²	Field	NTU
Electrical Conductivity ²	Field	µmhos/cm
Total Dissolved Solids (TDS) ²	160.1	mg/L
Chloride	300.0	mg/L
Sulfate ²	300.0	mg/L
Total Alkalinity	305.1	mg/L
Nitrate and Nitrite (Nitrogen)	300.0	mg/L
Manganese (dissolved)	6010B	mg/L
Iron (dissolved)	6010B	mg/L
Total Organic Carbon (TOC)	415.1 ³	mg/L
Perchlorate ⁴	314.0	µg/L
Total Petroleum Hydrocarbons (TPH) (gasoline, diesel, crude oil)	8015M	µg/L
Dissolved Oxygen (DO) ²	Field	mg/L

Notes:

- (1) The VOC_{water} Monitoring Parameter includes all Volatile Organic Compounds (VOCs) detectable using USEPA Method 8260 and MTBE, including at least all 47 organic constituents listed in Appendix I to 40 CFR, 258 (Subtitle D), and all unidentified peaks.
- (2) Analytical or physical parameter but not a monitoring parameter as defined by Title 27.

- (3) Or equivalent EPA method, with prior approval from the Executive Officer.
- (4) Discharger may discontinue analysis if this parameter is not detected or below background levels in at least three consecutive monitoring events.

Statistical and non-statistical assessment methods, as required by Part III, shall be used to evaluate analytical results for monitoring parameters.

- b. **Soil Pore Gas (Vadose Zone) Monitoring:** The Discharger shall analyze vadose zone gas at each monitoring location (see below) for VOCs and methane using field instruments. Test for VOC compounds annually in probes MP-1, MP-22, and three select probes adjacent to the residential area using EPA Method TO-14. In addition, test for VOC compounds annually in probes where VOCs have been detected at concentrations greater than 2 parts per million (ppm) with field instruments in two consecutive sampling events.

2. Monitoring Points

All groundwater monitoring points are shown on Figure A-1 attached to this MRP. Groundwater monitoring includes detection monitoring, corrective action, and piezometers, as listed in Table 2. Table 2 also includes storm water, soil gas, and LCRS sampling locations.

Additional Detection Monitoring Point well: The Discharger shall add MW-20, as shown on Figure A-1, to the groundwater monitoring program upon constructing new Cell #2 at the landfill. The initial monitoring event at these wells shall be completed prior to the placement of waste in the new cell.

3. Monitoring Frequency

Monitoring for all groundwater and vadose zone sampling locations shall be conducted on a quarterly basis (Table 2). However, the Discharger may propose reduced monitoring at all or a portion of monitoring locations after collecting appropriate data and evaluating the hydrogeochemical conditions responsible for elevated inorganic constituents at the site.

4. Groundwater Levels

For each monitored groundwater body, the Discharger shall measure the water level in each well or piezometer at least quarterly.

Table 2. Monitoring Points

Monitoring Points (See Attachment A-1)		Monitoring Program		Monitoring Parameters/Frequency		
Well ID	Monitoring Zone	Detection Monitoring	Corrective Action Monitoring	Parameters	COCs ⁽¹⁾	Frequency ⁽²⁾
MW-1R	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly
MW-2R	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly
MW-3R	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly
MW-4R	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MW-5R	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MW-6R	Alluvium/Orcutt Sand	X (background)		Table 1	Table 3	Quarterly
MW-7R	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly

Monitoring Points (See Attachment A-1)		Monitoring Program		Monitoring Parameters/Frequency		
Well ID	Monitoring Zone	Detection Monitoring	Corrective Action Monitoring	Parameters	COCs ⁽¹⁾	Frequency ⁽²⁾
MW-8R	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly
MW-9	Alluvium/Orcutt Sand	X (background)		Table 1	Table 3	Quarterly
MW-10	Alluvium/Orcutt Sand	X (background)		Table 1	Table 3	Quarterly
MW-11	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MW-12-1	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MW-12-2	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-13	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-14	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-15	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-16	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-17	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-18S	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-18D	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MW-19	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly
EW-1A	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
EW-2A	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
EW-3A	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
EW-4A	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
SP-1,-2,-3,-4 DP-1,-2	Alluvium/Orcutt Sand	X (Piezometer)		Water Levels		Quarterly
SW-1,-2,-3	Storm Water	X		Section 7		Semiannually (During a flow events)
MP-1 through -10; -10A&B; MP-11 through -24	Gas Migration; Vadose Zone	X		Section 1.b.		Quarterly
LCRS, LDRS, Subdrain	Collection System	X		Table 1	Table 3	Annually
Gas Condensate	Collection Systems	X		VOCs		Annually

⁽¹⁾ Sample once every five years for full suite of analytes listed in Table 3. Next sampling event spring 2011

⁽²⁾ Quarterly monitoring shall be performed during Jan.-Mar., April-June, July-Sept., and Oct.-Dec. and includes water levels for all wells and piezometers.

5. Constituents of Concern Monitoring

Constituents of Concern (COC) are listed in **Table 3**, and either directly include or include by reference all constituents list in Appendix I in 40 CFR, Part 258. Monitoring for COCs shall encompass only those which are not Monitoring Parameters (**Table 1**). Analysis of COCs shall be carried out **once every five years** at each of the site's groundwater monitoring points (Detection and Corrective Action). If there is an indication of release (**Part IV.C.4**) monitoring for COC is also required. The COC monitoring shall be carried out in the fall of year one and the spring of the fifth year. The next COC event is spring 2011. Monitoring points that have not

previously been sampled for COCs shall be sampled and analyzed for all COCs within three months of the effective date of this Order or following well installation and development.

Table 3. Constituents of Concern ⁽¹⁾

CONSTITUENTS	USEPA METHOD	UNITS
Antimony	6010	mg/L
Arsenic	7060	mg/L
Barium	6010	mg/L
Beryllium	6010	mg/L
Cadmium	6010	mg/L
Chromium	6010	mg/L
Cobalt	6010	mg/L
Copper	6010	mg/L
Cyanide	9010	mg/L
Lead	7421	mg/L
Mercury	7470	mg/L
Nickel	6010	mg/L
Selenium	7740	mg/L
Silver	6010	mg/L
Sulfide	9030	mg/L
Thallium	7841	mg/L
Tin	6010	mg/L
Vanadium	6010	mg/L
Zinc	6010	mg/L
Chlorophenoxy Herbicides	8150	µg/L
Nonhalogenated Volatiles	8015	µg/L
Organochlorine Pesticides and PCBs	8080	µg/L
Organophosphorous Pesticides	8141A	µg/L
Phthalate Esters	8060	µg/L
Phenols	8040	µg/L
Semi-Volatile Organic Compounds	8270	µg/L
Volatiles (Include MTBE)	8260	µg/L

(1)The Discharger shall analyze for all constituents using the USEPA analytical methods indicated above, including all constituents listed in Appendix II to 40 CFR, Part 258 (Subtitle D).

6. Collection System Performance

- a. The Leachate Collection and Leak Detection and Removal Systems, and Groundwater Subdrain:

For multiple lined cells in the Expansion Area, each cell will be equipped with both a Leachate Collection and Removal System (LCRS) and a Leak Detection and Removal System (LDRS), as well as a groundwater subdrain. The LCRS, LDRS, and subdrain shall gravity drain and/or be pumped to collection sumps. Leachate shall be collected in an above ground storage tank with secondary containment. Leachate volumes from all three systems shall be recorded monthly and submitted with subsequent monitoring reports. Each system shall be sampled and analyzed with the same sampling analytical protocol as a groundwater

monitoring point. Monthly and annual cumulative totals shall be prepared in tabular and graphical formats semi-annually. Disposal method of all collected volumes shall be reported. Fluids collected from each of these systems shall be analyzed, as available, for the Monitoring Parameters (**Table 1**) annually and for COCs (**Table 3**) every five years, starting with year one.

- b. **Perimeter Gas Probes:** Perimeter gas monitoring probes shall be monitored quarterly for methane, carbon dioxide, oxygen, hydrogen sulfide, and VOCs using calibrated field instruments. Test for VOC compounds annually in probes MP-1, MP-22, and three select probes adjacent to the residential area using EPA Method TO-14. In addition, test for VOC compounds annually in any remaining probes where VOCs have been detected at concentrations greater than 2 parts per million (ppm) with field instruments during two consecutive sampling events. Also collect a sample on a minimum of an annual basis from the landfill gas stream entering the flare system and from landfill condensate locations; analyze for methods described above. The Discharger shall follow consistent sampling protocols as specified in the sampling and analysis plan. Monitoring results shall be submitted to the Board in semi-annual reports and include information specified in Title 27, §20934

7. Storm Water Monitoring

The Storm Water sampling will be conducted at three locations (SW-1, SW-2, and SW-3, as shown in Figure A-1) per the NPDES general permit. A fourth storm water sampling point, SW-4, shall be added if significant discharges occur at this location. Annually, within one hour of the first storm event that causes a discharge, collect a water sample (unfiltered) at the locations specified above. A second sample must be collected from the point of discharge after a subsequent qualifying discharge event of the wet season.

Samples shall be analyzed for: total iron, turbidity, total suspended solids, pH (field measured), electrical conductivity, temperature, total organic carbon (method 415.1 or equivalent), and nitrate (as nitrogen).

8. Sample Procurement Limitation

For any given monitored medium, samples taken from Monitoring Points to satisfy the data analysis requirements for a given Monitoring Period shall be taken within a span not exceeding 30 days, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.

PART II: SAMPLE COLLECTION AND ANALYSIS

A. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard U.S. Environmental Protection Agency (USEPA) methods (USEPA publication "SW-846"), and in accordance with a sampling and analysis plan approved by the Water Board's Executive Officer. All water analyses shall be performed by a laboratory certified for these analyses by the State of California Environmental Laboratory Program. Specific methods of analysis must be identified. The director of the laboratory whose name appears in the certification shall supervise all analytical work in his/her laboratory and shall sign reports of such work submitted to the Water Board. In addition, the Discharger is responsible for seeing that the laboratory analysis of samples from Monitoring Points meets the following restrictions:

1. The methods of analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e. Trace) in historical data for that medium, the analytical method having the lowest Method Detection Limit (MDL) shall be selected.
2. Trace results (results falling between the MDL and the Practical Quantitation Limit) shall be reported as such.
3. MDLs and Practical Quantitation Limits (PQLs) shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Both limits are defined in Part V and shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. If the laboratory suspects that, due to a change in matrix or their effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived values, the results shall be flagged accordingly, and an estimate of the limit actually achieved shall be included.
4. Quality Assurance and Quality Control (QA/QC) data shall be reported along with the sample results to which it applies. Sample results shall be reported unadjusted for blank results or spike recovery. The QA/QC data submittal shall include:
 - a. Method, equipment, and analytical detection limits;
 - b. Recovery rates, an explanation for any recovery rate that is outside the USEPA-specified recovery rate;
 - c. Results of equipment and method blanks;
 - d. Results of spiked and surrogate samples;
 - e. Frequency of quality control analysis;
 - f. Chain of custody logs, and;
 - g. Name and qualifications of the person(s) performing the analyses.
5. QA/QC analytical results involving detection of common laboratory contaminants in any sample shall be reported and flagged for easy reference.
6. Non-targeted chromatographic peaks shall be identified, quantified, and reported to a reasonable extent. When significant unknown peaks are encountered, second column or second method confirmation procedures shall be performed in attempt to identify and more accurately quantify the unknown analyte(s).

B. CONCENTRATION LIMIT DETERMINATION

1. For the purpose of establishing Concentration Limits for COC and Monitoring Parameters detected in greater than ten percent of a medium's samples the Discharger shall:
 - a. Statistically analyze existing monitoring data (Part III), and propose, to the Executive Officer, statistically derived Concentration Limits for each COC and each Monitoring Parameter at each Monitoring Point for which sufficient data exists;
 - b. In cases where sufficient data for statistically determining Concentration Limits does not exist the Discharger shall collect samples and analyze for COC and Monitoring Parameter(s) which require additional data. Once sufficient data is obtained the Discharger shall submit proposed Concentration Limit(s) to the Executive Officer for

approval. This procedure shall take no longer than two calendar years;

- c. Sample and analyze new Monitoring Points, including any added by this Order, until sufficient data is available to establish a proposed Concentration Limit for all COC and Monitoring Parameters. Once sufficient data is obtained the Discharger shall submit the proposed Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than two calendar years.
2. Once established, concentration limits shall be reviewed a minimum of annually by the Discharger. The past year's data will be reviewed for application to revision of concentration limits. When appropriate, new concentration limits shall be proposed.

C. RECORDS TO BE MAINTAINED

Records shall be maintained in accordance with CCR Title 27 §21720(f) and 40 CFR 258.29. Analytical records shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. The period of retention shall be extended during the course of any unresolved litigation or when requested by the Executive Officer. Such records shall show the following of each sample:

1. Identification of sample, Monitoring Point from which sample was taken, and individual who obtained the sample;
2. Date and time of sampling;
3. Date and time that analyses were started and completed, and the name of personnel performing each analysis;
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
5. Results of analyses, and Methods Detection Limit and PQL for each analysis; and
6. A complete chain of custody log.

PART III: STATISTICAL AND NON-STATISTICAL ANALYSIS OF DATA

A. STATISTICAL ANALYSIS

For Detection Monitoring, the Discharger shall use statistical methods to analyze COC and Monitoring Parameters that exhibit concentrations that equal or exceed their respective MDL in at least ten percent of applicable historical samples. The Discharger may propose and use any statistical method that meets the requirements of California Code of Regulations, Title 27, §20415(e)(7). All statistical methods and programs proposed by the Discharger are subject to Executive Officer approval.

B. NON-STATISTICAL METHOD

For Detection Monitoring, the Discharger shall use the following non-statistical method for analyzing constituents which are detected in less than 10% of applicable historical samples. This method involves a two-step process:

1. From constituents to whom the method applies, compile a specific list of those constituents, which exceed their respective MDL. The list shall be compiled based on either data from the single sample or in cases of multiple independent samples, from the sample, which contains the largest number of constituents.
2. Evaluate whether the listed constituents meet either of two possible triggering conditions. Either the list from a single well contains two or more constituents, or contains one constituent, which equals or exceeds its Practical Quantitation Limit. If either condition is met, the Discharger shall conclude that a release is tentatively indicated and shall immediately implement the appropriate re-test procedure under Part III.C.

C. RE-TEST PROCEDURE

1. In the event that the Discharger concludes that a release has been tentatively indicated, the Discharger shall carry out the reporting requirements of Part IV.C.2 and, within 30 days of receipt of analytical results, collect two new suites of samples for the indicated COC or Monitoring Parameter(s) at each indicating Monitoring Point, collecting at least as many samples per Monitoring Point as were used for the initial test.
2. Analyze each of the two suites of re-test analytical results using the same statistical method (or non-statistical comparison) that provided the tentative indication of a release. If the test results of either (or both) of the re-tested data suites confirm the original indication, the Discharger shall conclude that a release has been discovered and shall carry out the requirements of Part IV.C.
3. Re-tests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the COC or Monitoring Parameter(s) which triggered the indication. When an analyte of the VOC composite parameter is re-tested the results of the entire VOC composite shall be reported.

PART IV: REPORTING

A. MONITORING REPORT

A written Monitoring Report shall be submitted semi-annually by **February 28 and August 31** of each year. Monitoring Reports will be submitted in an electronic format, with text, tables, figures, laboratory analytical data, and appendices placed on a compact disc in PDF format along with a hardcopy of text, tables, and figures. The electronic format must be compatible with Geotracker, as stipulated by California State law. Accompanying the electronic version of the report will be a hard copy transmittal letter, with signatures of preparers and submitters (in accordance with requirements stated in Waste Discharge Requirements Order No. R3-2007-0045), along with an executive summary of the report text. The Monitoring Report shall address all facts of the landfill's monitoring. Reports shall include, but should not be limited to, the following:

1. Letter of Transmittal

A letter transmitting the essential points shall accompany each report. The letter shall include a discussion of violations that occurred since the last such report was submitted. If no new violations have been discovered since the last submittal, this shall be stated in the transmittal letter. Both the Monitoring Report and the transmittal letter shall be signed by: for private facilities, a principal executive officer at the level of vice president; for public agencies, the director of the agency. Upon Water Board Executive Officer approval, the cited signature can

be by a California Registered Civil Engineer or Certified Engineering Geologist who has been given signing authority by the cited signatories. The transmittal letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

2. Compliance Summary

The Summary shall contain at least:

- a. Discussion of compliance with concentration limits. Release indications and any corrective actions taken.
- b. For each monitored groundwater body, calculate groundwater velocity and, based upon water level elevations taken during the Monitoring Period, graphically present groundwater flow direction under and around the Unit.

3. Graphical Presentation of Data

For each Monitoring Point in each medium, submit, in graphical format, the complete history of laboratory analytical data. Graphs shall effectively illustrate trends and/or variations in the laboratory analytical data. Each graph shall plot a single constituent concentration over time at one (for intra-well comparison) or more (for inter-well comparisons) monitoring points in a single medium. Maximum contaminant levels (MCL) and/or concentration limits shall be graphed along with constituent concentrations where applicable. When multiple samples are taken, graphs shall plot each datum, rather than plotting mean values.

The Discharger shall also determine horizontal and vertical gradients, groundwater flow rate, and flow direction for each respective groundwater body. This data shall be presented on a figure that depicts groundwater contours and flow directions as well as gradient. One figure for each water level measuring period shall be included with the semi-annual monitoring report.

4. Corrective Action Summary

Discuss significant aspects of any corrective action measures conducted during the monitoring period and the status of any ongoing corrective action efforts, including constituent trend analysis. Calculate pollutant load removed from the sites impacted media by mass (water, gas, leachate) removal system(s). Mass removal calculations shall be based on actual analytical data as required by Part I.E. Present discussion and indications, relating mass removal data to the violation the corrective action is addressing.

5. Laboratory Results

Laboratory results and statements demonstrating compliance with Part II and results of analyses performed at the landfill, outside the requirements of this Monitoring and Reporting Program, shall be summarized and reported.

6. Sampling Summary

- a. For each Monitoring Point addressed by the report, a description of: 1) the method and time of water level measurement; 2) the method of purging and purge rate and well recovery time; and 3) field parameter readings.
- b. For each Monitoring Point addressed by the report, a description of the type of sampling device used, its placement for sampling, and a description of the sampling procedure (number of samples, field blanks, travel blanks, and duplicate samples taken; the date and time of sampling; the name and qualification of the person actually taking the samples; description of any anomalies).

7. Leachate Collection and Detection Systems

A summary of the total volume of leachate collected each month since the previous Monitoring Report for both the leachate collection and leachate detection systems. Also include fluid level measurements in LCRS, LDMS, and subdrain along with transducer calibration records.

8. Standard Observations

A summary of Standard Observations (Part V) made during the Monitoring Period.

9. Map(s)

A map or an aerial photograph showing Monitoring Points, relative physical features, and with groundwater contours overlaid on the map or the aerial photograph to the greatest degree of accuracy possible.

B. ANNUAL SUMMARY REPORT

The Discharger shall submit an annual report to the Water Board covering the previous monitoring year. The annual Monitoring Period ends on December 31 each year. This report may be combined with the Second Semi-Annual Monitoring Report of the year and shall be submitted no later than January 31 each year. The annual report must include the information outlined above and the following;

1. Discussion

Include a comprehensive discussion of the compliance record, a review of the past year's significant monitoring system and operational changes, a summary of corrective action results and milestones, and a review of construction projects, with water quality significance, completed or commenced in the past year or planned for the up-coming year.

2. Statistical Limit Review

Statistically derived concentration limits shall be reviewed a minimum of annually and revised as necessary. Data collected during the past year shall be discussed and considered for inclusion in, and determination of, proposed limits for the coming year. For statistical limits that are changed from the previous year, include a comprehensive discussion of the proposed limit for Executive Officer review and consideration.

3. Analytical Data

Complete historical analytical data presented in a tabular form and on compact disk, and Excel™ format or in another file format acceptable to the Executive Officer.

4. Leachate Collection and Detection System

Results of annual leachate collection and leachate detection system testing, as required by Part I.C. Where leachate is used for dust control, testing that shows the leachate is non-hazardous shall be submitted annually.

5. Map(s)

A map, or set of maps, that indicate(s) the type of cover material in place (final, long-term intermediate, or intermediate) over inactive and completed areas.

C. CONTINGENCY RESPONSE

1. Leachate Seep

The Discharger shall, within 24 hours, report by telephone concerning the discovery of

previously unreported seepage from the disposal area. A written report shall be filed with the Water Board within seven days, containing at least the following information:

- a. A map showing the location(s) of seepage;
- b. An estimate of the flow rate;
- c. Location of sample(s) collected for laboratory analysis, as appropriate;
- d. A description of the nature of the discharge (e.g. pertinent observations and analysis); and
- e. A summary of corrective measures both taken and proposed.

2. Initial Release Indication Response

Should the initial statistical or non-statistical comparison (under Part III, A or B) indicate that a new release is tentatively identified, the Discharger shall:

- a. Within 24 hours, notify the Water Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved;
- b. Provide written notification by certified mail within seven days of such determination; and,
- c. Either of the following:
 - i. Shall carry out a discrete re-test in accordance with Part III.C. If the re-test confirms the existence of a release or the Discharger fails to perform the re-test, the Discharger shall carry out the requirements of Part IV.C.4. In any case, the Discharger shall inform the Water Board of the re-test outcome within 24 hours of results becoming available, following up with written results submitted by certified mail within seven days, or;
 - ii. Make a determination, in accordance with Title 27, §20420(k)(7), that a source other than the waste management unit caused the release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in the groundwater, surface water, or the unsaturated zone.

3. Physical Evidence of a Release

If either the Discharger or the Executive Officer determines that there is significant physical evidence of a new release pursuant to Title 27, §20385(a)(3), the Discharger shall conclude that a release has been discovered and shall:

- a. Within seven days notify the Executive Officer of this fact by certified mail (or acknowledge the Executive Officer's determination);
- b. Carry out the requirements of Part IV.C.4. for potentially-affected medium; and
- c. Carry out any additional investigations stipulated in writing by the Executive Officer for the purpose of identifying the cause of the indication.

4. Release Discovery Response

If the Discharger concludes that a new release has been discovered the following steps shall be carried out:

- a. If this conclusion is not based upon monitoring for COC, the Discharger shall sample for COC at Monitoring Points in the affected medium. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Executive Officer, by certified mail, of the concentration of COC at each Monitoring Point. This notification shall include a synopsis showing, for each Monitoring Point, those constituents that exhibit an unusually high concentration;
- b. The Discharger shall, within 90 days of discovering the release, submit to the Executive Officer a Revised Report of Waste Discharge proposing an Evaluation Monitoring and Reporting Program that:
 - (1) meets the requirements of Title 27, §20420 and §20425; and
 - (2) satisfies the requirements of 40 CFR §258.55(g)(1)(ii) by committing to install at least one monitoring well directly down-gradient of the center of the release;

- c. The Discharger shall, within 180 days of discovering the release, submit to the Executive Officer a preliminary engineering feasibility study meeting the requirements of Title 27, §20420; and
 - d. The Discharger shall immediately begin delineating the nature and extent of the release by installing and monitoring assessment wells as necessary to assure that the Discharger can meet the requirements of Title 27, §20425 to submit a delineation report within 90 days of when the Executive Officer directs the Discharger to begin the Evaluation Monitoring Program.
5. Release Beyond Facility Boundary
Any time the Discharger or the Executive Officer concludes that a release from the Unit has proceeded beyond the facility boundary, the Discharger shall so notify persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).
- a. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.
 - b. Subsequent to initial notification, the Discharger shall provide updates to Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.
 - c. Each time the Discharger sends a notification to Affected Persons (under a. or b. above), the Discharger shall, within seven days of sending such notification, provide the Executive Officer with both a copy of the notification and a current mailing list of Affected Persons.

PART V: DEFINITION OF TERMS

A. AFFECTED PERSONS

Individuals who either own or reside upon the land which directly overlies any part of that portion of a gas or liquid phase release that may have migrated beyond the facility boundary.

B. CONCENTRATION LIMITS

The Concentration Limit for any given COC or Monitoring Parameter in a given monitored medium shall be either:

1. The constituent's statistically determined background value or interval limit, established using an Executive Officer approved method (Part III); or
2. In cases where the constituent's MDL is exceeded in less than 10% of historical samples, the MDL is the concentration limit defined in **Part II. A.1.**

C. CONSTITUENTS OF CONCERN (COC)

An extensive list of constituents likely to be present in a typical municipal solid waste landfill. The COC for this landfill are listed in **Table 3.**

D. MATRIX EFFECT

Any increase in the MDL or PQL for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample being analyzed.

E. METHOD DETECTION LIMIT (MDL)

The lowest concentration at which a given laboratory, using a given analytical method to detect a given constituent, can differentiate with 99% reliability, between a sample which contains the constituent and one which does not. The MDL shall reflect the detection capabilities of the specific

analytical procedure and equipment used by the laboratory.

F. MONITORED MEDIUM

Those media that are monitored pursuant to this Monitoring and Reporting Program (groundwater, surface water, liquid, leachate, gas condensate, and other as specified).

G. MONITORING PARAMETERS

A short list of constituents and parameters used for the majority of monitoring activities. The Monitoring Parameters for this Unit are listed in **Part I. E.**

H. MONITORING PERIOD (frequency)

The duration of time, during which a sampling event must occur. The Monitoring Period for the various media and programs is specified in **Part I.E.** The due date for any given report will be 30 days after the end of its Monitoring Period, unless otherwise stated.

I. PRACTICAL QUANTITATION LIMIT (PQL)

The lowest acceptable calibration standard (acceptable as defined for a linear response or by actual curve fitting) times the sample extract dilution factor times any additional factors to account for Matrix Effect. The PQL shall reflect the quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. PQLs reported by the laboratory shall not simply be restated from USEPA analytical method manuals. Laboratory derived PQLs are expected to closely agree with published USEPA estimated quantitation limits (EQL).

J. RECEIVING WATERS

Any surface water, which actually or potentially receives surface or groundwater, which pass over, through, or under waste materials or contaminated soils.

K. STANDARD OBSERVATIONS

1. For Receiving Waters:

- a. Floating and suspended materials of waste origin;
- b. Discoloration and turbidity;
- c. Evidence of odors;
- d. Evidence of beneficial use – presence of water-associated wildlife; and
- e. Flow rate to the receiving water.

2. Along the perimeter of the Unit:

- a. Evidence of liquid leaving or entering the Unit;
- b. Evidence of odors;
- c. Evidence of erosion and/or exposed refuse; and
- d. Inspection of storm water discharge locations for evidence of non-storm water discharges during dry season, and integrity during wet season.

3. For the Unit:

- a. Evidence of ponded water at any point on the waste management facility;
- b. Evidence of odors;
- c. Evidence of erosion and/or daylighted refuse;
- d. Compliance with Storm Water Pollution Prevention Plan, insuring that the terms of the General Permit are properly implemented;
- e. Integrity of containment and drainage systems; and
- f. Evidence of waste in the drainage system (e.g., ditches and sediment basins)

L. VOLATILE ORGANIC COMPOUND (VOC) COMPOSITE MONITORING PARAMETER (VOC composite)

VOC composite is a composite parameter that encompasses a variety of VOCs. The constituents addressed by the VOC composite Monitoring Parameter includes all VOCs detectable using USEPA Methods, 8260 (water) and TO-14 (gas).

M. WATER MONITORING [For Detection and Corrective Action Monitoring]

The Discharger shall monitor water-bearing media as outlined below. Sampling, analyses, and reporting shall follow **MRP No. R3-2007-0045, Parts II, III, and IV**. The Discharger shall ensure enough samples are taken, at each monitoring point, to qualify for the most appropriate statistical analysis method outlined in **MRP No. R3-2007-0045, Part II**.

ORDERED BY: 
Executive Officer

10-26-07
Date

Figure: Figure A-1 Monitoring Point Location Map

