

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2002-0223
FOR
VALLEY WASTE DISPOSAL COMPANY
BROAD CREEK NO. 2 FACILITY
MIDWAY-SUNSET & BUENA VISTA OIL FIELDS
KERN COUNTY

Compliance with this Monitoring and Reporting Program, and with the Standard Provisions and Reporting Requirements dated 1 March 1991, is ordered by Waste Discharge Requirements Order No. R5-2002-0223.

Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements, constitutes noncompliance with the Waste Discharge Requirements and the California Water Code, which can result in the imposition of civil monetary liability.

A. REQUIRED REPORTS

<u>Report</u>	<u>Due</u>
1. Wastewater Monitoring (Section C.1)	Annually¹
2. Impoundment Sludge Monitoring (Section C.2)	Every 5 years¹ (Metals) with annual report
3. Facility Inspection (Section C.3)	Annually¹
4. Impoundment Inspection (Section C.4)	Monthly

¹ Annual report is due by 1 May of each year and shall include all analytical results performed during the year, and the facility inspection.

B. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required by appropriate sections of the Standard Provisions and Reporting Requirements. Reports that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the Waste Discharge Requirements. In reporting the monitoring data, the Discharger shall provide the data in a computer format approved by Regional Board staff. The data needs to be arranged so that the date, the constituents, the concentrations, and the units are readily discernible.

C. MONITORING

1. Wastewater Monitoring

At least once annually, a representative sample for wastewater analysis shall be taken at the point of discharge into the initial “cleaning” pond and at the point of discharge into a minimum of two of the evaporation/percolation ponds, one of which shall be the last pond containing water. Chemical analyses used in monitoring shall be performed as required by California Water Code Section 13176 and Health and Safety Code Section 100825. Analytical requirements for wastewater discharged at the facility are as follows:

<u>Parameter/Constituent</u>	<u>Analytical Method</u> ¹	<u>Reporting Units</u>
Total Annual Flow	estimate	bbls or gals.
Volatile Organics	8260B (see Table 1)	µg/l
Trace Metals (see Table 2)	6010 and 7000-series	µg/l & mg/l
Standard Minerals Analysis	(see Table 3)	(see Table 3)

¹ Other approved analytical methods may be proposed if they provide equal or greater accuracy or precision.

2. Impoundment Sludge Monitoring

Chemical analyses shall be performed as indicated in C.1. above. The analytical requirement for the sludge is as follows:

<u>Parameter/Constituent</u>	<u>Analytical Method</u> ¹	<u>Reporting Units</u>
Trace Metals (see Table 2)	6010 and 7000-series	µg/kg & mg/kg

¹ Other approved analytical methods may be proposed if they provide equal or greater accuracy or precision.

3. Annual Facility Maintenance and Operations Inspection

The Discharger shall inspect all facilities relating to operation of the surface impoundments annually. Necessary maintenance and/or repairs shall be implemented as soon as practicable. The Discharger shall report any subsequent repairs within 30 days of completion. The results shall be summarized in the **Annual Report**.

4. Impoundment Inspection

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The Discharger shall inspect all surface impoundments weekly or following a major storm event defined as one inch of precipitation within 24 hours, for compliance with Discharge Specification No. B.2. The Discharger shall report any damage within 24 hours and any subsequent repairs within 30 days of completion. The results of the inspections shall be summarized and submitted in the **Monthly Report**.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

_____ 5 December 2002
(Date)

JKD:jkd

TABLE 1.

Acetone	1,2-dichloropropane
Benzene	cis-1,3-Dichloropropene
Bromodichloromethane	trans-1,3-Dichloropropene
Bromoform	Ethylbenzene
Bromomethane	2-Hexanone
2-Butanone	Methylene Chloride
Carbon Disulfide	4-Methyl-2-Pentanone
Carbon Tetrachloride	Styrene
Chlorobenzene	1,1,1,2-Tetrachloroethane
Chloroethane	1,1,2,2-Tetrachloroethane
Chloroform	Tetrachloroethene
Chloromethane	Toluene
Dibromochloromethane	1,1,1-Trichloroethane
1,2-Dibromo-3-Chloropropane	1,1,2-Trichloroethane
1,2-Dibromoethane	Trichloroethene
Dichlorodifluoromethane	Trichlorofluoromethane
1,1-Dichloroethane	1,2,3-Trichloropropane
1,2-Dichloroethane	Vinyl Chloride
1,1-Dichloroethene	m and p-Xylenes
cis-1,2-Dichloroethene	o-Xylene
trans-1,2-Dichloroethene	

TABLE 2.

MONITORING AND REPORTING PROGRAM NO. R5-2002-0223
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Antimony	Mercury
Arsenic	Molybdenum
Barium	Nickel
Beryllium	Selenium
Cadmium	Silver
Chromium	Thallium
Cobalt	Vanadium
Copper	Zinc
Lead	

TABLE 3.

<u>Constituents</u>	<u>Method</u>	<u>Units</u>
Calcium	EPA-6010B	mg/l
Magnesium	EPA-6010B	mg/l
Sodium	EPA-6010B	mg/l
Potassium	EPA-6010B	mg/l
Total Cations	Calculated	meq/l
Hydroxide	EPA-310.1	mg/l
Carbonate	EPA-310.1	mg/l
Bicarbonate	EPA-310.1	mg/l
Sulfate	EPA-300.0	mg/l
Chloride	EPA-300.0	mg/l
Nitrate/Nitrite as NO ₃	EPA-353.2	mg/l
Nitrate/Nitrite as N	EPA-353.2	mg/l
Total Anions	Calculated	meq/l
pH	EPA-9040	pH
Electrical Conductivity @ 25 C	EPA-9050	µmhos/cm
Hardness as CaCO ₃	SM-2340B	mg/l
Boron	EPA-6010B	mg/l
Total Dissolved Solids	EPA-160.1	mg/l

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0223

WASTE DISCHARGE REQUIREMENTS
FOR
VALLEY WASTE DISPOSAL COMPANY
BROAD CREEK NO. 2 FACILITY
MIDWAY-SUNSET & BUENA VISTA OIL FIELDS
KERN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. Valley Waste Disposal Company (hereafter Discharger) is a nonprofit, California corporation engaged in the business of non-hazardous oilfield wastewater disposal. The Discharger operates the Broad Creek No. 2 Facility in the Midway-Sunset and Buena Vista Oil Fields. See Attachment A that is attached to and made part of this Order.
2. Currently, Waste Discharge Requirements (WDRs) Order No. 5-01-025 prescribe requirements for the discharge of produced wastewater to unlined surface impoundments at the Discharger's Broad Creek No. 2 Facility. The WDRs are being revised for the expansion of the facility. The proposed expansion includes eight additional cleaning ponds and twenty-seven additional impoundments. See Attachments B, C, D, E, and F that are attached to and made part of this Order.
3. The WDRs implement the *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plan), that designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.

LOCATION AND DESCRIPTION

4. The Discharger's existing 25-acre Broad Creek No. 2 facility is in Sections 2 and 3, T32S, R23E, MDB&M, (Assessor Parcel Nos. 198-010-1 and 198-010-15). The facility is approximately three miles northwest of the City of Taft and is within the Taft Hydrologic Area (No. 557.20), as depicted on interagency hydrologic maps prepared by the Department of Water Resources (DWR) in August 1986.
5. The existing facility, in operation since 1959, is divided into two disposal areas, the New Area and the Old Area having a capacity of 40,000 barrel/day (1,680,000 gpd). The New Area consists of 20 unlined surface impoundments. Produced water flows by pipeline to a series of inlet cleaning ponds for removal of any crude oil before discharging into the surface impoundments. The impoundments in the New Area are interconnected by piping. Upon filling, wastewater discharges by gravity into the next succeeding impoundment, approximately three feet lower in elevation. Approximately 14,000 barrels/day (588,000 gpd) is discharged in the New Area.
6. The Old Area consists of 15 unlined surface impoundments. Only one impoundment is used by a single oil producer. A single pipeline from the producer's oil/water separating tanks discharges

directly into Impoundment P-11. Approximately 200 barrels/day (8,400 gpd) is discharged to the impoundment.

7. The proposed expansion lies just west of the New Area in Section 3, T32S, R23E, MDB&M and will include a similar gravity drainage design as described above. The expansion will increase the facility's maximum disposal capacity to 70,000 barrels/day (2,940,000 gpd). The additional capacity is to be constructed to accommodate the forecasted increases of wastewater from oil production in the region.
8. The climate in the region is semi-arid, with hot, dry summers and cool winters. Available weather data from a monitoring station in Taft indicate that the average annual precipitation is 5.6 inches and the average annual Class A pan evaporation is 95.7 inches.
9. The 100-year and 1,000-year, 24-hour precipitation events calculated by the Department of Water Resources are 2.03 and 2.62 inches, respectively.
10. Small ephemeral streams occur in the vicinity of the facility. Based on the topography, overflow from surface impoundments on the facility could drain into the streams. Natural flow in the streams occurs during infrequent storm events during the months of November through April.
11. Flood Insurance Rate Map, Community Parcel Number 060075 1225 B, dated 29 September 1986, does not include coverage of Sections 2 and 3, T32S, R23E on the map. However, based upon the narrow width of the flood zones shown in stream channels in adjacent sections on the map, it can be projected that the facility is not within a 100-year flood plain.

GROUNDWATER INFORMATION

12. The Discharger submitted a detailed regional hydrogeologic study characterizing the geology and hydrogeology within the oil fields.
13. The Midway Valley is a southeast plunging structural trough formed by tectonic compressional forces associated with movement along the San Andreas Fault. The axis of the valley runs roughly parallel with the boundary between the oil fields. The trough contains over 10,000 feet of sedimentary deposits ranging in age from the Jurassic to Recent. The most recent sediments deposited in the valley trough are the 1,000+ foot thick Pleistocene Tulare Formation and the Quaternary Alluvium, which ranges up to 800 feet thick in the center of the valley.
14. No known active faults occur on or near the facility. The nearest known active faults are the Buena Vista Fault and the San Andreas Fault, which lie approximately three miles southeast and ten miles southwest of the facility, respectively.
15. The Tulare Formation, which lies stratigraphically below the Alluvium, consists of coarse-grained beds of poorly sorted sands and gravel, and beds of clay, silt, and fine sand.

16. The following is a summary of the groundwater conditions in the area of the Broad Creek No. 2 Facility: 1) the first encountered groundwater occurs in the Tulare Formation; 2) it is greater than 550 ft. in depth; 3) it is of poor quality with a TDS of greater than 4,000 mg/l; 4) it exceeds the secondary drinking water standard for chloride; 5) it is relatively high in boron; 6) it has no demonstrated beneficial uses; 7) it is hydraulically isolated from usable groundwater in the southern San Joaquin Valley; 8) it is not currently used or likely to be used in the foreseeable future, and without extensive treatment is not suitable for municipal or domestic supply (MUN).
17. Pursuant to 40 Code of Federal Regulations (CFR), Section 146.4, the Tulare Formation in the oil fields has been exempted by the U.S. EPA for the purpose of underground injection of non-hazardous fluids associated with the production of hydrocarbons. Permitting of Class II injection wells used for the subsurface injection of produced oilfield wastewater is conducted by the California State Division of Oil, Gas, & Geothermal Resources.
18. The Alluvium consists of poorly sorted unconsolidated silts and clays with lenticular sand and gravel deposits chiefly derived from coalescing alluvial fans. It varies in thickness from approximately 50 to 300 feet thick beneath the facility and contains no groundwater.
19. The Basin Plan generally describes beneficial uses for groundwater in this area of the Tulare Lake Basin as municipal and domestic, agricultural, and industrial service. It is recognized in the Basin Plan that there are certain areas such as the Midway-Sunset and Buena Vista Oil Fields where these beneficial uses may not exist.
20. The West Kern Water District supplies domestic and industrial water to a 250 square mile area in western Kern County, including the oil fields, from groundwater wells in the Tupman area. Other sources of water supply include State Water project deliveries and agreements with various Kern County water agencies. The nearest water well is approximately 12 miles southeast of the facility.

WASTEWATER CHARACTERISTICS

21. Connate formation water (wastewater) from the Midway Sunset Oil Field is disposed of at the Dischargers Broad Creek No. 2 Facility. The wastewater discharged at the facility is a sodium-chloride type having a high inorganic salt content. Analytical results show that the wastewater has the following range of characteristics:

<u>Constituent</u>	<u>Concentration</u>
Electrical Conductivity (EC) @ 25 ⁰ C (µmhos/cm)	7,690 – 87,242
Total Dissolved Solids (TDS) (mg/l)	4,454 – 42,843
Chloride (mg/l)	1,800 – 26,740
Boron (mg/l)	37 – 60

<u>Constituent</u>	<u>Concentration</u>
Benzene (µg/l)	2.0 – 250
Toluene (µg/l)	2.5 – 120
Ethylbenzene (µg/l)	1.1 – 80
Xylene (µg/l)	3.0 – 260
Selenium (µg/l)	20
Mercury (µg/l)	ND

22. Implementation policies in the Basin Plan regarding the disposal of oilfield wastewater indicate that the maximum salinity limits for wastewater in unlined sumps overlying groundwater with existing and future probable beneficial uses are 1,000 µmhos/cm electrical conductivity (EC), 200 mg/l chloride, and 1 mg/l boron. Discharges to unlined sumps may be permitted if the Discharger successfully demonstrates to the Regional Board in a public hearing that exceeding the maximum salinity limits will not substantially affect water quality nor cause a violation of water quality objectives.
23. The Basin Plan policy noted in Finding 22 was adopted to allow the Regional Board the flexibility to consider the beneficial reuse of some wastewater having salinities slightly above the maximum numerical limitations. The reuses included agricultural supply, stock watering and wildlife habitat enhancement. Based on the water quality, the Discharger does not propose to reuse the wastewater.
24. The “Sources of Drinking Water” policy, which was added to the Basin Plan in 1989, provides that all groundwater in the Tulare Lake Basin is considered to be suitable or potentially suitable for municipal or domestic water supply (MUN), and should be so designated by the Regional Board with certain exceptions. One of those exceptions is for groundwater that exceeds 3,000 mg/l in TDS (5,000 µmhos/cm EC) and is not reasonably expected to supply a public water system. A second exception is as stated in Finding 17, where pursuant to 40 Code of Federal Regulations (CFR), Section 146.4, the aquifer/formation is exempt for the purpose of underground injection of non-hazardous fluids associated with the production of hydrocarbons.
25. The West Kern Water District supplies domestic and industrial water as stated in Finding No. 20. There are no other known alternative water supplies.
26. Based upon Finding Nos. 12-20, there is no groundwater in the region that can reasonably be expected to be used for domestic/municipal, agricultural, or industrial supply.
27. Generally, designated waste is non-hazardous waste that contains pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations

exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the waters of the state as contained in the appropriate state water quality control plan. The discharge of designated waste to land is subject to the requirements of Title 27, California Code of Regulations (CCR), Section 20090(b) (hereafter Title 27).

28. The Discharger is exempt from the requirements of Title 27. The exemption is based upon the following:
- a) The Regional Board is issuing waste discharge requirements;
 - b) The wastewater discharge, as permitted in the Order, is in compliance with the applicable water quality control plan; and,
 - c) The wastewater does not need to be managed according to Chapter 11, Division 4.5 of Title 22 as a hazardous waste.

OTHER LEGAL REFERENCES

29. The action to adopt waste discharge requirements for existing facilities is exempt from the provisions of the California Environmental Quality Act (CEQA), in accordance with Title 14, California Code of Regulations, Section 15301.

30. California Water Code Section 13267 (b)(1) states:

“In conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste outside of its region that could affect the quality of water within its region, shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the Regional Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

This Order requires the Discharger to submit technical reports as authorized under California Water Code Section 13267. Submittal of these technical reports is necessary to determine whether the Discharger is in compliance with these WDRs.

31. The technical reports required by this Order and attached Monitoring and Reporting Program No. R5-2002-0223 are necessary to assure compliance with these Waste Discharge Requirements. The Discharger operates the facility that discharges the waste subject to this Order.

32. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) general industrial stormwater permit provided there has not been a reportable spill at the facility since 19 November 1987. It is the Discharger's responsibility to comply with US EPA federal stormwater regulations (40 CFR Parts 122,123, and 124) should it not qualify for exemption.
33. The Regional Board notified Dischargers and interested agencies and persons of its intention to issue WDRs for this facility.
34. The Regional Board, in a public meeting, heard and considered all comments pertaining to this facility and discharge.
35. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Section 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, within 30 days of the date of issuance of the WDRs. Copies of the laws and regulations applicable to the filing of a petition are available on the internet at http://www.swrcb.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED that Order No. 5-01-025 be rescinded, and that pursuant to §13263 and §13267 of the California Water Code, Valley Waste Disposal Company, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and plans, policies, and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. The acceptance, treatment, or discharge of "hazardous waste" is prohibited. For the purposes of this Order, the term "hazardous waste" is as defined in California Code of Regulations, Title 27, Section 20164.
2. Discharges to surface water or surface water drainage courses are prohibited except for stormwater discharges permitted by an active NPDES permit or for facilities exempt from the NPDES permitting requirements.
3. The discharge of wastes other than wastewater associated with the production of crude oil is prohibited.

B. Discharge Specifications

1. Surface impoundment berms shall be designed and maintained to prevent leakage caused by erosion, slope failure, or animal burrowing.

2. The Discharger shall maintain the surface impoundments at all times to have sufficient freeboard to prevent overtopping due to conditions such as: heavy successive precipitation events, high velocity winds, or an increased volume of wastewater discharge.
3. Precipitation and drainage control systems shall be designed, constructed, operated, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions. Annually, prior to the anticipated rainy season, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the impoundments.
4. The impoundments shall either be free of oil or effectively netted to preclude the entry of wildlife in accordance with Title 14, California Code of Regulations, Section 1770 (b)(3).
5. All impoundments shall be operated and maintained to prevent liquids, precipitates, and sludges from concentrating to hazardous levels.

C. Provisions

1. In accordance with Section 13050 (m) of the California Water Code, the operation of the Broad Creek No. 2 Facility shall not cause a nuisance. Section 13050(m) defines “Nuisance” as “anything which meets all of the following requirements:
 - 1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
 - 2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
 - 3) Occurs during, or as a result of, the treatment or disposal of wastes.”
2. The Discharger shall comply with those applicable sections of the “Standard Provisions and Reporting Requirements for Waste Discharge Requirements” dated 1 March 1991, which are attached to and made part of this Order. To the extent that the Standard Provisions are inconsistent with any terms, conditions, or requirements in this Order, this Order shall govern.
3. Technical and monitoring reports specified in this Order are requested pursuant to Section 13267 of the Water Code. The Discharger shall comply with Monitoring and Reporting Program No. R5-2002-0223, which is attached to and made part of this Order. Failing to furnish the reports by the specified deadlines or falsifying information in the reports, are misdemeanors that may result in assessment of civil liabilities against the Discharger.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2002-0223
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4. The Discharger may be required to submit additional technical reports as directed by the Executive Officer.
5. The Discharger shall notify Regional Board staff in writing of any proposed change in ownership or responsibility for construction or operation of the facility. This notification shall be given **90 days** prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents needed to demonstrate continued compliance with this Order. In the event of any change in ownership of this waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall simultaneously be sent to the Regional Board.
6. The Discharger shall maintain a copy of this Order and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel upon request.
7. The Discharger shall immediately notify Regional Board staff of any flooding, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste containment facilities or precipitation and drainage control structures.
8. The Regional Board will review this Order periodically and will revise these requirements when necessary.
9. Prior to closure of the surface impoundments, the Discharger shall submit a Closure Plan describing the method of closure. Dependent upon the method of closure, WDRs may be prescribed to regulate the closure and any subsequent post-closure monitoring.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 6 December 2002.

THOMAS R. PINKOS, Executive Officer

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