CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. R7-2004-0080

WASTE DISCHARGE REQUIREMENTS
FOR
PACIFIC GAS AND ELECTRIC COMPANY, OWNER/OPERATOR
TOPOCK COMPRESSOR STATION
AND
GROUNDWATER REMEDIATION FACILITY

Southeast of Needles – San Bernardino County

The California Regional Water Quality Control Board, Colorado River Basin Region (Regional Board) finds that:

1. The Topock Compressor Station is a natural gas compressor station used for transmission of natural gas by pipeline. Pacific Gas and Electric Company (PG&E), 77 Beale Street, San Francisco, CA 94105, is the owner and operator of the Topock Compressor Station and proposed Groundwater Remediation Facility. The proposed location for the Groundwater Remediation Facility is San Bernardino County Assessor's parcel No. 650-151-06. PG&E is currently in the process of purchasing the land from the Metropolitan Water District. PG&E is hereafter referred to either as PG&E or the discharger.

2. The Topock Compressor Station Class II surface impoundments, proposed groundwater extraction wells and proposed conveyance piping are located on land owned or managed by the U.S. Bureau of Land Management (BLM). BLM is the federal administering agency for the land.

3. From 1951 to 1964, PG&E discharged untreated wastewater containing hexavalent chromium from the compressor station cooling tower to percolation beds in Bat Cave Wash, an ephemeral stream bed draining into the Colorado River.

4. In 1964, PG&E began treatment of blow down water by reduction of hexavalent chromium to trivalent chromium (chrome III) prior to discharge to the percolation beds. On August 14, 1969, the Regional Board adopted Resolution No. 69-25 prohibiting PG&E from discharging wastewater containing hexavalent chromium. At approximately the same time, PG&E began disposing of the treated blow down water by subsurface injection at well PGE8.

5. On November 6, 1970, PG&E submitted a Report of Waste Discharge for disposal of 0.030 million gallons per day (mgd) of industrial wastewater from cooling tower operations into one on-site lined basin designed by a California registered civil engineer.

6. On December 10, 1970, the Regional Board adopted Resolution No. 70-72 to regulate the proposed discharge of cooling tower wastewater into the one on-site lined basin.

7. On September 11, 1975, the Regional Board rescinded Resolution No. 70-72 and adopted Board Order No. 75-52.

8. Board Order No. 75-52 permitted a maximum of 0.030 mgd of industrial wastewater containing chromate to be discharged to four lined evaporative basins. Also, the Board Order prohibited the discharge of wastewater to the Colorado River or to any channel draining to the Colorado River. In addition, the Board Order specified that chemical residues obtained by chemical flocculation or evaporation of process wastewater shall be discharged only at a solid waste disposal site

approved to receive these wastes.

9. On October 2, 1985, the Regional Board rescinded Board Order No. 75-52 and adopted Board Order No. 85-99.

10. Board Order No. 85-99, allowed the discharger to replace the hazardous chromate-based cooling tower water treatment process with phosphate-based inhibitors. Phosphate-based inhibitors are in use today.

11. On January 27, 1988, the Regional Board rescinded Board Order No. 85-99 and adopted Board Order No. 88-30, which was revised on March 23, 1988.

12. Revised Board Order No. 88-30 allowed discharge to four new Class II surface impoundments. PG&E closed the four existing lined evaporative basins along with all hazardous waste facilities at the Topock Compressor Station. Closure was done in compliance with closure requirements of 40 CFR Part 265 and Subchapter 15, Chapter 3, Title 23 of the California Code of Regulations.

13. On May 14, 1998, Board Order No. 88-30 was rescinded and Board Order No. 98-050 was adopted.

14. The ponds are currently regulated under Waste Discharge Requirements (WDRs) Order No. 98-050.

15. On May 10, 1995, PG&E notified the Regional Board Office that the results of analyses of groundwater samples collected from two abandoned production wells at Topock located approximately 2000 feet northeast of the former percolation ponds and 1700 feet southwest of the Colorado River, indicated concentrations of 2,300 parts per billion (ppb) and 2,850 ppb total chromium and concentrations of 1,480 ppb and 2,340 ppb hexavalent chromium for the two wells respectively. The samples were collected from a depth of approximately 120 feet below ground surface (bgs). The source of pollution is believed to be historical discharges to Bat Cave Wash and is not associated with the current evaporation basins.

16. The California Department of Health Services has set the Maximum Contaminant Level (MCL) for total chromium in drinking water at 50 ppb.

17. On February 26, 1996, the Department of Toxic Substances Control (DTSC) and PG&E entered into a Corrective Action Consent Agreement (CACA) at the Topock Gas Compressor Station due to hazardous levels of chromium found in groundwater. DTSC is the lead agency in the Resource Conservation and Recovery Act (RCRA) investigation under the CACA.

18. Under the terms of the CACA, PG&E agreed to conduct a RCRA Facility Investigation (RFI), and implement appropriate corrective action measures. The draft RFI was submitted in May, 2000. Results of the RFI indicated hexavalent chromium in a groundwater plume at concentrations of 13,000 ppb located 600 feet from the Colorado River at monitoring well cluster MW-20.

19. On June 30, 2004 DTSC directed PG&E to prepare and immediately implement Interim Measure No. 3 to expand existing groundwater extraction and management facilities to address hydraulic control of the chromium (VI) plume at the Topock site.

20. On June 30, 2004, DTSC issued a Notice of Exemption (NOE) for the proposed project summarized in Interim Measure No. 3. The NOE addresses the California Environmental Quality Act (CEQA) requirements for an Emergency Project, Title 14, Section 15269(c) providing for actions necessary to prevent an emergency.

21. On July 8, 2004 PG&E submitted Summary of Proposed Project for Interim Measures No.3 – Revision 1 that provided a general summary of the proposed project. The proposal describes the method of treatment to be used and means of disposal of treated water and waste products. They are as follows:

    a. Discharge to Land - Subsurface injection to one or more of three proposed injection well fields. Up to ten injection wells are proposed;

    b. Discharge to Topock Compressor Station Class II surface impoundments - Reuse of treated groundwater in the Compressor Station cooling tower;

    c. Discharge to Surface Water - Discharge of treated groundwater to the Colorado River under the National Pollutant Discharge Elimination System (NPDES).

22. On July 29, 2004 PG&E submitted an application and Report of Waste Discharge for a permit to discharge treated groundwater by three methods of disposal. A separate application was submitted for each method.

23. This Board Order revises Board Order No. 98-050 and only addresses discharge to the Topock Compressor Station Class II surface impoundments. Subsurface injection and discharge to the Colorado River are addressed in separate Board Orders.

24. The discharger proposes operation of a treatment facility for implementation of Interim Measures No. 3 to address hydraulic control of the contaminated groundwater plume boundaries and prevent contaminated groundwater from entering the Colorado River. The design flow for the treatment facility is 135 gallons per minute (gpm), with a maximum capacity of 150 gpm of contaminated groundwater.

25. The extracted groundwater will be treated with chemical reduction, precipitation, and solids removal by gravity or clarifier. Ferrous chloride will be used to reduce Cr(VI) to Cr(III). The precipitated solids containing Cr(III) and Fe(III) will be removed by gravity settling and microfiltration. Reverse Osmosis (RO) will be used as a polishing step for the treated water to reduce Total Dissolved Solids (TDS). Under this Board Order, RO concentrate and liquids will be discharged directly to the four Class II surface impoundments owned an operated by PG&E at the Topock Compressor Station or trucked to an appropriate off-site disposal facility. Residual solids will be disposed according to federal and state regulations.

26. The discharger proposes to use the following chemicals for the treatment of extracted groundwater:

Name of Chemicals	Purpose
Ferrous Chloride	Chemical Reducing Reagent
Sodium Hydroxide	pH Control
Sulfuric Acid	pH Control
Antiscalant Formulation	Mineral Control
Anionic Polymer	Particle Settling and Solids Dewatering
Sodium Hypochlorite Solution	Microfilter Cleaning
Citric Acid Cleaner	Microfilter and RO Cleaning

Hydrochloric Acid Solution	Microfilter Cleaning
Nonionic Surfactant	Microfilter and RO Cleaning
Sodium Metabisulfite	RO Membrane Preservation
Sodium Bicarbonate	pH Control

27. The Report of Waste Discharge application described the treated effluent as follows:

Parameter	Units	Average	Maximum
Aluminum	mg/L[1]	0.05	0.1
Ammonia (as N)	mg/L	1.5	3.0
Barium	mg/L	0.3	0.98
Boron	mg/L	1.9	3.6
Color	units	15	30
Copper	mg/L	0.02	0.04
Flow	gpm[2]	80	200
Fluoride	mg/L	0.3	0.6
Hexavalent Chromium	mg/L	0.008	0.016
Iron (total)	mg/L	0.3	0.6
Lead	mg/L	0.002	0.004
Manganese	mg/L	0.05	0.1
Molybdenum	mg/L	0.01	0.02
Nickel	mg/L	0.012	0.024
Nitrate/Nitrite as N	mg/L	10	20
pH	units	7.5	8.4
Sulfate	mg/L	250	500
Summer Temperature	° F	80	100
TDS	mg/L	500	1000
Total Chromium	mg/L	0.025	0.050
Turbidity	NTU	5	10
Winter Temperature	° F	80	85
Zinc	mg/L	0.08	0.10

28. Supply water to the cooling tower may reuse all or part of the RO permeate generated from the groundwater treatment facility. The discharger proposes to discharge a maximum of 50,000 gallons per day (gpd) of non-hazardous industrial wastewater into four existing Class II surface impoundments. The basins are located in the E ¼ of the NE ¼ of Section 7, T7N, R24E, SBB&M. A general location map is shown as attachment "A".

29. Supply water to the cooling tower is treated with sulfuric acid to maintain pH at 7.5 to inhibit calcium carbonate scaling in the cooling system. Bromine based biocides and a nontoxic phosphate based inhibitor are also used.

30. The discharge from the cooling tower will have a pH value ranging from approximately 6.0 to 9.0 and a total dissolved solids concentration of approximately 15,000 mg/L up to a maximum of 75,000 mg/L. The wastewater discharged to the Class II surface impoundments will be composed of cooling tower blowdown, RO concentrate from the groundwater treatment facility, and a small amount of wastewater generated from intermittent operational activities such as degreasing of

[1] Milligrams per Liter
[2] Gallons per Minute

equipment and compressor engine parts, and draining of cooling systems. These minor intermittent waste streams are processed in an oil/water separator prior to discharge.

31. Each Class II surface impoundment is constructed with a composite liner system. The primary liner is a 60 mil synthetic liner underlain by a leachate collection and removal system (LCRS). Beneath the LCRS is a second 40 mil synthetic liner and a two foot clay layer. The two foot clay layer is designed for a maximum hydraulic conductivity of 1×10^{-6} cm/sec.

32. Each Class II surface impoundment has a vadose zone monitoring system consisting of four lysimeters (two for each pond half). In addition there are seven (7) groundwater monitoring wells adjacent to the lined ponds.

33. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan), as amended to date, designates the beneficial uses of ground and surface waters in the Region. The Basin Plan contains water quality objectives for the Colorado River and the Piute Hydrologic Unit.

34. The beneficial uses of the Colorado River are:

    a. Municipal supply (MUN)
    b. Agricultural supply (AGR)
    c. Aquaculture (AQUA)
    d. Industrial supply (IND)
    e. Groundwater recharge (GWR)
    f. Water contact recreation (REC I)
    g. Non contact water recreation (REC II)
    h. Warm freshwater habitat (WARM)
    i. Cold freshwater habitat (COLD)
    j. Wildlife habitat (WILD)
    k. Hydropower generation (POW)
    l. Preservation of rare and endangered species (RARE)

35. The beneficial uses of ground waters in the Piute Hydrologic Unit are:

    a. Municipal supply (MUN)
    b. Industrial supply (IND)
    c. Agricultural supply (AGR)

36. Federal regulations for storm water discharges were promulgated by the United States Environmental Protection Agency (USEPA) (40 CFR Parts 122, 123, and 124). The regulations require specific categories of facilities which discharge storm water associated with industrial activity to obtain National Pollutant Discharge Elimination System (NPDES) permits and to implement Best Conventional Pollutant Technology (BCT) and Best Available Technology Economically Achievable (BAT) to reduce or eliminate industrial storm water pollution.

37. The State Water Resources Control Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying WDRs for discharges of storm water associated with industrial activities, excluding construction activities, and requiring submittal of a Notice of Intent (NOI) by industries to be covered under the Permit.

38. The proposed discharge is consistent with the anti-degradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution No. 68-16. If terms of the permit are met, the impact on water quality will be insignificant, including potential impacts on a municipal water source, which is the beneficial use most likely affected by the discharge.

39. In accordance with the California Environmental Quality Act (CEQA), DTSC, acting as the lead agency, has filed a Notice of Exemption for the Interim Measure 3 Emergency Groundwater Extraction and Management project at Pacific Gas and Electric Company, Topock Compressor Station. On July 1, 2004, the NOE (SCH#2004078010) was filed with the State Clearing House. The NOE states, in part: "In February 2004, [DTSC] directed [PG&E] to initiate immediate pumping, transport, and disposal of groundwater at the Topock site to ensure that groundwater containing chromium does not reach the Colorado River. Due to the influence of the Colorado River stage on groundwater levels . . . , extracting groundwater at higher rates will be necessary to maintain the stated goal of hydraulic control." The NOE further describes the project as follows: "The critical elements for this proposed project are the piping, conveyance of groundwater, construction of temporary treatment facilities, and development of a disposal method for the treated water.

40. DTSC concludes in the NOE that the project is statutorily exempt under Title 14 CCR Section 15269(c) (and Public Resources Code Section 21080(b)(4)) as an action to prevent or mitigate an emergency. The NOE states: "These project activities are necessary to prevent or mitigate an emergency situation wherein the waters of the Colorado River may be impacted with a hazardous constituent, chromium, which is in contaminated groundwater in close proximity to the river. Immediate action is necessary to contain and reverse the flow of groundwater away from the Colorado River. Commencement of the development of additional extraction, treatment, and treated water disposal capacity is urgent to assure that increased pumping rates will be available to respond to impending fluctuations of the Colorado River level.

41. The Regional Board has reviewed the NOE prepared by DTSC. The Regional Board concurs that an emergency condition exists because the flow of groundwater to the Colorado River has not yet been contained. It is necessary and desirable to have in place alternative disposal options to accommodate increased extraction and treatment rates (resulting in the need for increased disposal capacity) that may be required to contain the groundwater flow to the river. While the duration of the Interim Measures has not been determined, it is appropriate to limit the term of this Order as described in Provision 23, by which time it is reasonable to conclude that DTSC will have undertaken an environmental analysis of all disposal alternatives.

42. The Board has notified the discharger and all known interested agencies and persons of its intent to update waste discharge requirements for this discharge and has provided them with an opportunity for a public meeting and an opportunity to submit comments.

43. The Board, in a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, that Board Order No. 98-050 is rescinded, and in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, the discharger shall comply with the following:

A. Specifications

1. The treatment or disposal of wastes from the facility shall not cause pollution or nuisance as defined in Section 13050(l) and 13050(m) of Division 7 of the California Water Code.

2. The discharge of industrial wastewater shall be confined to the Class II surface impoundments.

3. Thirty days prior to introduction of a new waste stream into the Class II surface impoundments, the discharger must receive approval from the Regional Board's Executive Officer.

4. A minimum depth of two (2) freeboard feet shall be maintained at all times in each the Class II surface impoundment.

5. Adequate protective works shall be provided to insure that flood or surface drainage water does not erode or otherwise render portions of the disposal facilities inoperable.

6. Residual solids obtained by evaporation of process wastewater shall be discharged only at a waste management facility approved to receive such wastes and as approved by the Regional Board's Executive Officer.

7. The discharger shall obtain prior approval by the Regional Boards Executive Officer before using any treatment chemicals or additives other than those listed in this Board Order.

8. The Class II surface impoundments shall not store chemicals or elements at hazardous waste concentrations.

9. The Topock Compressor Station shall be protected from any washout or erosion of wastes or covering material, and from any inundation which could occur as a result of floods having a predicted frequency of once in 100 years. This includes the surface impoundments, extraction wells, treatment plant, and conveyance system for the groundwater remediation facility.

10. Containment of waste shall be to the areas designated for such activities. Any revision or modification of the designated waste containment area, or any proposed change in operation at the facility that changes the nature and constituents of the waste produced must be submitted in writing to the Regional Board's Executive Officer for review and approval before the proposed change in operations or modification of the designated area is implemented.

B. Prohibitions

1. Direct or indirect discharge of any wastewater from the facility to any surface waters or surface drainage courses is prohibited.

2. The use of hazardous chemicals including chromates may not be used in cooling tower water treatment process without prior approval from the Regional Board's Executive Officer.

3. The discharge of waste to land not owned or controlled by the discharger is prohibited.

4. Discharge of treated wastewater at a location or in a manner different from that described in this Board Order is prohibited.

5. The discharge shall not cause degradation of any groundwater aquifer or water supply.

6. The discharger shall neither cause nor contribute to the contamination or pollution of ground water or surface water via the release of waste constituents.

7. The discharger shall not cause or permit the release of pollutants, or waste constituents, in a manner which could cause or contribute to a condition of contamination, nuisance, or pollution to occur.

8. The discharger shall not cause degradation of any water supply in compliance with State Board Resolution No. 68-16.

C. Provisions

1. The discharger shall comply with all conditions of this Board Order. Noncompliance constitutes a violation of the Porter-Cologne Water Quality Control Act, and is grounds for enforcement action; for Order termination, revocation and re-issuance, or modification of waste discharge requirements; or denial of an Order renewal application.

2. The discharger shall comply with "Monitoring and Reporting Program No. R7-2004-0080", and future revisions thereto, as specified by the Regional Board's Executive Officer.

3. The dischargers shall ensure that all site operating personnel are familiar with the content of this Board Order, and shall maintain a copy of this Board Order at the facility site.

4. The discharger shall, at all times, properly operate and maintain all systems and components of collection, treatment and control which are installed or used by the discharger to achieve compliance with the conditions of this Board Order. Proper operation and maintenance includes effective performance, adequate process controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of this Board Order. All systems both in service and reserved, shall be inspected and maintained on a regular basis. Records shall be kept of the inspection results and maintenance performed and made available to the Regional Board upon demand.

5. A contingency plan detailing mitigation measures in the event of a plant upset shall be submitted for approval by the Regional Board's Executive Officer at least 30 days prior to any discharge. The plan shall provide an analysis of potential causes of system failure, the effect of failure, and the proposed course of corrective action.

6. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the California State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants", promulgated by the United States Environmental Protection Agency.

7. The discharger shall report any noncompliance that may endanger human health or the environment. The discharger shall immediately report orally information of the noncompliance as soon as (1) the discharger has knowledge of the discharge, (2) notification is possible, and (3) notification can be provided without substantially impeding cleanup or other emergency measures, to the Regional Board office and the Office of Emergency Services. During non-business hours, the discharger shall leave a message on the Regional Board office voice recorder. A written report shall also be provided within five (5) business days of the time the discharger becomes aware of the incident. The written report shall contain a description of the noncompliance and its cause, the period of noncompliance, the anticipated time to achieve full compliance, and the steps taken or planned, to reduce, eliminate, and prevent recurrence of the noncompliance. The discharger shall report all intentional or unintentional significant spills that occur within the facility to the Regional Board office in accordance with the above time limits.

8. The discharger shall allow the Regional Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:

   a. Enter upon the premises regulated by this Board Order, or the place where records must be kept under the conditions of this Board Order;

b. Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this Board Order;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Board Order; and

d. Sample or monitor at reasonable times, for the purpose of assuring compliance with this Board Order or as otherwise authorized by the California Water Code, any substances or parameters at this location.

9. The discharger shall comply with the following:

   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

   b. The discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Board Order, and records of all data used to complete the application for this Board Order, for a period of at least 5 years from the date of the sample, measurement, report or application.

   c. Records of monitoring information shall include:

      1. The date, exact place, and time of sampling or measurements.
      2. The individual(s) who performed the sampling or measurements.
      3. The date(s) analyses were performed.
      4. The individual(s) who performed the analyses.
      5. The results of such analyses.

10. Prior to any change in ownership or management of this operation, the discharger shall transmit a copy of this Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Regional Board.

11. Prior to any modifications in this facility, which would result in material change in the quality or, quantity of wastewater treated or discharged, or any material change in the location of discharge, the discharger shall report all pertinent information in writing to the Regional Board and obtain revised requirements before any modifications are implemented.

12. Adequate measures shall be taken to assure that flood or surface drainage waters do not erode or otherwise render portions of the discharge facilities inoperable.

13. In the event that there are storm water discharges associated with industrial activities, the discharger shall submit a Notice of Intent and/or maintain coverage under the General Storm Water Permit.

14. All storm water discharges from this facility must comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies, regarding discharges of storm water to storm water drain systems or other courses under their jurisdiction.

15. Storm water discharges from the facility shall not cause or threaten to cause pollution or contamination.

16. Storm water discharges from the facility shall not contain hazardous substances equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and/or 40 CFR Part 302.

17. The discharger shall provide a plan as to the method, treatment, handling and disposal of solids waste that is consistent with all State and Federal laws and regulations, including any and all prior approvals required by the Bureau of Land Management, and obtain prior written approval from the Regional Board specifying location and method of disposal, before disposing of treated or untreated solid waste.

18. This Board Order does not authorize violation of any federal, state, or local laws or regulations.

19. Ninety days prior to the cessation of all discharges to the Class II impoundments at the facility, the discharger shall submit a workplan, subject to approval of the Regional Board's Executive Officer, for assessing the extent, if any, of contamination of natural geological materials and waters of the Piute Hydrological Unit by the waste. 120 days following workplan approval, the discharger shall submit a technical report presenting results of the contamination assessment. A California Registered Civil Engineer or Certified Engineering Geologist must prepare the workplan, contamination assessment, and engineering report.

20. Upon ceasing operation at the facility, all waste, all natural geologic material contaminated by waste, and all surplus or unprocessed material shall be removed from the site and disposed of in accordance with applicable laws and regulations.

21. The discharger shall establish an irrevocable bond for closure in an amount acceptable to the Regional Board's Executive Officer or provide other means to ensure financial security for closure if closure is needed at the discharging site. The closure fund shall be established (or evidence of an existing closure fund shall be provided) within six (6) months of the adoption of this Order.

22. This Board Order does 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.

23. The discharge of the following wastestreams to the Class II surface impoundments authorized under these Waste Discharge Requirements shall not continue beyond two years from the date of first discharge of either of such wastestreams, but in no event later than January 31, 2007, unless specifically authorized by a future order of the Regional Board:

    a. Reverse osmosis concentrate liquids from the Interim Measures No. 3 treatment system;

    b. Cooling tower blowdown, if supply water to the cooling towers contains reverse osmosis permeate (treated effluent) from the Interim Measures No. 3 treatment system.

24. The Regional Board directs the Executive Officer to forthwith prepare and file with the Office of Planning and Research, State Clearinghouse, a Notice of Exemption under Public Resources Code Section 21080(b)(4) and Title 14, California Code of Regulations, Section 15269(c).

25. This Board Order may be modified, rescinded and reissued, for cause. The filing of a request by the discharger for a Board Order modification, rescission and reissuance, or a notification of planned changes or anticipated noncompliance does not stay any Board Order condition. Causes for modification include the promulgation of new regulations, modification of land application plans, or modification in sludge disposal practices, or adoption of new regulations by the State Board or the Regional Board, including revisions to the Basin Plan.

I, Philip A. Gruenberg, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on October 13, 2004.

Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. R7-2004-0080

FOR
PACIFIC GAS AND ELECTRIC COMPANY, OWNER/OPERATOR
TOPOCK COMPRESSOR STATION
AND
GROUNWATER REMEDIATION FACILITY
Southeast of Needles – San Bernardino County
Location of Discharge: E ½ of NE ¼ of Section 7, T7N, R24E, SBB&M

MONITORING

1. The collection, preservation and holding times of all samples shall be in accordance with United States Environmental Protection Agency (USEPA) approved procedures. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted by a laboratory certified by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of the "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR Part 136), promulgated by the USEPA.

2. Pursuant to the California Water Code (CWC) Section 13267, samples taken for Total Chromium shall be analyzed with a method having a method detection limit (MDL) of 1.0 ppb and samples taken for Chromium VI shall be analyzed with a method having a MDL of 0.2 ppb. The analytical results shall be reported consistent with actual observations by a California certified laboratory, and shall be reported in terms of the practical quantitation limit (PQL), if the MDL cannot be achieved. These requirements are necessary to ensure compliance with the Waste Discharge Requirements set forth in Board Order R7-2004-0080, determine the impact on the Class II surface impoundments, and confirm that the use of treated ground water in the cooling tower does not violate Waste Discharge Requirements. Ground water monitoring in the area proposed for extraction has shown that these constituents are present at very high levels and the discharge is a potential threat to ground water and to the Colorado River.

3. Samples shall be collected at the location approved by the Regional Board's Executive Officer. If no location is specified, sampling shall be conducted at the most representative sampling point available.

4. If the groundwater remediation facility is not in operation, or there is no discharge of the groundwater treatment remediation concentrate or liquids to the Class II ponds and no re-use of groundwater remediation facility permeate as supply water to the cooling towers under this Order, during a required reporting period, the discharger shall forward a letter to the Regional Board indicating that there has been no activity during the required reporting period. During such period, no sampling or analysis of the remediation facility influent, effluent, concentrate or sludge is required under this Order. In addition, during such period no operation and maintenance reports specific to the groundwater treatment system shall be submitted to the Regional Board under this Order.

5. The discharger shall monitor the treatment facility effluent, evaporation basins, groundwater, leachate recovery system and vadose zone in accordance with the following:

TREATMENT FACILITY START UP PHASE AND START UP REPORTING

1. The discharger shall inform the Regional Board in writing of the location of all sampling stations and the expected start up date at least 10 days prior to beginning operational start up. The Regional Board shall be notified in writing 5 days prior to any change in sampling location.

2. During the start up phase of the groundwater treatment facility, sampling of the system influent and effluent must be performed on the first (1st) and third (3rd) days of operation.

   a. On the 1st day of operation, the system shall be allowed to run until at least three (3) extraction well volumes are removed and until three (3) consecutive readings taken with field instruments at least one (1) hour apart for pH, specific conductivity, and temperature are within five (5) percent of each other. Discharge shall be conveyed to a holding tank or disposed at an offsite, permitted facility.

   b. Once these criteria are met, the treatment system influent, effluent, and RO concentrate shall be sampled for analysis of TDS, turbidity, specific conductivity, pH, total chromium, and hexavalent chromium. During this phase of the start up, all treatment system effluent shall be discharged to a holding tank (not the evaporation basins) or disposed at an offsite permitted facility until the results of the 1st day analysis show that the effluent is within the limitations of discharge specification A.8 set forth in Board Order R7-2004-0080.

   c. If the analyses of the treatment system effluent collected during the 1st day of operation indicate that the treatment system is in compliance, the system shall be operated with the treatment system effluent being used as make up water to the cooling tower provided the analyses are received within 48 hours of sampling. If the discharge is not in compliance with discharge specification A.8 set forth in Board Order R7-2004-0080, it shall be conveyed to a holding tank or disposed at an offsite, permitted facility.

   d. A second series of samples shall be collected on the 3rd day. If the samples from the 3rd day are in compliance, effluent from the treatment system shall continue to be used as make up water to the cooling tower. If the discharge is not in compliance with discharge specification A.8 set forth in Board Order R7-2004-0080, it shall be conveyed to a holding tank or disposed at an offsite, permitted facility.

3. If the treatment system is shut down for more than 96 hours during start up phase, the start up and sampling procedures must be repeated.

4. A report on the start up phase shall be submitted to the Regional Board no more than fifteen (15) calendar days after completion of the start up phase. The report should contain a summary of all monitoring results, copies of laboratory reports, Chain of custody forms, flow rates, and a description of any changes or modifications to the treatment system.

TREATMENT FACILITY REPORTING AFTER START UP PHASE

1. Upon completion of the start up phase, the discharger shall begin the normal monitoring and reporting for the daily operation and maintenance of the treatment system. The Treatment System influent, effluent, RO concentrate, and sludge monitoring and operation and maintenance reporting shall be performed as listed below in the following sections.

A. Groundwater Treatment System Influent

1. Extracted groundwater shall be analyzed for the following constituents immediately prior to treatment:

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow	gpm[1]	Metered	Continuous	Monthly
TDS	mg/L[2]	Grab	See Footnote[3]	Monthly

[1] gallons per minute reported as a monthly average
[2] mg/L = milligrams per Liter
[3] Samples shall be taken on the 1st and 3rd days during start up phase. Sampling will continue twice weekly for the first month, weekly for the following two

Turbidity	NTU[4]	Grab	See Footnote[3]	Monthly
Specific Conductance	µmhos/cm[5]	Grab	See Footnote[3]	Monthly
pH	pH units	Grab	See Footnote[3]	Monthly
Total Chromium	µg/L[6]	Grab	See Footnote[3]	Monthly
Chromium VI	µg/L	Grab	See Footnote[3]	Monthly
Aluminum	µg/L	Grab	Monthly	Monthly
Ammonia (as N)	mg/L	Grab	Monthly	Monthly
Antimony	µg/L	Grab	Monthly	Monthly
Arsenic	µg/L	Grab	Monthly	Monthly
Barium	µg/L	Grab	Monthly	Monthly
Boron	mg/L	Grab	Monthly	Monthly
Copper	µg/L	Grab	Monthly	Monthly
Fluoride	mg/L	Grab	Monthly	Monthly
Lead	µg/L	Grab	Monthly	Monthly
Manganese	µg/L	Grab	Monthly	Monthly
Molybdenum	µg/L	Grab	Monthly	Monthly
Nickel	µg/L	Grab	Monthly	Monthly
Nitrate/Nitrite (as N)	mg/L	Grab	Monthly	Monthly
Sulfate	mg/L	Grab	Monthly	Monthly
Total Iron	µg/L	Grab	Monthly	Monthly
Zinc	µg/L	Grab	Monthly	Monthly

B. Groundwater Treatment System Effluent

1. Treated groundwater shall be analyzed for the following constituents immediately after treatment:

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow	gpm	Metered	Continuous	Monthly
TDS	mg/L	Grab	See Footnote[7]	Monthly
Turbidity	NTU	Grab	See Footnote[7]	Monthly
Specific Conductance	µmhos/cm	Grab	See Footnote[7]	Monthly
pH	pH units	Grab	See Footnote[7]	Monthly
Total Chromium	µg/L	Grab	See Footnote[7]	Monthly
Chromium VI	µg/L	Grab	See Footnote[7]	Monthly
Aluminum	µg/L	Grab	Monthly	Monthly
Ammonia (as N)	mg/L	Grab	Monthly	Monthly
Antimony	µg/L	Grab	Monthly	Monthly
Arsenic	µg/L	Grab	Monthly	Monthly
Barium	µg/L	Grab	Monthly	Monthly
Boron	mg/L	Grab	Monthly	Monthly
Copper	µg/L	Grab	Monthly	Monthly
Fluoride	mg/L	Grab	Monthly	Monthly
Lead	µg/L	Grab	Monthly	Monthly
Manganese	µg/L	Grab	Monthly	Monthly
Molybdenum	µg/L	Grab	Monthly	Monthly
Nickel	µg/L	Grab	Monthly	Monthly
Nitrate/Nitrite (as N)	mg/L	Grab	Monthly	Monthly
Sulfate	mg/L	Grab	Monthly	Monthly
Total Iron	µg/L	Grab	Monthly	Monthly
Zinc	µg/L	Grab	Monthly	Monthly

months, and monthly thereafter.
[4] Nephelometric Turbidity Units
[5] micromhos per centimeter
[6] micrograms per Liter
[7] Samples shall be taken on the 1st and 3rd days during start up phase. Sampling will continue twice weekly for the first month, and weekly thereafter.

C. Groundwater Treatment System Reverse Osmosis Concentrate Monitoring

1. Reverse Osmosis Concentrate shall be analyzed for the following constituents:

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow	gpm	Metered	Continuous	Monthly
TDS	mg/L	Grab	See Footnote[3]	Monthly
Specific Conductance	µmhos/cm	Grab	See Footnote[3]	Monthly
pH	pH units	Grab	See Footnote[3]	Monthly
Total Chromium	µg/L	Grab	See Footnote[3]	Monthly
Chromium VI	µg/L	Grab	See Footnote[3]	Monthly
Antimony	mg/L	Grab	Monthly	Monthly
Arsenic	mg/L	Grab	Monthly	Monthly
Barium	mg/L	Grab	Monthly	Monthly
Beryllium	mg/L	Grab	Monthly	Monthly
Cadmium	mg/L	Grab	Monthly	Monthly
Cobalt	mg/L	Grab	Monthly	Monthly
Copper	mg/L	Grab	Monthly	Monthly
Fluoride	mg/L	Grab	Monthly	Monthly
Lead	mg/L	Grab	Monthly	Monthly
Molybdenum	mg/L	Grab	Monthly	Monthly
Mercury	mg/L	Grab	Monthly	Monthly
Nickel	mg/L	Grab	Monthly	Monthly
Selenium	mg/L	Grab	Monthly	Monthly
Silver	mg/L	Grab	Monthly	Monthly
Thallium	mg/L	Grab	Monthly	Monthly
Vanadium	mg/L	Grab	Monthly	Monthly
Zinc	mg/L	Grab	Monthly	Monthly

D. Groundwater Treatment System Sludge Monitoring

1. Representative composite sludge samples shall be taken from each treatment tank whose purpose is to accumulate sludge for disposal prior to transportation of the sludge offsite. If sludge is transported offsite more frequently than monthly, a representative sample shall be taken on a monthly or quarterly basis as specified below. Sludge samples shall be tested for the following constituents:

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Fluoride	mg/kg[8]	Composite	See Footnote[8a]	Monthly
Total Chromium	mg/kg	Composite	See Footnote[8a]	Monthly
Chromium VI	mg/kg	Composite	See Footnote[8a]	Monthly
Antimony	mg/kg	Composite	See Footnote[8a]	Monthly
Arsenic	mg/kg	Composite	See Footnote[8a]	Monthly
Barium	mg/kg	Composite	See Footnote[8a]	Monthly
Beryllium	mg/kg	Composite	See Footnote[8a]	Monthly
Cadmium	mg/kg	Composite	See Footnote[8a]	Monthly
Cobalt	mg/kg	Composite	See Footnote[8a]	Monthly
Copper	mg/kg	Composite	See Footnote[8a]	Monthly
Lead	mg/kg	Composite	See Footnote[8a]	Monthly

[8] milligrams per kilogram
[8a] Each time sludge is transported offsite, unless sludge is transported offsite more frequently than monthly, in which case the sampling frequency shall be monthly.

Mercury	mg/kg	Composite	See Footnote[8a]	Monthly
Molybdenum	mg/kg	Composite	See Footnote[8a]	Monthly
Nickel	mg/kg	Composite	See Footnote[8a]	Monthly
Selenium	mg/kg	Composite	See Footnote[8a]	Monthly
Silver	mg/kg	Composite	See Footnote[8a]	Monthly
Thallium	mg/kg	Composite	See Footnote[8a]	Monthly
Vanadium	mg/kg	Composite	See Footnote[8a]	Monthly
Zinc	mg/kg	Composite	See Footnote[8a]	Monthly
Bioassay			See Footnote[8b]	Quarterly

2. The discharger shall report quarterly on the quantity, location and method of disposal of all sludge and similar solid materials being produced at the wastewater treatment facility.

3. The discharger shall, prior to disposal but no more frequently than quarterly, collect one representative composite sample of sludge for each treatment tank and have an aquatic bioassay test performed on the samples. Report and select a procedure from the Static Acute Bioassay Procedure for Hazardous Waste Sample by the California Department of Fish and Game, Water pollution Control Laboratory, revised November 1988 or by other test methods approved by the California Department of Fish and Game. The discharger shall provide a report supporting any deviation from a standard procedure and must be approved by the Regional Board's Executive Officer.

E. Class II Surface Impoundments

1. Representative grab wastewater samples shall be taken from each basin near the point of discharge to analyze for the following constituents.

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow[8c]	gpd[9]	Metered	Continuous	Semi annually
Total Dissolved Solids	mg/L	Grab	Semi annually	Semi annually
Specific Conductance	μmhos/cm	Grab	Semi annually	Semi annually
pH	pH units	Grab	Semi annually	Semi annually
Fluoride	mg/L	Grab	Semi annually	Semi annually
Total Chromium	μg/L	Grab	Semi annually	Semi annually
Chromium VI	μg/L	Grab	Semi annually	Semi annually
Antimony	mg/L	Grab	Annually	Annually
Arsenic	mg/L	Grab	Annually	Annually
Barium	mg/L	Grab	Annually	Annually
Beryllium	mg/L	Grab	Annually	Annually
Cadmium	mg/L	Grab	Annually	Annually
Cobalt	mg/L	Grab	Annually	Annually
Copper	mg/L	Grab	Annually	Annually
Lead	mg/L	Grab	Annually	Annually
Mercury	mg/L	Grab	Annually	Annually
Molybdenum	mg/L	Grab	Annually	Annually
Nickel	mg/L	Grab	Annually	Annually
Selenium	mg/L	Grab	Annually	Annually
Silver	mg/L	Grab	Annually	Annually
Thallium	mg/L	Grab	Annually	Annually
Vanadium	mg/L	Grab	Annually	Annually
Zinc	mg/L	Grab	Annually	Annually

[8b] Each time sludge is transported offsite, unless sludge is transported offsite more frequently than quarterly, in which case the sampling frequency shall be quarterly.
[8c] The flow shall be measured at the existing flow meter and shall represent the combined flow to all four basins.
[9] gallons per day

2. Representative composite sludge samples shall be taken from each basin that has sludge present on an annual basis and tested for the following constituents:

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Fluoride	mg/kg	Composite	Annually	Annually
Total Chromium	mg/kg	Composite	Annually	Annually
Chromium VI	mg/kg	Composite	Annually	Annually
Antimony	mg/kg	Composite	Annually	Annually
Arsenic	mg/kg	Composite	Annually	Annually
Barium	mg/kg	Composite	Annually	Annually
Beryllium	mg/kg	Composite	Annually	Annually
Cadmium	mg/kg	Composite	Annually	Annually
Cobalt	mg/kg	Composite	Annually	Annually
Copper	mg/kg	Composite	Annually	Annually
Lead	mg/kg	Composite	Annually	Annually
Mercury	mg/kg	Composite	Annually	Annually
Molybdenum	mg/kg	Composite	Annually	Annually
Nickel	mg/kg	Composite	Annually	Annually
Selenium	mg/kg	Composite	Annually	Annually
Silver	mg/kg	Composite	Annually	Annually
Thallium	mg/kg	Composite	Annually	Annually
Vanadium	mg/kg	Composite	Annually	Annually
Zinc	mg/kg	Composite	Annually	Annually
Bioassay			Annually	Annually

3. The discharger shall report annually on the quantity, location and method of disposal of all sludge and similar solid materials being produced in the Class II Surface Impoundments.

4. The discharger shall annually collect one representative composite sample of sludge for each evaporation basin and have an aquatic bioassay test performed on the samples. Report and select a procedure from the Static Acute Bioassay Procedure for Hazardous Waste Sample by the California Department of Fish and Game, Water pollution Control Laboratory, revised November 1988 of by other test methods approved by the California Department of Fish and Game. The discharger shall provide a report supporting any deviation from a standard procedure and must be approved by the Regional Board's Executive Officer.

F. Groundwater Monitoring

1. Groundwater samples shall be taken semi annually from groundwater monitoring wells MW-1, MW-3, MW-4, MW-5, MW-6, MW-7, and MW-8, shown in attachment B, for the following constituents:

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Total Dissolved Solids	mg/L	Grab	Semi annually	Semi annually
Specific Conductance	μmhos/cm	Grab	Semi annually	Semi annually
pH	pH units	Grab	Semi annually	Semi annually
Total Chromium	μg/L	Grab	Semi annually	Semi annually
Chromium VI	μg/L	Grab	Semi annually	Semi annually
Chromium III	μg/L	Calculated	Semi annually	Semi annually
Molybdenum	mg/L	Grab	Semi annually	Semi annually

2. In accordance with the requirements of 27 CCR 20415 and 27 CCR 20420, a groundwater detection monitoring program has been established and implemented for the Topock Compressor Station Class II Surface Impoundment Site. The following report describes the components of this

program: Pacific Gas and Electric Company Topock Compressor Station Class II Surface Impoundments Updated Monitoring and Response Plan for Board Order No. 98-050, Report No. 402.331-00.85. This plan will be revised to conform with Board Order No.R7-2004-0080.

G. Leachate Collection and Recovery System (LCRS)

Leachate collection sumps for the evaporation basins shall be monitored weekly to check for leaking in the liner system. A log dating the inspection and persons inspecting the LCRS shall be maintained. If the total leachate flow rate detected in any LCRS collection sump at any of the four surface impoundments is greater than or equal to 10 gallons per day ("action leak rate"), the continued discharge to the affected surface impoundments is prohibited until the waste management unit is repaired. In case of a leak being detected (action leak rate exceeded), the discharger shall report the leak immediately to the Regional Board. If no leak occurs or is detected above the action leak rate, a "No Leak Detected" statement shall be made in the semi annual report.

H. Vadose Zone Monitoring

The Vadose Zone Detection system for the evaporation basins shall be monitored quarterly for the detection of moisture in the soil pores of the unsaturated zone. The detection of soil-pore liquid is determined by the use of lysimeters. A field notebook dating the inspection and persons inspecting the Vadose Zone Detection System shall provide documentation. In accordance with the requirements of 27 CCR 20415 and 27 CCR 20420, a vadose detection monitoring program has been established and implemented for the Topock Compressor Station Class II Surface Impoundment Site. The following report describes the components of this program: Pacific Gas and Electric Company Topock Compressor Station Class II Surface Impoundments Updated Monitoring and Response Plan for Board Order No. 98-050, Report No. 402.331-00.85. This plan will be revised to conform with Board Order No. R7-2004-0080. If no moisture is detected then a "No Moisture Detected" statement shall be made in the semi annual report.

OPERATION AND MAINTENANCE

1. The discharger shall document any groundwater treatment system and Class II ponds wastewater conveyance system operation/maintenance problems. The wastewater conveyance system consists of the piping, equipment and ponds downstream of the wastewater holding tank. Calibration of flow meters (if this can be performed accurately on-site with an ultrasonic flow meter) and equipment shall be performed in accordance with manufacturers requirements and documented. Operation and Maintenance reports shall be submitted to the Regional Board Office twice-annually.

REPORTING

1. The discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with waste discharge requirements.

2. Records of monitoring information shall include:

   a. The date, exact place, and time of sampling or measurement(s);
   b. The individual(s) who performed the sampling or measurement(s);
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or method used; and
   f. The results of such analyses.

3. The results of any analysis taken more frequently than required at the locations specified in this Monitoring and Reporting Program shall be reported to the Regional Board.

4. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.

5. Each report shall contain the following statement:

   "I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations".

6. A duly authorized representative of the discharger may sign the documents if:

   a. The authorization is made in writing by the person described above;

   b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and

   c. The written authorization is submitted to the Regional Board's Executive Officer.

7. Reporting of any failure in the facility (treatment plant, and collection and disposal systems) shall be as described in Provision No. 6 of Board Order R7-2004-0080. Results of any analysis performed as a result of a failure of the facility shall be provided within fourteen (14) days after collection of the samples.

8. The discharger shall attach a cover letter to the Self Monitoring Report. The information contained in the cover letter shall clearly identify violations of the WDRs, discuss corrective actions taken or planned and the proposed time schedule of corrective actions. Identified violations should include a description of the requirement that was violated and a description of the violation.

9. Daily, semi-weekly, weekly, and monthly monitoring reports shall be submitted to the Regional Board by the 30th day of the following month. Quarterly monitoring reports shall be submitted to the Regional Board by January 30, April 30, July 30, and September 30 of each year. Semi annual monitoring reports shall be submitted to the Regional Board by January 30, and July 30, of each year. Annual monitoring reports shall be submitted to the Regional Board by January 30 of each year.

10. Submit monitoring reports to:

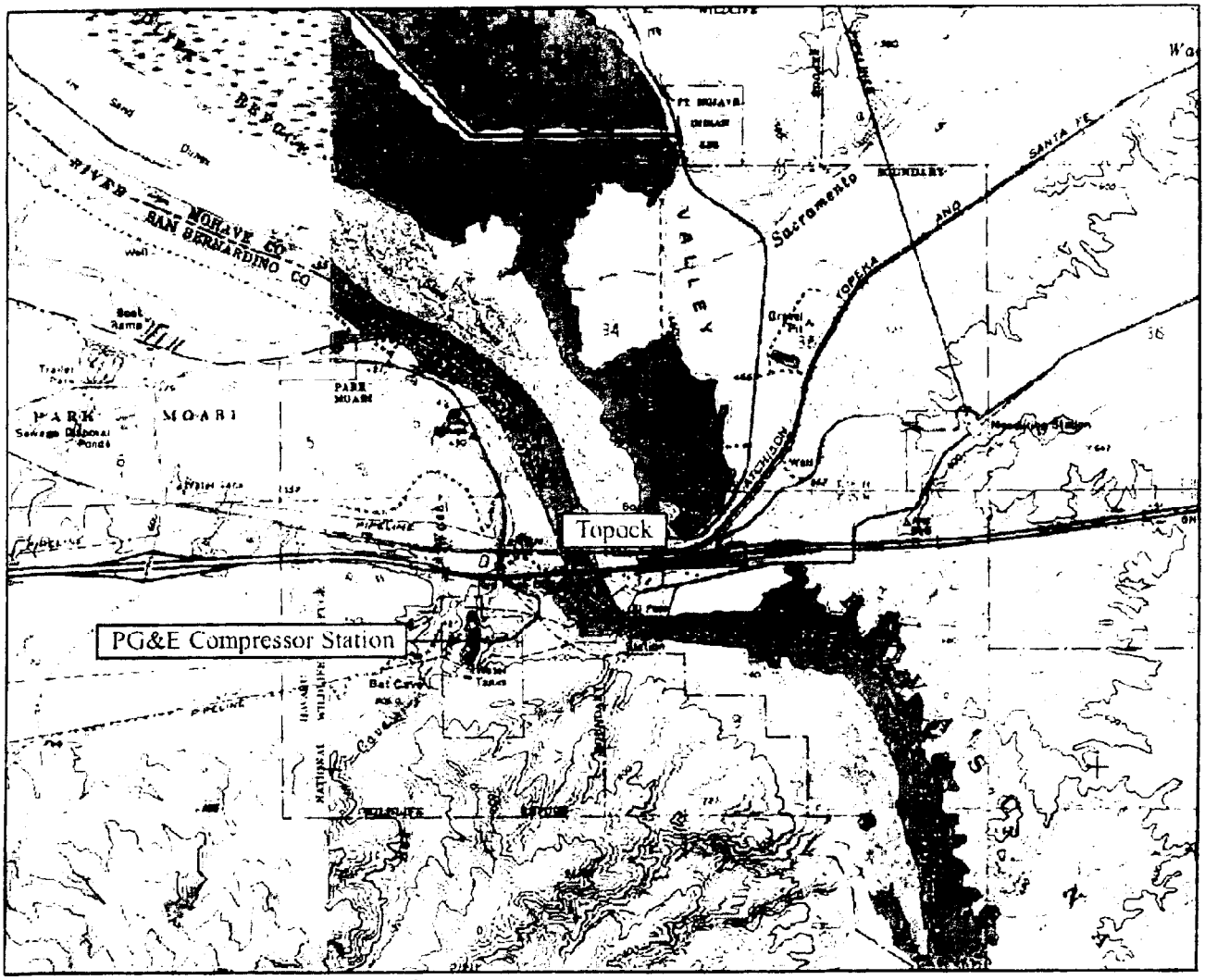
    California Regional Water Quality Control Board
    Colorado River Basin Region
    73-720 Fred Waring, Suite 100
    Palm Desert, CA 92260

Ordered by: _____
Executive Officer

OCT 13 2004

Date

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION



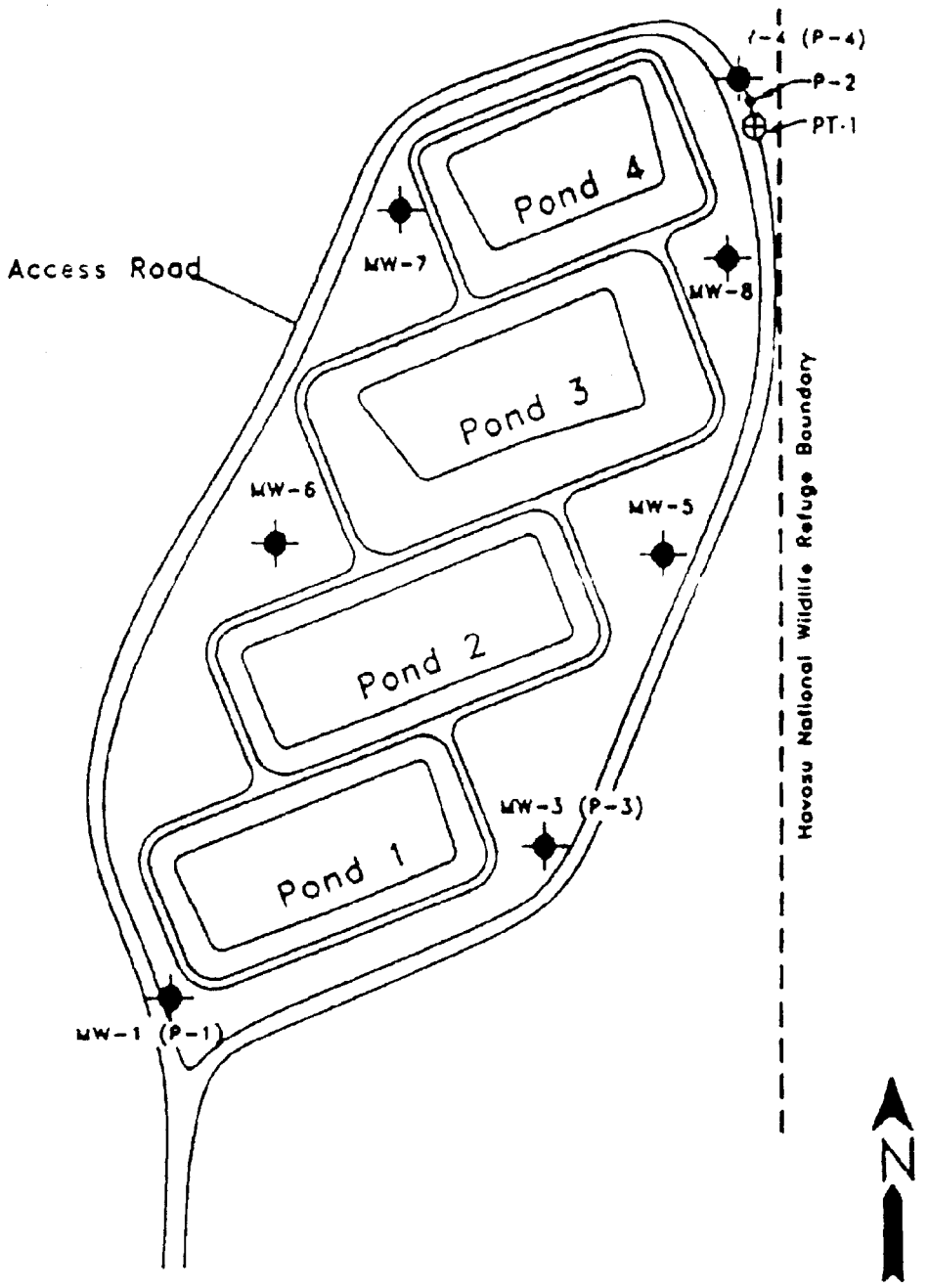
Source: USGS topographic map from National Geographic TOPO! software

Scale 1:15,375

PACIFIC GAS AND ELECTRIC COMPANY, OWNER/OPERATOR
TOPOCK COMPRESSOR STATION
AND
GROUNDWATER REMEDIATION FACILITY
Southeast of Needles – San Bernardino County

BOARD ORDER NO. R7-2004-0080

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION



Legend

MW-1 — Groundwater monitoring well

P-2 — Observation piezometer

PT-1 — Exploratory boring pumping/test well

0 50 100 200 feet

SCALE

PACIFIC GAS AND ELECTRIC COMPANY, OWNER/OPERATOR
TOPOCK COMPRESSOR STATION
AND
GROUNDWATER REMEDIATION FACILITY
Southeast of Needles – San Bernardino County

BOARD ORDER NO. R7-2004-0080