

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

**STAFF REPORT FOR REGULAR MEETING OF MAY 22-23, 2014
Prepared on April 29, 2014**

ITEM NUMBER: 10

SUBJECT: Santa Maria Integrated Waste Management Facility,
Los Flores Ranch Class III Landfill, Santa Barbara County
New Waste Discharge Requirements, Order No. R3-2014-0024

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KEY INFORMATION:

Location: Approximately eight miles south of the City of Santa Maria, as shown on Figure 1 of Waste Discharge Requirements Order No. R3-2014-0024.
Owner/Operator: City of Santa Maria (Discharger).
Type of Waste: Non-hazardous municipal solid waste (Class III Landfill).
Capacity Used: None.
Conceptual Capacity: Effective airspace of 130.9 million cubic yards, estimated site life of 90 years.
Disposal: Canyon-fill method.
Liner System: Composite liner yet to be approved as an engineered alternative to prescriptive requirements
Existing Orders: None
This Action: **Adopt New Waste Discharge Requirements Order No. R3-2014-0024**

SUMMARY

The City of Santa Maria (Discharger) is proposing to construct and operate the Santa Maria Integrated Waste Management Facility Los Flores Ranch Class III Landfill (Landfill). The Landfill will receive waste from urban and rural areas of northern Santa Barbara County, with the capacity to receive waste from southern Santa Barbara County as necessary. The new Landfill will replace and facilitate closure of the Santa Maria Regional Landfill, which is classified by Central Coast Water Board (Water Board) staff as a high threat to water quality landfill due to its proximity to the Santa Maria River and shallow groundwater. The proposed new Landfill is well sited as it has deep groundwater, no rivers nearby, is in a rural area without residences in close proximity, and is a former oil production area. Additionally, this will be the first Class III landfill that is fully lined in the Central Coast region.

Water Board staff proposes Waste Discharge Requirements (WDRs) Order No. R3-2014-0024 ("Order" or "Order No. R3-2014-0024" Attachment 1) and proposed Monitoring and Reporting Program Order No. R3-2014-0024 ("MRP" Attachment 2) to provide requirements for design,

construction, and operation of the new Landfill. The proposed Order benefits and protects groundwater and surface water by requiring adequate design, maintenance, inspection, and monitoring of engineering controls (e.g., composite liner, leachate collection and removal system, landfill gas, landfill covers, surface drainages, and sediment retention ponds).

DISCUSSION

The Discharger submitted a Joint Technical Document (JTD) to the Water Board on June 11, 2011 followed by revisions on January 25, 2012, and October 18, 2012 to facilitate the issuance of WDRs for the design, construction, and operation of a proposed new Landfill with an approximate 90 year site life. Currently the majority of the Landfill's design features are conceptual and the Discharger cannot finalize the design until other permits are acquired, most notably the Army Corps of Engineers §404 Permit, the Water Board's §401 Water Quality Certification Permit, and the California Department of Fish and Wildlife's §1602 Lake and Streambed Alteration Agreement. Similar to other landfill WDRs in our region, the proposed Order requires the Discharger to submit a Design Report for Executive Officer approval prior to constructing a Waste Management Unit (WMU). Water Board staff review and Executive Officer approval of the Design Report will ensure that the design and construction specifications for the Landfill are protective of water quality and will meet regulatory requirements as specified in the proposed Order.

Facility Description: The Landfill site is located in northern Santa Barbara County, approximately eight miles south of the Santa Maria city center and one mile east of Highway 101. The Landfill property is comprised of fairly gentle canyon land and encompasses 1,774 acres. Landfill operations or the waste management facility, as defined by the California Code of Regulations (CCR) Title 27, will cover approximately 617 acres. The area where waste will be disposed (WMU) is expected to cover approximately 286 acres during its 90 years of expected operational life. Ancillary facilities for waste disposal operations at the landfill will include access roads, parking areas, scales and a scale house, an administrative office, maintenance buildings, a water supply well, a water tank, soil stockpiles, sediment retention basins, a landfill gas flare station, leachate storage tanks, and areas reserved for resource recovery operations (i.e., recycling) including concrete and asphalt processing, agricultural plastics processing, and green waste processing.

Historically, the Landfill property has been used for free-range livestock grazing and for oil exploration and production activities. The land surrounding the Landfill property is predominantly agricultural but oil production exists east and west of Highway 101 and to the southwest.

Geology: The Landfill property has been modified by historical oil field operations including: numerous road cuts, oil well pads, and canyon fills that have generally altered the gentle, rounded nature of the original topography. The Discharger intends to remove the majority of upper geologic layers (Orcutt Sand, landslide deposits, alluvium, topsoil, and drilling mud/artificial fill) as the WMU is excavated and graded for construction. As a result, the majority of the WMU will be directly underlain by the Paso Robles Formation which overlies the much deeper (500 feet) Careaga Formation. The Paso Robles Formation beneath the WMU is typically light brown to yellowish brown sandstone and conglomerate, with very few claystone beds that are typically less than six inches thick. The Careaga Formation is primarily made up of a coarse-grained sandstone upper layer and a lower, fine-grained sandstone layer. Although not observed during onsite soil borings and monitoring well borings, the Careaga Formation may contain local tar deposits.

Hydrogeology

Groundwater exists in three hydrogeologic units below the WMU and includes perched groundwater in the alluvium, groundwater seeps in the Paso Robles Formation, and regional groundwater at depths greater than 500 feet below existing ground surface in the Careaga Formation. Perched groundwater in the alluvium and seeps in the Paso Robles Formation are of very limited quantities and the majority of the alluvium will be removed during construction of the WMU.

Groundwater Separation and Quality: Proposed excavation grades (e.g., elevation of bottom liner after grading) and conceptual liner design for the WMU provide for more than approximately 360-foot separation between groundwater and waste. Groundwater quality from monitoring wells beneath the site is generally naturally poor in quality, as indicated by chloride, sulfate, and total dissolved solids levels that exceed their respective median groundwater quality objectives for the Santa Maria Sub-basin and Orcutt Sub-area.

Surface Water: Landfill development has the potential to impact unnamed surface water drainages, many of which have been previously impacted by historical oil exploration and production activities. The Discharger's April 2010 Environmental Impact Report for the proposed Landfill identifies a total of 1.71 acres of jurisdictional non-wetland waters of the U.S., 3.09 acres of jurisdictional wetland waters of the U.S. and 0.57 acres of non-jurisdictional wetland throughout the Landfill property. The Discharger must obtain permits from the Army Corps of Engineers (§404 Permit), the Water Board (§401 Water Quality Certification), and California Department of Fish and Wildlife (§1602 Lake and Streambed Alteration Agreement) to develop in these areas. The proposed Order requires a Design Report for the WMU that must address wetlands and document compliance with the above required permits.

Stormwater: The Landfill will have six stormwater discharge points with four impacted by WMU development and operation, and two that will be relatively unimpacted. The four affected discharge points will include engineered stormwater conveyances and sedimentation retention basins to reduce sediment discharges and offer containment capability in the event of surface release. The two stormwater drainages that are relatively unaffected are not likely to require significant engineering or sedimentation retention basins because flows will be less than or similar to predevelopment. All Landfill drainage facilities will be designed to handle a 100-year, 24-hour precipitation storm event. In addition to the proposed Order, the Landfill will also be regulated by the General Industrial Stormwater Permit.

WMU Liner Design: The natural geologic materials between the base of the WMU and groundwater do not adequately protect against degradation of beneficial uses or water quality; therefore, the proposed Order requires an engineered liner system to contain waste and protect groundwater. Similar to WDRs for other landfills in our region the proposed Order requires prescriptive WMU composite liner design requirements with an allowance for Executive Officer-approved engineered alternative design. The CCR Title 27 and Code of Federal Regulations Title 40, Parts 257 and 258, prescriptive composite liner requirements are as follows (from bottom to top):

- a. Composite Liner
 - i. A well prepared subgrade.
 - ii. A minimum two foot layer of compacted low permeability soil with a hydraulic conductivity less than 1×10^{-7} cm/s.

- iii. A synthetic flexible membrane liner at least 40-mil thick [or at least 60-mil thick if the liner is high density polyethylene (HDPE)]
- iv. A leachate collection removal system (LCRS) designed to prevent more than 12 inches of static hydraulic head on the liner.
- v. A protective soil layer or operations layer.

In addition LCRS sumps must be double lined with leak detection capability and the Discharger must propose unsaturated zone monitoring for determining the earliest possible detection of release.

Most Landfills in our region typically propose an alternative liner design to the prescriptive composite liner design. The Discharger's October 2012 JTD includes a conceptual alternative liner design for the WMU that consists of the following

- a. Base Composite Liner
 - i. Prepared subgrade
 - ii. Minimum 1-foot thick compacted fine grained soil layer
 - iii. Geosynthetic Clay Liner (GCL) (Encapsulated with HDPE below the GCL towards the toe of the WMU)
 - iv. Minimum 60-mil thick HDPE geomembrane.
 - v. LCRS
 - vi. Protective Soil Layer
- b. Slope Composite Liner
 - i. Prepared subgrade.
 - ii. GCL
 - iii. Minimum 60-mil thick HDPE geomembrane.
 - iv. Protective Soil Layer

The proposed Order does not approve the above conceptual liner design as an engineered alternative to the prescriptive liner requirements. Instead, the proposed Order requires the Discharger to submit a detailed WMU Design Report that the Executive Officer will need to approve prior to constructing the landfill. Water Board staff and the Discharger are still evaluating alternatives to improve the proposed alternative composite liner design.

COMPLIANCE HISTORY

The Landfill is a proposed new facility and therefore has no compliance history; however, the Discharger also operates the Santa Maria Regional Landfill adjacent to the Santa Maria River. Overall the Discharger is responsive to Water Board staff's information requests, comments, concerns, and readily addresses compliance issues regarding the Santa Maria Regional Landfill. The Discharger has also met formal report deadlines regarding the Santa Maria Regional Landfill.

MONITORING AND REPORTING PROGRAM

The Landfill MRP includes:

Part I – Monitoring and Observation Schedule: This section requires periodic routine inspections of the Landfill and pollution control systems (leachate collection and removal, landfill

gas collection and removal, and groundwater extraction and treatment), rainfall data records, intake monitoring, and detailed analytical monitoring of groundwater, leachate, and landfill gas.

Part II – Sample Collection and Analysis: This section establishes criteria for sample collection and analysis, methods to determine concentration limits, and specifies how the Discharger must maintain these records.

Part III – Statistical and Non-Statistical Analysis of Data: This section establishes methods for the Discharger to determine Landfill compliance with water quality protection standards based on laboratory analytical information.

Part IV – Reporting: This section establishes formats and requirements that the Discharger must follow when submitting analytical data, annual reports, uploading information to GeoTracker, and summaries to the Water Board.

Part V – Definition of Terms: This section defines specific terms used in the MRP.

ENVIRONMENTAL SUMMARY

Order No. R3-2014-0024 contains prohibitions, discharge specifications, water quality protection standards, and provisions intended to protect the environment by mitigating or avoiding impacts to water quality during Landfill construction and operation.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The City of Santa Maria filed a Notice of Preparation of an Environmental Impact Report (EIR) for the Santa Maria Integrated Waste Management Facility on September 14, 2006 and circulated the notice until October 13, 2006. Environmental impacts from the proposed Landfill were evaluated in a Santa Maria Integrated Waste Management Facility Project EIR (SCH# 2006091069), during 2009 with a public comment review period from June 6, 2009 to August 3, 2009. The City of Santa Maria filed a Notice of Completion of the Final EIR with the State Clearing house on April 2, 2010. On April 20, 2010, the City of Santa Maria adopted Resolution No. 2010-42 certifying the Final EIR, making CEQA findings, adopting a Statement of Overriding Considerations, and adopting a Mitigation Monitoring Program for the Santa Maria Integrated Waste Management Facility Project. The City of Santa Maria filed a Notice of Determination approving the Santa Maria Integrated Waste Management Facility Project with the County of Santa Barbara on April 27, 2010.

The Water Board is a responsible agency for purposes of CEQA and has considered the Final EIR prepared by the City of Santa Maria and has considered the environmental impacts of the project. The Final EIR did not identify any significant effect on the environment with respect to water quality, and stated that the Discharger must comply with the waste discharge requirements and permits issued by the Water Board, which include this proposed Order, the General Industrial Stormwater Permit, and §401 Water Quality Certification.

PUBLIC NOTICE AND COMMENTS

Central Coast Water Board staff distributed Order No. R3-2014-0024 and MRP Order No. R3-20014-0024 on February 26, 2014, to a list of interested parties, including individuals, agencies, nonprofits, and surrounding landowners with possible interest in the Landfill's development. The comment period ended on April 1, 2014 and during the public comment period, Water

Board staff received one comment via email from Santa Barbara County Environmental Health Services (Attachment 3), which is the designated Local Enforcement Agency (LEA) by the California Department of Resources Recycling and Recovery (CalRecycle). The comment email from the LEA included six minor comments, which resulted in minor revisions to the draft Order.

The following are comments from the LEA's comment email, dated April 1, 2014:

Comment 1: Regarding Finding No. 8 of the proposed Order, the Solid Waste Facility Permit issued by the LEA lists the site at 617 acres (does not include buffer and recreation areas).

Water Board Staff Response: Water Board staff agrees and have revised Finding No. 8 of the proposed Order to reference the waste management facility acreage of 617 acres.

Comment 2: Regarding Finding No. 23 of the proposed Order, Vandenberg Air Force Base is considering alternative disposal options for its solid waste. Can Vandenberg Air Force Base be added as a potential waste contributor to the Landfill?

Water Board Staff Response: Water Board staff agrees and have revised Finding No. 23 of the proposed Order to include Vandenberg Air Force Base as a potential waste contributor to the future Los Flores Ranch Class III Landfill. However, there are no requirements within the proposed Order that restrict locations the Landfill can accept waste from, as long as the Landfill's JTD is updated to reflect changes and it is approved by the Executive Officer.

Comment 3: Finding No. 66 of the proposed Order should be revised to recognize the Santa Barbara County Environmental Health Services role as LEA, and the LEA's issuance of the Solid Waste Facility Permit

Water Board Staff Response: Water Board staff agrees and have revised Finding No. 66 of the proposed Order to recognize the LEA's role in regulating the Landfill through Solid Waste Facility Permit No. 42-AA-0076.

Comment 4: Does Prohibition No. 8a of the proposed Order require that all phases be approved before any waste is discharged?

Water Board Staff Response: No, the intent of Prohibition No. 8a is to require the Discharger to submit a design report and obtain approval from the Executive Officer for each phase (i.e., currently the discharger proposes building eight separate phases) of the WMU prior to construction and disposal of waste at each phase. Since it can take many years before a Discharger expands their landfill with a new phase, we anticipate that technology, designs, equipment and performance expectations can change significantly. Therefore, it is important that the design of each phase be approved prior to construction to ensure the best available technology and performance expectations are used to design each phase. Water Board staff have revised Prohibition No. 8a to clarify this intent.

Comment 5: Prohibition No. 8c of the proposed Order prohibits the discharge of waste until the landfill gas monitoring system is constructed, and appears to conflict with Finding No. 44, which states that a landfill gas collection and control system will be constructed by the Discharger within approximately three years of initiating landfill operations.

Water Board Staff Response: Water Board staff agrees and we have removed the landfill gas monitoring requirement from Prohibition No. 8c. Landfill gas monitoring will begin when the landfill gas collection and control system is constructed within approximately three years of the Discharger initiating landfill operations. However, soil vapor/vadose zone monitoring is still included in Prohibition No. 8c, and if soil vapor monitoring documents landfill gas migration, Water Board staff would likely require the Discharger to install the landfill gas collection and control system ahead of current expectations to prevent migration of landfill gas and impacts to groundwater.

Comment 6: Regarding Specification No. 28 of the proposed Order, please add the LEA to the approval list.

Water Board Staff Response: Water Board staff agrees and have referenced the LEA as an approving agency in Closure Specification Nos. 28 and 29f.

CONCLUSION

The proposed Order provides operational and monitoring requirements for the Landfill to protect groundwater and surface water through required engineering controls and containment systems, preventative inspections, and monitoring. The Landfill does not pose a significant risk to groundwater and surface water with the controls and requirements in the proposed Order.

RECOMMENDATION

Adopt Waste Discharge Requirements Order No. R3-2014-0024 with Monitoring and Reporting Program No. R3-2014-0024.

ATTACHMENT

Attachment 1: Proposed Waste Discharge Requirements Order No. R3-2014-0024

Attachment 2: Monitoring and Reporting Program No. R3-2014-0024

Attachment 3: LEA Comment Email