

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION
BOARD ORDER NO. R6V-2008-0014**

WDID NO. 6B369107001

GENERAL WASTE DISCHARGE REQUIREMENTS

FOR

**PACIFIC GAS AND ELECTRIC COMPANY
GENERAL SITE-WIDE GROUNDWATER REMEDIATION PROJECT**

San Bernardino County

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

1. Discharger

Pacific Gas and Electric Company (PG&E) submitted a Report of Waste Discharge (RWD) to conduct a General Site-wide Remediation Project (Project) at the PG&E Compressor Station, located southeast of the community of Hinkley in San Bernardino County. The RWD consists of transmittals dated August 27, 2007 and September 19, 2007. PG&E proposes to implement various remediation projects to clean up chromium contamination in groundwater at different locations within and outside of the plume boundaries. For the purposes of this Order, PG&E is referred to as the "Discharger."

2. Facility

The compressor station began operating in 1952 and discharged untreated cooling tower water containing hexavalent chromium (Cr(VI)) to unlined ponds until 1964. Wastewater then percolated through soil to the water table, approximately 80 feet below, creating a chromium plume. The compressor station is located at 35863 Fairview Road (APN 0488-112-52) in Hinkley. Remediation activities are being planned throughout the entire plume area. The project area is approximately 2,000 acres and includes all areas within the chromium plume boundaries (according to the February 2007 groundwater monitoring event) and approximately 1,000 feet beyond the plume boundary (see Attachment A). The chromium plume extends generally north from the compressor station to the Desert View Dairy (north of Santa Fe Avenue) and west of Summerset Road to west of Mountain View Road. For the purposes of this Order, the project area including the

chromium plume and area approximately 1,000 feet beyond the plume boundary is referred to as the "Facility."

3. Facility Location

The Facility is located as close as one-half mile east of the community of Hinkley in San Bernardino County in the Harper Valley Subarea of the Mojave Hydrologic Unit. The project area is shown on Attachment A, which is made a part of this Order. Most of the remediation projects will take place on parcels owned by the Discharger. However, project activities could potentially occur on parcels not owned by the Discharger. A list of the 143 County Assessor Parcel Numbers included within the project area is included in Attachment B.

4. Permit History

These are new General Waste Discharge Requirements (GWDRs) for a prior facility. PG&E had operated a groundwater remediation system at the East Land Treatment Unit (LTU) from 1991 to 2001 under the WDRs set forth in Board Order No. 6-91-917 and revised in Board Order No. 6-97-81. In addition, the Ranch LTU operated from 1997 to 2001 under WDRs set forth in Board Order No. 6-97-81. Also, since August 2004, PG&E has operated a groundwater remediation system at the Desert View Dairy under the WDRs set forth in Board Order No. R6V-2004-034. On June 14, 2006, the Water Board issued Board Order No. R6V-2006-0023 allowing for the reagent injections to groundwater for the Central Area In-situ Remediation Pilot Study. On November 9, 2006, the Water Board issued Board Order No. R6V-2006-0054 allowing for reagent injections to groundwater for chromium remediation in the source area at the PG&E Compressor Station. And on November 28, 2007, the Water Board issued two Board Orders: No. R6V-2004-0034A1 is for the Desert View Dairy Optimization Project and allows the use of off-site extraction wells for containing plume migration and No. R6V-2007-0032 is for the Central Area In-situ Remediation Project and allows discharges of lactate, whey, emulsified vegetable oil, ethanol, fluorescent tracers, and well rehabilitation compounds. The GWDRs will enable the Discharger to efficiently implement various remediation activities at different locations and still protect water quality.

5. Enforcement History

On December 29, 1987, the Executive Officer issued Cleanup and Abatement Order (CAO) No. 6-87-160 to the Discharger, ordering the investigation, clean up and abatement of the effects of chromium in the soil and groundwater from discharges at the PG&E Compressor Station. The selected remediation system consisted of extracting groundwater for irrigation of pasture crops on the East and Ranch LTUs. Natural soil

properties promoted the reduction of hexavalent chromium in extracted groundwater to trivalent chromium [Cr(III)] that adhered to soil.

In June 2001, the Executive Officer issued CAO 6-01-50 ordering PG&E to eliminate the threatened nuisance condition created at the East and Ranch LTUs due to the spray irrigation of chromium-polluted groundwater to crops. In response to this order, PG&E shut down the groundwater remediation system.

6. Reason for Action

Enforcement orders issued by the Water Board Executive Officer require the Discharger to clean up and abate the effects of chromium in the soil and groundwater from discharges at the PG&E Compressor Station. The Discharger proposes to implement remedial activities for hexavalent chromium in groundwater in the project area. These GWDRs will allow more timely and efficient implementation of the various projects.

7. Site Geology

The soils underlying the Facility are comprised of interbedded sands, gravels, silts, and clays. The depth to bedrock ranges from about 300 feet below ground surface in the southern project area to cropping out (bedrock comes to the ground surface) in the northern portion of the project area. In general, the thickness of sediments overlying the bedrock becomes thinner to the north and to the west. The nearest active fault is the northwest-southeast trending Lenwood fault located 200 feet southwest of the Facility.

8. Site Hydrogeology and Hydrology

The hydrogeology in the southern 75 percent of the project area consists of an upper, unconfined aquifer and a lower, confined aquifer separated by a lacustrine clay that forms a regional aquitard. The hydrogeology in the northern 25 percent of the project area consists of just the upper, unconfined aquifer, as the lower aquifer and clay aquitard pinch out (terminated against the upward sloping bedrock). In general, groundwater flow is primarily to the north-northwest towards the Harper Dry Lake, with an average gradient of 0.004 feet per foot.

The chromium plume resides primarily in floodplain sediments originating from the Mojave River and alluvial sediments eroded from local mountains. The closest surface water is an unnamed ephemeral stream, located about 4,000 feet northwest of the plume's northern boundary. In addition, the Mojave River is located less than one mile to the southeast of the Facility.

9. Climate

The precipitation in the area of the Facility is less than five inches annually. The evaporation rate is approximately 74 inches annually. The area has hot summers and mild winters.

10. Groundwater Quality

The groundwater in the upper aquifer below the Facility contains hexavalent chromium from the PG&E compressor station plume and naturally occurring constituents. At the Facility, chromium concentrations in groundwater are highest at the compressor station and become less concentrated towards the north. Based on 2007 data from monitoring wells, total chromium [Cr(T)] concentrations were up to 3370 micrograms per liter ($\mu\text{g/L}$) and hexavalent chromium concentrations were up to 3390 $\mu\text{g/L}$. (Different analytical methods can result in hexavalent chromium concentrations being greater than total chromium concentrations when most or all of the chromium is in the hexavalent form.)

The maximum contaminant level (MCL) for a municipal water source for these constituents is 50 $\mu\text{g/L}$ for Cr(T). The plume core containing total chromium concentrations at and above 50 $\mu\text{g/L}$ extends from the compressor station north to Santa Fe Avenue, a distance of 1.86 miles. Therefore, groundwater at the Facility in the plume core does not presently support the beneficial use of a municipal and domestic supply. There is no standard for hexavalent chromium.

11. Project Description

The purpose of this project is to implement various remediation projects for reducing hexavalent chromium in groundwater to trivalent chromium for achieving water quality standards. This project allows various discharges to carry out those remediation activities. Implementation will take place in the groundwaters of the Middle Mojave River Valley Ground Water Basin.

The GWDRs would allow for the following:

- 1) Extraction and management of groundwater, including by re-injection. The groundwater may be treated and/or dosed with chemical or biological reductant prior to discharge within the plume. Groundwater may also be extracted from outside the chromium plume and re-injected near the plume boundaries to contain migration.
- 2) In-situ activities consisting of the injection of chemical or biological reductant directly to groundwater.
- 3) Associated activities, including well rehabilitation and groundwater flow tracing.

12. Waste Classification

The chromium-contaminated groundwater is classified as a liquid designated waste under California Code of Regulations, section 20210, Title 27, (CCR).

13. Waste Management Unit Classification

The soils and aquifer materials beneath the Facility are classified as a Class II LTU in accordance with section 20614 of title 27, CCR.

14. Authorized Disposal Sites

The project area, shown on Attachment A, is the only authorized disposal site.

15. Water Quality Protection Standard

A Water Quality Protection Standard (WQPS) is established in this Order for the Facility. Specific constituents of concern (including monitoring parameters), concentration limits, monitoring points, and the point of compliance will be issued for each project in a Monitoring and Reporting Program. The WQPS applies over the active life of the Facility, post-closure monitoring period, and the compliance period.

16. Land Uses

The land uses at, and surrounding, the Facility consist of residential, commercial, agricultural, and open desert land. The nearest residences and domestic wells are located within and adjacent to the plume core in the northwestern portion of the Facility. No polluted domestic wells are currently in use.

17. Receiving Waters

The receiving waters are the groundwaters of the Harper Valley Hydrologic Area of the Mojave Hydrologic Unit. The Department of Water Resources (DWR) designation for the Harper Valley Hydrologic Area is 628.42.

18. Lahontan Basin Plan

The Regional Board adopted a Water Quality Control Plan for the Lahontan Basin (Basin Plan), which became effective on March 31, 1995. This Order implements the Basin Plan.

19. Beneficial Groundwater Uses

The beneficial uses of the groundwater of the Middle Mojave River Valley Groundwater Basin as set forth in the Basin Plan are:

- a. MUN - municipal and domestic supply;
- b. AGR - agricultural supply;
- c. IND - industrial supply;
- d. FRSH - freshwater replenishment; and
- e. AQUA - aquaculture.

20. Non-Degradation

In accordance with State Water Resources Control Board (State Water Board) Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*) and the Water Quality Control Plan for the Lahontan Region (Basin Plan), water quality degradation may be allowed if the following conditions are met: (1) any change in water quality must be consistent with maximum benefit to the people of the State; (2) the degradation will not unreasonably affect present and anticipated beneficial uses; (3) the degradation will not result in water quality less than that prescribed in the Basin Plan; and (4) discharges must use the best practicable treatment or control to avoid pollution or nuisance and maintain the highest water quality consistent with maximum benefit to the people of the State.

Discharges of biological reduction compounds and nutrients will temporarily cause some organic carbon, an alcohol taste and odor, and oily degradation to water quality in the area of injections. Discharges of chemical reduction compounds will temporarily alter pH and cause an increase in iron and total organic carbon concentration in groundwater. During bioremediation, biological and chemical reduction compounds will be consumed by naturally occurring microbes, and the concentrations will become diluted in the aquifer during groundwater recirculation or through natural groundwater mixing. The project will monitor anaerobic reducing conditions used to convert Cr(VI) to Cr(III) to concentrations below the MCL. Any potential by-products of the reaction, such as mobilized reduced metals, also attenuate with distance following contact with aerobic aquifer conditions in the downgradient portion of the project area. Therefore, any degradation to water quality will be temporary, should improve over time, and will be localized to the project area.

The discharge of tracers, including bromide and fluorescent dyes, will provide better information about aquifer conditions and the fate and transport of discharges. The injection of fluorescent tracers will cause a coloration of groundwater. Fluorescent and bromide tracers will become diluted in the

aquifer during groundwater recirculation and/or natural mixing. Coloration will dissipate to undetectable levels prior to reaching the Facility boundary. There are no established standards for fluorescent tracers, such as fluorescein or eosine. The Basin Plan, however, does require compliance with narrative objectives, which includes nuisance. Coloration of groundwater from the disposal of wastes would fall under the definition of "nuisance." Since groundwater outside the Facility boundaries is not expected to contain any color, there will be no adverse impacts to beneficial uses following the tracer test.

The use of acids and compounds to remove biofouling from screens in monitoring and extraction wells will alter pH in groundwater and increase the concentration of total organic carbon (TOC). Both effects, however, are will be localized to the vicinity of the well screen due to the strong buffering capability of the aquifer. Baseline sampling shows that bicarbonate alkalinity averaged 300 milligrams per liter (mg/L) and pH is neutral to alkaline. These groundwater characteristics will confine acid and other reactions to the point of injection. Therefore, since groundwater pH will return to background conditions before reaching the Facility boundaries, there will be no adverse impacts to beneficial uses following the injection of well rehabilitation compounds.

Re-injection of groundwater extracted from outside the chromium plume boundaries may affect water quality near or within the plume boundaries with respect to total dissolved solids, nitrate, and sulfate. Potential degradation will not result in water quality standards being exceeded or increasing more than 25 percent above current concentrations for total dissolved solids, nitrates, and sulfates.

The extraction, ex-situ treatment, and in-situ treatment processes are designed to be the equivalent of the Best Practicable Technologies, as required by the State Water Board's Resolution No. 68-16. In addition, reagent injection will be calculated to be the lowest dosage possible for creating anaerobic reducing conditions and will likely minimize the likelihood of creating conditions that could produce potential by-products. The long-term benefit of the project will result in removal of chromium from groundwater. Therefore, the resulting water quality from this project will be consistent with the State Water Board's Resolution No. 68-16.

21. Constituents of Concern

The Constituents of Concern (COCs) consist of total chromium (Cr(T)) and hexavalent chromium (Cr(VI)). Potential constituents of concern include reagents to be analyzed as volatile fatty acids (lactic acid, acetate, pyruvate, propionate, and butyrate), and naturally-occurring reducible metals, such as arsenic, manganese, and iron. In addition, other potential constituents of

concern include total dissolved solids, nitrate, and sulfate and tracers, such as bromide and fluorescent dyes.

22. Water Quality Data Evaluation

Since the project involves the injection of unregulated, food-grade reagents, acids, and tracers and regulated Pharmacopoeia-grade reagents, acids and oxidizers to groundwater to stimulate bioremediation, rehabilitate wells, and characterize flow conditions, a statistical method of monitoring data for detection of a release of waste from the Facility is superfluous. Water quality data will be evaluated as required in a Monitoring and Reporting Program for each project, and any potential releases from the Facility will be assessed through that monitoring.

23. Corrective Action

A Corrective Action Program (CAP) to remediate released wastes from the Facility may be required pursuant to sections 20385 and 20430, title 27, CCR, if results of an Evaluation Monitoring Program (EMP) warrant a CAP.

24. California Environmental Quality Act

The Project is a new project under the California Environmental Quality Act (CEQA) and is subject to the provisions of CEQA (Public Resources Code, section 21000 et seq.) The Lahontan Water Board is the lead agency for this project. An Initial Study describing the project was prepared by Arcadis on behalf of the Lahontan Water Board and PG&E. It was circulated under State Clearinghouse No. 2008011097 to satisfy CEQA with the Water Board as Lead Agency. The Initial Study indicates the intent of the Lahontan Board to consider a Mitigated Negative Declaration.

In a public meeting on April 9-10, 2008, the Lahontan Water Board adopted a resolution certifying the environmental document that states the effects on the environment from the Project are not significant as mitigated, adopting a Mitigated Negative Declaration and a Mitigation Monitoring and Reporting Plan to satisfy CEQA, and authorizing Lahontan Water Board staff to send a Notice of Determination to the Office of Planning and Research.

The discharge described in these GWDRs is consistent with the Negative Declaration and no new significant or potentially significant impacts are expected from the discharge allowed by these GWDRs.

25. Notification of Interested Parties

The Lahontan Water Board has notified the Discharger and all known interested parties of its intent to adopt new GWDRs for the project.

26. Consideration of Interested Parties

The Lahontan Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Discharger shall comply with the following:

I. DISCHARGE SPECIFICATIONS

A. Eligibility

1. The Discharger may seek coverage under this Order for implementing remediation projects that may include:
 - a. discharges to groundwater of biological chemical reduction compounds, well rehabilitation compounds, tracers, process chemicals, and nutrients identified in I.B., below, for the cleanup of hexavalent chromium.
 - b. re-injection of treated or untreated extracted groundwater, within the plume boundary.
 - c. re-injection of untreated extracted groundwater that is not affected by hexavalent chromium to areas outside of the plume to create a hydraulic barrier for plume control.
2. To be covered under this Order, a discharge must meet the following criteria:

The Executive Officer must find, based on a Notice of Intent submitted pursuant to Order II, Authorization, that the groundwater discharges for which coverage under this Order are sought have a threat to water quality of Category 3 and Complexity rating of A for a combined rating of 3-A, using the criteria established by the State Water Board.

B. Discharge Limitations

The GWDRs would allow the following materials to be used for remediation purposes. Prior to project implementation, a pilot study may be required for compounds not having a prior discharge history at the site or at a site with similar conditions.

1. Chemical Reduction Compounds:
 - Calcium polysulfide
 - Ferrous chloride
 - Ferrous sulfate
 - Sodium dithionite
 - Zero-valent iron

2. Biological Reduction Compounds:
 - Emulsified vegetable oil
 - Ethanol
 - Lactate
 - Whey
 - Molasses
 - Corn syrup
 - Acetate
 - Glucose
 - Methanol

3. Tracer compounds shall not be reactive with current contaminants to be treated or other compounds used in the remediation process. Tracers may include:
 - Bromide
 - Fluorescein
 - Eosine
 - Additional fluorescent tracers

4. Well Rehabilitation Compounds:
 - Acetic acid
 - Citric acid
 - Hydrochloric acid
 - Hydrogen peroxide
 - Sodium hydroxide

5. Process Chemicals:
 - Aluminum sulfate
 - Anti-scalants
 - Calcium hydroxide
 - Calcium oxide
 - Hydrochloric acid
 - Phosphoric acid
 - Polymeric flocculants
 - Sodium hydroxide
 - Sulfuric acid

6. Nutrients:
 - Ammonium
 - Nitrate
 - Phosphate
 - Vitamins
 - Yeast extract

C. Receiving Water Limitation

The discharge of waste shall not cause a violation outside the project boundaries of any applicable water quality standards for receiving water adopted by the Lahontan Water Board or the State Water Board. The boundaries are described in Finding No. 2 and shown in Attachment A. Additionally, the discharge of waste shall not cause a violation of water quality objectives inside the project boundaries at locations that adversely affect a receptor, such as a drinking water well or agricultural well. The discharge shall not cause the presence of the following substances or conditions in groundwaters as described.

1. Chemical Constituents - Groundwaters shall not contain concentrations of chemical constituents outside the project boundaries in excess of the maximum contaminant level (MCL) or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in the following provisions of Title 22 of the CCR (with the exception of TDS and nitrate, which already exceed the MCL or SMCL at locations within and outside the Facility): Table 64431-A of Section 64431 (Inorganic Chemicals), Table 6444-A of Section 64444 (Organic Chemicals), Table 64449-A of Section 64449 (SMCLs - Consumer Acceptance Limits), and Table 64449-B of Section 64449 (SMCLs - Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect. Groundwaters shall not contain concentrations of chemical constituents that adversely affect the water for beneficial uses.
2. Taste and Odors - Groundwaters outside of the projected boundaries shall not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses. For groundwaters designated as Municipal or Domestic Supply, at a minimum, concentrations shall not exceed adopted SMCLs specified in Table 64449-A of Section 64449 (SMCLs - Ranges), and Table 64449-B of Section 64449 (SMCLs - Ranges) of Title 22 of the CCR, including future changes as the changes take effect.
3. Any presence of toxic substances in concentrations outside the project boundaries that individually, collectively, or cumulatively cause detrimental physiological response in humans, plants, animals, or aquatic life is prohibited.

4. The discharge of wastes shall not cause the pH of the receiving groundwater outside the project boundaries, beyond the range of 6.5 and 8.5.
5. Waste discharged shall not cause the groundwater to contain concentrations of salts in amounts that adversely affect any designated beneficial use outside the project boundaries or in amounts significantly exceeding baseline conditions specific for that area of the project,

D. General Requirements and Prohibitions

The discharge of waste shall not cause a violation of the following General Requirements and Prohibitions. Additionally, the discharge of waste shall not cause a violation of water quality objectives inside the project boundaries at locations that adversely affect a receptor, such as a drinking water well or agricultural well.

1. The discharge of wastes other than those which meet eligibility requirements in Discharge Specifications section I.A. of this Order is prohibited unless the Discharger obtains coverage under another general permit or an individual site-specific permit that regulates the discharge of such wastes.
2. Surface flow or visible discharge of waste to land surface, surface waters, or surface water drainage courses is prohibited.
3. Creation of pollution, contamination, or nuisance, as defined in section 13050 of the Water Code, is prohibited outside the project boundaries.
4. The discharge of waste except to the authorized disposal site is prohibited.
5. The discharge of waste, as defined in the Water Code, that causes a violation of any narrative water quality objective (WQO) contained in the Basin Plan, including the Nondegradation Objective, is prohibited outside the project boundaries.
6. The discharge of waste that causes a violation of any numeric WQO contained in the Basin Plan is prohibited outside the project boundaries.
7. Where any numeric or narrative WQO contained in the Basin Plan is already being violated, the discharge of waste that

causes further degradation or pollution is prohibited outside the project boundaries.

8. The Discharger shall remove and relocate or otherwise mitigate any wastes that are discharged not in accordance with these GWDRs.
9. Hazardous waste, as defined under article 1, chapter 11, division 4.5 (§66261.3 et seq.) of title 22, CCR, shall not be disposed and/or treated at the Facility, outside the scope of these waste discharge requirements.
10. The discharge to the ground of any chemicals stored in tanks at the Facility is prohibited.
11. Discharge of solid waste to the Facility is prohibited.

II. AUTHORIZATION PROCESS

- A. To be authorized to discharge under this Order, the Discharger must submit a Notice of Intent (NOI). Upon receipt of the NOI, the Executive Officer shall determine the applicability of this Order to such a discharge and the completeness of the application package. If the discharge is eligible, the Executive Officer shall notify the Discharger that the discharge is authorized under the terms and conditions of this Order, and prescribe an appropriate monitoring and reporting program. The NOI must contain essential project description information that describes the discharge, the site of discharge, reaction or effects of the discharge upon water quality and public health, and other information deemed necessary by the Executive Officer. The latter may include modeling to evaluate the hydrogeologic area affected by the project and potential degradation to water quality.
- B. When a project NOI is submitted by the Discharger, the public will be allowed 30 days to provide comments on the NOI and a draft Notice of Applicability (NOA) before NOA issuance by the Executive Officer. The Executive Officer may shorten the comment period to seven days when he deems it an emergency.

III. MONITORING AND REPORTING

- A. Pursuant to Water Code section 13267, subdivision (b), the Executive Officer is hereby authorized to prescribe Monitoring and Reporting Programs for each authorized remediation project implemented under these GWDRs.
- B. The Discharger must file with the Water Board technical reports for self-monitoring conducted according to the Monitoring and Reporting Program specified by the Executive Officer and submit other reports as requested by the Water Board.

VI. PROVISIONS

A. Standard Provisions

The Discharger shall comply with the "Standard Provisions for Waste Discharge Requirements," dated September 1, 1994, in Attachment C, which is made a part of this Order.

B. Other Permits

This Order does not alleviate the responsibility of the Discharger to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order. Nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency.

C. Claim of Copyright or Other Protection

Any and all reports and other documents submitted to the Lahontan Water Board pursuant to this request will need to be copied for some or all of the following reasons: (1) normal internal use of the document, including staff copies, record copies, copies for Board members and agenda packets, (2) any further proceedings of the Lahontan Water Board and the State Water Board, (3) any court proceeding that may involve the document, and (4) any copies requested by members of the public pursuant to the Public Records Act or other legal proceeding.

If the Discharger or its contractor claims any copyright or other protection, the submittal must include a notice, and the notice will accompany all documents copied for the reasons stated above. If copyright protection for a submitted document is claimed, failure to expressly grant permission for the copying stated above will render the document unusable for the Lahontan Water Board's purposes, and will result in the document being returned to the Discharger as if the task had not been completed.

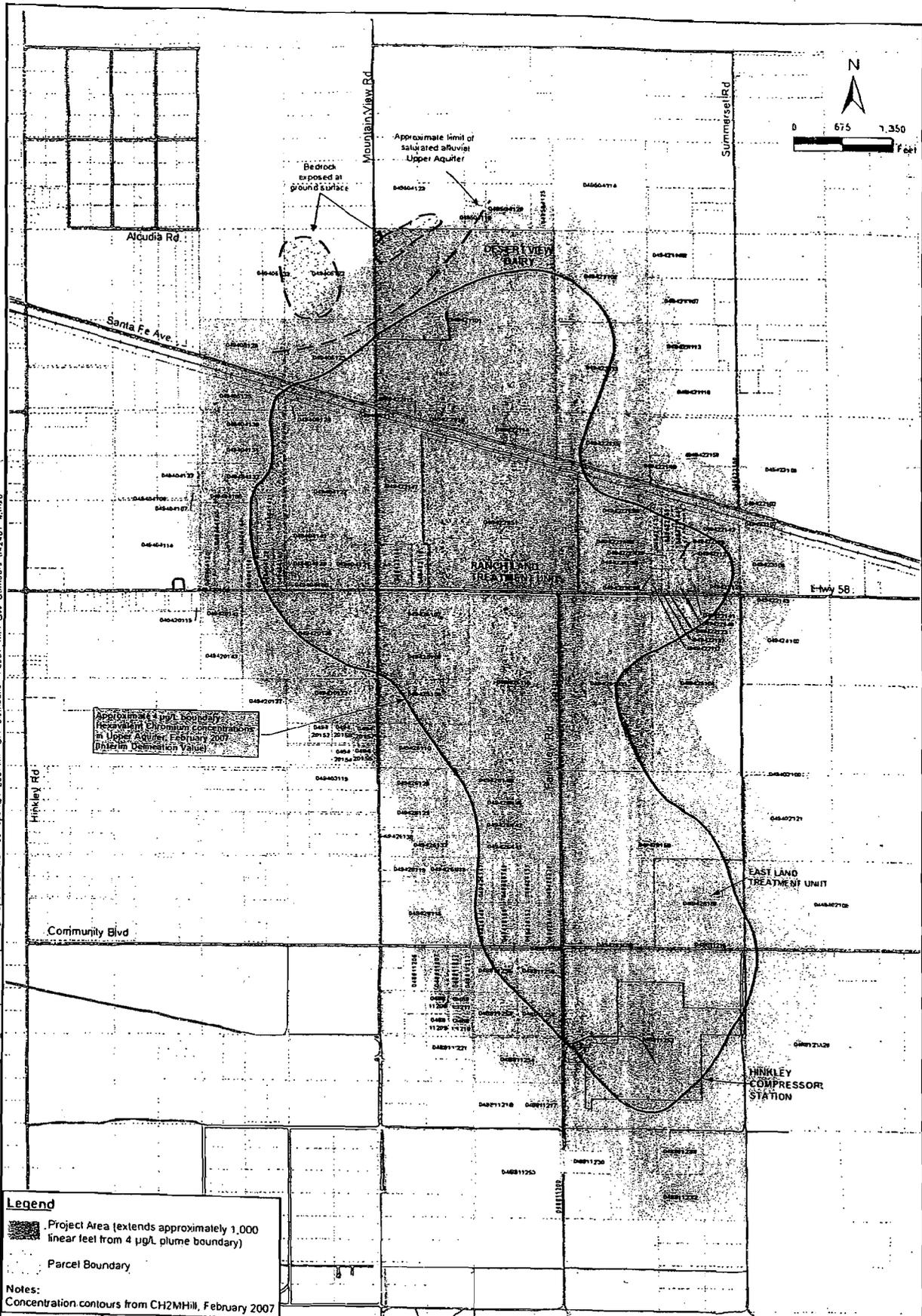
D. Expiration

These general waste discharge requirements do not expire.

I, Harold J. Singer, 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, Lahontan Region, on April 9, 2008.


HAROLD J. SINGER
EXECUTIVE OFFICER

- Attachments: A. Map of Project Area
B. List of Parcels within Project Area
C. Standard Provisions for Waste Discharge Requirements



Document Path: I:\C080699-9001_PGE_HinkleyGIS\StateMap_MXD\Report\Contour\Report01_2007\MP_CIT_distribution_Feb07_with_GW_Contours_042407_A.mxd
 Date: 04/17/2007
 D:\Brc_MPD

Legend

- Project Area (extends approximately 1,000 linear feet from 4 µg/L plume boundary)
- Parcel Boundary

Notes:
 Concentration contours from CH2M Hill, February 2007

Program Manager
 Lisa Cope

Project Manager
 Eric Pulnam

Task Manager
 Hollis Phillips

Technical Review
 Frank Lenzo

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Project Area

Hinkley Compressor Station Remediation Project

Pacific Gas and Electric Company
 Hinkley, California

ATTACHMENT

A

Attachment B. Assessor's Parcel Numbers
General Site-Wide Permit
Pacific Gas and Electric Company, Hinkley

APN	Owner Name	Owner Address	Owner City
0488-112-00	SAN BERNARDINO COUNTY	385 N. ARROWHEAD AVE	SAN BERNARDINO, CA 92415-0120
0488-112-06	GREENE, CUONG J	22623 COMMUNITY BLVD	HINKLEY CA 92347
0488-112-07	DOMINGUEZ, HENRY P	22611 COMMUNITY BLVD	HINKLEY CA 92347
0488-112-08	REY, MARTA A	35985 MOUNTAIN VIEW RD #A	HINKLEY CA 92347
0488-112-09	SWEET, DAVID D JR	205 S WALNUT	CAMERON MO 64429
0488-112-10	SMITH, LESTER (GUERLE)	35922 HERVEY RD	HINKLEY CA 92347
0488-112-11	CLOTFELTER, WILLIAM E TR	7611 E DAVID DR	TUCSON ARIZONA
0488-112-12	HEWITT, GEOFFREY	909 ARMORY RD #235	BARSTOW CA 92311
0488-112-13	LINEBAUGH, NANCY M	35889 DIXIE RD	HINKLEY CA 92347
0488-112-15	SOUTHERN CALIFORNIA EDISON COMPANY	P.O. BOX 800	ROSEMEAD, CA 91770
0488-112-17	THORNE, PAMELA S	2113 STETSON CREEK DR	FORT COLLINS CO 80528
0488-112-18	WHIPPLE, DAVID P	35754 HERVEY RD	HINKLEY CA 92347
0488-112-21	HAUETER, BARRY L	P O BOX 621	ATASCADERO, CA
0488-112-30	WHITSON, BARBARA J	35633 FAIRVIEW RD.	HINKLEY CA 92347
0488-112-31	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0488-112-32	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0488-112-52	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0488-112-53	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0488-112-54	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0488-112-55	MARCUM, MURIEL I	22771 COMMUNITY BLVD	HINKLEY CA 92347
0488-112-56	MARCUM, MURIEL I	22771 COMMUNITY BLVD	HINKLEY CA 92347
0488-112-57	MARCUM, MURIEL I	22771 COMMUNITY BLVD	HINKLEY CA 92347
0488-112-58	MARCUM, MURIEL I	23579 OSAGE	BARSTOW CA 92311
0488-121-20	VERNOLA, PAT & MARY - SURVIVOR TR-ES	1604 N LAUREL AVE	UPLAND CA 91784
0494-021-00	SAN BERNARDINO COUNTY	385 N. ARROWHEAD AVE	SAN BERNARDINO, CA 92415-0120
0494-021-08	VERNOLA, PAT & MARY - SURVIVOR TR-ES	1604 N LAUREL AVE	UPLAND CA 91784
0494-021-21	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-031-19	HAMBLIN, SANDRA E	1152 EASTSIDE SCHOOL RD	SENOIA GA 30276
0494-041-00	SAN BERNARDINO COUNTY	385 N. ARROWHEAD AVE	SAN BERNARDINO, CA 92415-0120
0494-041-07	BURDICK, DONALD O TR	13030 DETROIT CT	CHINO CA 91710
0494-041-08	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-14	LEYERLY, RICHARD E REV TRUST 1996	21988 W HWY 58	HINKLEY CA 92347
0494-041-18	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-20	LEYERLY, RICHARD E TR	21988 HIGHWAY 58	HINKLEY CA 92347
0494-041-21	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-22	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-29	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-30	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-31	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-32	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-37	MILLER, KENNETH J FAM TR 2004 7/7/04	1515 W ARROW ROUTE # 51	UPLAND CA 91786
0494-041-39	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-40	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-41	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-42	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-43	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-041-44	ARMAN MALIK	8431 RIDGELA AVE	BUENA PARK, CA 90621
0494-051-13	ATCHISON TOPEKA AND SANTA FE RR CO	740 EAST CARNEGIE DRIVE	SAN BERNARDINO, CA 92408
0494-051-22	RASCOE, JOAN	3955 CEANOTHUS PL APT "O"	CALABASAS CA 91302
0494-051-23	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-051-24	MONTGOMERY, JANICE C	25092 BELLOTA	MISSION VIEJO CA 92692
0494-051-25	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-051-26	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-051-33	DUVAL FAMILY LIMITED PARTNERSHIP	430 N MAPLE DR #201	BEVERLY HILLS CA 90210
0494-201-00	SAN BERNARDINO COUNTY	385 N. ARROWHEAD AVE	SAN BERNARDINO, CA 92415-0120
0494-201-19	STEELE, GLORIA	11320 SANTOL DR	SLYMAR CA 91552
0494-201-22	GREENWOOD	P O BOX 56 36682 MT VIEW RD	HINKLEY CA
0494-201-35	MT VIEW LLC	831 W MAIN ST	BARSTOW CA 92311
0494-201-37	HALL, JOHN	PO BOX 1116	FORT COLLINS, CO
0494-201-42	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-201-43	HALL, JOHN	PO BOX 1116	FORT COLLINS, CO
0494-201-52	GISLER, JOSEPH	36634 MT VIEW	HINKLEY CA 92347
0494-201-54	QUITY TRUST CO FBO REIICHI EMERSON I	225 BURNS RD	ELYRIA OH 44035
0494-201-55	NIEDERT, ERROL L	36506 MOUNTAIN VIEW RD	HINKLEY CA 92347
0494-201-57	MILLER, JAMES J	22062 COMMUNITY BLVD	HINKLEY CA 92347
0494-201-58	WATERS, PAUL D	36626 MT VIEW	HINKLEY CA 92347
0494-211-01	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-211-02	COTTRELL LIVING TRUST MARCH 1990	23005 ALCUDIA RD	HINKLEY CA 92347
0494-211-03	SEIZED PROPERTY	PO BOX 431	MIRA LOMA, CA
0494-211-07	WESTRA, RICHARD H	7851 BICKMORE ST	CHINO CA 91710
0494-211-10	WESTRA, RICHARD H	7851 BICKMORE ST	CHINO CA 91710
0494-211-11	YANG, YOUNG MO	301 ELMHURST PL	FULLERTON CA 92835

**Attachment B. Assessor's Parcel Numbers
General Site-Wide Permit
Pacific Gas and Electric Company, Hinkley**

APN	Owner Name	Owner Address	Owner City
0494-211-13	WESTRA, RICHARD H	7851 BICKMORE ST	CHINO CA 91710
0494-221-00	SAN BERNARDINO COUNTY	385 N. ARROWHEAD AVE	SAN BERNARDINO, CA 92415-0120
0494-221-02	WILSON, LEONARD R	2552 CAPISTRANO AVE	LAS VEGAS NV 89121
0494-221-11	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-221-12	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-221-13	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-221-14	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-221-15	YANG, YOUNG MO	301 ELMHURST PL	FULLERTON CA 92835
0494-221-17	DEAGULAR	5486 INDUSTRIAL PARKWAY	SAN BERNADINO, CA 92407
0494-221-18	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-221-20	COLLINS, BARBARA M	15075 DEL REY DR	VICTORVILLE CA 92392
0494-221-23	TONG, NHIEM	11902 E EBERLE ST	CERRITOS CA 90703
0494-221-27	LEE, MYUNG O	566 N SYCAMORE AVE	FULLERTON CA 92831
0494-221-28	LEE, MYUNG O	566 N SYCAMORE AVENUE	FULLERTON CA 92831
0494-221-29	LEE, MYUNG O	566 N SYCAMORE AVE	FULLERTON CA 92831
0494-221-31	LEE, MYUNG O	566 N SYCAMORE AVE	FULLERTON CA 92831
0494-221-32	LEE, MYUNG O	566 N SYCAMORE AVE	FULLERTON CA 92831
0494-221-37	EAP, KEARN P	203 N MOORE AVE # B	MONTEREY PARK CA 91754
0494-221-38	GOLCONDA UTILITIES CO	P O BOX 242	KEELER CA
0494-221-39	LEE, MYUNG O	566 N SYCAMORE AVE	FULLERTON CA 92831
0494-221-40	DEAGULAR	5486 INDUSTRIAL PARKWAY	SAN BERNADINO, CA 92407
0494-221-41	LEE, LEON D	P O BOX 335	YERMO CA
0494-221-42	COLLINS, BARBARA M	15075 DEL REY DR	VICTORVILLE CA 92392
0494-221-43	BRAL, RAMIN	P O BOX 18037	BEVERLY HILLS CA
0494-221-44	LEE, MYUNG O	566 N SYCAMORE AVE	FULLERTON CA 92831
0494-221-45	ESTEVEZ, PABLO	12027 S EAST END AVE	CHINO CA 91710
0494-221-46	BLACKWOOD, JAMES TR - DECEASED	23146 HIGHWAY 58	HINKLEY CA 92347
0494-221-47	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-221-49	KURTH, ALVIN V	23124 SANTA FE RD	HINKLEY CA 92347
0494-221-50	WESTRA, RICHARD H	7851 BICKMORE ST	CHINO CA 91710
0494-221-51	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-231-06	YOSHINAGA, SUNAO	P O BOX 1635	UPLAND CA
0494-231-07	ATCHISON TOPEKA AND SANTA FE RR CO	740 EAST CARNEGIE DRIVE	SAN BERNARDINO, CA 92408
0494-231-09	MUNOZ, ANTONIO M	16774 WILLOW CIR	FOUNTAIN VALLEY CA 92708
0494-241-02	VERNOLA, PAT & MARY - SURVIVOR TR-ES	1604 N LAUREL AVE	UPLAND CA 91784
0494-251-00	SAN BERNARDINO COUNTY	385 N. ARROWHEAD AVE	SAN BERNARDINO, CA 92415-0120
0494-251-03	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-251-04	VERNOLA, PAT & MARY - SURVIVOR TR-ES	1604 N LAUREL AVE	UPLAND CA 91784
0494-251-07	COOK, KWON WHAN	2601 CAMINO DEL SOL	FULLERTON CA 92633
0494-251-08	YU, CHUL SOO	2667 CLARELLEN ST	TORRANCE CA 90505
0494-251-09	HWANG, MOLLY	8116 BEVERLY BLVD	LOS ANGELES CA 90048
0494-251-10	TROWBRIDGE, JOHN INVESTMENTS, LLC	1599 SUPERIOR AVE B-5	COSTA MESA CA 92627
0494-251-15	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-261-00	SAN BERNARDINO COUNTY	385 N. ARROWHEAD AVE	SAN BERNARDINO, CA 92415-0120
0494-261-15	WENDLBERGER, ELEANOR A	2700 CAMPUS DRIVE	SAN MATEO, CA
0494-261-18	WENDLBERGER, ELEANOR A	2700 CAMPUS DRIVE	SAN MATEO, CA
0494-261-19	WENDLBERGER, ELEANOR A	2700 CAMPUS DRIVE	SAN MATEO, CA
0494-261-26	SCHUMACHER, HARRY P	27624 CINNABAR RD	BARSTOW CA 92311-6205
0494-261-29	VASQUEZ, YVONNE F	601 E SANTA PAULA ST	SANTA PAULA CA 93060
0494-261-37	ZAVALA, FELIPE A	3061 N CALIFORNIA ST	SAN BERNARDINO CA 92407
0494-261-38	ZAVALA, FELIPE A	3061 N CALIFORNIA ST	SAN BERNARDINO CA 92407
0494-261-39	FRITZ, EUGENIA B	4057 PAVILION TOWERS CIR	COLUMBIA SC
0494-261-40	TAYLOR, FRANCES M	16202 MENAHIKA RD	APPLE VALLEY CA 92307
0494-261-41	MUNOZ REV LIVING TRUST 10/28/05	16774 WILLOW CIRC	FOUNTAIN VALLEY CA 92708
0494-261-42	FAN, SHIH-WANG	3221 SAMANTHA AVE	WEST COVINA CA 91792-2420
0494-261-43	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-261-46	WALLIS, WARREN O	P O BOX 998	BARSTOW CA
0494-261-47	TONGCO, FELORINO P	3832 E AVE R12	PALMDALE CA 93550
0494-261-48	TONGCO, FELORINO P	3839 E AVE R12	PALMDALE CA 93550
0494-261-49	FAVORITE, MARIA G	VIA MONTEVIDEO 4	ROME ITALY 00198
0494-261-50	FAVORITE, JOSEPH J	4054 HARCLARE LN	MENCINO CA 91436
0494-261-51	BALLESIO, GIULIANA	VIA ALFREDO CASELLA N 4	00199 ROMA ITALY
0494-261-52	BALLESIO, GIULIANA	VIA ALFREDO CASELLA N 4	00199 ROMA ITALY
0494-261-58	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0494-261-59	PACIFIC GAS AND ELECTRIC CO	77 BEALE ST	SAN FRANCISCO CA 94104
0495-041-14	GORMAN TRUST 2002-215 (7-1-02)	PO BOX 215	HINKLEY CA
0495-041-16	FREDERICKSON, HANS M -EST OF	40113 TEAKWOOD RD	SHELBY IA 51570
0495-041-23	YAGLA, JEANETTE L	P O BOX 41	HINKLEY, CA
0495-041-25	NELSON, BILLENA L	22858 ALCUDIA RD	HINKLEY CA 92347
0495-041-26	FRY, STEPHEN R	15669 E FAIRGROVE AVE	LA PUENTE CA 91744

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

STANDARD PROVISIONS
FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The Discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements (WDRs);
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

2. Reporting Requirements

- a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260 (c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with applicable WDRs in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the WDRs shall be reported to the Regional Board. Notification of applicable WDRs shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing, and correct that information.

- e. Reports required by the WDRs, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation.
- f. If the Discharger becomes aware that their WDRs (or permit) are no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their WDRs (or permit) be rescinded.

3. Right to Revise WDRs

The Regional Board reserves the privilege of changing all or any portion of the WDRs upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the WDRs may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the WDRs which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the WDRs. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the WDRs.

7. Waste Discharge Requirement Actions

The WDRs may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDRs conditions.

8. Property Rights

The WDRs do not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the WDRs including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the WDRs shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the WDRs are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from treatment and disposal facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operation. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

- a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.
- b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.