CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

CEASE AND DESIST ORDER NO. R5-2015-XXXX

VALLEY WATER MANAGEMENT COMPANY
RACE TRACK HILL FACILITY AND
FEE 34 FACILITY, EDISON
KERN COUNTY

PROSECUTION TEAM'S EVIDENTIARY SUBMISSION

Includes:
Opening Brief,
Exhibit List,
And
Witness List

I. Introduction[1]

The Central Valley Water Board Prosecution Team recommends the Central Valley Water Board adopt the tentative Cease and Desist Order (CDO) issued to Valley Water Management Company (Valley Water or Discharger), which owns and operates two oil well production wastewater disposal facilities called the "Fee 34 Facility[2]" and the "Race Track Hill Facility" (Race Track). Prior to the issuance of the CDO, the Central Valley Water Board ordered the commencement of a hydrogeological investigation at Valley Water's two facilities, to assess the impacts of wastewater impacts on groundwater. The work to date has been conducted in phases, including the preparation of a work plan, implementation of the work, and submission of required reporting. Based on the impacts to groundwater detected at the Race Track Hill Facility and potential impacts at the Fee 34 Facility, additional characterization is proposed in the CDO.

II. Site Background

Valley Water Management Company owns and operates two wastewater disposal facilities under the names of "Fee 34 Facility" and "Race Track Hill Facility" in the Edison area of Kern County.

The Fee 34 Facility (also known as the C-Plant Facility) is on 3.4 acres on the valley floor near the community of Edison, about 10 miles east of Bakersfield. It contains six surface impoundments. Wastewater is transported to the facility by pipeline from approximately 70 oil company leases throughout the Edison Oil Field. Crude oil skimmed from the produced waters is shipped offsite. The wastewater is pumped to the Race Track Hill Facility for disposal. The Fee 34 Facility is regulated by Central Valley Water Board Orders 92-110 and 92-11037 (Exhibit 2).

Information from the California Department of Water Resources identified 36 groundwater supply wells within about one-mile of the Fee 34 Facility. The wells are used for domestic supply, agricultural supply, and industrial supply. The facility is in an area of agricultural development with scattered residences. The agriculture and residences are dependent on groundwater resources. (*See generally* Exhibit 10 and note.)

The Race Track Hill Facility is located on about 340 acres in the hills about 4 miles north of the Fee 34 Facility. It contains 27 unlined surface impoundments and approximately 94 acres of land, a portion of which is used for surface sprinkler disposal of approximately 3.5 to 4.5 million barrels (150 to 190 million gallons) of wastewater pumped from the Fee 34 Facility per year.

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[1] References are to documents already in the record or submitted as evidence, as described in the accompanying Evidence List.

[2] The Fee 34 Facility is also known as the C-Plant Facility.

Wastewater is discharged to the impoundments for percolation and evaporation. The Regional Board's understanding is that excess wastewater that does not percolate or evaporate is sprayed onto portions of the 94 acres for disposal. The Regional Board is informed that wastewater discharge began in approximately 1958. The Race Track Hill Facility is regulated by Resolution 58-349. (Exhibit 1)

Although Resolution 58-349 found "no freshwater producing wells in this vicinity," more recent information from the California Department of Water Resources identified six groundwater supply wells within one-mile of the Facility. The wells may have been used for domestic water supply, agriculture supply, or industrial service supply. The current status of these wells is not clear and some may have been destroyed. Several residences are within a mile of the facility and appear to depend on wells to meet their water needs. There also is a small grape vineyard about three quarters of a mile southwest of the facility that appears to rely on groundwater to meet its irrigation needs.

III. Impacts of Valley Water's Activities on Groundwater

Five groundwater monitoring wells have been installed in the vicinity of the Racetrack Hill Facility. RTH1 is west of and adjacent to a disposal pond in the northern portion of the facility. RTH3 and RTH4 are located on the eastern side of the northern portion of the facility. RTH5 is located northeast of the facility adjacent to Cottonwood Creek. RTH6 is located immediately southwest of and adjacent to a disposal pond in the southern portion of the facility.

The water level data from the monitoring wells suggests that there is a groundwater mound beneath the facility. Water levels were measured twice in RTH1, RTH3, and RTH4 between April 2014 and December 2014. The water level in RTH1 did not change as it did in the other two wells, indicating that percolating wastewater is maintaining the groundwater elevation there.

Chemical analysis of a sample collected in 2013 of the wastewater discharged at the Fee 34 Facility (which is subsequently discharged to the Race Track Hill Facility) had a specific electrical conductivity of 5,700 micromhos per centimeter (umhos/cm), a chloride concentration of 1,800 milligrams per liter (mg/l) and a boron concentration of 14 mg/l. (Exhibit 8) These values exceed allowable limits based on water quality objectives in the Tulare Lake Basin Plan, which include Secondary Maximum Contaminant Levels (MCLs) and plant toxicity.

Groundwater monitoring results from a hydrogeological investigation conducted by Valley Water Management shows that groundwater downgradient of the Race Track Hill Facility has values of 4,680 to 8,700 umhos/cm for electrical conductivity, 1,300 to 2,900 mg/l for chloride and 3 to 16 mg/l for boron. (Exhibit 6)

The short-term Secondary Maximum Contaminant Level (MCL) for specific electrical conductivity is 2,200 umhos/cm. The short-term Secondary MCL for chloride is 600 mg/l. The concentration of boron at which sensitive crops can be adversely affected is 1 mg/l. (Exhibits 13 and 21)

Electrical conductivity and boron are highest in RTH1 and slightly lower in RTH4 and RTH6. Electrical conductivity and boron are lowest in wells RTH3 and RTH5. The concentrations are much lower in RTH5, likely because it has not been influenced by the wastewater from the ponds. The water chemistry in RTH1 and RTH6, wells that are adjacent to ponds, is similar to the wastewater chemistry. This in combination with an apparent groundwater mound beneath the facility indicates that significant volumes of wastewater have migrated to groundwater beneath the ponds. The other wells have chemical differences that suggest that naturally occurring groundwater sources are mixing with wastewater in the area of these wells. In RTH3 and RTH4, this may be because of their distance from the nearest ponds. Groundwater from RTH5, which is about 2,000 feet from the facility, is chemically very different from all the other wells and appears to not be impacted by disposal activities.

Groundwater beneath the Race Track Hill Facility has been impacted by Valley Water Management's disposal operations. The results of the chemical analyses of groundwater samples indicate that groundwater has been polluted by the percolation of wastewater from the ponds.

As described above, wastewater at the Fee 34 Facility exceed applicable Tulare Lake Basin Plan limits. Investigations conducted by Valley Water Management indicate the seepage rates of the North Pond and the South Pond at the Fee 34 Facility are 4.4 millimeters per day and 1.8 millimeters per day, respectively. These rates translate to approximately 500 gallons per day from the North Pond and approximately 200 gallons per day from the South Pond.

The seepage discharges also threaten to pollute good quality underlying groundwater with Specific EC, chlorides, and boron in violation of Discharge Prohibition A.5 (proscribes pollution) of Order 92-110 and 92-11037. A groundwater investigation is needed at the Fee 34 Facility is needed unless a demonstration can be made that there is no potential for impact to underlying groundwater.

IV. Regulatory Framework

Race Track is governed by Resolution 58-359, which provides in pertinent part:

> RESOLVED, that the following requirements shall govern the nature of discharge of waste water from the production of oil in the Race Track Hill area of Edison Oil Field by Valley Waste Disposal Company[3]:
>
> 1. Neither the waste discharge nor its method of disposal shall result in the pollution of surface or underlying ground water;
> 2. Neither the waste discharge nor its method of disposal shall create a public nuisance by reason of odors or unsightliness in the disposal area;

[3] Valley Water Disposal Company transferred ownership and operation of the relevant facilities to Valley Water Management Company as reflected in Central Valley RWQCB Order No. R5-2012-0014. (Exh. 30)

3. Waste water discharge or overflowing onto the surface of the ground, or into natural draining channels or into unlined sumps other than those constructed in Section 24, T29S, R29E, MDB&M shall conform to the following criteria:
    a. Total dissolved solids shall not exceed 1000 parts per million.
    b. Chlorides shall not exceed 150 parts per million.
    c. Boron shall not exceed 1.0 part per million.

Resolution 58-349, p. 2. Analytical wastewater results at the Fee 34 Facility, which is the material discharged at Race Track, were analyzed in July 2013 and exceeded the limits for both boron and chloride.

Both the Race Track and Fee 34 Facilities also exceed the water quality objectives set forth in the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan). The Basin Plan and Order 92-110 limits for electrical conductivity (specific EC) are 1,000 µmhos/cm, 200 mg/l for chloride, and 1 mg/l for boron. July 2013 values at the Fee 34 Facility were 5,700 umhos/cm for specific EC, 1,800 mg/l for chloride, and 14 mg/lfor boron.

Regardless of Resolution 58-349, or Valley Water's lengthy operational history, the Regional Board can prescribe requirements, including revised Waste Discharge Requirements (WDRs), for any proposed discharge or existing discharge. *See* CWC Section 13263(a). Furthermore,

> No discharge of waste into the waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge. All discharges of waste into waters of the state are privileges, not rights.

CWC Section 13263(g). The CDO is designed to bring the two Valley Water facilities into compliance with the water quality objectives as reflected in the Basin Plan.

V. The Central Valley Water Board is authorized to issue a Cease and Desist Order where discharges of waste are taking place or threatening to take place in violation of waste discharge requirements.

Water Code section 13301 authorizes the Central Valley Water Board to issue a CDO where it "finds that a discharge of waste is taking place or threatening to take place, in violation of requirements or discharge prohibitions prescribed by the regional board or the state board." (CWC Section 13301.) As described above, Valley Water's current use of the ponds and sprayfields have resulted in exceedances of water quality objectives and significant impacts to groundwater. Therefore, discharges of waste are taking place or are threatening to take place in violation of WDR and/or NPDES discharge prohibitions. Though CWC Section 13301 authorizes the Central Valley Water Board to order compliance immediately, the proposed CDO grants Valley Water the opportunity to apply for revised WDRs and attempt to comply with those future requirements while taking into consideration relevant technical factors and comparable alternatives.

VI. Conclusion

The CDO requires a complete hydrogeological investigation and the drafting of new WDRs based on current information about the site conditions, volumes accepted at the Valley Water facilities, and impacts to surface and groundwater after more than 50 years of operation. The Fee 34 Facility and the Race Track Facility will be required to comply with the General WDRs or the discharges shall cease, and residual liquid waste shall be removed and disposed of at an appropriately regulated discharge facility.

12 June 2015

Julie Macedo

Julie Macedo, Senior Staff Counsel
Prosecution Team, Regional Water Quality Control Board, Central Valley

California Regional Water Quality Control Board, Central Valley Region
Cease and Desist Order No. R5-2015-XXXX

Prosecution Team Evidence List for 30/31 July 2015 Hearing
12 June 2015 Submission

EXHIBITS PROVIDED IN HARD COPY:

Exhibit 1: Resolution 58-349; Waste Discharge Requirements to Valley Waste Disposal Co., Race Track Hill Area, Edison Oil Field, Kern County (18 September 1958)

Exhibit 2: Central Regional Water Quality Control Board, Central Valley Region Order No. 92-11037, Notice of Applicability for Valley Waste Disposal Company, Fee 34 Facility, Edison Oil Field, Kern County; Central Regional Water Quality Control Board, Central Valley Region Order No. 92-110 General Order 92-110 Waste Discharge Requirements for Edison Oil Field Operators, Oil Production Wastewater Discharges, Kern County

Exhibit 3: 10 April 2015 Notice of Violation and Inspection Report, Valley Water Management Company, Race Track Hill, Edison Oil Field, Kern County

Exhibit 4: 10 April 2015 Notice of Violation and Inspection Report, Valley Water Management Company, Fee 34 Facility, Edison Oil Field, Kern County

Exhibit 5: Phase 1 Subsurface Investigation Report at the Fee 34 Facility and Race Track Hill Area, Edison Oil Field, California (excerpts only; received 4 August 2014)

Exhibit 6: Interim Report on Phase 2 Subsurface Investigations at the Valley Water Management Company Edison Oil Field Fee 34 Facility and Race Track Hill (excerpts only; 15 January 2015)

Exhibit 7: Laboratory data, 10 October 1995

Exhibit 8: Annual Monitoring Report submitted on 29 July 2013

Exhibit 9: Annual Monitoring Report submitted on May 27, 2014

Exhibit 10: Groundwater well data from Geotracker

****Please note:** Additional well information received from the Department of Water Resources (DWR) is confidential because it may contain information related to the location of municipal wells protected from disclosure for public safety reasons. Information about general location of water wells to support the findings in the tentative CDO is provided in Exhibit 10, but with the intention of not violating Water Code Section 13752. To the extent that additional information needs to be shared with Valley Water and the Board members, the Advisory Team can so advise. The information received in response to the Prosecution Team's request to DWR has been previously provided to Valley Water.

Exhibit 11: Summary of Groundwater and Wastewater Quality Discharge for Race Track Facility (3)

Exhibit 12: Aerial Photograph with Santa Margarita Formation Contours

Please note that certain documents are provided by reference only, pursuant to California Code of Regulations, Title 23, § 648.3, which provides:

Evidence by Reference. Public records of the Board that are relevant to the subject of the hearing, and books, reports, and other evidence that have been prepared and published by a public agency, if otherwise admissible, may in the discretion of the Board be received in evidence as exhibits by reference without the necessity of supplying copies to the Board and other parties, provided the original or a copy is in the possession of the Board and the specific file folder or other exact location where it can be found is identified. The party offering an exhibit by reference shall designate the particular portions on which the party relies. Each exhibit shall be appropriately identified and designated in the record as an exhibit of the party offering the exhibit or an exhibit of Board staff.

Documents provided by reference are due to the Hearing Procedures limit on printed material. Materials provided by reference are included in their entirety on the enclosed cd.

EXHIBITS PROVIDED BY REFERENCE AND IN ELECTRONIC FORMAT ONLY:

Exhibit 13: Water Quality Control Plan for the Tulare Lake Basin (2d Ed, Jan. 2004) This document is also available on the internet at: http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/tlbp.pdf

Exhibit 14: Oilfield Produced Water Sumps Central Valley Water Board Workplan, 14 November 2014

Exhibit 15: Comment letter on Cease and Desist Order from Neil Malpiede of Naftex Operating Company, dated 28 May 2015

Exhibit 16: 2009 Report of the State Oil & Gas Supervisor, Department of Oil, Gas, and Geothermal Resources (DOGGR), California Department of Conservation, 2009. This document is accessible at: ftp://ftp.consrv.ca.gov/pub/oil/annual_reports/2009/PR06_Annual_2009.pdf at p. 65.

Exhibit 17: 2013 Report of the State Oil & Gas Supervisor, Department of Oil, Gas, and Geothermal Resources (DOGGR), California Department of Conservation, 2013. This document is accessible at: ftp://ftp.consrv.ca.gov/pub/oil/annual_reports/2013/PR03_PreAnnual_2013.pdf at p. 9.

Exhibit 18: California Water Code Section 13267 Order issued to Valley Water Management Company on 1 July 2014

Exhibit 19: California Water Code Section 13267 Order issued to Valley Water Management Company on 1 April 2015

Exhibit 20: Ayers, R.S., and D. W. Westcott. FAO 1985. "Water Quality for Agriculture." *Irrigation and Drainage Paper* 29 (excerpts only). This publication is also available at: http://www.fao.org/DOCReP/003/T0234e/T0234e00.htm

Exhibit 21: 20 July 2012 Notice of Violation and Inspection Report Race Track Hill

Exhibit 22: Race Track Pictures (black and white)

Exhibit 23: Race Track and Fee 34 Photographs taken by Regional Water Quality Board staff

Exhibit 24: Report of Investigation of Waste Water Disposal Operations (May 1960; Report, Cross-section, and Geologic Map)

Exhibit 25: Valley Waste Disposal Company – Drilling and Data Acquisition Report (24 May 1996)

Exhibit 26: Phase 1 Subsurface Investigation Report at the Fee 34 Facility and Race Track Hill Area, Edison Oil Field, California (complete copy with appendices; received 4 August 2014)

Exhibit 27: Interim Report on Phase 2 Subsurface Investigations at the Valley Water Management Company Edison Oil Field Fee 34 Facility and Race Track Hill (complete copy; 15 January 2015)

Exhibit 28: Waste Water Pollution Problem - First Meeting (2-28-60; Report and Cross-section)

Exhibit 29: State Water Resources Control Board Resolution 68-16: Statement of Policy with Respect to Maintaining High Quality of Waters in California. This document can also be found at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf

Exhibit 30: Cover letter and Central Valley RWQCB Order No. R5-2012-0014 re: Transfer of Ownership

Please note that the proposed CDO included Attachments already in the record: A: Vicinity Map; B: Fee 34 Facility Site Map; C: Race Track Hill Facility Site Map; D1: NOV/Inspection Report for C-Plant Facility (Oct. 2013); D2: NOV/Inspection Report for Race Track Facility (Oct. 2013). These documents are publicly available at: http://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/, under Kern County.

Prosecution Team Witness List for 30/31 July 2015 Hearing

Pursuant to the Final Hearing Procedure, the Prosecution Team has been granted 65 minutes of time for use at hearing.

Clay Rodgers (30 minutes)
Assistant Executive Officer, Central Valley Regional Quality Control Board, Fresno Office
Mr. Rodgers will introduce the matter, and his testimony will cover the regulatory history of Valley Water and the need for the Cease and Desist Order. He will also offer testimony on the impacts of Valley Water's operation on groundwater.

Additional Water Board staff, including the previous inspectors from October 2013 (Ryan West) and March 2015 (Zachary Jarvie) will be present at the hearing and available for cross-examination.

The Prosecution Team reserves the right to call Rebuttal Witnesses to address legal argument or testimony by the Discharger.

TENTATIVE

RESOLUTION

WASTE DISCHARGE REQUIREMENTS

VALLEY WASTE DISPOSAL CO.

RACE TRACK HILL AREA, EDISON OIL FIELD

KERN COUNTY

RESOLUTION NO: 58-349 ADOPTED: 18 SEPT. 1958

WHEREAS, THE RACE TRACK HILL AREA IS LOCATED IN THE NORTHEAST PORTION OF THE EDISON OIL FIELD APPROXIMATELY EIGHT MILES EAST OF BAKERSFIELD; AND

WHEREAS, WASTE WATER FROM THE PRODUCTION OF OIL IN THIS AREA IS OF POOR MINERAL QUALITY, HIGH IN BORON AND CHLORIDE CONTENT, AND CONSIDERABLY INFERIOR TO LOCAL GROUND WATER; AND

WHEREAS, THE LOCAL GROUND WATER IS USED EXTENSIVELY FOR DOMESTIC AND IRRIGATION PURPOSES AND IS OF SATISFACTORY QUALITY FOR THESE USES; AND

WHEREAS, THE DISPOSAL OF WASTE WATER TO THE ALLUVIUM IN THIS AREA CONSTITUTES A THREAT OF POLLUTION TO THE USEABLE GROUND WATER; AND

WHEREAS, RESOLUTION NO. 57-16 WAS ADOPTED BY THE CENTRAL VALLEY REGIONAL WATER POLLUTION CONTROL BOARD ON 10 JANUARY 1957, STATING "THAT NO THREAT OF GROUND WATER POLLUTION WILL EXIST IN THIS AREA SO LONG AS WASTE WATERS FROM THE RACE TRACK HILL AREA OF THE EDISON OIL FIELD ARE DISPOSED OF BY MEANS OF INJECTION INTO SALINE WATER-BEARING FORMATIONS BELOW THE BASE OF THE FRESH WATER OR BY MEANS OF PERCOLATION INTO PERMEABLE MIOCENE FORMATIONS WHICH DIP BELOW THE USEABLE GROUND WATER LEVELS;" AND

WHEREAS, SHELL OIL COMPANY DESIGNED A COMPLETE INJECTION SYSTEM BUT WERE UNABLE TO GET PERMISSION FROM THE LAND OWNERS TO INJECT THE WASTE WATER AND IT WAS FELT THAT THEIR POSITION WAS WEAK BECAUSE OF THE GEOLOGICAL STRUCTURE WITH NUMEROUS FALT BLOCKS WHICH OFFERED AN OPENING FOR FUTURE LEGAL LIABILITY; AND

WHEREAS, VALLEY WASTE DISPOSAL COMPANY, AS REPRESENTATIVE FOR THE OPERATORS IN THE AREA, HAS ATTEMPTED TO PURCHASE OR OBTAIN A LONG TERM LEASE FOR LAND ON WHICH TO CONSTRUCT AND OPERATE PERCOLATION PONDS ON THE OUTCROP OF THE MIOCENE FORMATION NORTHEAST OF THE RACE TRACK HILL AREA BUT WERE UNABLE TO MAKE ANY REASONABLE NEGOTIATIONS; AND

WHEREAS, VALLEY WASTE DISPOSAL COMPANY HAS RECEIVED OFFERS FROM THE OWNERS OF THE W 1/2 AND SE 1/4 OF SEC. 24, T29S, R29E, MDB&M FOR PROPERTY ON WHICH TO CONSTRUCT AND OPERATE SUCH PERCOLATION PONDS; AND

WHEREAS, THIS PROPERTY IS LOCATED APPROXIMATELY THREE MILES NORTH EAST OF THE RACE TRACK HILL AREA ADJACENT TO THE OUTCROP OF THE MIOCENE FORMATION; AND

WHEREAS, THIS AREA IS CHARACTERIZED BY RELATIVELY BARREN HILLS WHICH ARE USED ALMOST EXCLUSIVELY FOR LIVESTOCK GRAZING; AND

WHEREAS, THERE ARE NO FRESH WATER PRODUCING WELLS IN THIS VICINITY; AND

WHEREAS, WASTE WATER CONFINED TO PERCOLATION PONDS IN THIS AREA WILL PROBABLY PERCOLATE DOWNWARD INTO THE MIOCENE FORMATIONS AND MIGRATE HARMLESSLY BELOW ANY FRESH WATER-BEARING FORMATIONS; AND

PT Exhibit 1

WHEREAS, WASTE WATER OVERFLOWING BEYOND THE CONFINES OF ANY PERCOLATION PONDS CONSTRUCTED IN THIS AREA WILL MIGRATE TOWARD COTTONWOOD CREEK WHICH EMPTIES INTO KERN RIVER; AND

WHEREAS, IT IS THE INTENT OF THE CENTRAL VALLEY REGIONAL WATER POLLUTION CONTROL BOARD TO PROTECT ANY SURFACE OR UNDERLYING GROUND WATERS FROM POLLUTION BY THE DISCHARGE OF WASTE WATER FROM THE PRODUCTION OF OIL IN THE RACE TRACK HILL AREA AND TO PREVENT SUCH DISCHARGE FROM CREATING A PUBLIC NUISANCE DUE TO ODORS OR UNSIGHTLINESS; THEREFORE BE IT

RESOLVED, THAT THE CENTRAL VALLEY REGIONAL WATER POLLUTION CONTROL BOARD CONSIDERS THAT THE TRANSFER OF WASTE WATER FROM THE PRODUCTION OF OIL IN THE RACE TRACK HILL AREA TO PERCOLATION SUMPS LOCATED IN SECTION 24, T29S, R29E, MDB&M IS A SATISFACTORY METHOD FOR PROTECTING THE LOCAL GROUND WATER; AND BE IT FURTHER

RESOLVED, THAT THE FOLLOWING REQUIREMENTS SHALL GOVERN THE NATURE OF DISCHARGE OF WASTE WATER FROM THE PRODUCTION OF OIL IN THE RACE TRACK HILL AREA OF EDISON OIL FIELD BY VALLEY WASTE DISPOSAL COMPANY:

1. NEITHER THE WASTE DISCHARGE NOR ITS METHOD OF DISPOSAL SHALL RESULT IN THE POLLUTION OF SURFACE OR UNDERLYING GROUND WATER;

2. NEITHER THE WASTE DISCHARGE NOR ITS METHOD OF DISPOSAL SHALL CREATE A PUBLIC NUISANCE BY REASON OF ODORS OR UNSIGHTLINESS IN THE DISPOSAL AREA;

3. WASTE WATER DISCHARGED OR OVERFLOWING ONTO THE SURFACE OF THE GROUND, OR INTO NATURAL DRAINAGE CHANNELS OR INTO UNLINED SUMPS OTHER THAN THOSE CONSTRUCTED IN SECTION 24, T29S, R29E, MDB&M SHALL CONFORM TO THE FOLLOWING CRITERIA:

   A. TOTAL DISSOLVED SOLIDS SHALL NOT EXCEED 1000 PARTS PER MILLION.
   B. CHLORIDES SHALL NOT EXCEED 150 PARTS PER MILLION.
   C. BORON SHALL NOT EXCEED 1.0 PART PER MILLION.

RESOLVED FURTHER, THAT VALLEY WASTE DISPOSAL COMPANY BE REQUIRED TO FURNISH THE CENTRAL VALLEY REGIONAL WATER POLLUTION CONTROL BOARD WITH ANY PERTINENT DATA RELATIVE TO THE WASTE DISPOSAL SYSTEM INCLUDING:

1. PLAN SHOWING LAYOUT OF WASTE WATER COLLECTION AND DISPOSAL SYSTEMS.
2. LIST OF OPERATORS CONTRIBUTING WASTE WATER TO THE SYSTEM TOGETHER WITH APPROXIMATE AMOUNT OF WATER FROM EACH.
3. ANY SIGNIFICANT CHANGES IN THE DISPOSAL SYSTEM AS THEY OCCUR.

RESOLVED FURTHER, THAT RESOLUTION 57-16 IS HEREBY RESCINDED.

IF THERE ARE ANY FUTURE CHANGES IN THE CONDITIONS OF DISCHARGE OR USE OF THE DISPOSAL AREA, IT MAY BE NECESSARY FOR THE CENTRAL VALLEY REGIONAL WATER POLLUTION CONTROL BOARD TO REVISE THESE REQUIREMENTS TO CONFORM TO THE NEW CONDITIONS OR USE.

THESE REQUIREMENTS DO NOT AUTHORIZE THE COMMISSION OF ANY ACT RESULTING IN THE INJURY TO THE PROPERTY OF ANOTHER OR PROTECT THE DISCHARGER FROM HIS LIABILITIES UNDER FEDERAL, STATE OR LOCAL LAWS.

/s/ CLIFFORD E. PLUMMER

CHAIRMAN

ATTEST:

/s/ JOSEPH S. GORLINSKI

EXECUTIVE OFFICER

REGIONAL WATER POLLUTION CONTROL BOARD
CENTRAL VALLEY REGION
STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 92-11037

NOTICE OF APPLICABILITY
FOR
VALLEY WASTE DISPOSAL COMPANY
FEE 34 FACILITY, EDISON OIL FIELD
KERN COUNTY

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

1. The Board adopted General Order No. 92-110 on 29 May 1992 that prescribes waste discharge requirements for the discharge of oil production wastewater to sumps in the Edison oil field.

2. Valley Waste Disposal Company operates an oil production wastewater discharge facility in the SW 1/4 of the SW 1/4 of Section 34, ~~T30S,~~ T29S, R29E, MDB&M. The wastewater storage facility is in a vineyard area adjacent to the No. 18 oil well, as shown on the 1991 Munger Oil Field Map Book. The facility consists of six sumps. Wastewater is transported to the facility by pipeline from various oil leases throughout the Edison oil field. Crude oil is stored in two oil recovery sumps until shipment offsite. The treated wastewater is stored in three gunite-lined sumps and eventually pumped via pipeline to Valley Waste's Race Track facility for disposal. There is one unlined contingency sump for storage of excess wastewater. Dimensions of the impoundments range from approximately 30' x 50' to 120' x 180'. The sumps are approximately 10' to 15' deep.

3. When in operation, up to 5000 barrels/day of wastewater are discharged to the sump(s). A chemical analysis of the wastewater indicates the following characteristics: 7900 μmhos/cm electrical conductivity, 4450 mg/l chloride, and 15.6 mg/l boron.

IT IS HEREBY ORDERED that Valley Waste Disposal Company, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the prescribed requirements of General Order No. 92-110.

I, WILLIAM H. CROOKS, 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, Central Valley Region, on 29 May 1992.

W. S. Johnson for
WILLIAM H. CROOKS, Executive Officer

SRG:mtr:cjs

PT Exhibit 2

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

GENERAL ORDER NO. 92-110

WASTE DISCHARGE REQUIREMENTS
FOR
EDISON OIL FIELD OPERATORS
OIL PRODUCTION WASTEWATER DISCHARGES
KERN COUNTY

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

1. The Edison oil field is on the eastern side of the Tulare Lake Basin, approximately four miles southeast of Bakersfield, as shown in Attachment A. The field comprises an area of approximately 30 square miles.

2. Crude oil production operators (hereafter Dischargers) use surface impoundments, generally known to the industry as sumps, at various oil lease production facilities in the oil field. The sumps are used for the separation of crude oil and produced wastewater, storage, and wastewater disposal by means of evaporation and percolation.

3. The sumps are either unlined or contain concrete liner material that does not meet the prescriptive construction criteria for classified waste management units as specified in Title 23, California Code of Regulations, Sections 2510 et seq. (Chapter 15).

4. The discharges are either not regulated or are presently governed by waste discharge requirements which are neither adequate nor consistent with current regulations and policies of the Board.

5. The Board may prescribe requirements for any discharge, in accordance with Section 13263 of the California Water Code.

AREA DESCRIPTION

6. The Edison oil field lies within the South Valley Floor Hydrologic Unit as depicted on interagency hydrologic maps prepared by the Department of Water Resources, August 1986.

7. The area receives approximately 5.85 inches of rainfall annually, as measured from the National Weather Service Station at the Bakersfield Airport, approximately seven miles northwest of the area. Evaporation in the area is approximately 68 inches annually.

8. There is no major surface drainage within the Edison oil field. The area receives runoff from Caliente Creek, an ephemeral drainage to the east, only in direct response to infrequent storms of high intensity.

9. Depth to ground water within the Edison oil field ranges from approximately 300 feet in the southwest to greater than 400 feet in the northeast part of the field. Ground water movement is generally to the southwest.

10. The ground water is of excellent to good quality with the following average characteristics:

Constituent	Units	Measured Average Value
Specific Electrical Conductance @ 25°C	µmhos/cm	731
Total Dissolved Solids	mg/l	580
Chloride	mg/l	85
Boron	mg/l	0.24

11. The beneficial uses of underlying ground water are domestic, industrial, and agricultural supply. Ground water is primarily used for agriculture.

12. Soils in the area generally range from well-drained, permeable sand and silty sand in the southwest portion of the field to silty sand and clay with fairly well developed claypan horizons to the northeast. Underlying the soil horizon is 200 to 300 feet of recent alluvial fan sediment, which consists primarily of gravel, gravelly sand, and sand of high permeability.

BASIN PLAN

13. The Board adopted a Water Quality Control Plan for the Tulare Lake Basin (5D), hereafter "Basin Plan". These requirements implement the Basin Plan.

14. The Basin Plan policy on oil field wastewater disposal states that all sumps overlying the ground water body shall protect present beneficial uses and not degrade ground water.

15. The Basin Plan contains the following maximum salinity limits for oil field wastewater in sumps overlying usable ground water:

Constituent	Units	Measured Value
Specific Electrical Conductance @ 25°C	µmhos/cm	1000
Chloride	mg/l	200
Boron	mg/l	1

16. The Basin Plan encourages the reclamation and beneficial reuse of wastewater discharges to land and surface waters.

17. In accordance with Basin Plan Amendment, Resolution No. 82-136, the Regional Board may allow discharges of oil field wastewater that is in excess of maximum salinity limits to unlined sumps, stream channels, and surface waters where the Discharger has demonstrated to the Board in public hearing that the proposed discharge will not substantially affect water quality nor cause a violation of water quality objectives.

WASTEWATER CHARACTERIZATION AND DISPOSAL ALTERNATIVES

18. Wastewater from oil producing zones in the Edison field is generally high in inorganic salts and has the following range of characteristics:

Constituent	Units	Measured Value Range
Specific Electrical Conductance @ 25°C	µmhos/cm	750 - 19,500
Chloride	mg/l	85 - 2,400
Boron	mg/l	0.2 - 12.5

19. Alternatives to oil field production wastewater discharges to sumps include on-site collection of wastewater in tanks and subsequent disposal of wastewater at an approved waste disposal facility or subsurface injection of wastes into approved Class II injection wells pursuant to Title 14, California Code of Regulations, Section 1724 et seq.

20. These requirements will allow the Dischargers to achieve compliance with current state regulations and policy regarding the discharge of oil field produced wastewater to land. The method of achieving compliance will be at the Discharger's discretion.

LEGAL REFERENCES

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

22. The Board has notified affected dischargers and interested agencies and persons of its intent to prescribe general waste discharge requirements for these operations and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

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

IT IS HEREBY ORDERED that Dischargers who are issued a Notice of Applicability of this General Order to their facility, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. Discharge of wastes to surface waters or drainage courses is prohibited.

2. Discharge from a surface impoundment except as authorized by this Order is prohibited.

3. Discharge of wastes other than wastewater generated during the production of crude oil is prohibited.

4. Bypass or overflow of untreated or partially treated waste is prohibited.

5. Creation of pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code, is prohibited.

6. Discharge of hazardous waste, as defined in Chapter 15, Section 2521(a), is prohibited.

7. Discharge of wastes within 100 feet of surface water drainage courses is prohibited.

B. Discharge Specifications:

1. Wastewater effluent discharge to sumps that do not meet the prescriptive construction criteria for classified waste management units as specified in Chapter 15 shall not exceed the following limits:

Constituent	Units	Limitation
Specific Electrical Conductance @ 25°C	µmhos/cm	1000
Chloride	mg/l	200
Boron	mg/l	1.0

2. Dischargers with wastewater effluent in excess of the numerical limitations established in Discharge Specification B.1 shall submit a plan for achieving compliance with this Order in accordance with the time schedule in Provision C.8. Plans are subject to concurrence by the Executive Officer and include but are not limited to the following:

a. Design of a wastewater system to treat the wastewater to meet the numerical limitations of Discharge Specification B.1.

b. Retrofit the sumps to comply with the current Chapter 15 construction standards for Class II surface impoundments; install monitoring systems in accordance with Article 5 of Chapter 15; and establish assurance of financial responsibility for closure, and for initiating and completing corrective action for all known and reasonably foreseeable releases from the surface impoundments, in accordance with Articles 5 and 8 of Chapter 15.

c. Demonstrate to the Board in public hearing that the proposed discharge will not substantially affect water quality or cause a violation of water quality objectives in accordance with Resolution No. 82-136.

d. Collection of wastewater in above ground tank(s) and subsequent disposal to an approved disposal facility or Class II injection well(s), and closure of the impoundments in accordance with Section 2582 of Chapter 15.

3. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.

4. Sumps shall be free of oil coatings, or shall be covered or screened to preclude entry of bird or animal life.

5. The facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

6. A minimum of two feet of freeboard shall be maintained in the sumps.

C. **Provisions:**

1. The Discharger shall, in a timely manner, remove any wastes discharged at this facility in violation of this Order, and dispose of the wastes in an appropriate manner.

2. At the facility, the Discharger shall post in a conspicuous location, a clearly visible, legible, permanently affixed sign with the name of the owner or operator, and name of the facility.

3. Where appropriate, a copy of this Order shall be kept at the facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

4. The Discharger shall comply with the attached Monitoring and Reporting Program No. 92-110, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

5. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which is part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

6. In the event of any change of owner or operator of the waste dischange facility, the Discharger shall promptly notify the succeeding owners or operators of their waste discharge requirements in writing, a copy of which shall be immediately forwarded to this

office. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

7. The Board will review this Order periodically and will revise these requirements when necessary.

TIME SCHEDULE

8. Dischargers with wastewater discharges that exceed the numerical water quality limitations of Discharge Specification B.1 shall comply with the following time schedule for compliance with this Order:

Task Description	Due Date[1/]
Submit Compliance Plan in accordance with Discharge Specification B.2	12 months
Compliance Progress Report	24 months
Compliance Progress Report	36 months
Achieve Compliance	48 months

1/ All compliance due dates are initiated as of the date the Notification of Applicability Order is issued to the Discharger by the Executive Officer.

9. All Dischargers subject to Provision C.8 shall submit to the Board on or before the Compliance Progress Report due dates, a report detailing progress toward implementation of its compliance plan submitted in accordance with Discharge Specification B.2. The Discharger shall report any delay in implementation of the compliance plan and reason(s) for the delay.

10. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a General Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 29 May 1992.

W.S. Johnson for
WILLIAM H. CROOKS, Executive Officer

SRG:mtr:cjs:5/29/92

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 92-110
FOR
EDISON OIL FIELD OPERATORS
OIL PRODUCTION WASTEWATER DISCHARGES
KERN COUNTY

EFFLUENT MONITORING

A sampling station shall be established where a representative grab sample of the effluent can be obtained. Samples shall be collected just prior to discharge to the sumps. Effluent samples should be representative of the volume and nature of the discharge. The following shall constitute the effluent monitoring program:

Constituent	Units	Sampling Frequency
Specific Electrical Conductance @ 25°C	µmhos/cm	Annually
Chloride	mg/l	Annually
Boron	mg/l	Annually

REPORTING

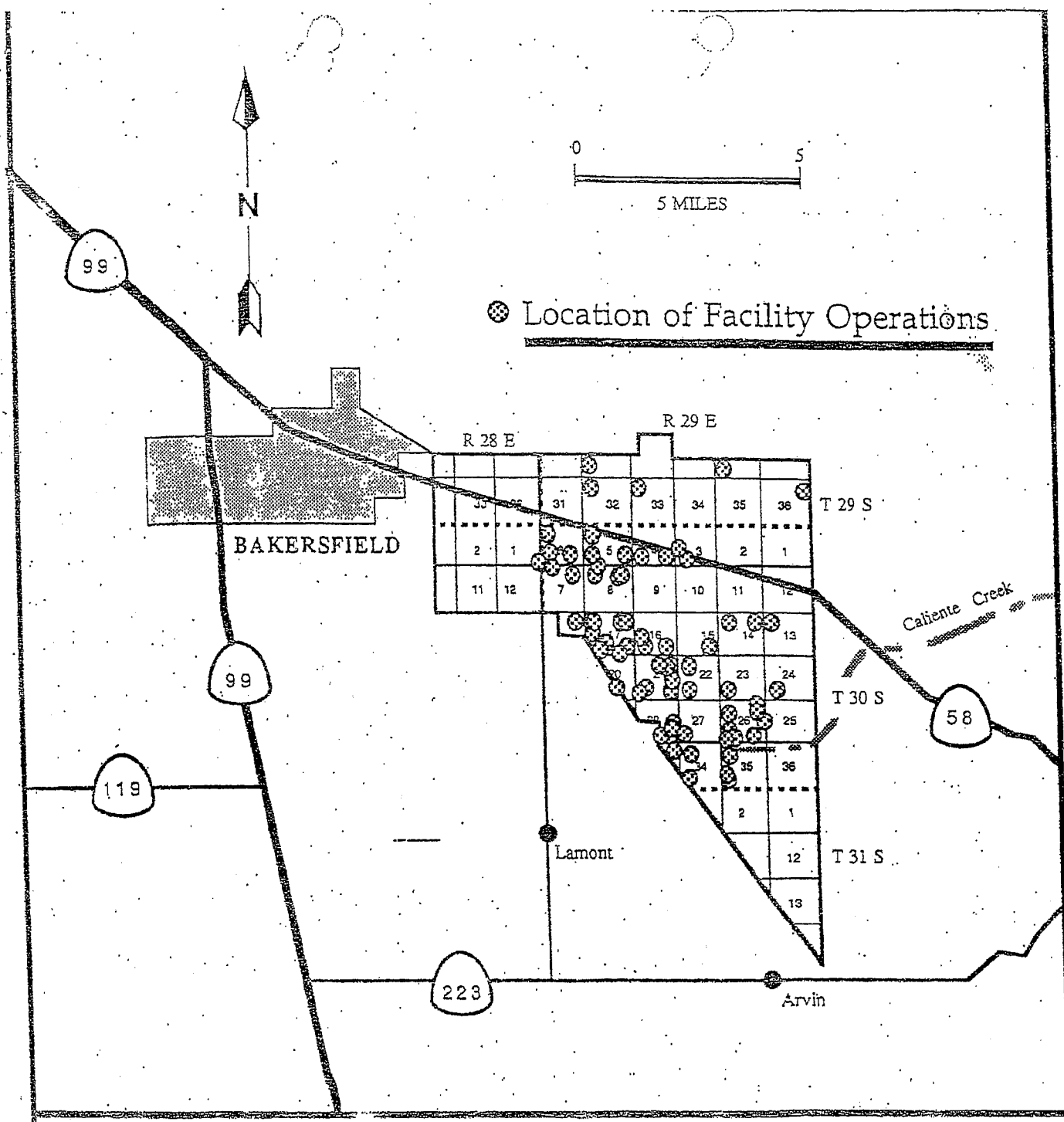
In reporting the monitoring data, the Discharger shall clearly indicate the monitoring and reporting program number and name of the facility on the front of the report. The Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. If the Discharger monitors any pollutant at the facility more frequently than is required by this Order, or is unable to monitor due to lack of discharge at the facility, the Discharger shall notify the Regional Board in the next annual discharge monitoring report.

All reports submitted in response to this Order shall comply with the signatory requirements in Standard Provision B.3. The Discharger shall implement this monitoring program on the first day of the month following the date of Notification of Applicability by the Executive Officer.

W.S. Johnson for
WILLIAM H. CROOKS, Executive Officer

29 May 1992
(Date)

SRG:mtr:cjs:5/29/92



GENERAL ORDER
WASTE DISCHARGE REQUIREMENTS FOR EDISON OIL FIELD OPERATORS OIL PRODUCTION WASTEWATER DISCHARGES KERN COUNTY

ATTACHMENT A

INFORMATION SHEET

EDISON OIL FIELD OPERATORS
OIL PRODUCTION WASTEWATER DISCHARGES
KERN COUNTY

The Edison oil field is on the eastern side of the Tulare Lake Basin, southeast of Bakersfield in Kern County. It encompasses an area of about 30 square miles.

There are approximately 70 oil field operators of record in the Edison oil field. Primary methods of wastewater disposal include discharge to sumps, piping the wastewater to the Valley Waste Disposal Company's Race Track Hill facility, and injection wells. There are 80 oil production facilities with sumps used for the separation of crude oil and wastewater, storage, and/or the disposal of produced wastewater by percolation and evaporation. Nearly one-half million gallons per day are discharged to sumps.

Wastewater from oil producing zones in the Edison field is generally high in inorganic salts and has the following range of characteristics:

Constituent	Units	Measured Value Range
Specific Electrical Conductance @ 25°C	μmhos/cm	750 - 19,500
Chloride	mg/l	85 - 2,400
Boron	mg/l	0.2 - 12.5

The sumps do not meet the prescriptive construction criteria for classified waste management units as specified in Chapter 15 regulations. The discharges are either not regulated or presently governed by waste discharge requirements which are neither adequate nor consistent with current regulations and policies of the Board.

Soils in the area generally range from well-drained, permeable sands and silty sands in the southwest portions of the field to silty sands, and clays with fairly well developed claypan horizons to the northeast. Underlying the soil horizon is 200 to 300 feet of recent alluvial fan sediments, which consist primarily of discontinuous deposits of gravel, gravelly sand, and sand of high permeability. The recent alluvium is underlain by 800 to 4,700 feet of interbedded, loosely consolidated, non-marine sandstone, siltstone, and claystone.

Unconfined ground water is found primarily within gravel and sand of the Kern River-Chanac Series at depths from 300 feet in the southwest portion to greater that 400 feet in the northeast part of the field. Ground water movement is generally to the southwest.

Ground water in the area is used extensively for agriculture, and to a lesser extent for domestic and industrial uses. The ground water is of excellent to good quality with the following average characteristics:

Constituent	Units	Average Value
Specific Electrical Conductance @ 25°C	µmhos/cm	731
Total Dissolved Solids	mg/l	580
Chloride	mg/l	85
Boron	mg/l	0.24

The Basin Plan includes a section entitled, "Policy on Oil Field Wastewater Disposal" which contains maximum salinity limits for oil field wastewater. Wastewater analyses indicate most discharges do not meet the Basin Plan objectives.

These requirements direct those Dischargers in noncompliance with salinity limitations to achieve compliance in accordance with a time schedule. The time schedule requires submittal of a plan and compliance with the requirements within 18 months.

The action to adopt new or updated requirements for existing facilities is exempt from the provisions of the California Environmental Quality Act in accordance with Title 14, California Code of Regulations (CCR), Section 15301.

Individual dischargers will be subject to this General Order when the Board has adopted a Notification of Applicability Order for each Discharger's facility, as described in the Order.

This General Order and individual Notice of Applicability Orders were developed to expedite the preparation and issuance of new and updated WDRs to oil production wastewater dischargers who either do not have WDRs or have WDRs that are outdated and do not reflect current regulations and policies of the Board.

SRG:mtr:cjs

FILE

10 April 2015

NOTICE OF VIOLATION

Larry Bright, Manager
Valley Water Management Company
7500 Meany Avenue
Bakersfield, CA 93308

CERTIFIED MAIL
7012 2920 0000 1430 0359

INSPECTION REPORT – VALLEY WATER MANAGEMENT COMPANY, RACE TRACK HILL, EDISON OIL FIELD, KERN COUNTY

Central Valley Regional Water Quality Control Board staff (Staff) inspected the Race Track Hill wastewater disposal facility (Facility) on 27 March 2015. Disposal operations at the Facility are regulated by Waste Discharge Requirements Order 58-439 (WDRs). Staff's observations and comments are presented in the enclosed inspection report.

Staff observed 27 surface impoundments (ponds) being used for evaporation and percolation of oil field production wastewater. Animal burrowing beneath the fence surrounding Cleaning Pond 1 (CP-1) has left openings that need to be repaired. Additionally oil sheens were observed in CP-2 and CP-3.

The openings in the screening surrounding CP-1 and the oil observed in CP-2 and CP-3 are violations of the Water Quality Control Plan for the Tulare Lake Basin Second Edition 2004 (Basin Plan), which states that ponds used for the disposal of oil field wastewater must either be free of oil or effectively covered or screened to preclude entry of birds or animals (Basin Plan, section IV-15, page 41).

Maintenance is needed to close the burrowing holes under the fencing at CP-1 and the oil must either be removed from CP-2 and CP-3 or else these ponds need to be fenced and netted.

Additionally staff noticed that freeboard within pond 10 was insufficient (less than 1 foot) although the present WDRs do not prescribe a minimum freeboard, maintenance to prevent waters from overtopping the impoundment around pond 10 is advisable.

By 15 May 2015, please submit a documentation, including before and after photos, describing measures completed to address the above violations.

PT Exhibit 3

If you have any questions regarding this inspection, please contact Zachary Jarvie at (559) 445-5455 or by email at Zachary.Jarvie@waterboards.ca.gov.

Dane S. Johnson

DANE S. JOHNSON
Senior Engineering Geologist
Professional Geologist No. 4239

Enclosure: Inspection Report

cc: Mike Toland, California Division of Oil, Gas and Geothermal Resources, Bakersfield
Jeffrey Single, California Department of Fish and Wildlife, Fresno

5F	5D152013013		NON-15	1/4
OFFICE	WDID	**FACILITIES INSPECTION REPORT**	PROGRAM	PAGE NO.
58-349	142624		49654	222241
ORDER NO.	REG MEASURE ID		PARTY ID	PLACE ID

VALLEY WATER MANAGEMENT COMPANY	EDISON OIL FIELD, RACETRACK HILL FACILITY
DISCHARGER NAME	FACILITY NAME
7500 MEANY AVENUE	W ½ SECTION 24, T29S, R29E, MDB&M
STREET ADDRESS	STREET ADDRESS
BAKERSFIELD, CA 93308	EDISON, KERN COUNTY
CITY, STATE, ZIP CODE	CITY, STATE, ZIP CODE
LARRY BRIGHT	RUSSELL EMERSON
DISCHARGER CONTACT PERSON	FACILITY CONTACT PERSON
(661) 410-7500 / lbright@vwwater.com	(661) 978-0982 / remerson@vwwater.com
TELEPHONE NO. / E-MAIL ADDRESS	TELEPHONE NO. / E-MAIL ADDRESS

GENERAL INSPECTION INFORMATION

Inspection Type: B Type Compliance Inspection — Lead Inspector: Zachary Jarvie

3/27/2015 to 3/27/2015	10:45AM-01:30PM	Clear Sunny
INSPECTION DATE(S)	INSPECTION TIME	GENERAL WEATHER CONDITIONS

INSPECTION ATTENDEE(S)

NAME	COMPANY/AGENCY	TELEPHONE NO.	E-MAIL ADDRESS
Zachary Jarvie	Regional Water Board	(559) 445-5455	Zachary.Jarvie@waterboards.ca.gov
Russell Emerson	Valley Water Management Co.	(661) 978-0982	remerson@vwwater.com

INSPECTION SUMMARY (for CIWQS entry – 500 character maximum)

The Racetrack Hills Facility was inspected to determine compliance with Waste Discharge Requirements Resolution 58-349 (WDRs). There are 27 ponds on the facility that are used for disposal of oil field production wastewater. The following violation of the WDRs were noted; Insufficient netting. No spraying of wastewater outside of the designated disposal ponds was observed.

INSPECTION VIOLATIONS SUMMARY (if applicable)

Identify VIOLATIONS noted during inspection in table below. For each violation documented entered into CIWQS, identify Violation ID and Violation Type, describe violation, and identify section of the WDRs or Water Code violated.

Label	Violation ID	Violation Type	Violation Description	Section of the WDRs Violated
V1	988961	Basin Plan Prohibition	Oil in impoundments not covered with netting	Water Quality Control Plan for the Tulare Lake Basin Second Edition 2004 (section IV-15, page 41)

OTHER VIOLATIONS (if applicable)

SMR violations?	☐ Yes ☐ No ☒ Not Evaluated	Notes: The SMR review will be addressed in a separate cover.
File Review violations?	☐ Yes ☐ No ☒ Not Evaluated	Notes: The file review will be addressed in a separate cover.

Lead Inspector ID: 549144 Signature: Z Jarvie Date: 4/10/2015

Inspection Tracking Information Reviewed by: (1) _____ (2) _____ (3) _____ CIWQS Coordinator

Filename: VALLEY WATER MANAGEMENT COMPANY SEC 24 FACILITY, EDISON OIL FIELD CIWQS Entry Date: 4/10/2015 CIWQS Inspection ID: 20016590

FACILITY INFORMATION

Oil field production wastewater disposal facility.
FACILITY DESCRIPTION (e.g., total area in acres, number of waste management units, etc.)

Active
STATUS (active, inactive, closed)

Oil field production wastewater.
WASTE TYPES

Oil/Gas Extraction
FACILITY CLASSIFICATION

Surface impoundments.
DISPOSAL DESCRIPTION (e.g., composting, landfill, surface impoundment, etc.)

BACKGROUND

The Racetrack Hill facility is regulated under Waste Discharge Requirements Resolution 58-349 (WDRs). The facility contains 27 unlined ponds and an irrigation sprinkler system that has been used for the disposal of wastewater. The facility was last inspected on 18 September 2013. The 2013 inspection observed the use of the irrigation sprinkler system to dispose of high-salinity wastewater and noted that this was a violation of WDRs.

INSPECTION GIS DATA

Description of Measured Point	Latitude	Longitude	Datum	Comments
Centroid of Facility	35.392863	-118.821173	NAD 83	

INSPECTION OBSERVATIONS AND FINDINGS

Describe observations and findings and identify those that document and reference each violation listed in the Inspection Violations Summary table by identifying the cited violation number within parentheses following the observation/finding (e.g., Exposed waste on top deck (V1)).

The facility was inspected to observe current wastewater disposal operations and evaluate compliance with the WDRs. Photographs were taken to document conditions observed. Attachment 1 is an aerial view of the Racetrack Hill Facility.

Staff observed that oilfield produced wastewater was being discharged into twenty seven unlined ponds within the facility. No spraying of wastewater outside of the designated disposal ponds was observed.

Wastewater is pumped from the Valley Water Management's Fee 34 facility into Cleaning Pond 1 (CP-1). From the Cleaning Ponds (CP-1, CP-2 & CP-3) wastewater is piped into the disposal ponds (Ponds 1 through 24) which feed into one another in a downhill series. Field readings for the Temperature, pH and Electrical Conductivity (EC) were taken in several of the ponds. EC is measured in microsiemens per centimeter (µS/cm).

- CP-1 contains wastewater and oil
  - The pond is fenced and netted. However, animal burrowing appears to have opened up several gaps between the ground surface and the screened fencing (Photos 1 & 2). Maintenance is needed to close these gaps
  - Freeboard appears adequate

- CP-2 & CP-3 each contain wastewater and that had minor visible oil (Photos 3 & 4)
  - These ponds have no netting or fencing
  - Freeboard appears adequate
  - Field readings of wastewater taken from the cleaning ponds were as follows;
    - CP-2: EC 5,433 µS/cm, pH 7.49, Temperature 23.3 °C
    - CP-3: EC 5,475 µS/cm, pH 7.59, Temperature 24.0 °C

- Ponds 1 through 24 all contained wastewater and were each free of visible oil
  - Ponds 1 through 24 had no individual fencing or netting
  - Pond 10 has inadequate freeboard on its northeast corner and was in danger of overflowing into the roadway (Photos 5 & 6). All other ponds appeared to have adequate freeboard
  - Field readings of wastewater taken from disposal ponds were as follows;
    - Pond 1: EC 5,235 µS/cm, pH 8.16, Temperature 22.9 °C
    - Pond 5: EC 5,818 µS/cm, pH 8.29, Temperature 21.9 °C
    - Pond 10: EC **12,050 µS/cm**, pH 7.81, Temperature 24.5 °C
    - Pond 13: EC 5,381 µS/cm, pH 8.67, Temperature 25.5 °C
    - Pond 19: EC 5,392 µS/cm, pH 8.04, Temperature 25.2 °C
    - Pond 20: EC 7,424 µS/cm, pH 8.73, Temperature 29.7 °C

SAMPLING INFORMATION AND OBSERVATIONS

Were samples collected during the inspection? ☐ Yes ☒ No Are sample results included in report? ☐ Yes ☒ No

Did discharger collect split samples? ☐ Yes ☒ No

SAMPLE COLLECTION INFORMATION AND OBSERVATIONS

SAMPLE ID	SAMPLE DESCRIPTION/OBSERVATIONS	SAMPLE TIME (hours)	PHOTO NO.
SAMPLE ID	SAMPLE DESCRIPTION/OBSERVATIONS	SAMPLE TIME (hours)	PHOTO NO.

DISCUSSION OF SAMPLING RESULTS

Discuss sampling results (e.g., discuss whether sampling results show compliance with WDRs).

No samples were collected.

CONCLUSIONS

Summarize the conclusions of the inspection(s) below.

1. The Water Quality Control Plan for the Tulare Lake Basin Second Edition 2004 (Basin Plan), states that ponds used for the disposal of oil field wastewater must either be free of oil or effectively covered or screened to preclude entry of birds or animals (Basin Plan, section IV-15, page 41).

2. The burrowed openings under the fence surrounding Cleaning Pond 1 (CP-1) are a violation of the Basin Plan and need to be repaired.

3. Oily-wastewater observed in CP-2 and CP-3 is a violation of the Basin Plan. The oil in these ponds needs to be removed or the ponds need to be fenced and netted to preclude entry of birds or animals.

4. Pond 10 has inadequate freeboard. The water level in pond 10 needs to be lowered or a berm erected to prevent the water from overtopping and spilling outside of the impoundment.

Attachments Include: Attachment 1: Racetrack Hill Facility

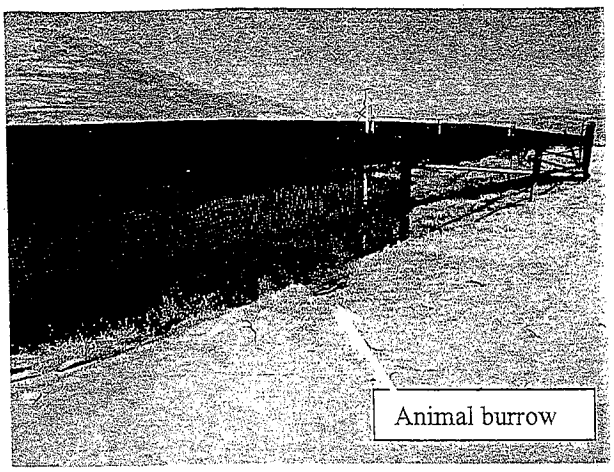


Photo 1. – CP-1 looking northwest

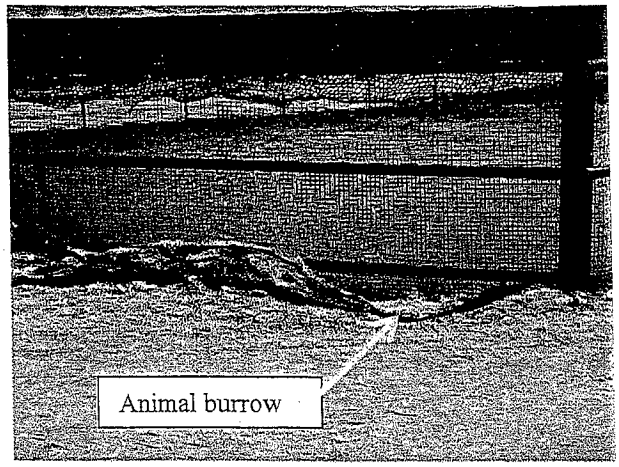


Photo 2. – CP-1 looking northeast

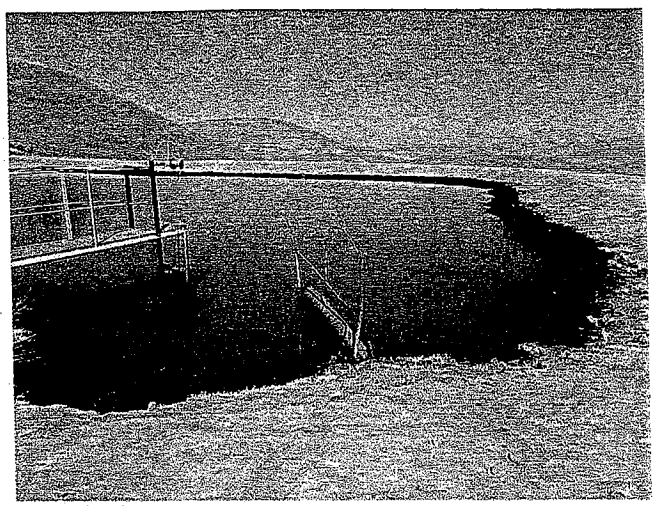


Photo 3. – CP-2 looking northwest

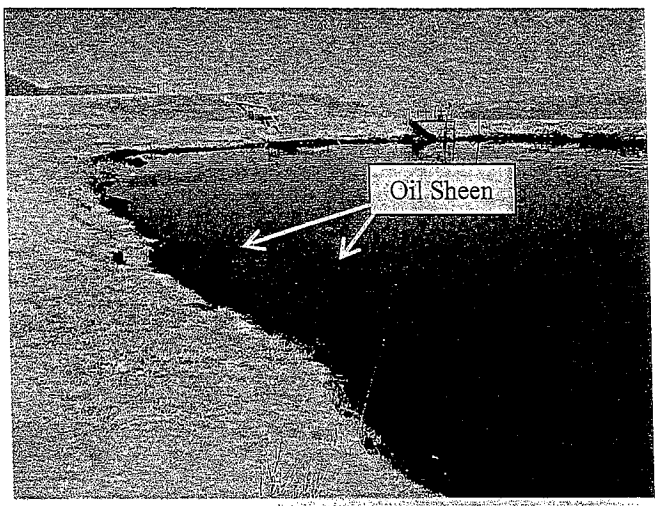


Photo 4. – CP-3 looking northwest

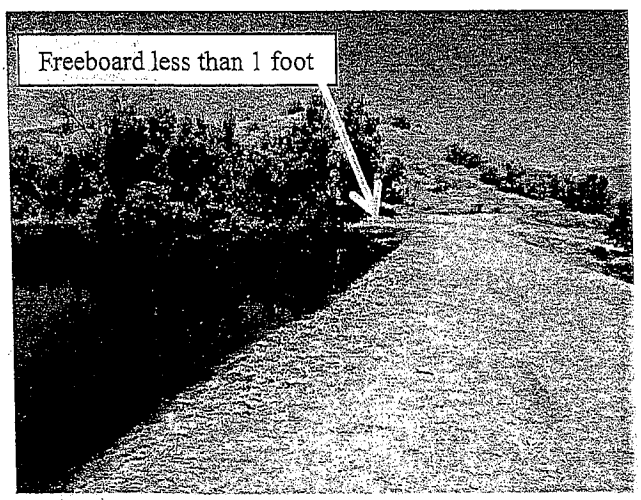
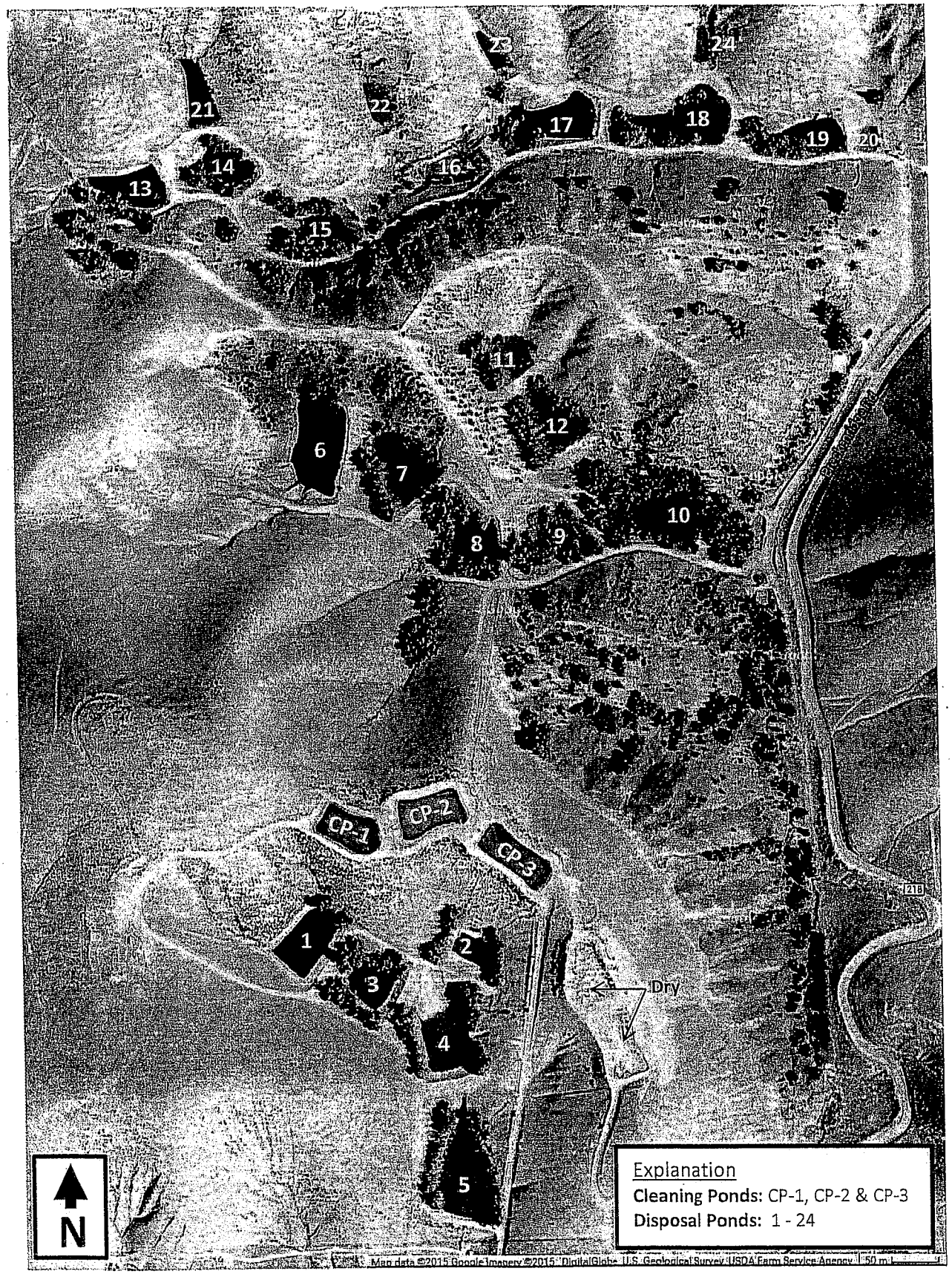


Photo 5. – Pond 10 looking north


Photo 6. – The northeast corner of pond 10

Photos taken on 27 March 2015 by Zachary Jarvie, Engineering Geologist



Attachment 1: Racetrack Hill Facility

Map by ZJJ 04/10/2015

Attachment 1: Racetrack Hill Facility

Map by ZJJ 04/10/2015

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

FILE

10 April 2015

NOTICE OF VIOLATION

Larry Bright, Manager
Valley Water Management Company
7500 Meany Avenue
Bakersfield, CA 93308

CERTIFIED MAIL
7012 2920 0000 1430 0342

INSPECTION REPORT – VALLEY WATER MANAGEMENT COMPANY, FEE 34 FACILITY, EDISON OIL FIELD, KERN COUNTY

Central Valley Regional Water Quality Control Board staff (Staff) inspected the Fee 34 wastewater disposal facility (Facility) on 27 March 2015. Disposal operations at the Facility are regulated by Waste Discharge Requirements Order 92-11037 (WDRs). Staff's observations and comments are presented in the enclosed inspection report.

Staff observed oil produced water being discharged into eight surface impoundments (ponds) at the facility. Two gunite-lined wastewater ponds containing oily-wastewater did not have netting. Two unlined oil ponds had gaps between the netting and the ground surface. Freeboard appeared inadequate in the two oil separation ponds as well as in the two wastewater ponds. Wastewater has been discharged into the unlined impoundment known as the stormwater basin.

The Facility is in violation or threatened violation of the following sections of the WDRs:

1. Discharge Specification B.1 (WDRs, page 5), for wastewater effluent discharge to ponds that have not been demonstrated to meet the prescriptive construction criteria for classified waste management units.

2. Discharge Specification B.4 (WDRs, page 6), for presence of oil in ponds that are not covered or screened to preclude entry of bird or animal life.

3. Discharge Specification B.6 (WDRs, page 6), for failing to maintain a minimum of two feet of freeboard in all ponds

For a discussion of above violations, please refer to the enclosed inspection report.

By 15 May 2015, please submit documentation describing measures completed to address the netting repairs, including before and after photos.

PT Exhibit 4

If you have any questions regarding this inspection, please contact Zachary Jarvie at (559) 445-5455 or by email at Zachary.Jarvie@waterboards.ca.gov.

Dane S. Johnson

DANE S. JOHNSON
Senior Engineering Geologist
Professional Geologist No. 4239

Enclosure: Inspection Report

cc: Mike Toland, California Division of Oil, Gas and Geothermal Resources, Bakersfield
Jeffrey Single, California Department of Fish and Wildlife, Fresno

5F	5D159073001		NON-15	1/4
OFFICE	WDID	**FACILITIES INSPECTION REPORT**	PROGRAM	PAGE NO.
92-11037	144517		49654	222263
ORDER NO.	REG MEASURE ID		PARTY ID	PLACE ID

VALLEY WATER MANAGEMENT COMPANY	EDISON OIL FIELD, FEE 34 C-PLANT
DISCHARGER NAME	FACILITY NAME
7500 MEANY AVENUE	SW ¼ SECTION 34, T29S, R29E, MDB&M
STREET ADDRESS	STREET ADDRESS
BAKERSFIELD, CA 93308	EDISON, KERN COUNTY
CITY, STATE, ZIP CODE	CITY, STATE, ZIP CODE
LARRY BRIGHT	RUSSELL EMERSON
DISCHARGER CONTACT PERSON	FACILITY CONTACT PERSON
(661) 410-7500 / lbright@vwwater.com	(661) 978-0982 / remerson@vwwater.com
TELEPHONE NO. / E-MAIL ADDRESS	TELEPHONE NO. / E-MAIL ADDRESS

GENERAL INSPECTION INFORMATION

Inspection Type: B Type Compliance Inspection — Lead Inspector: Zachary Jarvie

3/27/2015 to 3/27/2015	9:20AM-10:30AM	Clear Sunny
INSPECTION DATE(S)	INSPECTION TIME	GENERAL WEATHER CONDITIONS

INSPECTION ATTENDEE(S)

NAME	COMPANY/AGENCY	TELEPHONE NO.	E-MAIL ADDRESS
Zachary Jarvie	Regional Water Board	(559) 445-5455	Zachary.Jarvie@waterboards.ca.gov
Russell Emerson	Valley Water Management Co.	(661) 978-0982	remerson@vwwater.com

INSPECTION SUMMARY (for CIWQS entry – 500 character maximum)

The C-Plant Facility was inspected to determine compliance with Waste Discharge Requirements Order 92-11037 (WDRs). There are seven ponds on the facility that are used for separation and storage of oil field production wastewater. The following violations of the WDRs were noted. Discharge of wastewater to the unlined oil ponds and to the Stormwater Basin. Insufficient netting and inadequate freeboard.

INSPECTION VIOLATIONS SUMMARY (if applicable)

Identify VIOLATIONS noted during inspection in table below. For each violation documented entered into CIWQS, identify Violation ID and Violation Type, describe violation, and identify section of the WDRs or Water Code violated.

Label	Violation ID	Violation Type	Violation Description	Section of the WDRs Violated
V1	988958	Effluent violation	Discharge of high salinity water to ponds	Discharge Specification B. 1 (WDRs, page 5)
V2	988959	Order Condition	Oil in impoundments not covered with netting	Discharge Specification B. 4 (WDRs, page 6)
V3	988960	Order Condition	Failing to maintain a minimum of two feet of freeboard	Discharge Specification B. 6 (WDRs, page 6)

OTHER VIOLATIONS (if applicable)

SMR violations?	☐ Yes ☐ No ☒ Not Evaluated	Notes: The SMR review will be addressed in a separate cover.
File Review violations?	☐ Yes ☐ No ☒ Not Evaluated	Notes: The file review will be addressed in a separate cover.

Lead Inspector ID: 549144 Signature: Z Jarvie Date: 4/10/2015

Inspection Tracking Information Reviewed by: (1) _____ (2) _____ (3) _____

CIWQS Coordinator

Filename: VALLEY WATER MANAGEMENT COMPANY FEE 34 C-PLANT FACILITY, EDISON OIL FIELD CIWQS Entry Date: 4/10/2015 CIWQS Inspection ID: 20016588

FACILITY INFORMATION

Oil field production wastewater disposal facility.
FACILITY DESCRIPTION (e.g., total area in acres, number of waste management units, etc.)

Active
STATUS (active, inactive, closed)

Oil field production wastewater.
WASTE TYPES

Oil/Gas Extraction
FACILITY CLASSIFICATION

Surface impoundments.
DISPOSAL DESCRIPTION (e.g., composting, landfill, surface impoundment, etc.)

BACKGROUND

The C-Plant Facility is regulated under Waste Discharge Requirements Order 92-11037 (WDRs). The facility was last inspected on 18 September 2013.

INSPECTION GIS DATA

Description of Measured Point	Latitude	Longitude	Datum	Comments
Centroid of Facility	35.355071	-118.859904	NAD 83	

INSPECTION OBSERVATIONS AND FINDINGS

Describe observations and findings and identify those that document and reference each violation listed in the Inspection Violations Summary table by identifying the cited violation number within parentheses following the observation/finding (e.g., Exposed waste on top deck (V1)).

The facility was inspected to observe current wastewater disposal operations and evaluate compliance with the WDRs. Photographs were taken to document conditions observed.

Staff observed that oilfield produced wastewater was being discharged into eight ponds within the facility. Field readings for the Temperature, pH and Electrical Conductivity (EC) were taken in two of the ponds. EC is measured in microsiemens per centimeter (µS/cm).

- Two Oil Separation Ponds
  - gunite-lined ponds with netting, containing oil and wastewater
  - inadequate freeboard, less than 2 feet
- Two Wastewater Ponds
  - gunite-lined pond with no netting, containing oily-wastewater
    - according to Mr. Emerson skimmers are used twice per day to remove oil from these ponds
    - field readings from water taken from the southern wastewater pond were as follows; Conductivity (EC) 5,427 µS, pH 7.21, Temperature 25.5°C
  - inadequate freeboard, less than 2 feet
- One Shipping Pond
  - gunite-lined pond with netting, containing wastewater and oil
  - freeboard appears adequate
- Two Oil Ponds
  - unlined ponds, containing oil and wastewater
  - inadequate netting (See Photo 5)
  - freeboard appears adequate
- One Containment Pond (referred to as a Stormwater Basin)
  - an unlined pond with no netting
  - contains wastewater
    - Mr. Emerson state that the water in the pond was production wastewater
    - field readings of water taken from the pond were as follows; EC 3,975 µS, pH 8.38, Temperature 22.6 °C
  - no oil was observed in the pond
  - freeboard appears adequate

SAMPLING INFORMATION AND OBSERVATIONS

Were samples collected during the inspection? ☐ Yes ☒ No Are sample results included in report? ☐ Yes ☒ No

Did discharger collect split samples? ☐ Yes ☒ No

SAMPLE COLLECTION INFORMATION AND OBSERVATIONS

SAMPLE ID	SAMPLE DESCRIPTION/OBSERVATIONS	SAMPLE TIME (hours)	PHOTO NO.
SAMPLE ID	SAMPLE DESCRIPTION/OBSERVATIONS	SAMPLE TIME (hours)	PHOTO NO.

DISCUSSION OF SAMPLING RESULTS

Discuss sampling results (e.g., discuss whether sampling results show compliance with WDRs).

No samples were collected.

CONCLUSIONS

Summarize the conclusions of the inspection(s) below.

1. The two Oil Separation Ponds and the two Wastewater Ponds have insufficient freeboard (less than two feet) and are in violation of WDRs. Discharge Specification B. 6 of the WDRs states that a minimum of two feet of freeboard shall be maintained in all ponds.

2. Oily-wastewater observed within the two Wastewater Ponds (See Photos 3 & 4) is a violation of WDRs. Discharge Specification B. 4 of the WDRs states that ponds shall be free of oil coatings or be covered or screened to preclude entry of bird or animal life. These two ponds need to be netted.

3. The two Oil Ponds have insufficient netting (See Photo 5) and are in violation of WDRs. Discharge Specification B. 4 of the WDRs states that ponds shall be free of oil coatings or be covered or screened to preclude entry of bird or animal life.

4. Discharge of high-salinity wastewater to the ponds in excess of Basin Plan limits is a violation of the WDRs and poses a threat to groundwater.

Attachments Include: Attachment 1: Fee 34 C-Plant Facility

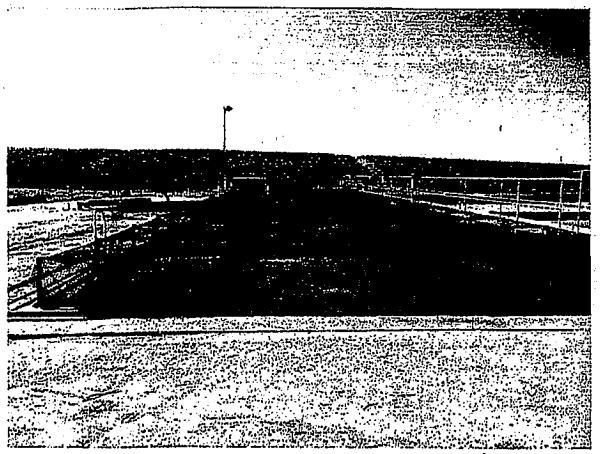


Photo 1. – Netted Oil Separation Ponds looking south

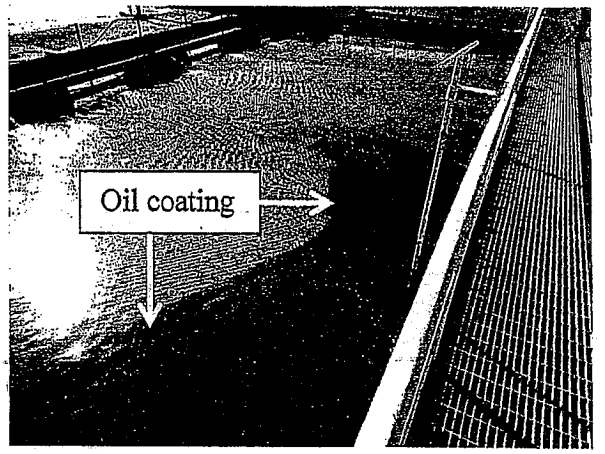


Photo 2. – Oil in the Oil Separation Ponds

Photo 3. – Wastewater Pond (southern) looking southwest

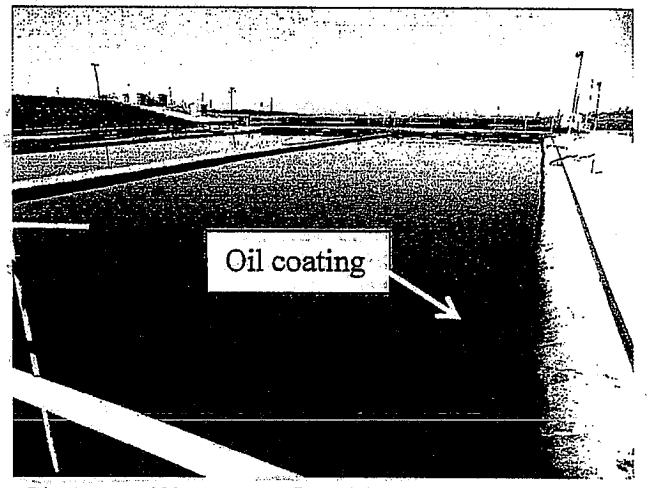


Photo 4. – Wastewater Pond (northern) looking southwest

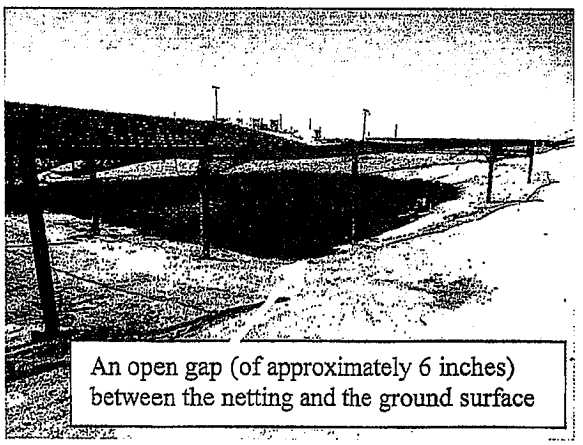


Photo 5. – Oil Pond (western) looking southwest

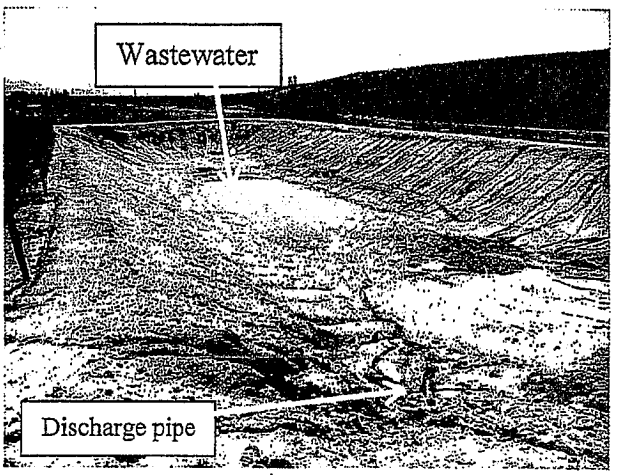
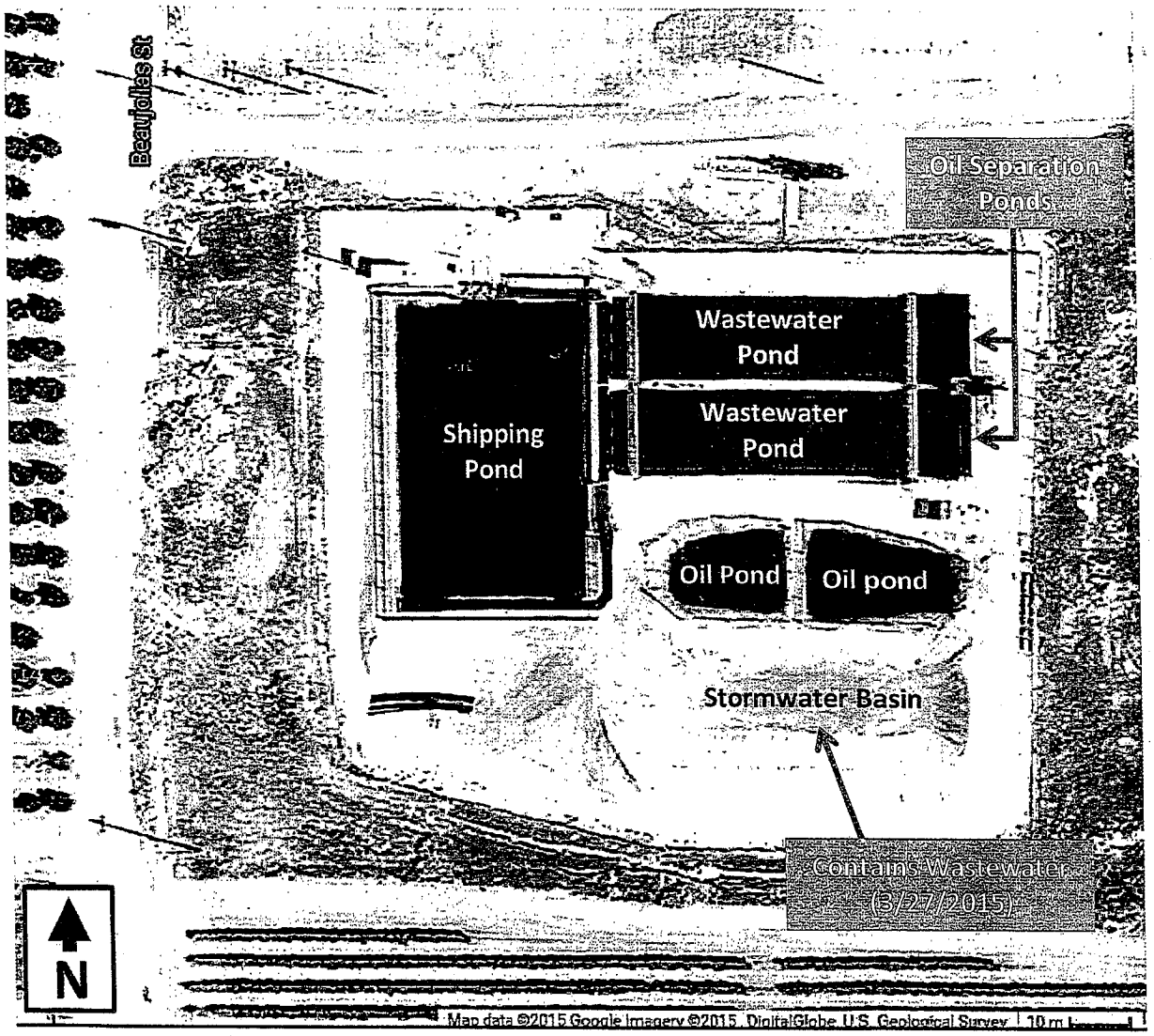


Photo 6. – The Storm Water Basin looking southeast

Photos taken on 27 March 2015 by Zachary Jarvie, Engineering Geologist



Attachment 1: Fee 34 C-Plant Facility

Map by ZJJ 04/10/2015

Kennedy/Jenks Consultants

303 Second Street, Suite 300 South
San Francisco, California 94107
415-243-2150
FAX: 415-896-0999

Phase 1 Subsurface Investigation Report at the Fee 34 Facility and Race Track Hill Area, Edison Oil Field, California

1 August 2014

Prepared for

Valley Water Management Company
7500 Meany Ave.
Bakersfield, California 93308

K/J Project No. 1365027*00

PT Exhibit 5

Table 2: Summary of Reconnaissance Groundwater Sample Data

Boring ID	Depth (Feet bgs)[a]	Sample Date	pH	EC @ 25°C (µmhos/cm)[b]	Boron[c] (mg/l)[d]	Chloride (mg/l)	TPH-crude oil No Silica Gel[e] (mg/l)	TPH-crude oil[f] Silica Gel (mg/l)
Reconnaisance Samples								
RTH #1	65	4/10/2014	7.46	9,130	14	2,900	<0.5	<0.5
RTH #2	90	4/14/2014	7.34	8,020	13	2,600	2.0	<0.5
RTH #3	95	4/17/2014	6.33	5,110	10	1,600	-	-
RTH #4	90	4/15/2014	7.59	6,400	5.1	1,700	-	-

Notes:

(a) Feet bgs = Feet below ground surface
(b) µmhos/cm = micromhos per centimeter
(c) Water analyzed for Boron was field filtered with a 0.45-micron filter prior to analyses.
(d) mg/l = milligrams per liter
(e) Silica Gel = Preparation with EPA Method 5030 to remove non-anthropogenic hydrocarbons
(f) TPH-crude oil = Total Petroleum Hydrocarbons as Crude Oil

Table 3: Summary of Groundwater Elevation Data

Monitoring Well	Measuring Point[a] Elevation (ft AMSL)[b]	Date	Depth to Groundwater (ft TOC)[c]	Groundwater Elevation (ft AMSL)
RTH #1	1025.85	4/30/2014	47.91	977.94
RTH #3	879.39	4/29/2014	80.83	798.56
RTH #4	871.02	4/29/2014	78.45	792.57

Notes:

(a) Top of PVC Well Casing
(b) ft AMSL = feet above mean sea level, to NAVD88 datum. Wells surveyed in June 2014 by Dee Jaspar & Associates
(c) ft TOC = feet below top of casing

Table 4: Summary of Monitoring Well Sample Data - Inorganic Analytes

Monitoring Well	Sample Date	Sample Name	pH	Electrical Conductivity @ 25°C	Total Dissolved Solids @ 180°C	Calcium	Magnesium	Sodium	Potassium	Boron	Bicarbonate Alkalinity as $CaCO_3$	Carbonate Alkalinity as $CaCO_3$	Chloride	Nitrate as N	Sulfate
			pH Units	µmhos/cm[a]	mg/L[b]	mg/L	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/L	mg/L
RTH #1	4/30/2014	RTH-1-140430	7.31	8,690	6,600	560	44	1,100	8.9	16	240	<8.2[c]	2,900	7.1	42
RTH #3	4/29/2014	RTH-3-140429	6.86	2,810	1,900	200	93	280	25	4.1	120	<8.2	510	0.7	680
RTH #4	4/29/2014	RTH-4-010429	7.52	5,900	4,400	450	170	580	22	6.9	210	<8.2	1,700	8.3	510
RTH #4	4/29/2014	QCFD-01-140429	7.53	5,900	4,100	430	160	560	22	6.8	220	<8.2	1,700	8.4	510

Notes:

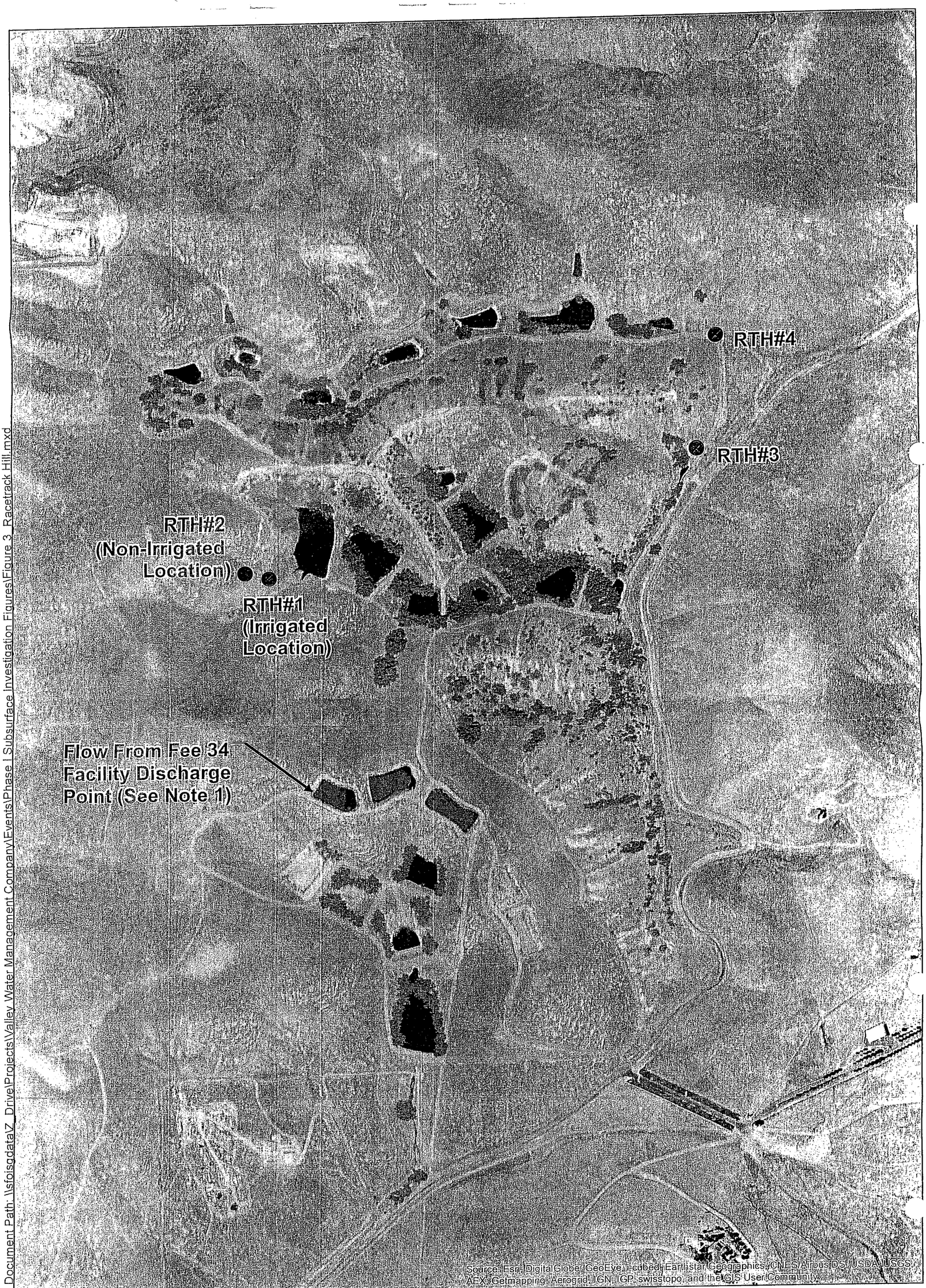
(a) µmhos/cm = micromhos per centimeter
(b) mg/l = milligrams per liter
(c) "<8.2" = not detected above the practical quantitation limit

Table 6: Leak Test Results for the Fee 34 Facility

Test Pond	Duration	Total Seepage (cm)	Average Seepage Rate (mm/day)	Average Seepage Rate (cm/sec)	Standard Deviation of Average Seepage Rate[d] (mm/day)
North Pond	April 22, 2014 16:00 - April 28, 2014 11:30 (5.81 Days)	2.55	4.4	5.1×10^{-6}	0.53
South Pond	April 29, 2014 15:00 - May 5, 2014 11:00 (5.83 Days)	1.02	1.8	2.1×10^{-6}	0.76

Notes:

a) Centimeters
b) Millimeters per Day
c) Centimeters per Day
d) Standard deviation calculation excluded several samples collected early in the test.



Document Path: \\sfoisgdata\Z_Drive\Projects\Valley Water Management Company\Events\Phase I Subsurface Investigation Figures\Figure 3_Racetrack Hill.mxd

Legend:

- Soil Boring Location
- Monitoring Well Location

Notes:

1.) Flow from Fee 34 Facility is discharged to the pond shown on the map. This is the highest elevation pond, and all other ponds are fed by gravity.

2). Racetrack Hill Area is located at W1/2 Section 24 T27S R29E WDB&M.

N

0 200 400

Feet

Kennedy/Jenks Consultants

Valley Water Management Company
Bakersfield, California

Racetrack Hill Borings and Wells

K/J 1365027*00
July 2014

Figure 3

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Legend:

- - - Approximate Boundary of Irrigated Area

N

0 200 400

Feet

Kennedy/Jenks Consultants

Valley Water Management Company
Bakersfield, California

Racetrack Hill
Sprinkler Irrigation Areas

K/J 1365027*00
July 2014

Figure

A'

RTH #2

EC (μmhos/cm) or Chloride (mg/kg)

100 200 300 400 500

Approximate Ground Surface

RTH #1

EC (μmhos/cm) or Chloride (mg/kg)

100 200 300 400 500

A

Feet Above Mean Sea Level)

Elevation (Feet

1,050 1,040 1,030 1,020 1,010 1,000 990 980 970 960 950 940 930 920 910

Feet Below Ground Surface

10 20 30 40 50 60 70 80 90 100

Silty Sand

Layers of Silty Sand and Poorly Graded Sand

Silty Sand to Silty Clayey Sand

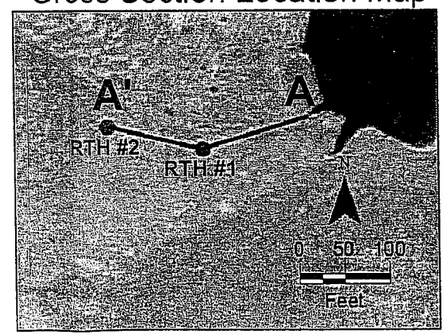
Sandy to Clayey Silt

Clayey to Silty Sand

Pond Shoreline (See Note 1)

Approximate Groundwater Elevation

Cross Section Location Map



0 20 40 60 80 100 120 140 160 180 200 220 240 260

Distance Along Baseline (Feet)

Legend:

- Chloride (mg/kg)
- Electrical Conductivity (μmhos/cm)
- Groundwater Elevation Measured on 4/30/14
- Approximate First Encountered Groundwater Depth
- Silty Sand
- Well Graded Sand
- Poorly Graded Sand
- Clayey to Silty Sand
- Silty Sand and Poorly Graded Sand
- Silty Sand to Silty Clayey Sand
- Silty Sand To Silty Gravelly Sand
- Sandy To Clayey Silt

Note:

1) Ground Elevation at Pond Shoreline Measured From Google Earth 2014.

10 Scale (Feet) 0 20

Kennedy/Jenks Consultants

Valley Water Management Company
Bakersfield, California

Cross Section of RTH#1 and RTH #2

K/J 1365027*00
July 2014

Figure 9

N:\2013.isb\1365027.00 - VWMC\Figure 9_Cross Section RTH1 RTH2.dwg MARGARET WILD 7/29/2014 1:38 PM

Kennedy/Jenks Consultants

Engineers & Scientists

200 S.W. Market Street, Suite 500
Portland, Oregon 97201
503-423-4000
FAX: 503-295-4901

15 January 2015

Mr. Dane Johnson
Senior Engineering Geologist
Central Valley Regional Water Quality Control Board
1685 E Street
Fresno, California 93706

Subject: Interim Report on Phase 2 Subsurface Investigations at the Valley Water Management Company Edison Oil Field Fee 34 Facility and Race Track Hill
K/J 1365027*00

Dear Mr. Johnson:

This interim report on the Phase 2 Subsurface Investigations: Valley Water Management Company Edison Oil Field, Fee 34 Facility and Race Track Hill is submitted in compliance with the 13267 Order issued to Valley Water Management Company (VWMC) on 1 July 2014. A Work Plan describing the proposed investigations was submitted for Central Valley Regional Water Quality Control Board (Regional Board) approval on 14 November 2014 and reviewed with the Regional Board during a meeting on 2 October 2014. During that meeting, the Regional Board gave conceptual approval to the Phase 2 investigations plan.

Background. VWMC received the 13267 Order on 7 July 2014, and responded to the Regional Board on 29 July 2014 (Letter from Larry Bright, VWMC, to Clay Rodgers, Regional Board, dated 29 July 2014). The purpose of the letter was to once again reiterate the impossibility VWMC faces in complying with the requirement to complete all the work described in the 13267 Order by the final completion date of 15 January 2015 established in the Order.

The basis for our concerns with the schedule contained in the 13267 Order is summarized as follows. The work required to be performed by VWMC in the Order consists of three basic tasks:

1. Conduct investigations and studies necessary to determine whether potential adverse impacts on soil and groundwater quality have occurred.

2. Characterize the nature and extent of release, if any, from the subject facilities.

3. Once the characterization is complete, conduct studies to evaluate what corrective measures, if any, need to be taken to protect existing and potential future uses of impacted soils and groundwater.

PT Exhibit 6

samples will be discussed here. Monitoring wells RTH#1 and RTH#6 are located directly adjacent to produced water percolation-evaporation ponds on Racetrack Hill. Water quality of these wells is expected to be related to the chemistry of produced water. RTH#3 and RTH#4 are at the base of Racetrack Hill and may have water quality affected by more than one water source. The same is true for RTH#5 but this well is much further from Racetrack Hill.

Electrical conductivity (EC) and boron (B) are highest at well RTH#1 and slightly lower at RTH#4 and RTH#6. These parameters are lowest at wells RTH#3 and RTH#5. RTH#5 is much lower in EC and B than all other wells, likely because it is furthest from Racetrack Hill and may not have been influenced by water from the Racetrack Hill ponds. This comparative trend among wells is consistent for a number of constituents including sodium (Na) and chloride (Cl) which are characteristically high in produced water. Calcium and total dissolved solids (TDS) also follow this trend. Nitrate nitrogen, sulfate (SO_4), magnesium (Mg), potassium (K), and alkalinity (HCO_3) all have different trends for the wells completed in first encountered groundwater. SO_4, Mg, K, and HCO_3 all have concentrations equal to or greater than those at RTH#1. This suggests that there are other sources of groundwater that contribute salt ions, particularly at RTH#4.

The relationships among salt ions can be evaluated using a trilinear geochemical analysis (Figure 4). This figure shows that the wells on Racetrack Hill, RTH#1 and RTH#6, consistently plot near each other, because they are chemically similar. Wells RTH#3 and RTH#5 consistently plot at one end of the group of five wells because their geochemistry is markedly different. In addition, RTH#3 and RTH#5 are different from each other because RTH#5 has a geochemical make-up that is distinctly different from all other wells. EC, B, and Cl are much lower than the other wells and indicates that groundwater at this well location comes primarily from sources other than produced water discharge at Racetrack Hill. Well RTH#4 generally falls between the geochemistry of RTH#1/RTH#6 and RTH#3/RTH#5. This well also has higher Mg and SO_4 concentrations than are present in the produced water or at RTH#1.

The sampling plan for the December 2014 sampling event also included TPHc and isotopes of oxygen and hydrogen. TPHc was not detected in any sample above the method reporting limit, 500 µg/l (Table 4).

The preliminary analysis of wells at the Racetrack Hill site indicate that wells located on Racetrack Hill (RTH#1, RTH#6) have characteristics similar to produced water but generally at somewhat lower concentrations. The other wells have chemical differences from produced water that suggest that other groundwater sources are present at these wells. RTH#4 may have another source with elevated K, Mg, and SO_4. RTH#3 may have similar effects but the concentrations of B, Cl, and EC are lower than at RTH#4. This may be due to the distance of RTH#3 from the nearest percolation-evaporation ponds. As mentioned above, RTH#5 has very different water quality than that of the other four wells at Racetrack Hill.

Isotope analyses have not yet been completed by the specialty laboratory. Since isotopic analysis is a key part of evaluating potential component sources of groundwater, any further

Table 3: Summary of Monitoring Well Sample Data - Inorganic Analytes

Monitoring Well	Sample Date	Sample Name	pH	Electrical Conductivity @ 25°C	Total Dissolved Solids @ 180°C	Calcium	Magnesium	Sodium	Potassium	Boron	Bicarbonate Alkalinity as $CaCO_3$	Carbonate Alkalinity as $CaCO_3$	Chloride	Nitrate as N	Sulfate
			pH Units	µmhos/cm[a]	mg/L[b]	mg/L	mg/L	mg/L	mg/L	mg/l	mg/L	mg/L	mg/L	mg/L	mg/L
Produced Water	10/24/2014	RTH Discharge Water	7.49	5700	3000	100	10	1300	12	13	290	<10[c]	1500	-	18
RTH #1	4/30/2014	RTH-1-140430	7.31	8,690	6,600	560	44	1,100	8.9	16	240	<8.2[c]	2,900	7.1	42
RTH #1	12/22/2014	RTH #1 - 122214	7.26	8,650	7,000	550	45	1,300	9.0	16	220	<8.2	2,900	14	42
RTH #1	12/22/2014	QCFD-01-141222	7.24	8,700	7,000	560	45	1,300	9.0	16	220	<8.2	2,900	11	40
RTH #3	4/29/2014	RTH-3-140429	6.86	2,810	1,900	200	93	280	25	4.1	120	<8.2	510	0.7	680
RTH #3	12/23/2014	RTH#3-122314	6.91	1,920	1,500	170	81	180	22	0.65	100	<8.2	130	0.16	800
RTH #4	4/29/2014	RTH-4-010429	7.52	5,900	4,400	450	170	580	22	6.9	210	<8.2	1,700	8.3	510
RTH #4	4/29/2014	QCFD-01-140429	7.53	5,900	4,100	430	160	560	22	6.8	220	<8.2	1,700	8.4	510
RTH #4	12/22/2014	RTH #4 - 122214	7.38	6,540	5,100	490	180	680	23	5.4	210	<8.2	2,000	3.4	370
RTH #5	12/21/2014	RTH #5 - 122114	7.69	624	450	64	23	51	6.4	0.066	220	<4.1	26	0.57	92
RTH #6	12/23/2014	RTH #6 - 122314	7.34	4,680	3,500	400	48	570	22	3.0	190	<8.2	1,300	23	290

Notes:
(a) µmhos/cm = micromhos per centimeter
(b) mg/l = milligrams per liter
(c) "<10", "<8.2" = not detected above the practical quantitation limit

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(805) 395-0539
FAX (805) 395-3069

Valley Waste Disposal
1400 Easton Drive, Suite 139B
Bakersfield, CA 93389

Laboratory No: 60008-3
Date Received: 10-2-95
Date Reported: 10-10-95

Attention: Larry Bright

Sample Identification: Racetrack A Section
Sampled by Larry Bright on 10-2-95

IRRIGATION WATER ANALYSIS

pH	8.2
Electrical Conductivity, EC (millimhos/cm @ 25 C)	6.87

Constituents	mg/l	meq/l
Calcium, Ca	170	8.48
Magnesium, Mg	13	1.07
Sodium, Na (calculated)	1300	55.77
Potassium, K	16	0.41
Alkalinity as:		
Hydroxide, OH	0	0
Carbonate, CO3	0	0
Bicarbonate, HCO3	480	7.94
Chloride, Cl	2000	57.79
Sulfate, SO4	< 5.0	0
Nitrate, NO3	< 1.0	0
Totals (Sum)	3800	131.46
Boron, B	13	
Total Dissolved Solids, (Grav)	3900	
Calculated Hardness, CaCO3	480	
Sodium Adsorption Ratio, SAR	25.5	
Exchangeable Sodium Percentage, ESP	26.7	
Cation/Anion Balance, %	0.29	
Sodium, Na (determined), mg/l	1300	
Langelier Scale Index	1.70	
Gypsum Requirement, lbs/ac-ft	0	

Jim Etherton
Laboratory Director

PT Exhibit 7

NON 15 REPORTING FORM
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION-5F
MONITORING AND REPORTING PROGRAM NO. 92-110

FOR

COMPANY: Valley Water Management
LEASE:
OIL FIELD: Edison Oil Field
COUNTY: Kern

WDR Order No. 92-11037

RECEIVED
AUG 01 2013
RWQCB-CVR
FRESNO, CALIF.

Effluent Monitoring:

1. Total Annual Flow 4.5 Million bbls

2. Chemical Quality: *

   a. Specific Electrical Conductance @ 25° C 5.7 5,700 µmhos/cm

   b. Chloride 1800 mg/L

   c. Boron 14 mg/L

*Attach a copy of report from a State certified analytical laboratory

Remarks:

I declare under penalty of perjury, that to the best of my knowledge, the foregoing is true and correct.

Signature: Russell Emerson Date: 7-29-13

Name: Russell Emerson Telephone: 661-410-7500

Title: Assistant Manager

Address: 7500 Meany Ave
Bakersfield, CA 93308

PT Exhibit 6

MONITORING AND REPORTING PROGRAM NO.

FREEBOARD INSPECTION

Dates: 1-1-13 through 7-31-13

To be recorded twice monthly from calibrated permanent marker and submitted with annual report. At least two feet of freeboard is required in each sump.

DATE	Sump (feet)	Sump (feet)	Sump (feet)	Sump (feet)				
1-4-13	2	2	4					
1-21-13	2	2	4					
2-6-13	2	2	4					
2-22-13	2	2	5					
3-3-13	2	2	5					
3-29-13	2	2	4					
4-2-13	2	2	5					
4-19-13	2	2	4					
5-5-13	2	2	4					
5-20-13	2	2	5					
6-8-13	2	2	5					
6-18-13	2	2	4					
7-2-13	2	2	5					
7-25-13	2	2	5					

Notes/comments:

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

July 23, 2013

Russell Emerson
Valley Water Management Company
7500 Meany Avenue
Bakersfield, CA 93308

TEL: (661) 978-0982
FAX: (661) 410-7500

Project ID:
RE: 1307211

Dear Russell Emerson:

Zalco Laboratories, Inc. received 1 samples on 7/18/2013 for the analyses presented in the following report.

We appreciate your business and look forward to serving you in the future. Please feel free to call our office if you have any questions regarding these test results.

Sincerely,

Juan Magana
Project Manager
CC:

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C. Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

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Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Valley Water Management Company	Project: Master	Work Order No.: 1307211
7500 Meany Avenue	Project #:	Reported: 07/23/2013
Bakersfield, CA 93308	Attention: Russell Emerson	Received: 07/18/2013 12:30

Lab Sample ID: 1307211-01	Collected By:
Client Sample ID: Produced Water RTC-Plant	Date Collected: 7/18/2013 10:25:00AM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
General Chemistry		*MCL Limits*						
Electrical Conductivity	5.7	0.010	mmhos/cm		SM 2510B	7/18/13	7/23/13	MSS
Chloride	1800	200	mg/L		EPA 300.0	7/22/13	7/22/13	LME
Metals								
Boron	14	0.10	mg/L		EPA 200.7	7/23/13	7/23/13	SS

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
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ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

QUALITY CONTROL

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Z307319 - No Prep - Bench Chem										
Blank (Z307319-BLK1)				Prepared & Analyzed: 07/18/201						
Electrical Conductivity	ND	0.010	mmhos/cm							
Duplicate (Z307319-DUP1)		Source: 1307207-10		Prepared & Analyzed: 07/18/201						
Electrical Conductivity	2.1	0.010	mmhos/cm		2.1			0.00	15	
Duplicate (Z307319-DUP2)		Source: 1307219-01		Prepared & Analyzed: 07/18/201						
Electrical Conductivity	1.2	0.010	mmhos/cm		1.2			0.0865	15	
Reference (Z307319-SRM1)				Prepared & Analyzed: 07/18/201						
Electrical Conductivity	1.4		mmhos/cm	1.4120		98.1	0-200			
Reference (Z307319-SRM2)				Prepared & Analyzed: 07/18/201						
Electrical Conductivity	13		mmhos/cm	12.900		99.8	0-200			
Batch Z307375 - No Prep - Instrument Chem										
Blank (Z307375-BLK1)				Prepared & Analyzed: 07/22/201						
Chloride	ND	2.0	mg/L							
LCS (Z307375-BS1)				Prepared & Analyzed: 07/22/201						
Chloride	3.1	2.0	mg/L	3.0400		103	90-110			
LCS Dup (Z307375-BSD1)				Prepared & Analyzed: 07/22/201						
Chloride	2.9	2.0	mg/L	3.0400		96.7	90-110	6.62	20	
Reference (Z307375-SRM1)				Prepared & Analyzed: 07/22/201						
Chloride	5.9	2.0	mg/L	6.0800		97.6	80-120			
Reference (Z307375-SRM2)				Prepared & Analyzed: 07/22/201						
Chloride	25		mg/L	25.000		102	80-120			

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C. Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

QUALITY CONTROL

Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Z307382 - MEPR-L										
Blank (Z307382-BLK1)				Prepared & Analyzed: 07/23/201						
Boron	ND	0.10	mg/L							
LCS (Z307382-BS1)				Prepared & Analyzed: 07/23/201						
Boron	1.0	0.10	mg/L	1.0000		103	80-120			
Duplicate (Z307382-DUP1)		Source: 1307211-01		Prepared & Analyzed: 07/23/201						
Boron	15	0.10	mg/L		14			6.35	20	

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
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ZALCO LABORATORIES, INC.

4309 Armour Avenue, Bakersfield, CA 93308 (661) 395-0539 FAX (661) 395-3069 www.zalcolabs.com
2186 Eastman Avenue, Suite103, Ventura, CA 93003 (805) 477-0114 Fax (805) 477-0125

CHAIN OF CUSTODY, ID# 1307211

RUSH!

Page 1 of 1
Zalco Lab # 1307211
Client PO #
PROJECT ID:
QUOTE ID:

COMMENTS:
Turnaround Time:
Routine 5 working days ☐
Rush By _____ working days
Send Copy to State of CA? Yes ☐ No ☐
Attention To:
Send Copy to County? Yes ☐ No ☐
County

REPORT INFO		INVOICE INFO	
Client:	Valley Water Management	Invoice To:	Same as Client ☐
Address:	7500 Meany Ave.	Address:	
City, State, Zip:	Bakersfield, CA. 93308	City, State, Zip:	
Attention:	Russell Emerson	Attention:	
Phone: Results ☐	978-0982	Phone:	
Fax: Results ☐		Fax:	
Email: Results ☒	REmerson@VWWater.com	Email:	

SAMPLED BY: **EMPLOYED BY:**

Sample No.*	Sample Description	Sample Date	Sample Time	Type*	# OF CONTAINERS	ANALYSIS: H.C. Chlorides, Boron	TEMPERATURE (C°)
1	Produced Water RTC-Plant	7-18-13	10:25	W	1	X	30.4

Logged-In Subbed Printed
☐ ☐
Scanned Short Hold Time
☐ ☐

RELINQUISHED By: Signature	PRINT	COMPANY	Date	Time	RECEIVED By: Signature	PRINT
Russell Emerson	Russell Emerson	Valley Water	7/18/13	12:30		

NOTE: Samples are discarded 30 days after results unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client's expense.

*Sample Type Key: AQ-Aqueous; BS-Biosolid; DW-Drinking Water; GW-Ground Water; G-Gas; LPG-Liquid Petroleum Gas; OL-Oil; O-Other; P-Petroleum; S-Soil/Solid; ST-Storm Water; WW-Wastewater
*Sample No.: FOR OFFICE USE ONLY

NON 15 REPORTING FORM
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION-5F
MONITORING AND REPORTING PROGRAM NO. 92-110

FOR

RECEIVED
MAY 28 2014
RWQCB-CVR
FRESNO, CALIF.

COMPANY: Valley Water Management
LEASE:
OIL FIELD: Edison Oil Field
COUNTY: Kern

WDR Order No. 92-11037

MONITORING REPORT REVIEW
Engineer
Compliance Yes no
Date Reviewed

Effluent Monitoring:

1. Total Annual Flow 3.67 million bbls

2. Chemical Quality: *

   a. Specific Electrical Conductance @ 25° C 4.9 4,900 µmhos/cm

   b. Chloride 1500 mg/L

   c. Boron 12 mg/L

*Attach a copy of report from a State certified analytical laboratory

Remarks:

I declare under penalty of perjury, that to the best of my knowledge, the foregoing is true and correct.

Signature: Russell A. Emerson Date: 5/27/14

Name: Russell Emerson Telephone: 661-410-7500

Title: Assistant Manager

Address: 7500 Meany Ave
Bakersfield, CA 93308

PT Exhibit 9

MONITORING AND REPORTING PROGRAM NO. 92-110
FREEBOARD INSPECTION

Dates: May 1, 2013 -- April 30, 2014

To be recorded twice monthly from calibrated permanent marker and submitted with annual report.
At least two feet of freeboard is required in each sump.

DATE	Pond 1 (FEET)	Pond 2 (FEET)	Pond 3 (FEET)	COMMENTS
05/06/13	1	1	5	
05/20/13	1	1	4	
06/03/13	1	1	5	
06/17/13	1	1	5	
07/01/13	1	1	4	
07/15/13	1	1	6	
07/29/13	1	1	5	
08/12/13	1	1	5	
08/26/13	1	1	4	
09/09/13	1	1	4	
09/23/13	1	1	3	
10/07/13	1	1	4	
10/21/13	1	1	4	
11/04/13	1	1	5	
11/18/13	1	1	4	
12/02/13	1	1	5	
12/16/13	1	1	4	
12/30/13	1	1	5	
01/13/14	1	1	6	
01/27/14	1	1	6	
02/10/14	1	1	5	
02/24/14	1	1	3	
03/10/14	1	1	3	
03/24/14	1	1	4	
04/07/14	1	1	5	
04/21/14	1	1	4	

Notes:

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

April 28, 2014

Russell Emerson
Valley Water Management Company
7500 Meany Avenue
Bakersfield, CA 93308

TEL: (661) 978-0982
FAX: (661) 410-7500

Project ID:
RE: 1404259

Dear Russell Emerson:

Zalco Laboratories, Inc. received 1 samples on 4/22/2014 for the analyses presented in the following report.

We appreciate your business and look forward to serving you in the future. Please feel free to call our office if you have any questions regarding these test results.

Sincerely,

Juan Magana
Project Manager
CC:

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Valley Water Management Company	Project: Master	Work Order No.: 1404259
7500 Meany Avenue	Project #:	Reported: 04/28/2014
Bakersfield, CA 93308	Attention: Russell Emerson	Received: 04/22/2014 15:06

Lab Sample ID: 1404259-01	Collected By:
Client Sample ID: Race Track C	Date Collected: 4/22/2014 2:30:00PM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
General Chemistry		*MCL Limits*						
Electrical Conductivity	4.9	0.010	mmhos/cm		SM 2510B	4/23/14	4/23/14	SAM
Chloride	1500	200	mg/L		EPA 300.0	4/22/14	4/22/14	MSS
Metals								
Boron	12	0.10	mg/L		EPA 200.7	4/24/14	4/24/14	SS

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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ZALCO LABORATORIES, INC.
4309 Armour Avenue, Bakersfield, CA 93308 (661) 395-0539 FAX (661) 395-3069 www.zalcolabs.com

CHAIN OF CUSTODY, ID# 1404259

Page 1 of 1
Zalco Lab #
Client PO #
PROJECT ID:
QUOTE ID:

REPORT INFO
Client: Valley Water Management
Address: 7500 Meany Ave.
City, State, Zip: Bakersfield, CA. 93308
Attention: Russell Emerson
Phone: 410-7500
Results ☐
Fax:
Results ☐
Email:
Results ☒

INVOICE INFO
Invoice To: Same as Client ☐
Address:
City, State, Zip:
Attention:
Phone:
Fax:
Email:

SAMPLED BY: Ernie McNette **EMPLOYED BY:**

Sample No. *	Sample Description	Sample Date	Sample Time	Type*	# OF CONTAINERS	EC	Chloride	Boron						TEMPERATURE (C°)
1	RaceTrack C	4/22/14	1430	AQ	1	X	X	X						28.7

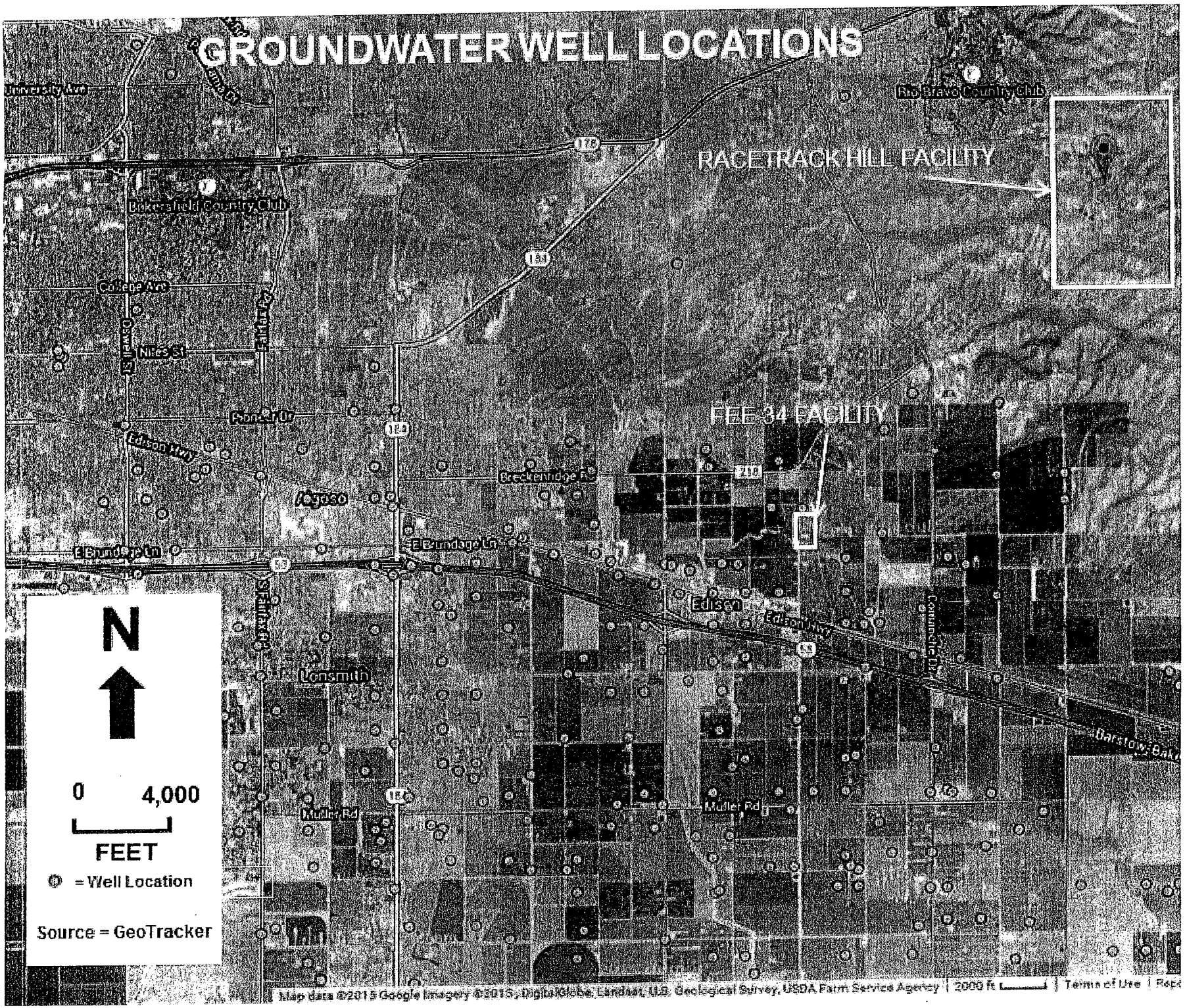
COMMENTS:
Turnaround Time:
Routine 10 working days ☒
Rush By ____ working days
Send Copy to State of CA? Yes ☐ No ☐
Attention To:
Send Copy to County? Yes ☐ No ☐
County

Logged-In ☒ Subbed ☐ Printed ☐
Scanned ☐ Short Hold Time ☐

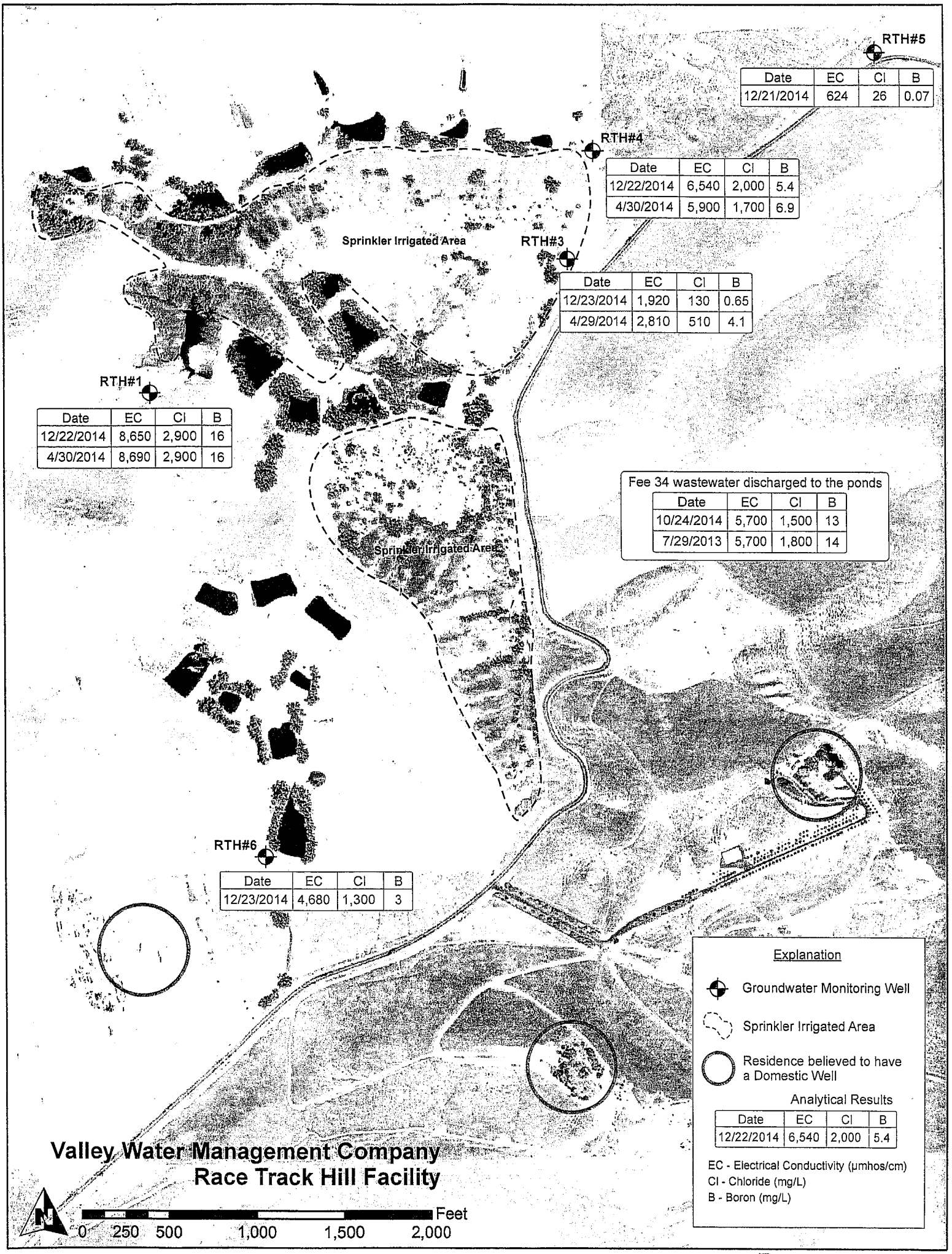
RELINQUISHED By: Signature	PRINT	COMPANY	Date	Time	RECEIVED By: Signature	PRINT
Ernie McNett			4/22/14	1506	Jocelyn Bogie	J. Bogie

NOTE: Samples are discarded 30 days after results unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client's expense.

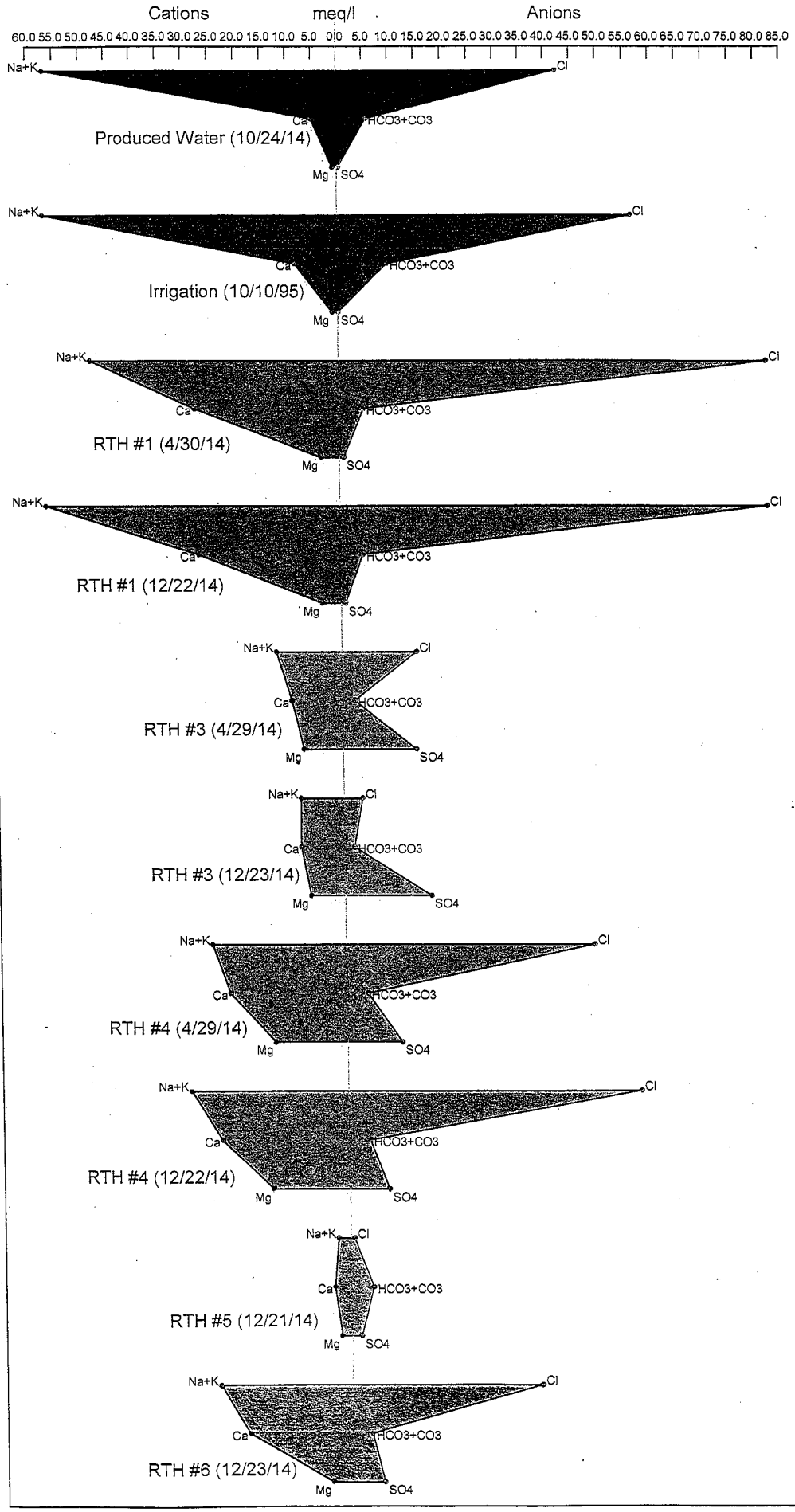
*Sample Type Key: AQ-Aqueous; BS-Biosolid; DW-Drinking Water; GW-Ground Water; G-Gas; LPG-Liquid Petroleum Gas; OL-Oil; O-Other; P-Petroleum; S-Soil/Solid; ST-Storm Water; WW-Wastewater
*Sample No.: FOR OFFICE USE ONLY



Pt Exhibit 10


RTH#5
Date | EC | Cl | B
12/21/2014 | 624 | 26 | 0.07
RTH#4
Date | EC | Cl | B
12/22/2014 | 6,540 | 2,000 | 5.4
4/30/2014 | 5,900 | 1,700 | 6.9
Sprinkler Irrigated Area
RTH#3
Date | EC | Cl | B
12/23/2014 | 1,920 | 130 | 0.65
4/29/2014 | 2,810 | 510 | 4.1
RTH#1
Date | EC | Cl | B
12/22/2014 | 8,650 | 2,900 | 16
4/30/2014 | 8,690 | 2,900 | 16
Fee 34 wastewater discharged to the ponds
Date | EC | Cl | B
10/24/2014 | 5,700 | 1,500 | 13
7/29/2013 | 5,700 | 1,800 | 14
Sprinkler Irrigated Area
RTH#6
Date | EC | Cl | B
12/23/2014 | 4,680 | 1,300 | 3
Explanation
Groundwater Monitoring Well
Sprinkler Irrigated Area
Residence believed to have a Domestic Well
Analytical Results
Date | EC | Cl | B
12/22/2014 | 6,540 | 2,000 | 5.4
EC - Electrical Conductivity (µmhos/cm)
Cl - Chloride (mg/L)
B - Boron (mg/L)
Valley Water Management Company
Race Track Hill Facility
N
0 250 500 1,000 1,500 2,000 Feet

Valley Water Management Company
Fee 34 and Racetrack Hill Facility



Valley Water Management Company

Fee 34 and Racetrack Hill Facility