

STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION

WASTE DISCHARGE REQUIREMENTS ORDER NO. R4-2006-0037  
FOR  
GOLDEN WEST REFINING COMPANY  
MARKETING AREA  
(SANTA FE SPRINGS, CALIFORNIA)

(FILE NO. 85-13)

The California Regional Water Quality Control Board (Regional Board), Los Angeles Region, finds:

1. Golden West Refining Company (hereafter “Discharger”) owned a former oil refinery located at 13539 East Foster Road in the City of Santa Fe Springs, County of Los Angeles, California. The refinery was built in the 1930's by Wilshire Oil Company and was owned and operated by Wilshire Oil Company until 1960, when the facility was sold to Gulf Oil Corporation. The Discharger purchased the refinery from Gulf Oil Corporation in August 1983. The refinery was comprised of four principal areas: 1) the Process Unit Area (PUA); 2) the West Tank Farm; 3) the Marketing Area (MA) (Figure 1); 4) the South Tank Farm (STF). Crude oil was refined in the PUA into various fuels such as fuel oil, diesel, gasoline and propane. The West Tank Farm and South Tank Farm have been used for storage of petroleum products. Prior to the Discharger's ownership, various types of materials containing petroleum hydrocarbons and heavy metals were placed in two areas of the refinery designated as Area A, located in the West Tank Farm Zone D<sub>1</sub>, and Area B, located in the STF. Loading and inventory of finished products took place in the Marketing Area. Crude oil processing operations were suspended in February 1992, and fuel transport operations were suspended in August 1997.
2. The MA is located west of Carmenita Avenue and north of the Burlington Northern Santa Fe (BNSF) railroad and occupies 10.4 acres. The MA site was formerly used for product loading and unloading, and has not been used for GWRC petroleum operations since 1992. Between 1992 and 1997, the MA was used for fuel transport operations only. Demolition of the MA is scheduled to start in early 2006. The MA has contained loading facilities, aboveground and under-ground storage tanks (USTs) and sumps, and four buildings. Soil remediation will include removal and transportation of shallow impacted soils to an off-site, permitted disposal/recycling facility, and in-situ soil remediation of deeper impacted soils. Golden Springs Development Company (GSDC) plans to obtain title to the MA from the Discharger for development of the MA into retail commercial, office/retail commercial, and research and development light industrial uses (“Intended Uses”). GSDC is currently negotiating to lease significant portions of the MA to a third party. The lease is conditioned upon the issuance of a Prospective Purchaser Agreement (PPA) by the Regional Board. A map depicting the MA is attached hereto as Figure 1.

3. Approximately 13,000 cubic yards of impacted soils are estimated to exist in the MA within 5 feet below ground surface (an estimated 10 feet below future grade). Discharger will submit an "Unanimous Written Consent to Action Without a Meeting of the Board of Directors of Golden West Refining Company, a California corporation" (Written Consent) showing it has allocated \$2,221,510 and \$497,000 for remediation of soil and groundwater contamination at MA, respectively.
4. In February 1985, the Regional Board issued Cleanup and Abatement Order (CAO) No. 85-17, which required the Discharger to conduct subsurface investigations and site assessments to detect and characterize groundwater contamination beneath the facility. In April 1991, CAO No. 91-079, issued administratively by the Executive Officer, required that the Discharger implement soil and groundwater investigations to determine the extent of contaminant migration, and remediate site-derived soil and groundwater contamination. CAO No. 91-079 was amended to reflect the compliance progress achieved by the Discharger, update the Cleanup and Investigation Activity Schedule, and continue Regional Board oversight of the remaining cleanup activities.
5. On July 31, 1992, the Discharger filed a petition for reorganization under Chapter 11 of the U.S. Bankruptcy Code in the United States Bankruptcy Court. CAO No. 93-082 was issued administratively by the Executive Officer on December 21, 1993, and superseded Order No. 91-079. This Order required the Discharger to cleanup any on and/or off-site groundwater contamination originating from the site. It also required the Discharger to implement a source elimination program to detect leakage from ASTs, USTs, and under ground pipelines, identify free product in the vadose zone, if any, and remediate any free product in a timely manner. These activities were being carried out in accordance with a ten-year time schedule and with annual planned expenditures specified as contained in the Discharger's Plan of Reorganization (Plan). The Plan was approved by the U.S. Bankruptcy Court on February 16, 1995, and became effective on February 28, 1995. Reorganized, the Discharger emerged from bankruptcy, and performed its obligations under CAO No. 93-082. The Plan addressed groundwater contamination, continued free phase liquid hydrocarbon recovery, and a source elimination program.
6. On August 24, 2004, the Regional Board issued CAO No. R4-2004-0020 to supersede CAO No. 93-082. The CAO requires the Discharger to implement investigation, monitoring and remediation tasks according to a schedule included as Attachment A, which was clarified in October 2004. For the MA portion of the former refinery, the CAO requires a work plan by June 30, 2005, for assessment of soil contamination and an Assessment Report of contamination by June 30, 2007. Discharger submitted both reports in April 2005, and December 2005, respectively.
7. At the MA, previous investigations included a soil gas survey, groundwater monitoring well installation, and localized soil investigations. In 1989, all USTs were removed, and soil samples were collected from the excavations. In September 2005, the Santa Fe Springs Fire Department (SFSFD) reviewed the April 2005 Workplan for soil investigation and referred further investigations of soil at the UST sites to the Regional Board.

8. On October 13, 2005, Regional Board approved the Preliminary Remedial Environmental Assessment Report and Remedial Action Plan for the MA, dated April 2005. In October 2005, Optimal Technology collected soil gas samples at depths of 5 to 10 feet below grade at 79 locations. In November 2005, Environmental Audit, Inc. advanced 13 hand-auger borings and 55 soil borings to depths of 20 to 60 feet. On December 16, 2005, GWRC submitted Supplemental Site Characterization and Remedial Action Workplan (RAP) on soil impacts at the MA based on previous and recent investigations for the Regional Board's review.
9. In July 1999, England Geosystems, Inc. prepared a Final Groundwater Remedial Design Report, dated May 18, 2001, and approved by the Regional Board on October 25, 2001. This Design Report included: a remediation system for the STF, which has been installed and is under operation; a system for the PUA, which is under installation; and a groundwater remediation system for the MA, which is required by the CAO to be installed by December 2008. In May 2002, TRC developed a groundwater model to characterize and predict the fate and transport of free-phase petroleum hydrocarbons and dissolved phase constituents originating from the site from previous refinery operations as required by the CAO No. 93-082.
10. A Health Risk Assessment (HRA) was conducted, at the request of SFSFD and the Regional Board for the PUA, in 2002, and approved by the Office of Environmental Health Hazard Assessment (OEHHA) in July 2002. The human health risk assessment was prepared to evaluate current and future risks and to provide that the constituent concentrations listed in the Waste Discharge Requirements (WDRs) are also protective of human health. The PUA's human health risk has also been accepted by the SFSFD as applicable to other parts of the refinery, i.e., STF, assuming that the findings of investigations indicate similar contaminants and land use provisions. The December 2005 RAP for MA indicates that similar contaminants exist in the MA and land use for MA will be the same as for the PUA and STF.
11. Currently, all stormwater runoff from the MA is discharged through a General National Pollutant Discharge Elimination System (NPDES) permit with industrial activities (Facility ID 4191019038). Discharger also receives the groundwater from the City of Santa Fe Springs, Carmenita Road Underpass that is currently treated and discharged to the sanitary sewer under the Los Angeles County Sanitation Districts (Permit No. 061450).
12. The refinery is underlain by several water-bearing zones. The uppermost water-bearing zone is referred to as the 'semi-perched zone'. The semi-perched zone is discontinuous across the site. The unit is located between 20 to 45 feet below ground surface; however, is absent under the MA. The underlying semi-perched zone is the Artesia Aquifer, which is a continuous water-bearing unit. The Artesia Aquifer located approximately 80 feet below ground surface. Free product has been identified in the semi-perched zone and in the Artesia Aquifer underlying the refinery. The third deeper water-bearing zone is the Silverado Aquifer. The Silverado Aquifer is utilized as a municipal source of drinking water and is located approximately 850 to 1,050 feet below ground surface. Sampling results from the deeper (Silverado) Aquifer did not indicate presence of any contamination. There are no drinking water supply wells within one mile of the site.

13. The Discharger commenced recovery of free product and dissolved phase petroleum hydrocarbons from the semi-perched zone in August 1983 and from the Artesia Aquifer in October 1985. Approximately, 62,390 barrels of free product have been recovered from the semi-perched zone and the Artesia Aquifer.
14. Halogenated organic compounds (cis-1,2-dichloroethylene, trichloroethylene, vinyl chloride, 1,2-dibromoethane, and 1,2-dichloroethane) have been detected in on-site Artesia Aquifer monitoring wells in the PUA, northeast of the MA, and in the vicinity of a former off-site landfill. In June 2003, the Discharger prepared, under the Regional Board's directive, a technical report on the evaluation of Artesia Aquifer impact by potential on-site contaminants and particularly fuel oxygenates. The report provides documentation that the presence of oxygenates in the groundwater under the former refinery is localized under the West Tank Farm, MA and partially under the STF and is delineated to non-detect as reported in the annual groundwater monitoring reports.
15. The Regional Board adopted a revised Water Quality Control Plan for the Los Angeles Region on June 13, 1994. This Water Quality Control Plan designates beneficial uses and establishes water quality objectives for all ground water within the Region, including the Central Basin, Coastal Plain Subunit, where the site is located. Existing beneficial uses for groundwater in this area include municipal and domestic supply, agricultural supply, and industrial process and service supply.
16. On June 29, 1981, the City of Santa Fe Springs adopted Resolution No. 4614 entitled the "Final Environmental Impact Report (EIR) on the Redevelopment Plan for Amendment No. 1 to the Consolidated Redevelopment Project", in accordance with the California Environmental Quality Act (CEQA)(Public Resources Code, Section 21000, et. seq.). In addition, the City of Santa Fe Springs' "General Plan Update, Final Environmental Impact Report" (EIR) dated September 7, 1994, addresses spills and soil and groundwater contamination issues at this site including soil and groundwater cleanup. Consequently, the Community Development Commission relied upon the two adopted EIRs when approving the GSDC development project. No substantial adverse impact to the environment from the Golden West Refining Company project, have been identified in the EIR. In addition, the City of Santa Fe Springs filed a Notice of Determination on July 28, 1998, with the Office of Planning and Research in Sacramento, California in accordance with the CEQA. No substantial adverse impact to the environment was identified in the EIR as a result of the 133-acre project, which is located on the southwest corner of Carmenita Road and Imperial Highway.

The Regional Board has notified the Discharger and interested agencies and persons of its intent to issue Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge and to the tentative requirements.

IT IS HEREBY ORDERED, pursuant to California Water Code Section 13263, that Golden West Refining Company shall comply with the following:

A. REQUIREMENTS

1. Wastes discharged at the site for ex-situ bioremediation, such as land treatment or vapor extraction, and in-situ bioremediation, such as bio-venting or vapor extraction processes, shall be limited to petroleum hydrocarbons, and/or VOCs contaminated soil only and shall be conducted in accordance with a remedial work plan approved by the Executive Officer. Any land treatment process involving the introduction of nutrients and/or bacteria to soil, and soil aeration, shall be conducted in a manner such that no contaminants are released into surface water or groundwater.
2. No off-site soils shall be transported to the MA for treatment.
3. Soil closure shall not be granted unless site soils located within the zone are clean or any residual contaminants remaining in place are determined to be protective of groundwater quality and human health, as determined by the Executive Officer.
4. No soils excavated from the 10.4-acre Marketing Area shall be reused as backfill unless the soils meet all of the limits specified below.

<u>Parameter</u>	<u>Limits<sup>1</sup></u> <u>(mg/kg)</u>
Total Petroleum Hydrocarbons – Ranges:	
C <sub>4</sub> - C <sub>12</sub>	1,000
C <sub>13</sub> - C <sub>22</sub>	10,000
C <sub>23</sub> - C <sub>32</sub>	50,000
Aromatic Volatile Organic Compounds:	
Benzene	1.4
Toluene	15
Ethylbenzene	70
Xylenes (Total)	175
Methyl Tertiary Butyl Ether (MTBE)	0.13
Semi-Volatile Organic Compounds:	

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<sup>1</sup> The Limits specified in Requirement 4 may be modified by the Regional Board's Executive Officer, based on site specific background concentrations, leachability factors, fate and transport assessment or health risk analyses. The site development will substantially cap the site 97%-98% with building slabs, roads, paved parking, or sidewalks. The limits are based on the Health Risk Assessment values approved by OEHHA in July 2002.

Naphthalene	50
2-Methylnaphthalene	50
Bis (2-ethylhexyl) phthalate	0.06
Polynuclear Aromatic Hydrocarbons (PAHs):	
Benzo(a)anthracene	2
Benzo(b)fluoranthene	2.9
Benzo(k)fluoranthene	29
Benzo(a)pyrene	0.29
Chrysene	200
Metals:	
Arsenic	12
Chromium (Total)	40
Chromium (Hexavalent)	40
Lead	500
Tetraethyl Lead	0.088
Mercury	4
Nickel	100
Selenium	5
PCB	1

Soils meeting these limits may be used to backfill up to two feet below ground surface. Soils containing concentrations exceeding these limits shall be legally disposed off-site.

5. The Discharger shall provide the Regional Board with a written technical closure report upon the completion of remediation activities at each development zone. Individual development zones may be closed independent of remediation activities undertaken or not undertaken at other development zones that are subject to the Waste Discharge Requirements. The Executive Officer shall review the closure report(s), and upon acceptance of the findings of the report(s) and satisfactory fulfillment of this Waste Discharge Requirements, provide the Discharger with a "No Further Action" letter for individual development zones.
6. Any excavated non-hazardous material disposed off-site shall be at a location specifically approved by the Executive Officer and in accordance with requirements that have been established by a California Regional Water Quality Control Board.
7. Any excavated hazardous waste shall be transported off-site to a legal point of disposal or recycling. For the purposes of this requirement, a legal point of disposal or recycling is one for which the requirements have been established by a California Regional Water Quality Control Board or the Department of Toxic Substances Control.

8. Neither the disposal/recycling nor any handling of waste on-site shall cause a condition for pollution at the site or unreasonable nuisance odor at the facility boundary.
9. Adequate facilities shall be provided to divert storm water run-off away from the treatment and excavation areas. Containment berms shall be constructed so as to surround the excavations and treatment units/cells to control run-on and run-off of storm water and/or water(s) used in the treatment process. During rainy weather, Discharger shall follow the requirements stipulated in General Industrial NPDES and General Construction NPDES permits.
10. The treatment area shall be bermed so that storm water falling directly onto the treatment area will be contained. Standing water within the contained treatment area shall be pumped out and removed to treatment facilities on-site, or disposed of at a legal disposal site as defined above.

B. PROVISIONS

1. This Order includes "Standard Provisions Applicable to Waste Discharge Requirements". If there is any conflict between provisions stated herein and the "Standard Provisions Applicable to Waste Discharge Requirements", these provisions stated herein shall prevail.
2. A copy of these requirements shall be maintained at an on-site office and be available at all times to operating personnel.
3. In the event of any change in name, ownership, or control of these facilities, the Discharger shall notify this Regional Board in writing and shall notify any succeeding owner or operator of the existence of this order by letter; a copy of which shall be forwarded to this Board.
4. The Discharger shall notify Regional Board staff by telephone within 24 hours, followed by written notification within one week, in the event it is unable to comply with any of the conditions of this Order due to:
  - a. Breakdown of waste treatment equipment,
  - b. Accident caused by human error or negligence,
  - c. Other causes such as acts of nature, or
  - d. Site construction or development operations.
5. At least 90 days prior to any closure of the waste management units, the Discharger shall submit operation plans for: precipitation and drainage controls; any required cover; and a closure and post-closure maintenance plan (if necessary) acceptable to the Executive Officer as set forth in Title 27, California Code of Regulations.

6. In accordance with Section 13260 of the California Water Code, the Discharger shall file a report with this Regional Board of any material change or proposed change in the character, location or volume of its discharge.
7. In accordance with Section 13267 of the California Water Code, the Discharger shall furnish, under penalty of perjury, technical monitoring program reports. Such reports shall be submitted in accordance with specifications prepared by the Executive Officer. The specifications shall be subject to periodic revisions as may be warranted. All technical reports submitted to the Regional Board shall be signed by either/or a registered Civil Engineer, registered geologist, or certified engineering geologist.
8. The Regional Board and/or its authorized representative(s) shall be allowed:
  - a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;
  - b. Access to copy any records that are kept under the conditions of this Order;
  - c. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
  - d. To photograph, sample, and monitor for the purpose of assuring compliance with this Order, or as otherwise authorized by the California Water Code.
9. In accordance with Section 13263 of the Water Code, these waste discharge requirements are subject to periodic review and revision by this Regional Board.
10. These requirements do not exempt the Discharger from compliance with any other laws, regulations, or ordinances, which may be applicable. They do not legalize these waste treatment and disposal facilities and they leave unaffected any further restraints on those facilities that may be contained in other statutes of required by other agencies. These requirements do not limit, waive, or otherwise lessen the Discharger's responsibility for contamination on, at, or under the site, including the groundwater there under.

I, Jonathan Bishop, 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, Los Angeles Region, on March 9, 2006.

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Jonathan Bishop  
Executive Officer