

REN

# *VEIR Corp*

---

*Environmental Management Services*

RECEIVED

AUG 03 2015

RWQCB-CVR  
FRESNO, CALIF.

**HYDROGEOLOGICAL CHARACTERIZATION WORK PLAN**

**RESPONSE TO THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
DRAFT CLEANUP AND ABATEMENT ORDER  
PURSUANT TO CALIFORNIA WATER CODE SECTIONS 13304 AND 13267  
PERTAINING TO PRODUCED WATER DISPOSAL PRACTICES AT THE  
ANDERSON, BALL, RICHARDSON, AND ROCO LEASES IN THE  
CYMRIC FIELD, KERN COUNTY, CALIFORNIA**

**JULY 29, 2015**

Client: KB Oil and Gas, Inc.  
Post Office Box 42108  
Bakersfield, California 93268-2108

Client Contact: Mr. Kenneth L. Beard  
(661) 623-1238

Agency: California Regional Water Quality Control Board  
Central Valley Region  
1685 E Street  
Fresno, California 93706

Agency Contact: Mr. Ronald Holcomb  
(559) 445-6050

Consultant: *VEIR Corp*  
3410 Fruitvale Avenue, Suite A  
Bakersfield, California, 93308

Project Manager: Mr. Mark R. Magargee, PG, CHg  
(661) 631-8347



Mark R. Magargee, PG, Chg  
Consulting Hydrogeologist  
*VEIR Corp*



---

3410 Fruitvale Avenue, Suite A, Bakersfield, California 93308  
(661) 631-8347 ∞ Fax (661) 631-8007  
Contractor License Number 920738-HAZ  
[www.veir.net](http://www.veir.net)

I, Kenneth L. Beard, an authorized representative of KB Oil and Gas, Inc., certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Pursuant to Water Code section 13350, any person who intentionally or negligently violates a cleanup and abatement order may be liable civilly in an amount which shall not exceed five thousand dollars (\$5,000), but shall not be less than five hundred dollars (\$500), for each day in which the cleanup and abatement order is violated.



Kenneth C. Beard

7-29-2015

Date

## TABLE OF CONTENTS

	Page
Introduction.....	1
Site Description .....	4
Geologic Setting .....	4
Hydrogeologic Setting .....	6
Project Background.....	7
Hydrogeological Characterization Work Plan.....	9

### SECTION II - FIGURES

1. Site Location Map
2. Plot Plan for the Anderson Lease
3. Plot Plan for the Ball Lease
4. Plot Plan for the Richardson Lease
5. Plot Plan for the Roco Lease
6. Geomorphic Province Map of California
7. Geology Map
8. Hydrologic Basin Map

### SECTION III - TABLES

1. Summary of the Produced Water Sample Analytical Results
2. Summary of the Volume of Discharged Produced Water

### SECTION IV - ATTACHMENTS

1. Central Valley Water Board Correspondence
2. Laboratory Reports
3. Assessor's Parcel Maps and Property Ownership Data Sheets

## INTRODUCTION

*VEIR Corp* is pleased to present this Hydrogeological Characterization Work Plan (Work Plan) in response to the California Regional Water Quality Board – Central Valley Region Water Quality Control Board (Central Valley Water Board) Draft Cleanup and Abatement Order (CAO) pursuant to California Water Code Section 13267, dated July 1, 2015, pertaining to produced water disposal practices at the Anderson, Ball, Richardson, and Roco Leases, which are operated by KB Oil and Gas, Inc. (KB Oil) in the Cymric Field in Kern County, California (see Attachment 1 for the Central Valley Water Board Correspondence). The Order requested submittal of the Work Plan, along with a timeline to come into compliance with the CAO, within 45 days of the issuance of the final CAO.

On January 23, 2015, representatives of the Central Valley Water Board performed an inspection of the KB Oil leases in the Cymric Field, including the collection of fluid samples from wash tanks at the Anderson and Roco leases for laboratory analysis. The Central Valley Water Board's Facility Inspections Reports for each lease, dated March 24, 2015, reported that the electric conductivity (EC) ranged from 26,000 to 36,000  $\mu\text{mhos/cm}$ , the chloride concentrations ranges from 6,800 to 14,000 mg/l, and the boron concentrations ranged from 41 to 170 mg/l in the fluid samples. The reports concluded that the disposal of the oil field produced wastewater to the sumps without Waste Discharge Requirements (WDRs) was a violation of Section 13260(a) of the California Water Code (see Attachment 1). KB Oil responded that this discharge has been occurring for over 50 years, and has been permitted by the Central Valley Water Board since the 1970s under a general waiver to WDRs due to the well documented unpotable condition of groundwater beneath the site, where total dissolved solids (TDS) exceeds 10,000 mg/l and ranges up to 30,000 mg/l.

Based upon the results of the facility inspections, the Central Valley Water Board, in its California Water Code Directive Pursuant To Section 13267 (the Order), dated April 1, 2015, required that the fluids in each sump be samples for laboratory analysis by the lists of analytical methods specified in Attachment B of the Order. On June 9, 2015 Oilfield Environmental and Compliance, Inc. (OEC) collected fluid samples from the sumps at the four leases for analysis. The TDS concentrations ranged from 18,000 to 29,000 mg/l, the chloride concentrations ranges from 6,900 to 13,000 mg/l, and the boron concentrations ranged from 47 to 210 mg/l in the fluid samples (see Table 1 – Summary of Laboratory Sample Analytical Results). KB Oil contends that these analytical results provide further documentation of unpotable condition of groundwater beneath the site, which is further demonstrated by the lack of water wells not only within a mile radius, but beyond a five mile radius of the site. The nearest agricultural cultivation is greater than five miles from the site, and the water for these activities is provided entirely by irrigation canals connected to the California Aqueduct.

Based upon the results of the sump sampling, the Central Valley Water Board, in its California Water Draft CAO, dated July 1, 2015, required submittal of the following Work Plan. The Work Plan shall include, but is not limited to, the following tasks:

- a. Identify all owners of the surface rights and the mineral rights of the Anderson, Ball, Richardson and Roco Leases;
- b. Conduct a hydrogeological site characterization to assess the effects of the discharge of oil field wastes on underlying groundwater. The characterization shall be conducted in a manner to utilize acquired information to further assess the impacts of the wastewater discharge on groundwater. If the Discharger demonstrates that the waste discharged to the ponds cannot affect the quality of the underlying groundwater, the Assistant Executive Officer may rescind by signed letter all or part of the requirements to complete the groundwater investigation and groundwater monitoring portions of this Order;
- c. The hydrogeological characterization, and a determination whether there has been a release of waste constituents to groundwater, shall be consistent with the detection monitoring requirements of Title 27, CCR, section 20005 et seq (Title 27). This includes the development of a Sampling and Analysis Plan (SAP); the location and installation of groundwater monitoring wells; soil sampling locations (if necessary); and the sampling and analysis methods for groundwater and soil samples, in accordance with Monitoring and Reporting Program No. R5-2015-XXXX (MRP), which is attached hereto and made part of the Order;
- d. Monitoring wells installed for the hydrogeological characterization shall be installed at appropriate depths that will allow the collection of representative groundwater samples. Existing groundwater wells documented to be in appropriate locations, where well depth and construction details can be provided, may be proposed as sampling points;
- e. Collect and submit representative groundwater and soil samples for laboratory analysis for waste constituents in Monitoring and Reporting Program No. R5-2015-XXXX in accordance with a Sampling and Analysis Plan (SAP) approved by the Assistant Executive Officer;

The methods of analysis and the method detection limits (MDLs) used must be appropriate for the expected concentrations. The laboratory reporting limits (RLs) for all reported monitoring data shall be set no greater than the practical quantification limit (PQL). MDLs, PQLs, and RLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Analysis with an MDL greater than the most stringent drinking water standard that results in non-detection needs to be reanalyzed with the MDL set lower than the drinking water standard or at the lowest level achievable by the laboratory;

- f. Conduct a well survey to identify water supply wells within one-mile of the ponds. The Discharger shall sample the identified domestic water supply wells and analyze the samples for the waste constituents listed in Table 1 of Monitoring and Reporting Program No. R5-2015-XXXX. If access to private property is needed, requested, and denied, a demonstration of that is required:
- g. If the investigation determines that a release of wastewater to groundwater or soils has occurred, the hydrogeological characterization shall include a characterization of the nature and extent of the release consistent with the evaluation program requirements contained in section 20425 of Title 27 CCR section 20005 et seq (Title 27);
- h. If the investigation determines that a release wastewater to soils has occurred, then following the characterization of the nature and extent of the release, a groundwater remediation program shall be submitted for Assistant Executive Officer review and approval that is consistent with the corrective action program requirements contained in section 20430 of Title 27. This will entail the preparation of an engineering feasibility study followed by a proposed corrective action program;
- i. Based on information acquired during the hydrogeological site characterization, submit a report of waste discharge (RWD) for preparation of waste discharge requirements, if appropriate, consistent with current regulations and policies. It is anticipated that general WDRs for discharges to unlined ponds will be presented to the Central Valley Water Board for adoption by August 2016. Submittal of a Notice of Intent (NOI) to come under a general WDR, with additional technical information, will meet the requirement of a RWD;
- j. Include in the report a table that provides the total monthly discharge in barrels and gallons to the pond(s) subject to this Order from 1 January 2013 to the end of the month immediately preceding the date of the report. The table shall include a description of the sources and volume of each individual waste stream going to each pond; and
- k. Include in the report a calculation of the average monthly discharge of wastes to the ponds from 1 June 2014 through 1 June 2015.

All required work plans and technical information are required to be submitted in an electronic format compatible with the State's GeoTracker system following the requirements of California CCR, title 23, section 3893 (available at [http://www.waterboards.ca.gov/ust/electronic\\_submittal/docs/text\\_regs.pdf](http://www.waterboards.ca.gov/ust/electronic_submittal/docs/text_regs.pdf)). All GeoTracker uploads should consist of a GeoReport, GeoMap(s), and an EDF of laboratory data, if applicable.

## SITE DESCRIPTION

KB Oil operates petroleum production wastewater discharge facilities at its Anderson, Ball, Richardson, and Roco leases in the Cymric Field, Kern County, California. The Anderson Lease is located in Section 19, Township 29 South (T29S), Range 21 East (R21E), Mount Diablo Base and Meridian (MDB&M), the Call Lease is located in Section 35, T29S, R21E, MDB&M, and the Richardson and Roco leases are located in Section 18, T29S, R21E, MDB&M (see Figure 1 – Site Location Map). The Anderson Lease is identified as Assessor's Parcel Number (APN) 098-142-51, with a mineral rights APN of 098-142-30; the Ball Lease is identified as APN 098-150-28, with a mineral rights APN of 098-150-45; the Richardson Lease is identified as APN 096-141-13, with a mineral rights APN of 098-141-44; and Roco Lease is identified as APNs 098-141-09, 098-141-10, 098-141-11, and 098-141-12, with mineral rights APNs of 098-141-41, 098-141-42, and 098-141-43 (see Attachment 3 for the Assessor's Parcel Maps).

The surface owner of the Anderson Lease is Mr. and Mrs. Carl and Martha Twisselman and the mineral rights owner is Mr. Kenneth Beard. The surface owner of the Ball Lease is Mr. and Mrs. Harold and Householder and the mineral rights owner is Mr. Kenneth Beard. The surface owner of the Richardson Lease is Mr. Stephen Poppino and the mineral rights owner is KB Oil. The surface owner of the Roco Lease is Mr. and Mrs. Kenneth and Patricia Beard and the mineral rights owner is KB Oil (see Attachment 3 for the Property Ownership Data Sheets).

The Anderson Lease has three producing wells, oil gathering pipelines, a tank farm consisting of a wash tank and a shipping tank, and a 40-foot long by 19-foot wide unlined surface impoundment (pond) (see Figure 2 – Plot Plan for the Anderson Lease). The Ball Lease has a single producing well, oil gathering pipelines, a tank farm consisting of a wash tank and a shipping tank, and a 65-foot by 35-foot wide unlined pond (see Figure 3 – Plot Plan for the Ball Lease). The Richardson Lease has eight producing wells, oil gathering pipelines, a tank farm consisting of a wash tank and a shipping tank, and a 90-foot by 30-foot pond, and a 75-foot by 25-foot pond (see Figure 4 – Plot Plan for the Richardson Lease). The Roco Lease has two producing wells, oil gathering pipelines, a tank farm consisting of a wash tank and two shipping tanks, and a 20-foot by 20-foot pond, a 50-foot by 14-foot pond, and a 90-foot by 23-foot pond (see Figure 5 – Plot Plan for the Roco Lease).

## GEOLOGIC SETTING

Site climate at the Cymric fields is typical of the southern San Joaquin Valley with hot summers and mild winters, accented with periods of Tule fog in the winter. The prevailing wind direction is from the northwest 58 percent of the time, at an average wind speed of 5 to 11 mph at Meadows Field Airport in Bakersfield, California. The leases lie along the eastern flank of the Temblor Range. The average annual rainfall is approximately 6 inches, as is displayed on annual precipitation map from the Kern County Department of Public Works. Most of the precipitation is received during the winter months from December through March. Isohyetal maps obtained from the KCDPW Floodplain Management

Department indicate that the 100-year, 24-hour, maximum precipitation is 2 inches. Evaporation is in excess of 80 inches per year, and the thickness of the moisture-deficient zone is in excess of 50 feet. Vegetation is composed largely of native grasses and brush, with oak trees at higher elevations in the uplands surrounding the valley floor. Animal life is characterized by small mammals, which include coyotes, rabbits, and rodents, as well as various birds and reptiles.

The leases are located at the boundary between southern portions of the Great Valley and Coastal Ranges geomorphic provinces (see Figure 6 - Geomorphic Province Map of California).. The Great Valley geomorphic province is a northwest-southeast trending valley that is also approximately 400 miles long by 50 miles wide, the southern portion of which is referred to as the San Joaquin Valley. The leases lie on the eastern flank of the Temblor Range, which trends north-northwest to south-southeast. Surface deposits consist of outcropping Pliocene to Pleistocene, Tulare Formation, nonmarine sediments (see Figure 7 - Geology Map). The Tulare Formation consists of continental beds of poorly consolidated alternating sand and gravel with lenticular, gypsiferous deposits. Sand and gravel sequences within the Tulare Formation contain significant quantities of crude oil and were responsible for the primary oil production during the early development of the Cymric field. Above the producing zones are the Upper Tulare shales. Immediately beneath the Upper Tulare shales is the top of the Tulare reservoir sands, which consist of three main sand zones: the Upper, Middle, and Lower Tulare sands. Surface soils are classified by the Soils Conservation Services as Kimberlina fine, sandy loam with moderate permeability.

The Cymric Field lies in the West Side Fold Belt of the San Joaquin Valley of California. The Cymric Field is noteworthy because of the large number of producing zones and because in its geologic history and varied structural features they epitomize the post-Eocene history of the whole area. Although discovered in early 1900s, oil was produced entirely from the shallow Pleistocene and Pliocene sand zones until the 1940s, when deeper drilling discovered oil in Miocene, Oligocene, and Eocene sands. The oil accumulations are influenced by faulting, anticlinal closure, and stratigraphic traps formed by pinch-out of sands and buttressing at unconformities.

Oil is produced from Tertiary sediments (Pleistocene, Pliocene, Miocene, Oligocene, and Eocene, sands) at depths from less than 500 to greater than 6,000 feet below grade (fbg) with API gravities in the Pleistocene and Pliocene sands varying from 8° to 15° and in the Miocene, Oligocene, and Eocene sands varying from 20° to 30°. Most of the oil in the West Side Fold Belt fields is in a Pleistocene-age sandstone formation known as the Tulare. The Tulare formation was created mainly in a braided stream and fan delta depositional environment, while the depositional characteristics of the Amnicola suggest a lacustrine (lake) environment, as well as braided stream. These kinds of rocks have high porosity (around 35%) but lower permeability, allowing considerable oil to accumulate in the formation, while a combination of structural and stratigraphic traps keep the oil from migrating further upward. Throughout the history of the field, these upper units have been the most productive, and they were also the first to be discovered, in the early 1900s. Other productive units include the Pliocene-age Etchegoin 54-21 sands; the Upper Miocene-age Reef Ridge Formation; the Middle and Lower Miocene-age McDonald/Devilwater

diatomaceous shale source beds in the Monterey Formation; the Oligocene-age Carneros, Agua, Phacoides, and Oceanic sands in the Temblor formation, and the Eocene-age first through fourth Point of Rocks sands in the Kreyenhagen Formation. Many of the pools, especially in the deeper units, were not found until the 1940s to the 1980s.

### HYDROGEOLOGIC SETTING

The leases lie within the Detailed Analysis Unit 259 of the Kern County Basin Hydrologic Unit of the Tulare Lake Basin (Basin) (see Figure 8 - Hydrologic Basin Map). While the leases are located within the West Kern agricultural water district, the closest water district pipeline is two miles southeast of the Ball Lease. Surface water and groundwater in the San Joaquin Valley are derived predominantly from the Sierra Nevada to the east and the Coast Range to the west. Surface water is transported through five major rivers, the nearest being the Kern River. The Temblor Range is located west of the synclinal axis of the San Joaquin Valley. Surface water historically existed along the entire length of the synclinal axis from the termination of the Kern River at Buena Vista Lake, north through a series of sloughs to Goose Lake; and further north through a second series of sloughs to Tulare Lake. The occurrence of shallow, perched groundwater and the trough of the regional unconfined groundwater aquifer closely parallel this trend. While there are seasonal drainages crossing several of the leases, none of the leases are located within a designated Federal Emergency Management Agency (FEMA) 100 or 500-year flood zones.

The Temblor Range is on the southwestern flank of the Kern County Subarea of the Tulare Lake Basin. Groundwater is present within the Tulare Lake Basin in perched, unconfined, and confined conditions. Perched groundwater is present at shallow depths above the Quaternary 'A' clay. The Corcoran Clay (also known as the 'E' clay) within the upper Tulare Formation is the regional confining layer for the groundwater basin. Groundwater above the Corcoran Clay is unconfined and is present within continental deposits. Therefore, it is generally considered to be potable. Within the Cymric field, crude oil is present within tar sands at depths as shallow as 100 fbg. Beneath the crestal portion of the oil field, no groundwater is known to exist above the first occurrence of crude oil. This condition is referred to as an area of "no top water." The initial occurrence of groundwater beneath the leases is at a depth in excess of 300 fbg and is present within Tulare Formation. Beneath the KB Oil leases groundwater is not known to be present above the first occurrence of oil bearing sediments.

Fresh water within the San Joaquin Valley is confined to continental deposits of the Tulare Formation and younger. Water-bearing zones within the underlying marine deposits are considered to contain saline, non-potable groundwater. Because of the thin continental sediments along the western side of the valley, fresh water resources are restricted both aerially and in thickness. In addition, the groundwater recharge areas along the western flank of the San Joaquin Valley are underlain by marine sediments, which has resulted in saline, non-potable groundwater within the westside continental deposit water-bearing zones.

Numerous studies have confirmed that the regional unconfined groundwater aquifer surrounding the Cymric Field is considered non-potable, containing concentrations of various metals including arsenic, boron, manganese, and selenium, as well as total dissolved solids (TDS) and constituent salts, which are in excess of the California Code of Regulations Title 22 Primary maximum contaminant levels for drinking water. Among the reports are the 1983 Westside Groundwater Study by Mr. Michael R. Rector; Kern County Water Agency (KCWA) Annual Water Supply Reports; and the United States Geological Survey Open File Report 92-655; Water Quality Data for Shallow Wells in the Western and Southern Tulare Lake Basin, San Joaquin Valley, California.

In April 1983, Mr. Michael R. Rector issued a report entitled the Westside Groundwater Study, Kern County, California, which indicated that TDS and associated salts rendered the regional unconfined groundwater flanking the Cymric Field non-potable. Groundwater monitoring data for regional unconfined aquifers from the Groundwater Quality Maps produced by the KCWA indicate TDS concentrations ranging from 10,000 to 30,000 mg/l flanking the Cymric Field.

In August 1975, the Regional Board issued the Tulare Lake Basin (5D) Water Quality Control Plan, which stated that all groundwater within 5D was suitable or potentially suitable for beneficial uses. However, in 1988 the State Water Resources Control Board adopted Resolution No. 88-63, entitled "Sources of Drinking Water." The policy states that water with TDS concentrations greater than 3,000 mg/l is not suitable or potentially suitable for municipal or domestic water supply. Because the groundwater beneath the leases is considered to be unpotable and not suitable for beneficial uses, there are no water wells located on any of the leases, and there are no municipal or agricultural water supply wells within not only a mile of the leases, but not within five miles of the leases.

## **PROJECT BACKGROUND**

On January 23, 2015, representatives of the Central Valley Water Board performed an inspection of the KB Oil leases in the Cymric Field, including the collection of fluid samples from wash tanks at the Anderson and Roco leases for laboratory analysis. The Central Valley Water Board's Facility Inspections Reports for each lease, dated March 24, 2015, reported that the EC ranged from 26,000 to 36,000  $\mu\text{mhos/cm}$ , the chloride concentrations ranges from 6,800 to 14,000 mg/l, and the boron concentrations ranged from 41 to 170 mg/l in the fluid samples. The reports concluded that the disposal of the oil field produced wastewater to the sumps without WDRs was a violation of Section 13260(a) of the California Water Code (see Attachment 1). KB Oil responded that this discharge has been occurring for over 50 years, and has been permitted by the Central Valley Water Board since the 1970s under a general waiver to WDRs due to the well documented unpotable condition of groundwater beneath the site, where TDS exceeds 10,000 mg/l and ranges up to 30,000 mg/l.

Based upon the results of the facility inspections, the Central Valley Water Board, in its California Water Code Directive Pursuant To Section 13267 (the Order), required that the fluids in each sump be samples for laboratory analysis by the lists of analytical methods specified in Attachment B of the Order and listed below:

Total Dissolved Solids using SM 2540C

Metals Listed in California Code of Regulations, Title 22, Section 66260.24, subdivision (a)(2)(A);  
TTLC EPA 6010B/7470A (STLC as necessary)

Benzene, toluene, ethyl benzene, and xylenes (BTEX) using EPA 8021

Total Petroleum Hydrocarbons, crude oil range using EPA 8015M

Polynuclear aromatic hydrocarbons (including acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, chrysene, dibenzo[a,h]anthracene, fluoranthene, fluorine, indeno[1,2,3-cd]pyrene, naphthalene, phenanthrene, and pyrene) using EPA 8270M SIM

Major and minor cations (including sodium, potassium, magnesium, and calcium) using EPA 6010B

Major and minor anions (including nitrate, chloride, sulfate, alkalinity, and bromide) using EPA 300.0, Alkalinity, Titrimetric (pH 4.5) using SM 2320B

Trace elements (including lithium, strontium, boron, iron, and manganese) using EPA 6010B

Radionuclides listed under California Code of Regulations, Title 22, Table 64442. Crude Oil Gross Beta EPA 900, Gross Alpha EPA 900.0, Gamma (photon) emitters EPA 901.1M, Radium 226 and 228 Combined 900.00, Uranium EPA 6020, Tritium 901.01

On June 9, 2015 Oilfield Environmental and Compliance, Inc. (OEC) collected fluid samples from the sumps at the four leases for analysis. TDS ranged from 18,000 to 29,000 mg/l, the chloride concentrations ranges from 6,900 to 13,000 mg/l, and the boron concentrations ranged from 47 to 210 mg/l in the fluid samples (see Table 1). KB Oil contends that these analytical results provide further documentation of the unpotable condition of groundwater beneath the site. This is further demonstrated by the lack of water wells not only within a mile radius, but beyond a five mile radius of the site. The nearest agricultural cultivation is greater than five miles from the site, and the water for these activities is provided entirely by irrigation canals connected to the California Aqueduct. The leases are located in the Salt Creek area of the Cymric Field and Salt Creek is deserving of its name.

Based upon the results of the sump sampling, the Central Valley Water Board, in its California Water Draft CAO, dated July 1, 2015, required submittal of the following Work Plan (see Attachment 1). The Order requested submittal of the Work Plan, along with a timeline to come into compliance with the CAO, within 45 days of the issuance of the final CAO.

## HYDROGEOLOGICAL CHARACTERIZATION WORK PLAN

KB Oil contends that the disposal of the oil field produced wastewater to the sumps without WDRs is not a violation of Section 13260(a) of the California Water Code. This discharge has been occurring for over 50 years, and has been permitted by the Central Valley Water Board since the 1970s under a general waiver to WDRs due to the well documented unpotable condition of groundwater beneath the site, where TDS exceeds 10,000 mg/l and ranges up to 30,000 mg/l. The analytical results of the samples collected during the facility inspection and subsequent sump sampling provide further documentation of unpotable condition of groundwater beneath the site. This is further demonstrated by the lack of water wells not only within a mile radius, but beyond a five mile radius of the site. The nearest agricultural cultivation is greater than five miles from the site, and the water for these activities is provided entirely by irrigation canals connected to the California Aqueduct. Because KB Oil contends that it is already in compliance with the CAO, a timeline to come into compliance is not required.

The Work Plan includes the following tasks:

- a. Identify all owners of the surface rights and the mineral rights of the Anderson, Ball, Richardson and Roco Leases.

*The surface owner of the Anderson Lease is Mr. and Mrs. Carl and Martha Twisselman and the mineral rights owner is Mr. Kenneth Beard. The surface owner of the Ball Lease is Mr. and Mrs. Harold and Householder and the mineral rights owner is Mr. Kenneth Beard. The surface owner of the Richardson Lease is Mr. Stephen Poppino and the mineral rights owner is KB Oil. The surface owner of the Roco Lease is Mr. and Mrs. Kenneth and Patricia Beard and the mineral rights owner is KB Oil (see Attachment 3).*

- b. Conduct a hydrogeological site characterization to assess the effects of the discharge of oil field wastes on underlying groundwater. The characterization shall be conducted in a manner to utilize acquired information to further assess the impacts of the wastewater discharge on groundwater. If the Discharger demonstrates that the waste discharged to the ponds cannot affect the quality of the underlying groundwater, the Assistant Executive Officer may rescind by signed letter all or part of the requirements to complete the groundwater investigation and groundwater monitoring portions of this Order.

*Because KB Oil has demonstrated that the waste discharged to the ponds cannot affect the quality of the underlying groundwater, and groundwater is not present beneath the leases above the oil producing sediments, KB Oil requests that the Assistant Executive Officer rescind by signed letter all of the requirements to complete the groundwater investigation and groundwater monitoring portions of this Order. KB Oil proposes to submit a NOI under the forthcoming general WDR, which will meet the*

*requirement of a WDR. Furthermore, KB Oil does not believe that it is responsible for any of the fees or penalties specified in the Order.*

The hydrogeological characterization, and a determination whether there has been a release of waste constituents to groundwater, shall be consistent with the detection monitoring requirements of Title 27, CCR, section 20005 et seq (Title 27). This includes the development of a Sampling and Analysis Plan (SAP); the location and installation of groundwater monitoring wells; soil sampling locations (if necessary); and the sampling and analysis methods for groundwater and soil samples, in accordance with Monitoring and Reporting Program No. R5-2015-XXXX (MRP), which is attached hereto and made part of the Order.

*Because KB Oil has demonstrated that the waste discharged to the ponds cannot affect the quality of the underlying groundwater, KB Oil is not proposing the construction of any groundwater monitoring wells. If the Assistant Executive Officer does not rescind by signed letter all of the requirements to complete the groundwater investigation and groundwater monitoring portions of this Order, then KB Oil will provide an addendum to the Work Plan, which will include a Sampling and Analysis Plan, the location and installation of groundwater monitoring wells, soil sampling locations (if necessary), and the sampling and analysis methods for groundwater and soil samples, in accordance with Monitoring and Reporting Program No. R5-2015-XXXX (MRP).*

- c. Monitoring wells installed for the hydrogeological characterization shall be installed at appropriate depths that will allow the collection of representative groundwater samples. Existing groundwater wells documented to be in appropriate locations, where well depth and construction details can be provided, may be proposed as sampling points.

*Because KB Oil has demonstrated that the waste discharged to the ponds cannot affect the quality of the underlying groundwater, KB Oil is not proposing the construction of any groundwater monitoring wells. If the Assistant Executive Officer does not rescind by signed letter all of the requirements to complete the groundwater investigation and groundwater monitoring portions of this Order, then KB Oil will provide an addendum to the Work Plan, which will include a Sampling and Analysis Plan, the location and installation of groundwater monitoring wells, and the sampling and analysis methods for groundwater samples, in accordance with Monitoring and Reporting Program No. R5-2015-XXXX.*

- d. Collect and submit representative groundwater and soil samples for laboratory analysis for waste constituents in Monitoring and Reporting Program No. R5-2015-XXXX in accordance with a Sampling and Analysis Plan (SAP) approved by the Assistant Executive Officer.

*Because KB Oil has demonstrated that the waste discharged to the ponds cannot affect the quality of the underlying groundwater, KB Oil is not proposing the construction of any groundwater monitoring wells. If the Assistant Executive Officer does not rescind by signed letter all of the requirements to complete the groundwater investigation and groundwater monitoring portions of this Order, then*

*KB Oil will provide an addendum to the Work Plan, which will include a Sampling and Analysis Plan, the location and installation of groundwater monitoring wells, soil sampling locations (if necessary), and the sampling and analysis methods for groundwater and soil samples, in accordance with Monitoring and Reporting Program No. R5-2015-XXXX (MRP).*

- e. The methods of analysis and the method detection limits (MDLs) used must be appropriate for the expected concentrations. The laboratory reporting limits (RLs) for all reported monitoring data shall be set no greater than the practical quantification limit (PQL). MDLs, PQLs, and RLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Analysis with an MDL greater than the most stringent drinking water standard that results in non-detection needs to be reanalyzed with the MDL set lower than the drinking water standard or at the lowest level achievable by the laboratory.

*Because KB Oil has demonstrated that the waste discharged to the ponds cannot affect the quality of the underlying groundwater, KB Oil is not proposing the construction of any groundwater monitoring wells. If the Assistant Executive Officer does not rescind by signed letter all of the requirements to complete the groundwater investigation and groundwater monitoring portions of this Order, then KB Oil will provide an addendum to the Work Plan, which will include a Sampling and Analysis Plan, the location and installation of groundwater monitoring wells, soil sampling locations (if necessary), and the sampling and analysis methods for groundwater and soil samples, in accordance with Monitoring and Reporting Program No. R5-2015-XXXX.*

- f. Conduct a well survey to identify water supply wells within one-mile of the ponds. The Discharger shall sample the identified domestic water supply wells and analyze the samples for the waste constituents listed in Table 1 of Monitoring and Reporting Program No. R5-2015-XXXX. If access to private property is needed, requested, and denied, a demonstration of that is required.

*Not only are there are no water wells not only within a mile radius, but the nearest wells are beyond a five mile radius of the site. The nearest agricultural cultivation is also greater than five miles from the site, and the water for these activities is provided entirely by irrigation canals connected to the California Aqueduct. The leases are located in the Salt Creek area of the Cymric Field and Salt Creek is deserving of its name. This Work Plan does not propose to collect samples from any water wells.*

- g. If the investigation determines that a release of wastewater to groundwater or soils has occurred, the hydrogeological characterization shall include a characterization of the nature and extent of the release consistent with the evaluation program requirements contained in section 20425 of Title 27 CCR section 20005 et seq (Title 27).

*Because KB Oil has demonstrated that the waste discharged to the ponds cannot affect the quality of the underlying groundwater, KB Oil does not propose a characterization of the nature and extent of the release.*

- h. If the investigation determines that a release wastewater to soils has occurred, then following the characterization of the nature and extent of the release, a groundwater remediation program shall be submitted for Assistant Executive Officer review and approval that is consistent with the corrective action program requirements contained in section 20430 of Title 27. This will entail the preparation of an engineering feasibility study followed by a proposed corrective action program.

*Because KB Oil has demonstrated that the waste discharged to the ponds cannot affect the quality of the underlying groundwater, KB Oil does not propose a characterization of the nature and extent of the release, feasibility study, or corrective action plan.*

- i. Based on information acquired during the hydrogeological site characterization, submit a report of waste discharge (RWD) for preparation of waste discharge requirements, if appropriate, consistent with current regulations and policies. It is anticipated that general WDRs for discharges to unlined ponds will be presented to the Central Valley Water Board for adoption by August 2016. Submittal of a Notice of Intent (NOI) to come under a general WDR, with additional technical information, will meet the requirement of a RWD.

*Because KB Oil has demonstrated that the waste discharged to the ponds cannot affect the quality of the underlying groundwater, KB Oil proposes to submit a NOI under the forthcoming general WDR, which will meet the requirement of a WDR.*

- j. Include in the report a table that provides the total monthly discharge in barrels and gallons to the pond(s) subject to this Order from 1 January 2013 to the end of the month immediately preceding the date of the report. The table shall include a description of the sources and volume of each individual waste stream going to each pond.

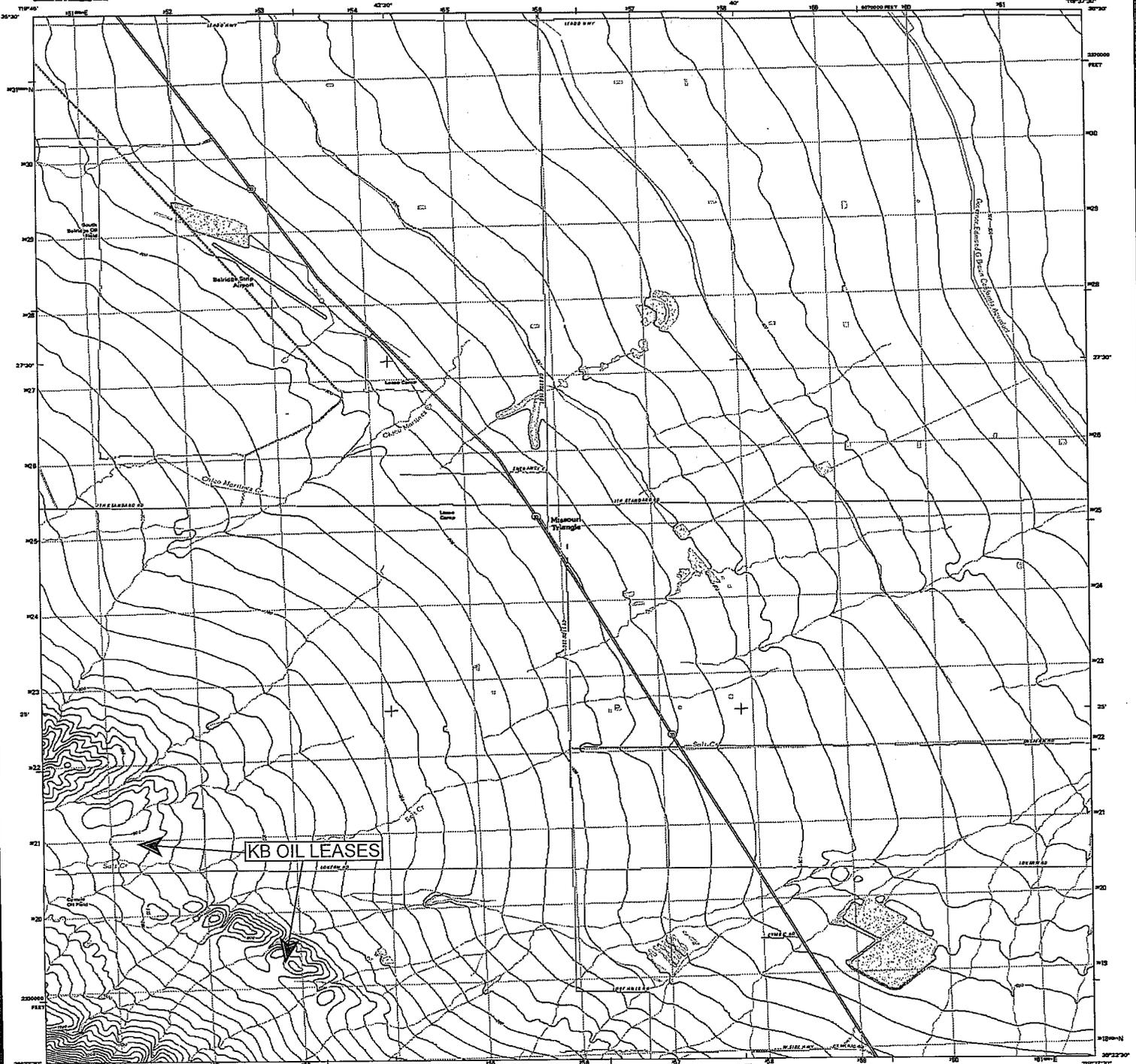
*Table 2 – Summary of the Volume of Discharged Produced Water, presents the volume of the waste stream going to the ponds at each lease.*

- k. Include in the report a calculation of the average monthly discharge of wastes to the ponds from 1 June 2014 through 1 June 2015.

*The calculation of the average monthly discharge of TDS, chloride, and boron to the ponds at each lease is based upon the volume of fluids discharged from 1 June 2014 through 1 June 2015 and the concentrations of TDS, chloride, and boron detected in the samples collected on June 9, 2015 from the ponds. The monthly average of fluids discharged into the ponds at the Anderson, Ball, Richardson, and Roco leases as 61,795, 11,250, 97,944, and 79,897 gallons, respectively. The average monthly discharge of TDS, chloride, and boron to the ponds at the Anderson Leases is 14,928, 6,692, and 108 pounds, respectively; at the Ball Lease is 1,874, 1,031, and 9 pounds, respectively; at the Richardson Lease is 14,686, 5,630, and 38 pounds, respectively; and at the Roco Lease is 14,642, 7,987, and 100 pounds, respectively.*

**SECTION II.**

**FIGURES**

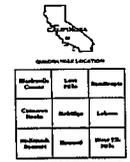


Produced by the United States Geological Survey  
North American Datum of 1983 (NAD83)  
World Geodetic System of 1984 (WGS84). Production and  
1:000,000 scale Contour Interval Series of 1998  
Scale by



SCALE 1:24 000  
1 000 2000 3000 4000 5000 6000 7000 8000 9000 10000  
FEET  
0 1 2 3 4 5 6 7 8 9 10  
KILOMETERS

CONTOUR INTERVAL 80 FEET  
NORTH AMERICAN VERTICAL DATUM OF 1983  
This map was produced by contractors to the  
National Geospatial Program US Topo Project, January, 2011.  
A revision to the standard will not produce a shift in the D.E.S.



ROAD CLASSIFICATION  
Interstate Route  
US Route  
State  
Federal  
Beltway  
Beltway  
Local Road  
Beltway  
Beltway

Produced by: NAD83, June 2010  
Scale: 1:24,000  
Datum: North American Datum of 1983  
Projection: UTM  
Coordinate System: UTM  
Datum: NAD83  
Projection: UTM  
Scale: 1:24,000

BELRIDGE, CA  
2012

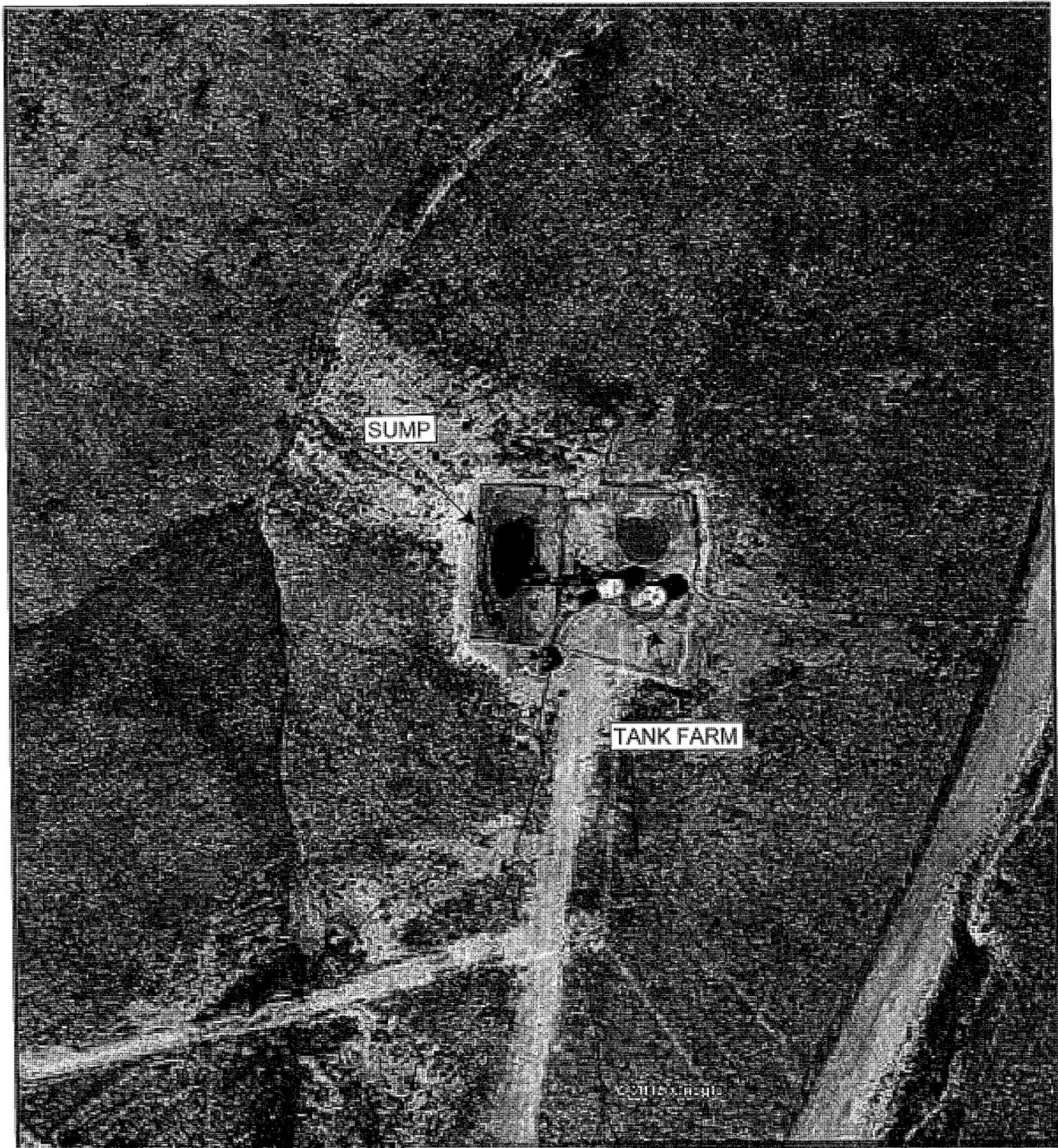
LEGEND

KB OIL AND GAS, INC.

ANDERSON, BALL, RICHARDSON, AND ROCO LEASES  
CYMRIC FIELD  
KERN COUNTY, CALIFORNIA

FIGURE 1 - SITE LOCATION MAP

VEIR Corp



LEGEND

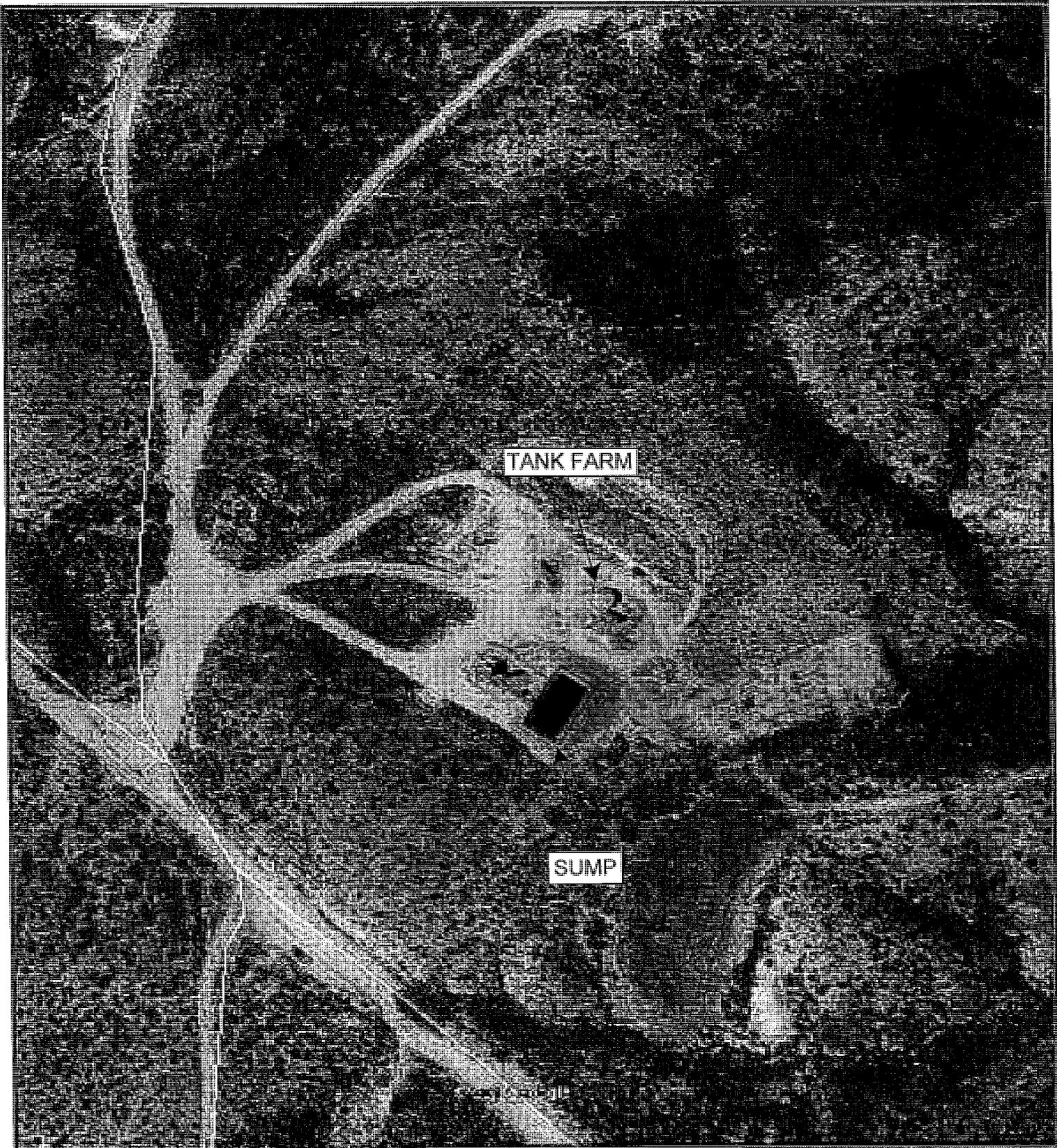


KB OIL AND SONS, INC.

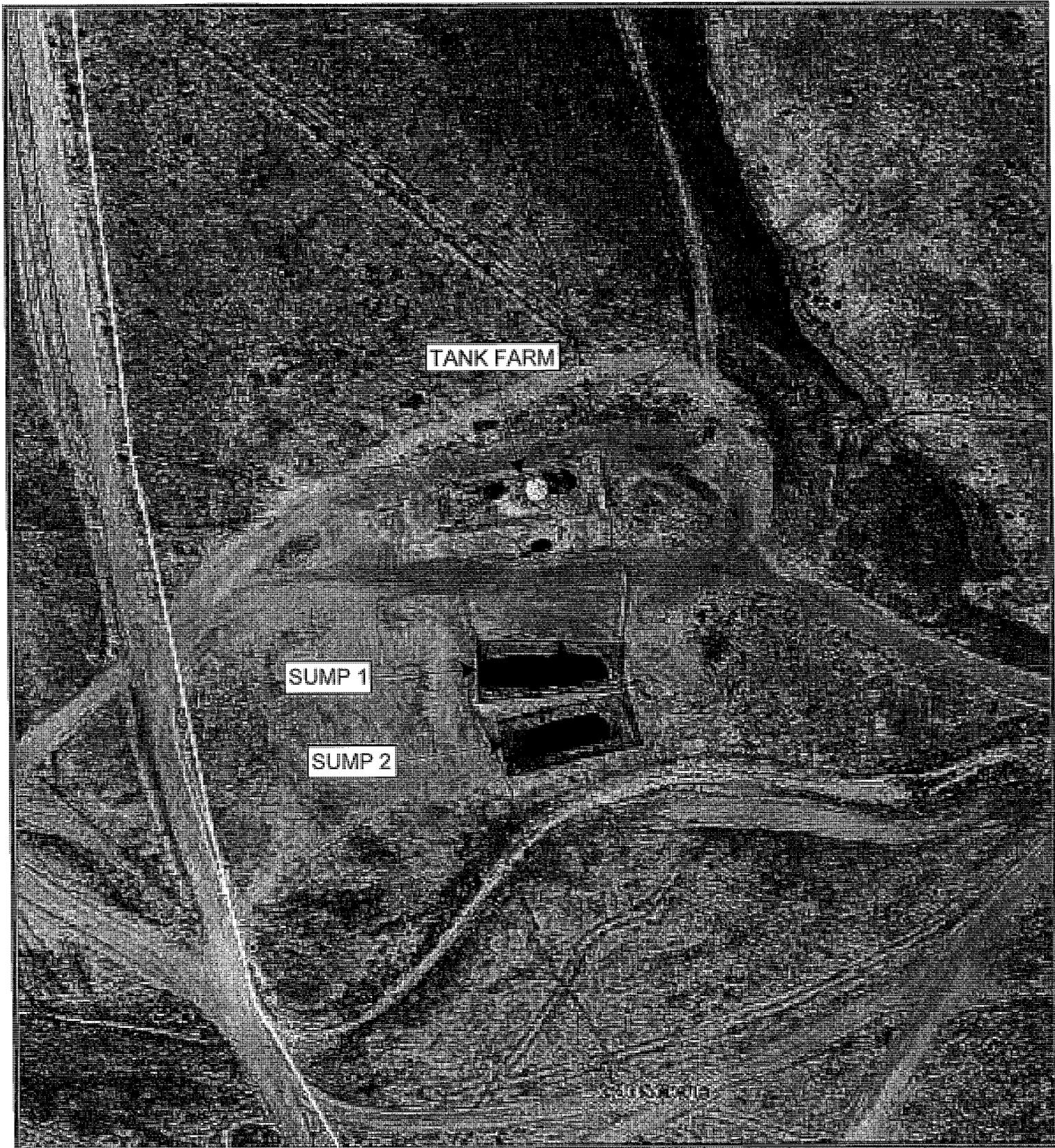
ANDERSON LEASE  
CYMRIC FIELD  
KERN COUNTY, CALIFORNIA

FIGURE 2 - PLOT PLAN FOR THE ANDERSON LEASE

*VEIR Corp*



LEGEND	KB OIL AND SONS, INC.
	BALL LEASE CYMRIC FIELD KERN COUNTY, CALIFORNIA FIGURE 3 - PLOT PLAN FOR THE BALL LEASE
	<i>VEIR Corp</i>



LEGEND

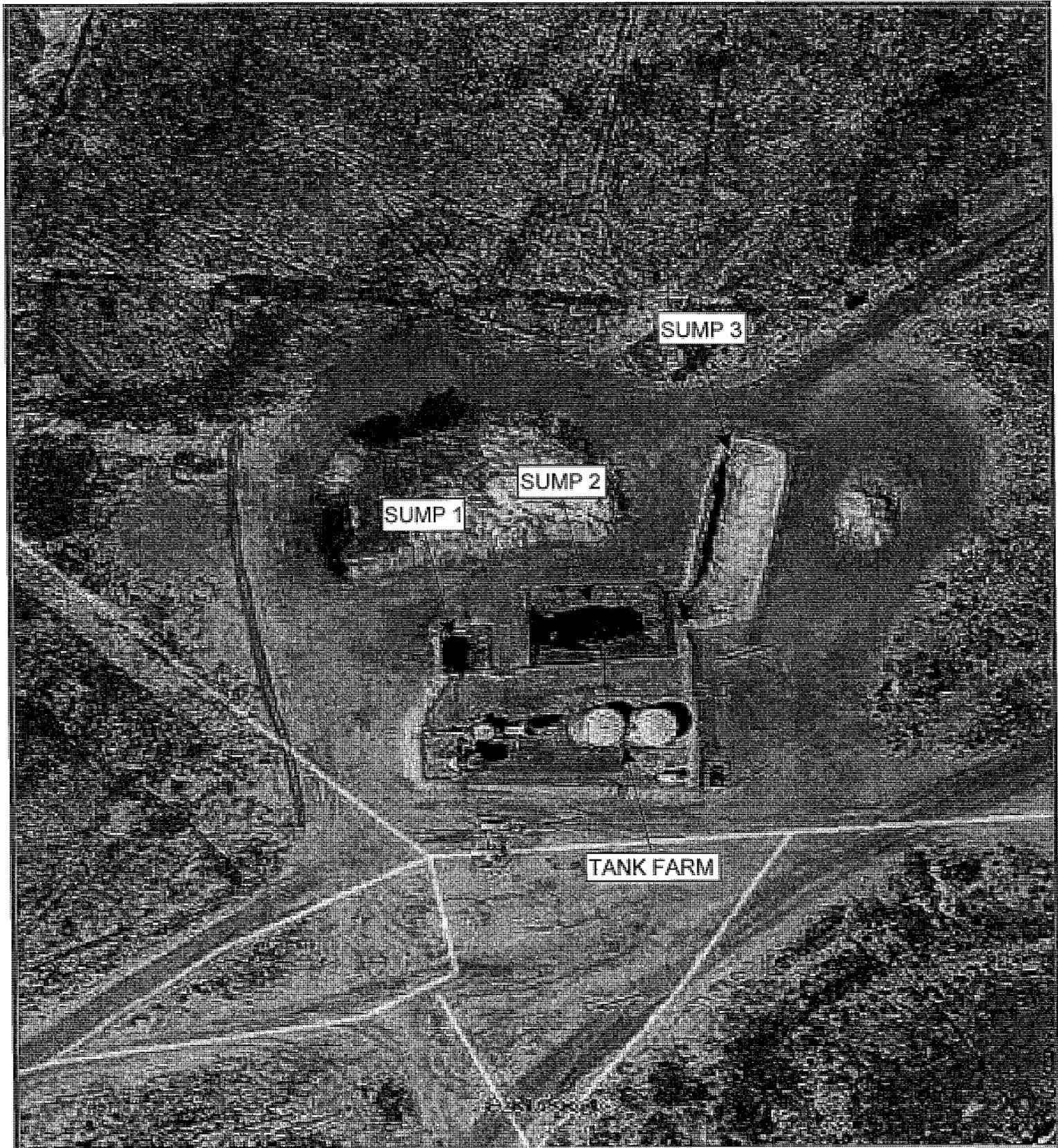
KB OIL AND SONS, INC.

RICHARDSON LEASE  
 CYMRIC FIELD  
 KERN COUNTY, CALIFORNIA

FIGURE 4 - PLOT PLAN FOR THE RICHARDSON LEASE

*VEIR Corp*





LEGEND



KB OIL AND SONS, INC.

ROCO LEASE

CYMRIC FIELD

KERN COUNTY, CALIFORNIA

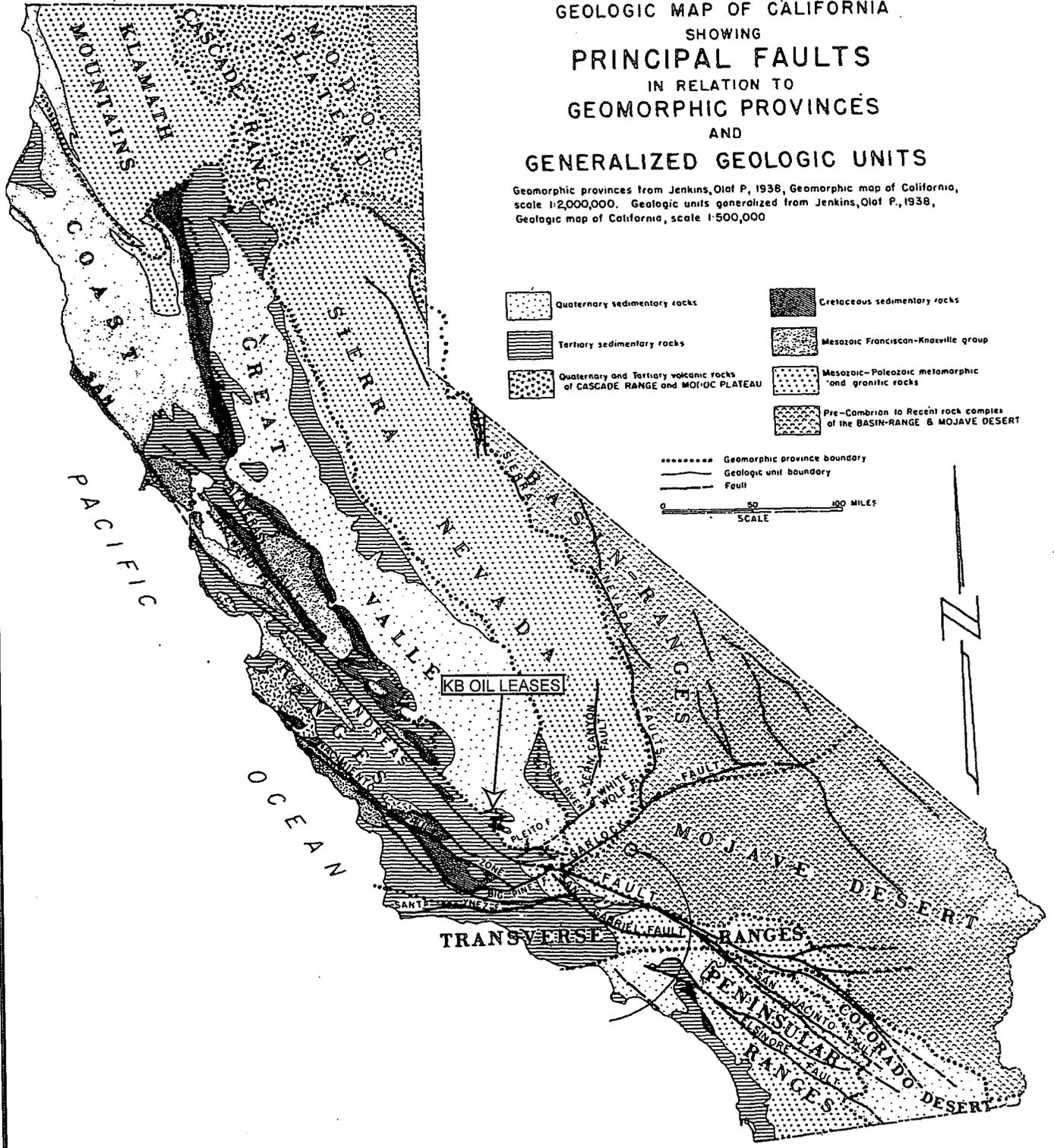
FIGURE 5 - PLOT PLAN FOR THE ROCO LEASE

*VEIR Corp*

# GEMORPHIC PROVINCE MAP OF CALIFORNIA

## GEOLOGIC MAP OF CALIFORNIA SHOWING PRINCIPAL FAULTS IN RELATION TO GEMORPHIC PROVINCES AND GENERALIZED GEOLOGIC UNITS

Geomorphic provinces from Jenkins, Olat P., 1938, Geomorphic map of California, scale 1:2,000,000. Geologic units generalized from Jenkins, Olat P., 1938, Geologic map of California, scale 1:500,000



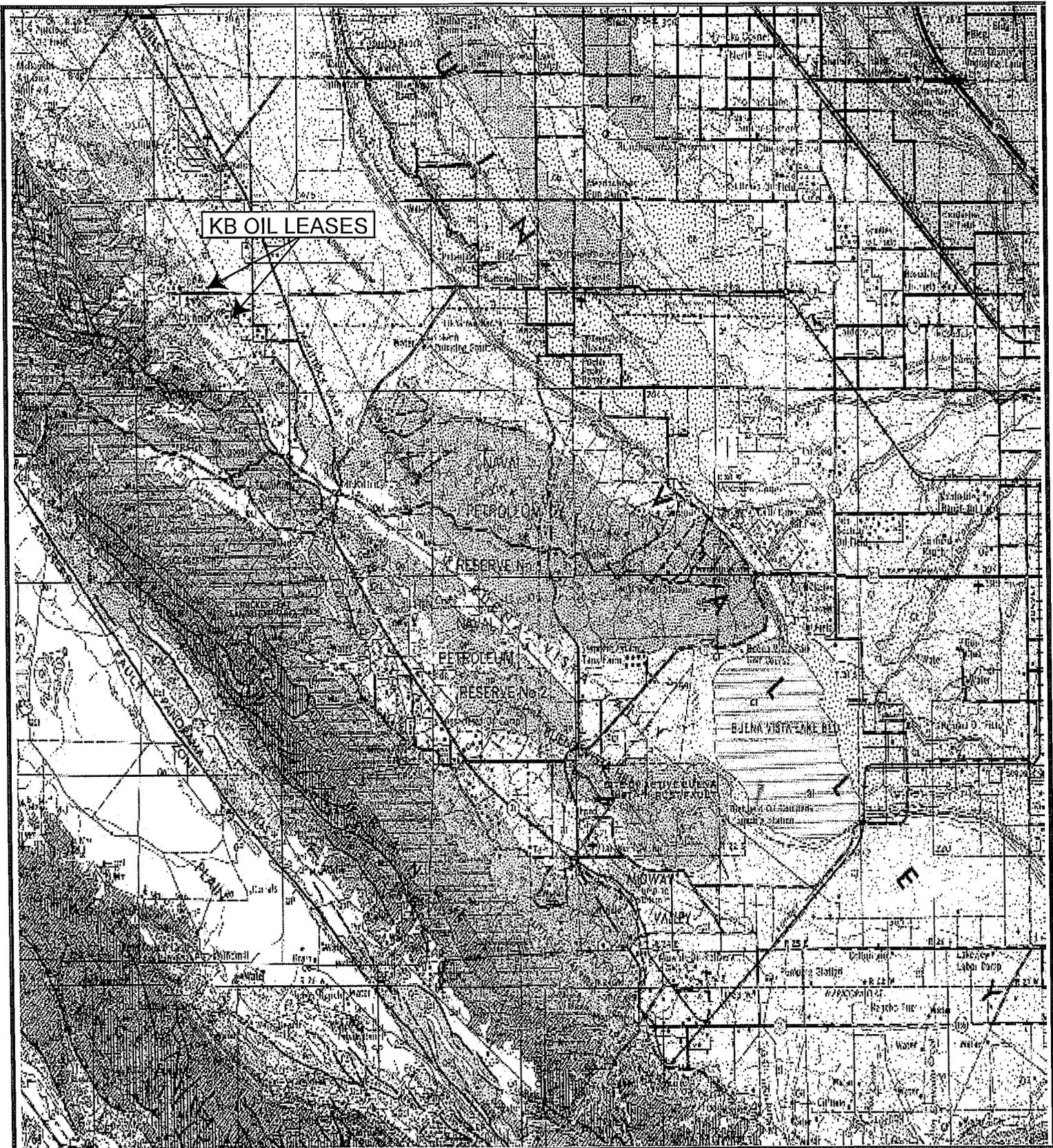
LEGEND

KB OIL AND GAS, INC.

ANDERSON, BALL, RICHARDSON, AND ROCO LEASES  
CYMRIC FIELD  
KERN COUNTY, CALIFORNIA

FIGURE 6 - GEMOMORPHIC PROVINCE MAP OF CALIFORNIA

VEIR Corp



**KB OIL LEASES**

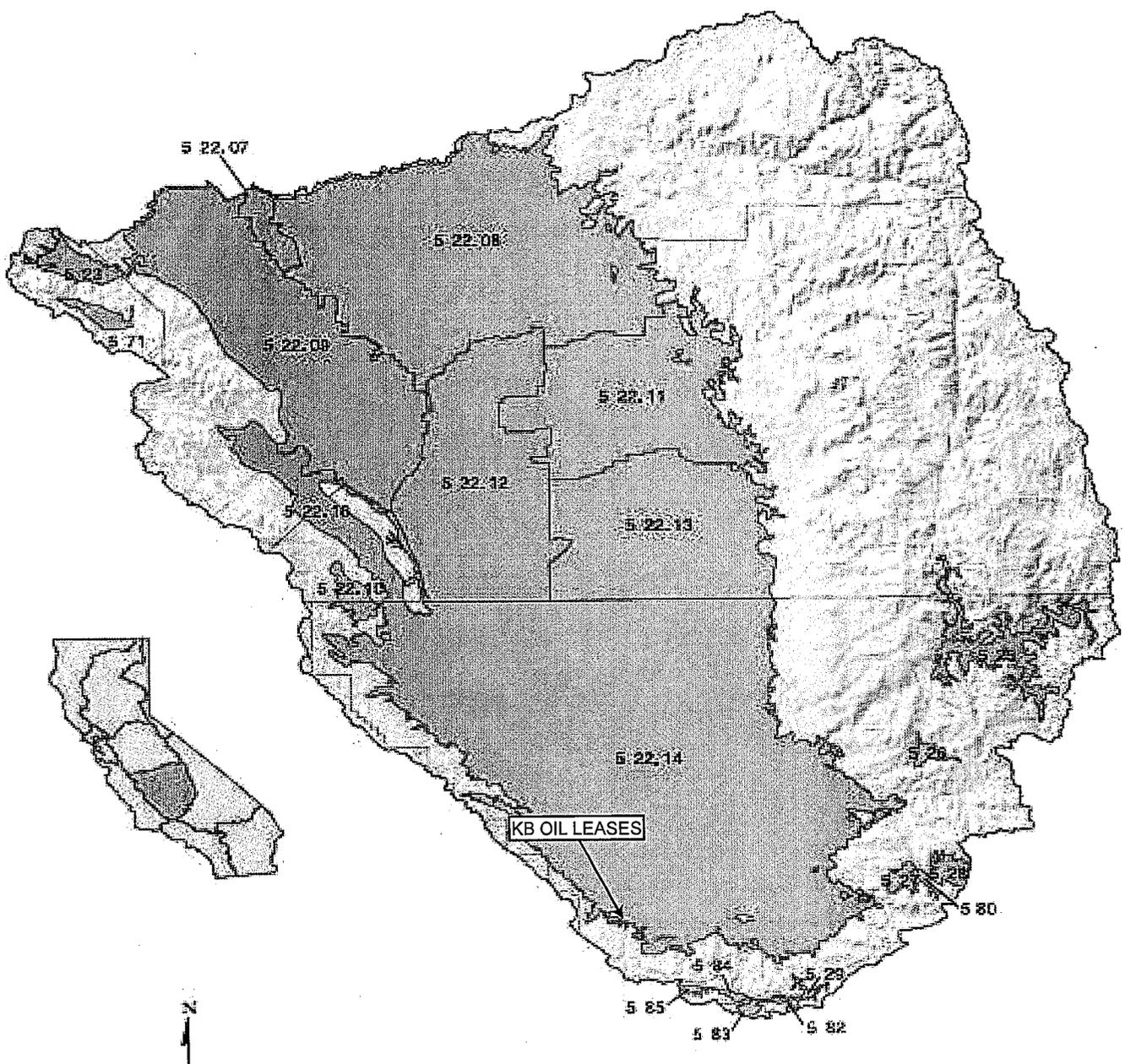
**LEGEND**



**KB OIL AND GAS, INC.**

ANDERSON, BALL, RICHARDSON, AND ROCO LEASES  
 CYMRIC FIELD  
 KERN COUNTY, CALIFORNIA  
 FIGURE 7 - GEOLOGY MAP

*VEIR Corp*



- 124 Basin Number
- 12.01 Subbasin Number
- Basin
- Hydrologic Region Boundaries
- County Lines



**LEGEND**



KB OIL AND GAS, INC.  
 ANDERSON, BALL, RICHARDSON, AND ROCO LEASES  
 CYMRIC FIELD  
 KERN COUNTY, CALIFORNIA  
 FIGURE 8 - HYDROLOGIC BASIN MAP  
*VEIR Corp*

**SECTION III.**

**TABLES**

TABLE 1.  
SUMMARY OF PRODUCED WATER SAMPLE ANALYTICAL RESULTS

SAMPLE SOURCE	ANDERSON	BALL	RICHARDSON	ROCO
DATE SAMPLED	6-9-15	6-9-15	6-9-15	6-9-15
TOTAL DISSOLVED SOLIDS (mg/L)	29,000	20,000	18,000	22,000
SODIUM (mg/L)	5,200	7,400	6,300	6,900
CHLORIDE (mg/L)	13,000	11,000	6,900	12,000
SULFATE (mg/L)	ND (<8)	ND (<8)	12	ND (<8)
NITRATE AS N (mg/L)	ND (<8)	ND (<8)	ND (<8)	ND (<8)
BROMIDE (mg/L)	36	76	34	41
TOTAL ALKALINITY (mg/L)	430	2,600	4,300	340
BICARBONATE (mg/L)	430	2,600	4,300	340
BARIUM (mg/L)	19	13	5.9	14
BORON (mg/L)	210	91	47	150
CALCIUM (mg/L)	2,700	200	54	420
IRON (mg/L)	13	11	ND (<0.05)	1.1
LEAD (mg/L)	0.027	0.012	ND (<0.01)	ND (<0.01)
LITHIUM (mg/L)	5.3	4.5	1.4	2.7
MAGNESIUM (mg/L)	69	93	84	170
MANGANESE (mg/L)	0.92	0.4	ND (<0.01)	0.014
MOLYBDENUM (mg/L)	ND (<0.005)	ND (<0.005)	ND (<0.005)	0.026
NICKEL (mg/L)	0.0066	0.0059	ND (<0.005)	ND (<0.005)
POTASSIUM (mg/L)	71	160	76	130
SELENIUM (mg/L)	0.094	0.093	0.12	0.11
STRONTIUM (mg/L)	120	9.2	13	54
ZINC (mg/L)	0.13	ND (<0.05)	ND (<0.005)	0.057
TPH AS CRUDE OIL (mg/L)	450	73	160	140
BENZENE (ug/L)	200	ND (<10)	ND (<10)	ND (<10)
TOLUENE (ug/L)	31	ND (<10)	ND (<10)	ND (<10)
ETHYLBENZENE (ug/L)	ND (<10)	ND (<10)	ND (<10)	ND (<10)
TOTAL XYLENES (ug/L)	23	ND (<10)	ND (<10)	ND (<10)
ACENAPHTHENE (ug/L)	12	ND (<2.1)	1.9	6
CHRYSENE (ug/L)	18	ND (<2.1)	0.62	ND (<2.1)
FLOURANTHENE (ug/L)	7.3	ND (<2.1)	ND (<0.52)	ND (<2.1)
FLOURENE (ug/L)	96	ND (<2.1)	2.4	10
NAPHTHALENE (ug/L)	8.8	ND (<2.1)	1.5	ND (<2.1)
PHENANTHRENE (ug/L)	240	9.8	14	12
PYRENE (ug/L)	11	ND (<2.1)	ND (<0.52)	ND (<2.1)
GROSS ALPHA (pCi/l)	7.25 +/- 1.02	3.99 +/- 0.85	5.02 +/- 0.96	2.75 +/- 0.82
GROSS BETA (pCi/l)	18.35 +/- 1.59	7.74 +/- 1.66	4.03 +/- 2.47	9.79 +/- 3.425
URANIUM N (pCi/l)	5.35 +/- 1.56	3.56 +/- 1.04	1.72 +/- 0.5	1.11 +/- 0.32
URANIUM RAD (pCi/l)	2.51 +/- 0.48	1.82 +/- 0.47	1.69 +/- 0.36	0.70 +/- 0.31
RADIUM 226 (pCi/l)	0.48 +/- 0.44	0.50 +/- 0.41	2.14 +/- 0.75	1.37 +/- 0.72
RADIUM 228 (pCi/l)	5.63 +/- 1.62	2.65 +/- 0.93	0.03 +/- 0.02	7.32 +/- 0.25

ND = Not detected above minimum reporting level.

All of the other constituents that are not listed but were analyzed for were not detected.

TABLE 2.  
SUMMARY OF THE VOLUME OF DISCHARGED PRODUCED WATER

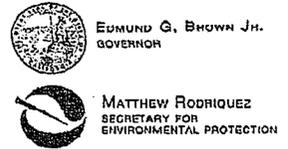
MONTH-YEAR	ANDERSON		BALL		RICHARDSON		ROCO	
	BARRELS	GALLONS	BARRELS	GALLONS	BARRELS	GALLONS	BARRELS	GALLONS
Jan-13	1,862	78,204	0	0	856	35,952	2,265	95,130
Feb-13	1,506	63,252	148	6,216	1,410	59,220	2,921	122,682
Mar-13	1,730	72,660	159	6,678	1,305	54,810	3,146	132,132
Apr-13	1,685	70,770	143	6,006	696	29,232	2,978	125,076
May-13	1,681	70,602	96	4,032	1,879	78,918	1,070	44,940
Jun-13	1,207	50,694	203	8,526	1,922	80,724	1,236	51,912
Jul-13	949	39,858	213	8,946	799	33,558	1,937	81,354
Aug-13	1,099	46,158	291	12,222	3,601	151,242	2,222	93,324
Sep-13	1,636	68,712	196	8,232	2,096	88,032	2,123	89,166
Oct-13	1,619	67,998	234	9,828	726	30,492	2,166	90,972
Nov-13	1,647	69,174	436	18,312	2,179	91,518	2,019	84,798
Dec-13	1,530	64,260	341	14,322	2,168	91,056	1,240	52,080
Jan-14	1,890	79,380	241	10,122	2,093	87,906	1,954	82,068
Feb-14	1,759	73,878	253	10,626	1,160	48,720	1,900	79,800
Mar-14	1,645	69,090	227	9,534	2,377	99,834	1,761	73,962
Apr-14	1,574	66,108	207	8,694	1,187	49,854	1,860	78,120
May-14	1,679	70,518	221	9,282	2,245	94,290	1,738	72,996
Jun-14	1,824	76,608	216	9,072	2,278	95,676	1,971	82,782
Jul-14	1,573	66,066	162	6,804	1,380	57,960	1,793	75,306
Aug-14	1,495	62,790	391	16,422	2,797	117,474	1,861	78,162
Sep-14	1,597	67,074	386	16,212	2,729	114,618	1,941	81,522
Oct-14	1,339	56,238	402	16,884	1,370	57,540	1,701	71,442
Nov-14	1,345	56,490	93	3,906	2,679	112,518	1,643	69,006
Dec-14	1,468	61,656	0	0	2,691	113,022	2,163	90,846
Jan-15	1,325	55,650	387	16,254	1,605	67,410	2,038	85,596
Feb-15	1,304	54,768	314	13,188	3,196	134,232	1,861	78,162
Mar-15	1,461	61,362	307	12,894	2,833	118,986	2,171	91,182
Apr-15	1,331	55,902	291	12,222	1,625	68,250	1,969	82,698
May-15	1,386	58,212	312	13,104	2,888	121,296	1,880	78,960

**SECTION IV.**

**ATTACHMENTS**

**ATTACHMENT 1.**

**CENTRAL VALLEY WATER BOARD CORRESPONDENCE**



EDMUND G. BROWN JR.  
GOVERNOR

MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

1 July 2015

KB Oil and Gas, Inc.  
Kennith L. Beard  
P.O. Box 42108  
Bakersfield, CA 93268-2108

**CERTIFIED MAIL**  
**7014 1200 0000 3347 0082**

**DRAFT CLEANUP AND ABATEMENT ORDER, KB OIL AND GAS COMPANY, ANDERSON LEASE, BALL LEASE, RICHARDSON LEASE, AND ROCO LEASE, CYMRIC OIL FIELD, KERN COUNTY**

KB Oil and Gas, Inc. has has been identified as the owner or operator of petroleum production facilities that utilize ponds for the disposal of produced fluids. Enclosed is a draft copy of a Cleanup and Abatement Order (CAO), including a draft Monitoring and Reporting Program, for the disposal ponds in the above-referenced oil field. This draft copy is being provided as a courtesy for your review and comment prior to issuance of the final CAO by the Central Valley Water Board Assistant Executive Officer. Comments submitted on this draft CAO by the close of business on **16 July 2015** will be considered prior to issuance of the final CAO.

Please submit your comments to the attention of:

Ron Holcomb  
Central Valley Water Board  
1685 E Street  
Fresno, CA 93706  
[Ronald.Holcomb@waterboards.ca.gov](mailto:Ronald.Holcomb@waterboards.ca.gov)

If you have any questions regarding this matter, please contact Ron Holcomb of this office at (559) 445-6050 or at the above e-mail address.

A handwritten signature in black ink, appearing to read "W. Dale Harvey".

W. DALE HARVEY  
Supervising Engineer  
RCE No. 55628

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

**CLEANUP AND ABATEMENT ORDER NO. R5-2015-XXXX  
FOR K.B. OIL AND GAS, INC.  
ANDERSON LEASE, BALL LEASE, RICHARDSON LEASE, AND ROCO LEASE  
CYMRIC OIL FIELD  
KERN COUNTY**

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

1. K.B. Oil and Gas, Inc. (hereinafter Discharger) operates a petroleum production wastewater discharge facilities at its Anderson Lease, its Ball Lease, its Richardson Lease, and its Roco Lease in the Cymric Oil Field (Anderson, Ball, Richardson and Roco Leases). The Anderson Lease, forty one miles west of Bakersfield, is located in Section 19, T29S, R21E, MDB&M. The Ball Lease, approximately thirty seven miles west of Bakersfield, is located in Section 35, T29S, R21E, MDB&M. The Richardson and Roco Leases are located in Section 18, T29S, R21E, MDB&M.
2. The Anderson, Ball, Richardson and Roco Leases collectively contain seven unlined surface impoundments (ponds). Wastewater is separated from the extracted crude oil and discharged to the unlined ponds for percolation and evaporation. The ponds are summarized in the flowing table.

Pond	Approximate Diminutions Measured on Aerial Photos
Anderson Lease Pond	40 ft. Long by 19 ft. wide
Ball Lease Pond	65 ft. long by 35 ft. wide
Richardson Lease	
Pond 1	90 ft. long by 30 ft. wide
Pond 2	76 ft. long by 25 ft. wide
Roco Lease	
Pond 1	20ft. by 20 ft.
Pond 2	50 ft. long by 14 ft. wide
Pond 3	90 ft. long by 23 ft. wide

3. The Discharger has not submitted a Report of Waste Discharge. The Anderson, Ball, Richardson and Roco Leases are not regulated by Waste Discharge Requirements (WDRs) for the discharge of petroleum production wastewaters.
4. This Order contains a time schedule to achieve compliance with the California Water Code (Water Code) and the *Water Quality Control Plan for the Tulare Lake Basin Second Edition, Revised January 2004* (Basin Plan), and requires that by 31 December 2016, the Discharger demonstrate that the discharge to these ponds can comply with the applicable laws, policies, and regulations or the discharge will have to cease by that date.
5. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.

K.B. Oil and Gas, Inc.  
 Anderson Lease, Ball Lease, Richardson Lease and Roco Lease  
 Cymric Oil Field, Kern County

6. Surface drainage is toward the east and north east in the Antelope Plain Hydrologic Area (558.60), part of the South Valley Floor Hydrologic Unit, of the Tulare Lake Basin. The designated beneficial uses of Valley Floor Waters, as specified in the Basin Plan, are agricultural supply; industrial service and process supply; water contact and non-contact water recreation; warm fresh water habitat; wildlife habitat; preservation of rare, threatened and endangered species; and groundwater recharge.
7. The Anderson, Ball, Richardson and Roco Leases are in the Kern County Basin Hydrologic Unit, Detailed Analysis Unit (DAU) 259. The designated beneficial uses of the groundwater, as specified in the Basin Plan for DAU 259 are municipal and domestic water supply, agricultural supply, and industrial service supply.
8. This Cleanup and Abatement Order is based upon: 1) Chapter 5, Enforcement and Implementation commencing with section 13300, of the Porter-Cologne Water Quality Control Act (Water Code Division 7, commencing with section 13000); 2) Water Code section 13267<sup>1</sup>, Investigations; inspections, Chapter 4, Regional Water Quality Control; 3) all applicable provisions of the Basin Plan including beneficial uses, water quality objectives, and implementation plans; 4) California State Water Resources Control Board (State Water Board) Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*); 5) State Water Board Resolution No. 92-49 (*Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code section 13304*); and 6) all other applicable legal authority.
9. The Basin Plan sets forth the following specific waste constituent limits for discharges of oil field wastewater to unlined ponds overlying groundwater with existing and future probable beneficial uses are:

Constituent	Limitation	Units
Electrical Conductivity (EC):	1000	micromohs per centimeter (µmhos/cm)
Chloride:	200	milligrams per liter (mg/L)
Boron:	1	mg/L

10. The Basin Plan allows discharges of oil field wastewater that exceed the above maximum salinity limits to unlined ponds, stream channels, or surface waters if the Discharger successfully demonstrates to the Central Valley Water Board in a public

<sup>1</sup> Water Code section 13267, subdivision (b)(1) states: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

hearing that the proposed discharge will not substantially affect water quality nor cause a violation of water quality objectives.

11. In March 2015, the Central Valley Water Board issued a Notices of Violation (NOVs) to the Discharger that was the result of inspections conducted on 23 January 2015. The NOVs alleged that the discharge was in violation of Section 13260 of the California Water Code for failing to submit a Report of Waste Discharge. Discharging waste that could affect the quality of waters of the State without obtaining WDRs is a violation of Sections 13260 and 13264 of the California Water Code. Production-water samples were taken from tanks at both the Anderson Lease and the Roco Lease. Complete analytical results from these samples were included in the 24 March 2015 NOVs. Salinity concentrations for the samples are summarized in the table below.

Constituent	Production Water 1/23/2015		Basin Plan Salinity Limits	Units
	Anderson Lease	Roco Lease		
Electrical Conductivity (EC):	26,000	36,000	1,000	µmhos/cm
Chloride:	6,800	14,000	200	mg/l
Boron:	41	170	1	mg/l

Salinity concentrations of produced water at the Anderson and Roco Leases exceed the maximum salinity limits, set with in the Basin Plan, for oil field wastewaters discharged to land overlying ground water with existing and future probable beneficial uses.

12. Section 13304(a) of the Water Code provides that:

*Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts. A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner. Upon failure of any person to comply with the cleanup or abatement order, the Attorney General, at the request of the board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant.*

13. Oil field produced water can contain elevated concentrations of general minerals (especially total dissolved solids and chloride), metals (i.e., arsenic), trace elements (i.e.,

K.B. Oil and Gas, Inc.

Anderson Lease, Ball Lease, Richardson Lease and Roco Lease

Cymric Oil Field, Kern County

boron, strontium, thallium, lithium, etc.), petroleum hydrocarbons, polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs, i.e., benzene, toluene, ethylbenzene, and xylenes [BTEX]), and radionuclides. The unauthorized discharge of waste containing oil field waste constituents to ground and/or groundwater creates, or threatens to create, a condition of pollution in groundwater, and may result in the degradation of water quality.

14. Land east and north of the Anderson, Ball, Richardson and Roco Leases is being used for agricultural production. The nearest irrigated crops are approximately five and a half miles northeast of the Ball Lease and five and a quarter miles east of the Richardson and Roco Leases. Many of the crops may be irrigated with groundwater from local supply wells in conjunction with canal water. Based on Ayers and Westcott (1985), irrigation water with a chloride concentration above 350 mg/L can cause severe crop problems. Boron toxicity can occur on sensitive crops at concentrations greater than 0.5 mg/l in irrigation water.
15. Underlying groundwater may be degraded if mixed with oil field wastewater. Oil field wastewater constituents could impair the groundwater for municipal and domestic supply and agricultural supply uses.
16. An investigation is necessary to determine whether the discharge of wastewater has caused or threatens to cause a condition of pollution in groundwater or the development of nuisance conditions.
17. The following actions will determine the threat and/or impacts to groundwater as a result of the discharges at the Anderson, Ball, Richardson and Roco Leases in violation of the Water Code:
  - a. Development of a work plan to conduct a hydrogeological site characterization and assess potential groundwater degradation by discharges from this facility;
  - b. Documentation of the average monthly volume of wastewater discharged to the ponds during the previous year will be submitted, and continued discharge during the investigation will not exceed the average monthly discharge rate calculated for the prior year; and
  - c. This Order requires that if degradation of groundwater due to discharge from any of the ponds is documented, then a work plan to delineate the nature and extent of the release and a plan to remediate the effects of the release must be submitted.
18. The deliverables ordered herein (work plans, signing up for WDRs, investigations, etc. as necessary) are needed to provide information to the Central Valley Water Board regarding (a) the nature and extent of the discharge, (b) the nature and extent of pollution conditions in State waters created by the discharge, (c) the threat to public health posed by the discharge, and (d) appropriate cleanup and abatement measures. The deliverables will enable the Discharger, with concurrence from the Central Valley Water Board, to determine the vertical and lateral extent of the discharge, ascertain

K.B. Oil and Gas, Inc.

Anderson Lease, Ball Lease, Richardson Lease and Roco Lease

Cymric Oil Field, Kern County

whether the condition of pollution poses a threat to human health in the vicinity of the Anderson, Ball, Richardson and Roco Leases, and provide technical information to determine the cleanup and abatement measures necessary to bring the Site into compliance with applicable water quality standards. Based on the nature and possible consequences of the discharges, including impacts to groundwater supply, the burden of providing the required information, including costs, bears a reasonable relationship to the need for the required reports, and the benefits to be obtained from the reports. The deadlines set forth herein are reasonable given the need to investigate the potential threat to groundwater quality.

19. In accordance with Water Code section 13267(b), these findings provide the Discharger with a written explanation with regard to the need for remedial action and reports, and identify the evidence that supports the requirement to implement investigative activities, to implement cleanup and abatement activities if needed, and to submit the reports. The Discharger owns a portion of the mineral rights and operates the Anderson, Ball, Richardson and Roco Leases which are subject to this Cleanup and Abatement Order. The technical and monitoring reports required by this Order are necessary to determine compliance with this Cleanup and Abatement Order.
20. Issuance of this Cleanup and Abatement Order is being taken for the protection of the environment and as such is exempt from provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq.) in accordance with California Code of Regulations, title 14, sections 15061(b)(3), 15306, 15307, 15308, and 15321. This Cleanup and Abatement Order generally requires the Discharger to submit plans for approval prior to implementation of investigative and, if necessary, cleanup activities at the Anderson, Ball, Richardson and Roco Leases. Mere submission of plans is exempt from CEQA as submission will not cause a direct or indirect physical change in the environment and/or is an activity that cannot possibly have a significant effect on the environment. CEQA review at this time would be premature and speculative, as there is not enough information concerning the Discharger's proposed remedial activities and possible associated environmental impacts. If the Central Valley Water Board determines that implementation of any plan required by this Cleanup and Abatement Order will have a significant effect on the environment, the Central Valley Water Board will conduct the necessary and appropriate environmental review prior to the Executive Officer's approval of the applicable plan.
21. The Discharger will bear the costs, including the Central Valley Water Board's costs, of determining whether implementation of any plan required by this Cleanup and Abatement Order will have a significant effect on the environment and, if so, in preparing and handing any documents necessary for environmental review. If necessary, the Discharger and a consultant acceptable to the Central Valley Water Board shall enter into a memorandum of understanding with the Central Valley Water Board regarding such costs prior to undertaking any environmental review.

**IT IS HEREBY ORDERED** that, pursuant to section 13304 and section 13267 of Division 7 of the California Water Code, K.B. Oil and Gas, Inc. shall cease the discharge of wastewater in violation of applicable laws, policies, and regulations, and clean up and abate the condition of unauthorized discharge in accordance with the schedule below:

1. By **[45 days from CAO issuance]**, the Discharger shall prepare and submit to the Central Valley Water Board a Work Plan with a time schedule proposed by the Discharger and approved by the Assistant Executive Officer. The schedule shall provide the ability to determine whether the discharge can comply with applicable laws, policies, and regulations that would allow the issuance of waste discharge requirements by 31 October 2016. If issuance of waste discharge requirements is not obtained by 31 December 2016, the discharge shall cease. The Work Plan shall include, but is not limited to, the following tasks:
  - a. Identify all owners of the surface rights and the mineral rights of the Anderson, Ball, Richardson and Roco Leases.
  - b. Conduct a hydrogeological site characterization to assess the effects of the discharge of oil field wastes on underlying groundwater. The characterization shall be conducted in a manner to utilize acquired information to further assess the impacts of the wastewater discharge on groundwater. If the Discharger demonstrates that the wastes discharged to the ponds cannot affect the quality of underlying groundwater, the Assistant Executive Officer may rescind by signed letter all or part of the requirements to complete the groundwater investigation and groundwater monitoring portions of this Order.
  - c. The hydrogeological characterization, and a determination whether there has been a release of waste constituents to groundwater, shall be consistent with the detection monitoring requirements of Title 27, CCR, section 20005 et seq. (Title 27). This includes the development of a Sampling and Analysis Plan (SAP); the location and installation of groundwater monitoring wells; soil sampling locations (if necessary); and the sampling and analysis methods for groundwater and soil samples, in accordance with Monitoring and Reporting Program No. R5-2015-XXXX (MRP), which is attached hereto and made part of this Order;
  - d. Monitoring wells installed for the hydrogeological characterization shall be installed at appropriate depths that will allow the collection of representative groundwater samples. Existing groundwater wells documented to be in appropriate locations, where well depth and construction details can be provided, may be proposed as sampling points;
  - e. Collect and submit representative groundwater and soil samples for laboratory analysis for waste constituents in Monitoring and Reporting Program No. R5-2015-XXXX in accordance with a sampling and analysis plan (SAP) approved by the Assistant Executive Officer;

K.B. Oil and Gas, Inc.

Anderson Lease, Ball Lease, Richardson Lease and Roco Lease

Cymric Oil Field, Kern County

- f. The methods of analysis and the method detection limits (MDLs) used must be appropriate for the expected concentrations. The laboratory reporting limits (RLs) for all reported monitoring data shall be set no greater than the practical quantitation limit (PQL). MDLs, PQLs and RLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Analysis with an MDL greater than the most stringent drinking water standard that results in non-detection needs to be reanalyzed with the MDL set lower than the drinking water standard or at the lowest level achievable by the laboratory;
- g. Conduct a well survey to identify all water supply wells within one-mile of the ponds. The Discharger shall sample the identified domestic water supply wells and analyze the samples for the waste constituents listed in Table I of Monitoring and Reporting Program No. R5-2015-XXXX. If access to private property is needed, requested and denied, a demonstration of that is required;
- h. If the investigation determines that a release of wastewater to groundwater or soils has occurred, the hydrogeological characterization shall include a characterization of the nature and extent of the release consistent with the evaluation monitoring program requirements contained in section 20425 of Title 27 CCR section 20005 et seq. (Title 27);
- i. If the investigation determines that a release of wastewater to groundwater or soils has occurred, then following the characterization of the nature and extent of the release, a groundwater remediation program shall be submitted for Assistant Executive Officer review and approval that is consistent with the corrective action program requirements contained in section 20430 of Title 27. This will entail the preparation of an engineering feasibility study followed by a proposed corrective action program;
- j. Based on information acquired during the hydrogeological site characterization, submit a report of waste discharge (RWD) for preparation of waste discharge requirements, if appropriate, consistent with current regulations and policies. It is anticipated that general WDRs for discharges to unlined ponds will be presented to the Central Valley Water Board for adoption by August 2016. Submittal of a Notice of Intent to come under a general WDR, with the additional technical information, will meet the requirement of a RWD.
- k. Include in the report a table that provides the total monthly discharge in barrels and gallons to the pond(s) subject to this Order from 1 January 2013 to the end of the month immediately preceding the date of the report. The table shall include a description of the sources and volume of each individual waste stream going to each pond.
- l. Include in the report a calculation of the average monthly discharge of wastes to the ponds from 1 June 2014 through 1 June 2015.

K.B. Oil and Gas, Inc.

Anderson Lease, Ball Lease, Richardson Lease and Roco Lease

Cymric Oil Field, Kern County

2. Beginning **[90 days from CAO issuance]**, or a date approved by the Assistant Executive Officer, and quarterly thereafter until all Work Plan activities are complete, the Discharger shall submit technical reports that provide information to document the Work Plan activities completed to date and to ultimately document that all elements of the Work Plan have been completed. Corrective actions shall be proposed and included in these technical reports when Work Plan activities fail to satisfy any interim or final success criteria.
3. The Discharger shall comply with the MRP, which is part of this Order, and any revisions thereto as ordered by the Assistant Executive Officer. The submission dates of self-monitoring reports shall be no later than the submission date specified in the MRP.
4. The monthly discharge volume of oil field wastewater to the ponds shall not exceed the average monthly discharge volume calculated in Order 1.I. above.
5. The Discharger shall not discharge produced fluids to any location on the Anderson, Ball, Richardson and Roco Leases other than a permitted injection well, a permitted pond or disposal facility, or the ponds which are the subject of this Order.
6. The ponds shall either be free of oil or effectively screened and maintained to preclude entry of birds or animals;
7. Ponds adjacent to natural drainage courses shall be protected from inundation or washout, or properly closed;
8. **All activities in the Work Plan shall be completed** in accordance with time frames included in the Work Plan as approved by the Assistant Executive Officer.
9. With each work plan and report required by this Cleanup and Abatement Order, the Discharger shall provide under penalty of perjury under the laws of California a "Certification" statement to the Central Valley Water Board. The "Certification" shall include the following signed statement:

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Pursuant to Water Code section 13350, any person who intentionally or negligently violates a cleanup and abatement order may be liable civilly in an amount which shall not exceed five thousand dollars (\$5,000), but shall not be less than five hundred dollars (\$500), for each day in which the cleanup and abatement order is violated.*

K.B. Oil and Gas, Inc.

Anderson Lease, Ball Lease, Richardson Lease and Roco Lease

Cymric Oil Field, Kern County

10. If it is determined that discharges from the Anderson, Ball, Richardson and Roco Leases have impacted the beneficial uses of water, the Discharger can be further required upon notification by the Assistant Executive Officer to provide a replacement water supply or treat the water to allow continued use.

## NOTIFICATIONS

1. **Applicability.** Requirements established pursuant to Water Code sections 13304 and 13267(b) are enforceable when signed by the Assistant Executive Officer of the Central Valley Water Board.
2. **Enforcement Actions.** The Central Valley Water Board reserves its right to take any enforcement action authorized by law for violations, including but not limited to, violations of the terms and conditions of this Cleanup and Abatement Order.
3. **Inspection and Entry.** The Discharger shall allow the Central Valley Water Board or State Water Board, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to at reasonable times do the following:
  - a. Enter upon the properties;
  - b. Access and copy any records related to this Cleanup and Abatement Order;
  - c. Inspect and photograph any facilities, equipment, practices, or operations regulated or required by this Cleanup and Abatement Order; and
  - d. Sample or monitor any substances or parameters on-site for the purposes of assuring Cleanup and Abatement Order compliance or as otherwise authorized by the Porter-Cologne Water Quality Control Act.
4. **Potential Liability.** Pursuant to Water Code section 13350, any person who intentionally or negligently violates a cleanup and abatement order may be liable civilly in an amount which shall not exceed five thousand dollars (\$5,000), but shall not be less than five hundred dollars (\$500), for each day in which the cleanup and abatement order is violated. Pursuant to Water Code section 13268, any person failing or refusing to furnish technical or monitoring program reports as required by section 13267, or falsifying any information provided therein, is guilty of a misdemeanor, and may be liable civilly in an amount which shall not exceed one thousand dollars (\$1,000) for each day in which the violation occurs.
5. **Cost Reimbursement.** Pursuant to Water Code section 13304, the Central Valley Water Board is entitled to, and may seek reimbursement for, all reasonable costs it actually incurs to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Cleanup and Abatement Order. The Discharger shall reimburse the State of California for all reasonable costs actually incurred by the Central Valley Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Cleanup and

K.B. Oil and Gas, Inc.

Anderson Lease, Ball Lease, Richardson Lease and Roco Lease

Cymric Oil Field, Kern County

Abatement Order, according to billing statements prepared from time to time by the State Water Board.

6. **Waste Management.** The Discharger shall properly manage, store, treat, and dispose of contaminated soils and groundwater which are extracted or disturbed during the investigation in accordance with applicable federal, state, and local laws and regulations. The storage, handling, treatment, or disposal of soil containing waste constituents and polluted groundwater shall not create conditions of pollution, contamination or nuisance as defined in Water Code section 13050(m). The Discharger shall obtain or apply for coverage under waste discharge requirements or a conditional waiver of waste discharge requirements for any discharge of the waste to (a) land for treatment, storage, or disposal or (b) waters of the State.
7. **Requesting Administrative Review by the State Water Board.** Any person aggrieved by an action of the Central Valley Water Board that is subject to review as set forth in Water Code section 13320(a), may petition the State Water Board to review the action. Any petition must be made in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition within thirty (30) days of the date the action was taken, except that if the thirtieth day following the date the action was taken falls on a Saturday, Sunday, or state holiday, then the State Water Board must receive the petition by 5:00 p.m. on the next business day. Copies of the laws and regulations applicable to filing petitions may be found on the internet at [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality/index.shtml](http://www.waterboards.ca.gov/public_notices/petitions/water_quality/index.shtml) or will be provided upon request.
8. **Modifications.** Any modification to this Cleanup and Abatement Order shall be in writing and approved by the Assistant Executive Officer, including any extensions. Any written extension request by the Discharger shall include justification for the delay.
9. **No Limitation of Water Board Authority.** This Cleanup and Abatement Order in no way limits the authority or ability of the Central Valley Water Board to institute additional enforcement actions or to require additional investigation and any necessary cleanup of the property consistent with the Water Code. This Cleanup and Abatement Order may be revised as additional information becomes available.

## REPORTING REQUIREMENTS

1. **Duty to Use Qualified Professionals.** The Discharger shall provide documentation that plans and reports required under this Cleanup and Abatement Order are prepared under the direction of appropriately qualified professionals. Business and Professions Code sections 6735, 7835, and 7835.1 require that engineering and geologic evaluations and judgments be performed by or under the direction of licensed professionals. The Discharger shall include a statement of qualifications and license numbers, if applicable, of the responsible lead professionals in all plans and reports required under this Cleanup and Abatement Order. The lead professional shall sign and

K.B. Oil and Gas, Inc.

Anderson Lease, Ball Lease, Richardson Lease and Roco Lease

Cymric Oil Field, Kern County

affix their license stamp, as applicable, to the report, plan, or document.

2. **Electronic and Paper Media Reporting Requirements.** The Discharger shall comply with the following reporting requirements for all reports and plans (and amendments thereto) required by this Cleanup and Abatement Order:

- a. The Discharger shall submit one paper and one electronic, searchable Portable Document Format (PDF) copy of all technical reports, monitoring reports, progress reports, and plans required by this Cleanup and Abatement Order. The PDF copy of all the reports shall also be uploaded into the Geotracker database, as required by Reporting Requirement 2.(d) below.
- b. Larger documents shall be divided into separate files at logical places in the report to keep file sizes under 150 megabytes.
- c. All paper correspondence and documents submitted to the Central Valley Water Board must include the Geotracker Site Global ID.
- d. Electronic Data Submittals to the Central Valley Water Board in compliance with the Cleanup and Abatement Order are required to be submitted electronically via the Internet into the Geotracker database <http://geotracker.waterboards.ca.gov/>.

Lease	Geotracker Site ID:
Anderson	T10000006968
Ball	T10000006970
Richardson	T10000006971
Roco	T10000006972

The electronic data shall be uploaded on or prior to the regulatory due dates set forth in the Cleanup and Abatement Order or addenda thereto. To comply with these requirements, The Discharger shall upload to the Geotracker database the following minimum information:

- i. **Laboratory Analytical Data:** Analytical data (including geochemical data) for all waste, soil, and water samples shall be submitted in Electronic Deliverable Format (EDF), which facilitates the transfer of data from the laboratory to the end user. Waste, soil, and water include analytical results of samples collected from the following locations and devices: surface samples, equipment, monitoring wells, boreholes, gas and vapor wells or other collection devices, groundwater, piezometers, and stockpiles.
- ii. **Locational Data:** All permanent monitoring locations (monitoring wells, sediment sampling locations, etc.) shall be surveyed with latitude and longitude coordinates in a decimal degree format basin on the North American Datum 1983 ellipsoid, and accurate to within one meter (3 feet).

K.B. Oil and Gas, Inc.

Anderson Lease, Ball Lease, Richardson Lease and Roco Lease

Cymric Oil Field, Kern County

- iii. **Site Map:** Site map or maps which display discharge locations, streets bordering the facility, and sampling locations for all waste, soil, and water samples. The site map is a stand-alone document that may be submitted in various electronic formats. A site map must also be uploaded to show the maximum extent of any soil impact and water pollution. An update to the site map may be uploaded at any time.
  - iv. **Electronic Report:** A complete copy (in character searchable PDF) of all work plans, work plan modifications, assessment, cleanup, and monitoring reports including the signed transmittal letters, professional certifications, and all data presented in the reports.
3. **Oversight Reimbursement.** The Discharger may be required to reimburse the Central Valley Water Board for reasonable costs associated with oversight of the investigation and remediation of the Site, as provided in Water Code section 13304(c) (1). **[30 days from CAO issuance]**, provide the name and address where the invoices shall be sent. Failure to provide a name and address for invoices and/or failure to reimburse the Central Valley Water Board's reasonable oversight costs shall be considered a violation of this Cleanup and Abatement Order.
  4. **Signatory Requirements.** All reports and work plans required under this Cleanup and Abatement Order shall be signed and certified, in accordance with Order Item 9 above, by the Discharger or by a duly authorized representative and submitted to the Central Valley Water Board. A person is a duly authorized representative only if: 1) The authorization is made in writing by The Discharger; and 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
  5. All monitoring and technical reports required under this Cleanup and Abatement Order shall be submitted to:

California Regional Water Quality Control Board  
Central Valley Region  
1685 E Street, Suite 200  
Fresno, CA 93706  
Attn: Ron Holcomb

Geotracker Site Global ID: T10000006968 for the Anderson lease

Geotracker Site Global ID: T10000006970 for the Ball lease

Geotracker Site Global ID: T10000006971 for the Richardson lease

Geotracker Site Global ID: T10000006972 for the Roco lease

6. FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CLEANUP AND ABATEMENT ORDER MAY SUBJECT YOU TO FURTHER ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO, ASSESSMENT OF CIVIL LIABILITY UNDER SECTIONS 13268 AND 13350 OF THE WATER CODE AND REFERRAL TO THE DISTRICT ATTORNEY OR ATTORNEY GENERAL FOR INJUNCTIVE RELIEF AND CIVIL OR CRIMINAL LIABILITY.

Ordered by:

---

CLAY L. RODGERS  
Assistant Executive Officer

---

Date

ADMINISTRATIVE DRAFT

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2015-XXXX  
FOR  
K.B. OIL AND GAS, INC.  
ANDERSON LEASE, BALL LEASE, RICHARDSON LEASE, AND ROCO LEASE  
CYMRIC OIL FIELD  
KERN COUNTY

Compliance with this Monitoring and Reporting Program is required pursuant to Water Code section 13267 as ordered by Cleanup and Abatement Order R5-2015-XXXX (the "CAO"). Failure to comply with this program constitutes noncompliance with the CAO and the Water Code, which can result in the imposition of civil liability. All sampling and analyses shall be by United States Environmental Protection Agency (USEPA) approved methods. The test methods chosen for detection of the constituents of concern shall be subject to review and concurrence by the California Regional Water Quality Control Board, Central Valley Region ("Central Valley Water Board").

A complete list of substances which are tested for and reported on by the testing laboratory shall be provided to the Central Valley Water Board. All peaks must be reported. In addition, both the method detection limit (MDL) and the practical quantification limit shall be reported. Detection limits shall equal or be more precise than USEPA methodologies. Analysis with an MDL greater than the most stringent drinking water standard that results in non-detection needs to be reanalyzed with the MDL set lower than the drinking water standard or at the lowest level achievable by the laboratory. Water samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136. All quality assurance/quality control (QA/QC) samples must be run on the same dates when samples were actually analyzed. Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report. All analyses must be performed by a California Department of Public Health certified laboratory.

The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Central Valley Water Board.

### **GROUNDWATER MONITORING**

The Discharger shall operate and maintain a groundwater monitoring system that complies with the requirements of the CAO and is consistent with the detection monitoring requirements of section 20420 et seq. of Title 27, CCR, section 20005 et seq. (Title 27). The monitoring system shall be certified by a California-licensed professional civil engineer or geologist as being consistent with the detection monitoring requirements of Title 27. The Discharger shall revise the groundwater monitoring system (after review and approval by Central Valley Water Board staff) as needed to characterize the groundwater and to delineate the nature and extent of any release of waste constituents due to the operation of the surface impoundments (ponds) that are the subject of the CAO.

Groundwater samples shall be collected from groundwater monitoring wells and other sampling points established in accordance with the hydrogeological characterization required by the CAO. The collected samples shall be analyzed for the parameters and constituents listed in Table I in accordance with the specified methods and frequencies. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the Sample Collection and Analysis Plan approved by the Assistant Executive Officer.

### INFLUENT MONITORING

Produced water samples shall be collected at a point in the system before discharge to the ponds. Time of collection of the sample shall be recorded. The collected produced water samples shall be analyzed for the parameters and constituents listed in Table I in accordance with the specified methods and frequencies. The Discharger shall collect, preserve, and transport produced water samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall record the volume of wastewater discharged to the ponds monthly. The wastewater volumes shall be reported in the quarterly monitoring reports.

### FACILITY MONITORING

Permanent markers shall be in place with calibrations indicating the water level at design capacity and available operational freeboard. The freeboard shall be monitored on all ponds to the nearest tenth of a foot **monthly**.

Annually, prior to the anticipated rainy season, but **no later than 30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess repair and maintenance needed for: drainage control systems; slope failure; groundwater monitoring wells, or any change in site conditions that could impair the integrity of the waste management unit or precipitation and drainage control structures; and shall assess preparedness for winter conditions including, but not limited to, erosion and sedimentation control. The Discharger shall take photos of any problems areas before and after repairs. Any necessary construction, maintenance, or repairs shall be **completed by 31 October**. Annual facility inspection reporting shall be **submitted by 30 November**.

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following major storm events (e.g., a storm that causes continual runoff for at least one hour) capable of causing flooding, damage, or significant erosion. The Discharger shall take photos of any problems areas before and after repairs. Necessary repairs shall be completed **within 30 days** of the inspection. Notification and reporting requirements for major storm events shall be conducted as required in Reporting Requirements 2. of this MRP.

The Discharger shall monitor and record on-site rainfall data using an automated rainfall gauge. Data shall be used in establishing the severity of storm events and wet seasons for comparison with design parameters used for waste management unit design and conveyance and drainage design. Daily data and on-site observation shall be used for establishing the need for inspection and repairs after major storm events. Rainfall data shall be reported in the quarterly monitoring reports as required by this MRP.

### REPORTING REQUIREMENTS

1. The Discharger shall report all monitoring data and information as specified herein. Reports that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with this Monitoring and Reporting Program.

MONITORING AND REPORTING PROGRAM R5-2015-XXXX  
K.B. OIL AND GAS, INC.  
ANDERSON LEASE, BALL LEASE, RICHARDSON LEASE, AND ROCO LEASE  
CYMRIC OIL FIELD, KERN COUNTY

2. Quarterly groundwater monitoring and remediation system reports shall be submitted to the Central Valley Water Board according to the schedule below.

<u>Monitoring Period</u>	<u>Report Due</u>
January – March	April 30
April – June	July 31
July – September	October 31
October – December	January 31

Each quarterly report shall include the following minimum information:

- (a) a description and discussion of the groundwater sampling event and results, including trends in the concentrations of waste constituents and groundwater elevations in the wells. If there are any deficiencies during the sampling event or if impacts to groundwater extend beyond recent historical boundaries, the report shall include an explanation and/or evaluation and propose options for addressing or correcting the deficiencies;
- (b) field logs that contain, at a minimum, water quality parameters measured before, during, and after purging, method of purging, depth of water, volume of water purged, etc.;
- (c) groundwater contour maps for all groundwater zones, if applicable;
- (d) waste constituent isoconcentration maps for all groundwater zones, if applicable;
- (e) a table showing well construction details that shall include, at a minimum, well number, groundwater zone being monitored, measuring point elevation, depth to top and bottom of screen, water level elevation, and depth to water;
- (f) cumulative data tables containing all historical water quality analytical results and depth to groundwater;
- (g) a copy of all laboratory analytical data reports;
- (i) results of any monitoring done more frequently than required at the locations specified in this Monitoring and Reporting Program or at other locations at the site shall be reported to the Central Valley Water Board;
- (j) a summary of any spills/releases that occurred during the quarter and tasks undertaken in response to the spills/releases;
- (k) an update and status on each of the outstanding tasks required by the CAO or Assistant Executive Officer;
- (l) a map showing all wells on the facility;

3. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be

MONITORING AND REPORTING PROGRAM R5-2015-XXXX  
K.B. OIL AND GAS, INC.  
ANDERSON LEASE, BALL LEASE, RICHARDSON LEASE, AND ROCO LEASE  
CYMRIC OIL FIELD, KERN COUNTY

-4-

summarized to demonstrate compliance with the requirements. All data shall be submitted in an electronic form acceptable to the Assistant Executive Officer.

4. The Discharger shall submit an **annual report by 31 January** of each year for the preceding year. The report can be combined with the Discharger's fourth quarter report. The report shall contain:
  - a. Both tabular and graphical summaries of all data obtained during the year;
  - b. An in-depth evaluation of groundwater conditions at the site including short and long-term trends of the constituents of concern in each area of the site;
  - c. An evaluation of the effectiveness of the groundwater monitoring network in delineating the lateral and vertical extent of impacts to groundwater in all affected areas of the site. This needs to include an identification of any data gaps and potential deficiencies in the monitoring system or reporting program. The report shall include recommendations to address any deficiencies in the monitoring and report program;
  - d. An evaluation of the effectiveness of each of the remediation systems. The evaluation shall include the effectiveness of the systems in remediating impacted groundwater and each of the source areas or suspected source areas. The report shall include recommendations for improving or expanding the systems, if necessary;
  - e. A summary of the performance of each remediation system including the amount and percentage of operating and downtime, and the amount of petroleum hydrocarbons removed, if applicable; and
  - f. A summary of all spills/releases, if any, that occurred during the year, tasks undertaken in response to the spills, the results of the tasks undertaken.
5. For each required quarterly and annual report, one report shall be submitted containing all monitoring data collected at the site by the Discharger and include all information cited in the above sections. A hard copy of all required reports on/or responses shall be submitted by the due date unless otherwise arranged with Central Valley Water Board staff.
6. The Discharger may request that the Assistant Executive Officer change the monitoring frequency or constituents of concern after the first year of monitoring. The request needs to include a demonstration that adequate data has been collected to determine background groundwater conditions and a justification for the change.
6. The Discharger shall maintain a data base containing historical and current monitoring data in an electronic form acceptable to the Assistant Executive Officer. The data base shall be updated quarterly and provided to the Central Valley Water Board in electronic format.
7. The Discharger shall submit electronic copies of all workplans, reports, analytical results, and groundwater elevation data over the Internet to the State Water Board Geographic Environmental Information Management System database (GeoTracker) at <http://geotracker.swrcb.ca.gov>. Electronic submittals shall comply with GeoTracker standards and procedures as specified on the

MONITORING AND REPORTING PROGRAM R5-2015-XXXX  
K.B. OIL AND GAS, INC.  
ANDERSON LEASE, BALL LEASE, RICHARDSON LEASE, AND ROCO LEASE  
CYMRIC OIL FIELD, KERN COUNTY

State Water Board's web site. Uploads to Geotracker shall be completed on or prior to the due date. In addition, a hardcopy of each document shall be submitted to:

California Regional Water Quality Control Board  
Central Valley Region  
1685 E Street, Suite 200  
Fresno, CA 93706  
Attn: Ron Holcomb

Geotracker Site Global ID: T10000006968 for the Anderson lease  
Geotracker Site Global ID: T10000006970 for the Ball lease  
Geotracker Site Global ID: T10000006971 for the Richardson lease  
Geotracker Site Global ID: T10000006972 for the Roco lease

8. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report. The transmittal letter shall contain a statement identical to that required by the CAO by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate, and complete.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by: \_\_\_\_\_  
CLAY L. RODGERS, Assistant Executive Officer

\_\_\_\_\_  
(Date)

**Table 1 – Influent and Groundwater Monitoring**

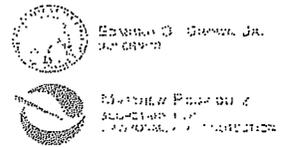
<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>US EPA or other Method</u>	<u>Reporting Frequency</u>
<b><u>Groundwater Elevation</u></b>	feet & hundredths, MSL <sup>1</sup>	Quarterly		Quarterly
<b><u>Field Parameters</u></b>				
Temperature	°F <sup>2</sup>	Quarterly		Quarterly
Electrical Conductivity	µmhos/cm <sup>3</sup>	Quarterly		Quarterly
pH	pH units	Quarterly		Quarterly
<b><u>Monitoring Parameters</u></b>				
Total Dissolved Solids (TDS)	mg/L <sup>4</sup>	Quarterly	160.1	Quarterly
Electrical Conductivity	µmhos/cm	Quarterly	120.1	Quarterly
Boron, dissolved	mg/L	Quarterly	6010B	Quarterly
<b><u>Standard Minerals</u></b>				
Alkalinity as CaCO <sub>3</sub>	mg/L	Quarterly	310.1	Quarterly
Bicarbonate Alkalinity as CaCO <sub>3</sub>	mg/L	Quarterly	310.1	Quarterly
Carbonate Alkalinity as CaCO <sub>3</sub>	mg/L	Quarterly	310.1	
Hydroxide Alkalinity as CaCO <sub>3</sub>	mg/L	Quarterly	310.1	Quarterly
Sulfate, dissolved	mg/L	Quarterly	300.0	Quarterly
Nitrate-N, dissolved	mg/L	Quarterly	300.0	Quarterly
Calcium, dissolved	mg/L	Quarterly	6010B	Quarterly
Magnesium, dissolved	mg/L	Quarterly	6010B	Quarterly
Sodium, dissolved	mg/L	Quarterly	6010B	Quarterly
Potassium	mg/L	Quarterly	6010B	Quarterly
Chloride	mg/L	Quarterly	300.0	Quarterly
<b><u>PAHs</u></b> <sup>5</sup>	µg/L <sup>6</sup>	Quarterly	8270	Quarterly
<b><u>Total Petroleum Hydrocarbons (TPH)</u></b>	µg/L	Quarterly	418.1	Quarterly
<b><u>Volatile Organic Compounds</u></b>				
Full Scan	µg/L	Quarterly	8260B	Quarterly

**Table 1 – Influent and Groundwater Monitoring**

<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>US EPA or other Method</u>	<u>Reporting Frequency</u>
<b><u>Stable Isotopes</u></b>				
Oxygen ( <sup>18</sup> O)	pCi/L <sup>7</sup>	Quarterly	900.0	Quarterly
Deuterium (Hydrogen 2, <sup>2</sup> H, or D)		Quarterly	900.0	Quarterly
<b><u>Radionuclides</u></b>				
Radium-226	pCi/L	Quarterly	SM <sup>8</sup> 7500-Ra	Quarterly
Radium-228	pCi/L	Quarterly	SM 7500-Ra	Quarterly
Gross Alpha particle (excluding radon and uranium)	pCi/L	Quarterly	SM 7110	Quarterly
Uranium	pCi/L	Quarterly	200.8	Quarterly
<b><u>Constituents of Concern</u></b>				
Lithium	mg/L	Quarterly	200.7	Quarterly
Strontium	mg/L	Quarterly	200.7	Quarterly
Iron	mg/L	Quarterly	200.8	Quarterly
Manganese	mg/L	Quarterly	200.8	Quarterly
Antimony	mg/L	Quarterly	200.8	Quarterly
Arsenic	mg/L	Quarterly	200.8	Quarterly
Barium	mg/L	Quarterly	200.8	Quarterly
Beryllium	mg/L	Quarterly	200.8	Quarterly
Cadmium	mg/L	Quarterly	200.8	Quarterly
Chromium (total)	mg/L	Quarterly	200.8	Quarterly
Chromium (hexavalent)	mg/L	Quarterly	7196A	Quarterly
Cobalt	mg/L	Quarterly	200.8	Quarterly
Copper	mg/L	Quarterly	200.8	Quarterly
Lead	mg/L	Quarterly	200.8	Quarterly
Mercury	mg/L	Quarterly	7470A	Quarterly

<b>Table 1 – Influent and Groundwater Monitoring</b>				
<b><u>Parameters</u></b>	<b><u>Units</u></b>	<b><u>Monitoring Frequency</u></b>	<b><u>US EPA or other Method</u></b>	<b><u>Reporting Frequency</u></b>
Molybdenum	mg/L	Quarterly	200.8	Quarterly
Nickel	mg/L	Quarterly	200.8	Quarterly
Selenium	mg/L	Quarterly	200.8	Quarterly
Silver	mg/L	Quarterly	200.8	Quarterly
Thallium	mg/L	Quarterly	200.8	Quarterly
Vanadium	mg/L	Quarterly	200.8	Quarterly
Zinc	mg/L	Quarterly	200.8	Quarterly

- <sup>1</sup> Mean Sea Level
- <sup>2</sup> Degrees Fahrenheit
- <sup>3</sup> Micromhos per centimeter
- <sup>4</sup> Milligrams per liter
- <sup>5</sup> Polycyclic aromatic hydrocarbons
- <sup>6</sup> micrograms per liter
- <sup>7</sup> Picocuries per liter
- <sup>8</sup> Standard Methods



## Central Valley Regional Water Quality Control Board

1 April 2015

Kennith L. Beard  
KB Oil & Gas  
P.O. Box 207  
Taft, CA 93268

**CERTIFIED MAIL**  
7014 3490 0001 7023 0506

**CALIFORNIA WATER CODE DIRECTIVE PURSUANT TO SECTION 13267. You are legally obligated to respond to this Order. Please read this Order carefully.**

KB Oil & Gas (hereafter Discharger) has been identified as the owner or operator of petroleum production wastewater disposal ponds (ponds). A list of the ponds (and the leases and oil fields where they are located) that the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) identifies as under your control is presented in Attachment A. Ponds for the disposal of wastewater generated during the course of petroleum production have the potential to affect the quality of groundwater (a water of the State). Groundwater underlying the areas where your ponds are located have beneficial uses as identified in the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan).

This order requires the collection and analysis of wastewater samples collected from each of the ponds listed in Attachment A to characterize the discharge. Each sample is to be analyzed for each of the constituents listed in Attachment B. These data are needed to comprehensively characterize wastewater in each pond and provide data needed to evaluate the threat to the quality of waters of the State. If more than one pond is connected in series (i.e., one pond drains directly to the next with no other source of inflow) then only the upstream pond must be sampled. This order is not intended to require the collection of duplicative data. If during the 12 months (one year) prior to the date of this order, samples required by this order have been analyzed from one or more of the ponds for the required constituents, that data can be submitted for the appropriate order requirements.

This order also requires Discharger to identify any discharge(s) of oil field wastewater to land that is not identified in Attachment A. Discharger must also collect and analyze wastewater samples in accordance with Attachment B from any additionally identified discharge to characterize the discharge.

The Central Valley Water Board's authority to require technical reports derives from Section 13267 of the California Water Code, which specifies, in part, that:

Section 13267 Order  
Kennith L. Beard  
KB Oil & Gas

- 3 -

1 April 2015

**Under the prescribed authority of California Water Code section 13267, the Central Valley Water Board directs Discharger to:**

**1. By 15 June 2015, submit a technical report containing the following information:**

- A. Identification of any discharges of oil field produced waters to land, including but not limited to ponds, since April of 2014 that are not listed in Attachment A;
- B. Collect representative samples of wastewater within each of the ponds. Samples must be analyzed in accordance with the water quality analysis and reporting requirements contained in Attachment B to this Order;<sup>1</sup>

If a representative sample cannot feasibly be collected from one or more of the sources discharging to a surface impoundment(s), then a comment will need to be added to the technical report required by this Order demonstrating that collection of a representative sample from a specific source is not feasible within the required timeframe, and propose an alternative sampling procedure and expeditious time schedule for obtaining a representative sample for each source. Alternative sampling procedures and time schedules are subject to approval by the Assistant Executive Officer of the Central Valley Regional Water Quality Control Board.

- C. All available information for each of the surface impoundment(s), including dimensions (i.e., length, width, and depth), latitude and longitude, Assessor's Parcel Numbers of the lease, duration of the discharge (in months), and the volume of wastewater discharged per year.
- D. A location map that includes the following information:
  - i. All surface impoundment(s) at the Facility,
  - ii. Include the boundary lines for all leases at the Facility, and
  - iii. Legend with the name of the surface impoundment(s).

**2. By 15 April 2015, Discharger needs to contact Dane S. Johnson of this office at (559) 445-5525 if you have received this Order and cannot collect the required samples.**

---

<sup>1</sup> All previously obtained analytical data for oil field produced wastewater samples collected at the Facility, if any, with a description of the source and location for each analysis may be submitted in the alternative for re-running tests if the sample(s) was collected and analyzed within 12 months (one year) of the date of this order.

**ATTACHMENT A**

The following table contains the names of oil fields and lease(s) and the corresponding number of ponds that the Central Valley Water Board has identified as active and under your control:

<b>OPERATOR</b>	<b>OIL FIELD</b>	<b>LEASE</b>	<b>NO. OF PONDS</b>
KB Oil & Gas	Cymric	Anderson	1
		Ball	1
		Richardson	2
		Roco	3

**ATTACHMENT B**Water Quality Analysis

Wastewater samples collected from the ponds shall be analyzed by a laboratory certified by the Environmental Laboratory Accreditation Program using currently applicable United States Environmental Protection Agency-approved analytical methods for water for the following:

- A. Total dissolved solids;
- B. Metals listed in California Code of Regulations, title 22, section 66261.24. subdivision (a)(2)(A);
- C. Benzene, toluene, ethylbenzene, and xylenes;
- D. Total petroleum hydrocarbons as crude oil;
- E. Polynuclear aromatic hydrocarbons (including acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, chrysene, dibenzo[a,h]anthracene, fluoranthene, fluorine, indeno[1,2,3-cd]pyrene, naphthalene, phenanthrene, and pyrene);
- F. Radionuclides listed under California Code of Regulations, title 22, Table 64442;
- G. Major and minor cations (including sodium, potassium, magnesium, and calcium);
- H. Major and minor anions (including nitrate, chloride, sulfate, carbonate, bicarbonate, and bromide);
- I. Trace elements (including lithium, strontium, boron, iron, and manganese).

Reporting Requirements

Water Quality information shall be submitted in a technical report that includes at a minimum:

- A. Site plan(s) with the location(s) of where the samples were collected;
- B. A description of how the samples, representative of the pond contents, were collected;

Table(s) of analytical results organized by pond number with the data also submitted electronically as an Excel spreadsheet.

Section 13267 Order  
Kennith L. Beard  
KB Oil & Gas

- 5 -

1 April 2015

California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 days after the date of this directive, except that if the thirtieth day following the date of this directive falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: [www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

If you have any questions regarding this matter, please contact Doug Patteson of this office at (559) 445-5577 or at [doug.patteson@waterboards.ca.gov](mailto:doug.patteson@waterboards.ca.gov).



Clay L. Rodgers  
Assistant Executive Officer

cc: Julie Macedo, Office of Enforcement, State Water Resources Control Board, Sacramento  
Mike Toland, California Division of Oil, Gas, and Geothermal Resources, Bakersfield

**FACILITIES INSPECTION REPORT**  
**KB OIL COMPANY**  
**ANDERSON LEASE, CYMRIC OIL FIELD**

**FACILITY INFORMATION**

Crude oil production facility. Tank farm with oil and water separation tanks.

Active

FACILITY DESCRIPTION (e.g., total area in acres, number of waste management units, etc.)

STATUS (active, inactive, closed)

Oil field production wastewater.

Oil/Gas Extraction

WASTE TYPES

FACILITY CLASSIFICATION

Wastewater is piped to the sumps for disposal via percolation and evaporation.

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

**BACKGROUND**

The sump at the Anderson Lease is unregulated and has not previously been inspected.

**INSPECTION GIS DATA**

GIS Equipment used:

	MANUFACTURER	MODEL	SERIAL NO.	DATUM
Description of Measured Point	Latitude	Longitude	Datum	Comments
Centroid of Sump #1	119°45'47.27"W	119°45'47.27"W	NAD 83	Active – Recorded by DOGGR

**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 Anderson Lease (Facility) in the Cymric Oil Field was inspected to ascertain the status of a sump identified by the DOGGR as active. Disposal operations are not regulated by WDRs. Photographs were taken to document conditions observed (see page 4). Staff observed the following conditions for the sump:

- Oil stained soil;
- Fluid in the sump;
- Freeboard and netting appeared adequate;
- Two inlet pipes in the sump;

Kenneth Beard with KB Oil Company stated that the sump is used for the disposal of oil field produced wastewater via percolation and evaporation. The discharge to a sump without WDRs is a violation of Section 13260(a) of the California Water Code.

**SAMPLING INFORMATION AND OBSERVATIONS**

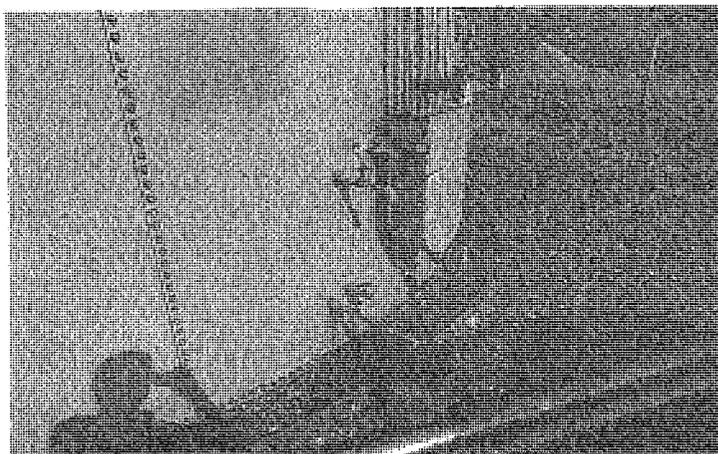
Were samples collected during the inspection?  Yes  No      Are sample results included in report?  Yes  No  
 Did discharger collect split samples?  Yes  No

**SAMPLE COLLECTION INFORMATION AND OBSERVATIONS**

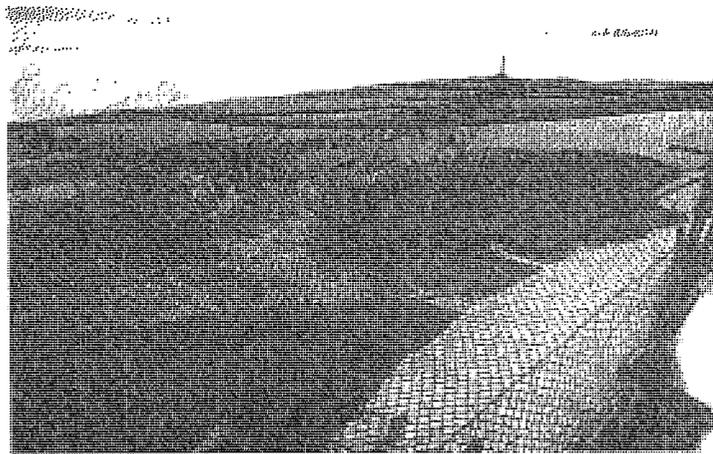
SAMPLE ID	SAMPLE DESCRIPTION/OBSERVATIONS	SAMPLE TIME (hours)	PHOTO NO.
JGM152301-1	From the wash tank at the adjacent tank farm	12:10 PM	1

**FACILITIES INSPECTION REPORT**  
KB OIL COMPANY  
ANDERSON LEASE, CYMRIC OIL FIELD

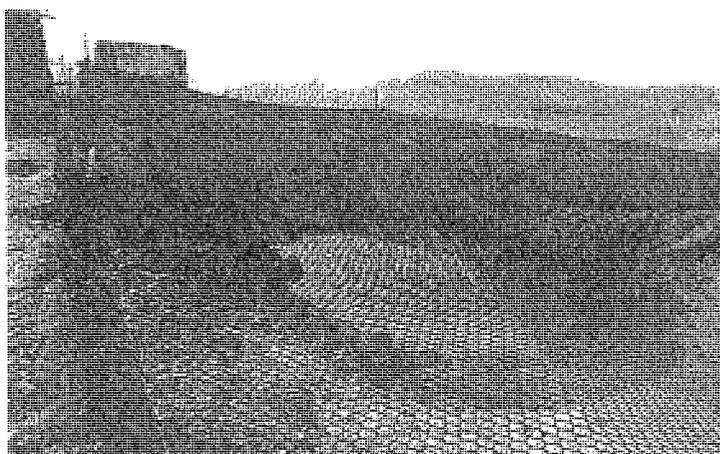
**PHOTOGRAPHS**



Photograph 1. – View of the sample location.



Photograph 2. – View of the sump looking south.



Photograph 3. – View of the sump looking north.

**FACILITIES INSPECTION REPORT**  
KB OIL COMPANY  
ANDERSON LEASE, CYMRIC OIL FIELD

3/4

### DISCUSSION OF SAMPLING RESULTS

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

Staff collected a sample of wastewater from the tank with the assistance of Kenneth Beard. The samples were submitted to Moore Twining and Associates and the analytical results are attached to this inspection report. The wastewater analysis for electrical conductivity, chloride, and boron were 26,000 uhmos/cm, 6,800 mg/l, and 41 mg/l, respectively.

### CONCLUSIONS

Summarize the conclusions of the inspection(s) below.

1. The Facility contains an unlined sump that was being used for the disposal of oil field produced wastewater.
2. The discharge of oil field produced wastewater to a sump without WDRs is a violation of Section 13260(a) of the California Water Code.
3. Netting and freeboard appeared to be adequate.

5F OFFICE	5D152198N01 WDID	<b>FACILITIES INSPECTION REPORT</b>	N/A PROGRAM	1/4 PAGE NO.
N/A ORDER NO.	162357 REG MEASURE ID		23780 PARTY ID	216468 PLACE ID
KB OIL COMPANY DISCHARGER NAME			CYMRIC OIL FIELD; BALL LEASE FACILITY NAME	
PO BOX 207 STREET ADDRESS		SECTION 35, T29S, R21E, MDB&M STREET ADDRESS		
TAFT, CA 93268 CITY, STATE, ZIP CODE		KERN COUNTY CITY, STATE, ZIP CODE		
KENNETH BEARD DISCHARGER CONTACT PERSON		KENNETH BEARD FACILITY CONTACT PERSON		
(661) 345-4596 TELEPHONE NO.	E-MAIL ADDRESS	(661) 765-4677 TELEPHONE NO.	E-MAIL ADDRESS	

### GENERAL INSPECTION INFORMATION

Inspection Type: B Type Compliance Inspection      Lead Inspector: Joshua Mahoney

1/23/2015 to 1/23/2015      1:30 PM      Cloudy, Sunny

INSPECTION DATE(S)      INSPECTION TIME      GENERAL WEATHER CONDITIONS

#### INSPECTION ATTENDEE(S)

<u>Joshua Mahoney</u> NAME	<u>Central Valley Water Board</u> COMPANY/AGENCY	<u>(559) 445-5116</u> TELEPHONE NO.	<u>Joshua.Mahoney@waterboards.ca.gov</u> E-MAIL ADDRESS
<u>Kenneth Beard</u> NAME	<u>KB Oil Company</u> COMPANY/AGENCY	<u>(661) 345-4596</u> TELEPHONE NO.	E-MAIL ADDRESS
NAME	COMPANY/AGENCY	TELEPHONE NO.	E-MAIL ADDRESS

### INSPECTION SUMMARY (for CIWQS entry - 500 character maximum)

The Ball Lease in the Cymric Oil Field was inspected to ascertain the status of a surface impoundment (sump) identified by the California Division of Oil, Gas, and Geothermal Resources (DOGGR) as active. Staff observed fluid in the sump. Disposal operations at the facility are not regulated by Waste Discharge Requirements (WDRs).

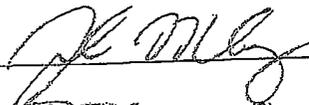
### INSPECTION VIOLATIONS SUMMARY (if applicable)

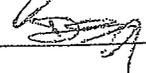
Identify VIOLATIONS noted during inspection in table below. For each violation documented entered into CIWQS, identify Violation ID and Violation Type, describe violation, and identify section of the WDRs or Water Code violated.

Label	Violation ID	Violation Type	Violation Description	Section of the WDRs Violated
V1	988043	Unauthorized Discharge	Fluid observed in the sump	Section 13260(a) of the California Water Code
V2				
V3				
V4				
V5				
V6				

### OTHER VIOLATIONS (if applicable)

SMR violations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Evaluated	Notes:
File Review violations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Evaluated	Notes:

Lead Inspector ID: 470254      Signature:       Date: 3/24/15

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

Filename: Ball Lease; Cymric Oil Field      CIWQS Entry Date: 3/17/2015      CIWQS Inspection ID: 19667912

**FACILITY INFORMATION**

Crude oil production facility. Tank farm with oil and water separation tanks.

Active

FACILITY DESCRIPTION (e.g., total area in acres, number of waste management units, etc.)

STATUS (active, inactive, closed)

Oil field production wastewater.

Oil/Gas Extraction

WASTE TYPES

FACILITY CLASSIFICATION

Wastewater is piped to the sump for disposal via percolation and evaporation.

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

**BACKGROUND**

The sump at the Ball Lease is unregulated and has not previously been inspected.

**INSPECTION GIS DATA**

GIS Equipment used:

	MANUFACTURER	MODEL	SERIAL NO.	DATUM
Description of Measured Point	Latitude	Longitude	Datum	Comments
Centroid of the sump	35°21'37.62"N	119°41'25.16"W	NAD 83	Active - Recorded by DOGGR

**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 Ball Lease (Facility) in the Cymric Oil Field was inspected to ascertain the status of a sump identified by the DOGGR as active. Disposal operations are not regulated by WDRs. Photographs were taken to document conditions observed (see page 4). Staff observed the following conditions for the sump:

- Oil stained soil;
- Fluid in the sump;
- Oil on the fluid surface;
- Active discharge of fluid into the sump;
- Freeboard and netting appeared adequate;
- One inlet pipe in the sump;

Kenneth Beard with KB Oil Company stated that the sump is used for the disposal of oil field produced wastewater via percolation and evaporation. The discharge of wastewater to a sump without WDRs is a violation of Section 13260(a) of the California Water Code.

**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.

**DISCUSSION OF SAMPLING RESULTS**

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

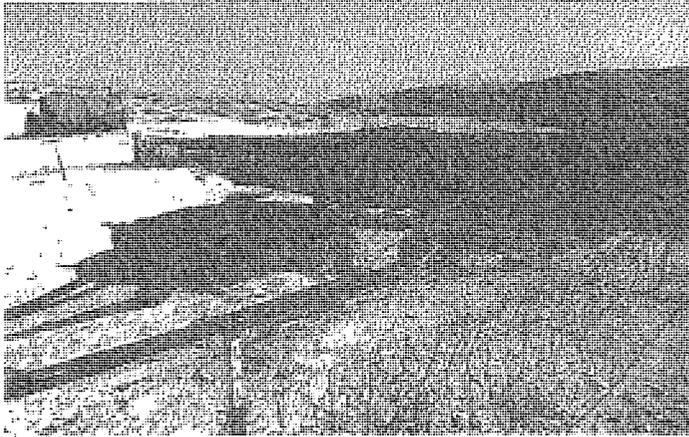
No samples were collected.

**CONCLUSIONS**

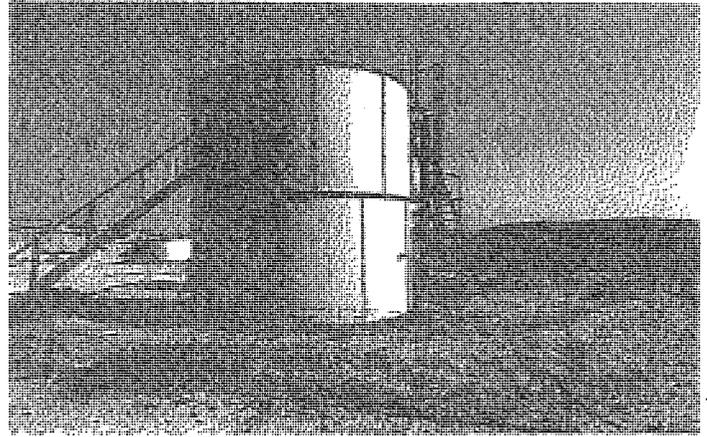
Summarize the conclusions of the inspection(s) below.

1. The Facility contains an unlined sump that was being used for the disposal of oil field produced wastewater.
2. The discharge of oil field produced wastewater to a sump without WDRs is a violation of Section 13260(a) of the California Water Code.
3. Netting and freeboard appeared to be adequate.

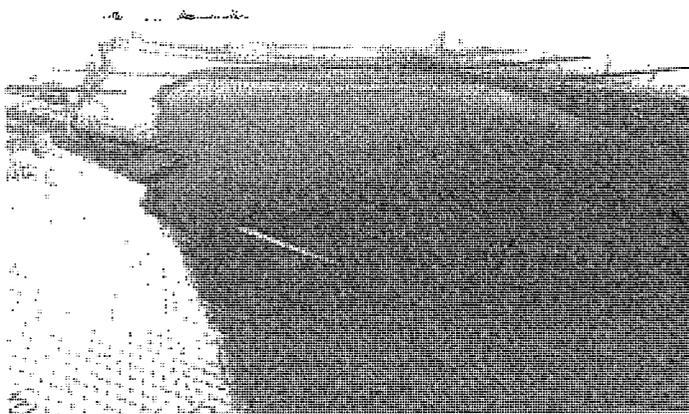
PHOTOGRAPHS



Photograph 1. – View of the sump looking east.



Photograph 2. – View of tank and sump looking south.



Photograph 3. – View the fluid in the sump.

5F  
OFFICE  
N/A  
ORDER NO.

5D153211N01  
WDID  
164058  
REG MEASURE ID

# FACILITIES INSPECTION REPORT

N/A  
PROGRAM  
23780  
PARTY ID

1/4  
PAGE NO.  
216472  
PLACE ID

KB OIL COMPANY	CYMRIC OIL FIELD; RICHARDSON LEASE
DISCHARGER NAME	FACILITY NAME
PO BOX 207	SECTION 18, T29S, R21E, MDB&M
STREET ADDRESS	STREET ADDRESS
TAFT, CA 93268	KERN COUNTY
CITY, STATE, ZIP CODE	CITY, STATE, ZIP CODE
KENNETH BEARD	KENNETH BEARD
DISCHARGER CONTACT PERSON	FACILITY CONTACT PERSON
(661) 345-4596	(661) 765-4677
TELEPHONE NO.	TELEPHONE NO.
E-MAIL ADDRESS	E-MAIL ADDRESS

## GENERAL INSPECTION INFORMATION

Inspection Type: B Type Compliance Inspection      Lead Inspector: Joshua Mahoney

1/23/2015 to 1/23/2015      1:00 PM      Cloudy, Sunny

INSPECTION DATE(S)      INSPECTION TIME      GENERAL WEATHER CONDITIONS

### INSPECTION ATTENDEE(S)

Joshua Mahoney	Central Valley Water Board	(559) 445-5116	Joshua.Mahoney@waterboards.ca.gov
NAME	COMPANY/AGENCY	TELEPHONE NO.	E-MAIL ADDRESS
Kenneth Beard	KB Oil Company	(661) 345-4596	
NAME	COMPANY/AGENCY	TELEPHONE NO.	E-MAIL ADDRESS
NAME	COMPANY/AGENCY	TELEPHONE NO.	E-MAIL ADDRESS

## INSPECTION SUMMARY (for CIWQS entry – 500 character maximum)

The Richardson Lease in the Cymric Oil Field was inspected to ascertain the status of two surface impoundments (sumps) identified by the California Division of Oil, Gas, and Geothermal Resources (DOGGR) as active. Staff observed fluid in the sumps. Disposal operations at the facility are not regulated by Waste Discharge Requirements (WDRs).

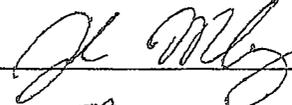
## INSPECTION VIOLATIONS SUMMARY (if applicable)

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	988026	Unauthorized Discharge	Fluid observed in Sumps #1 and #2	Section 13260(a) of the California Water Code
V2				
V3				
V4				
V5				
V6				

## OTHER VIOLATIONS (if applicable)

SMR violations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Evaluated	Notes:
File Review violations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Evaluated	Notes:

Lead Inspector ID: 470254      Signature:       Date: 3/24/15

Inspection Tracking Information      Reviewed by: (1)       (2) \_\_\_\_\_      (3) \_\_\_\_\_

CIWQS Coordinator

Filename: Richardson Lease; Cymric Oil Field      CIWQS Entry Date: 3/17/2015      CIWQS Inspection ID: 19671711

**FACILITY INFORMATION**

Crude oil production facility. Tank farm with oil and water separation tanks.

Active

FACILITY DESCRIPTION (e.g., total area in acres, number of waste management units, etc.)

STATUS (active, inactive, closed)

Oil field production wastewater.

Oil/Gas Extraction

WASTE TYPES

FACILITY CLASSIFICATION

Wastewater is piped to the sumps for disposal via percolation and evaporation.

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

**BACKGROUND**

The sumps at the Richardson Lease are unregulated and have not previously been.

**INSPECTION GIS DATA**

GIS Equipment used:

Description of Measured Point	Latitude	Longitude	Datum	Comments
Centroid of Sump #1	119°45'9.89"W	119°45'9.89"W	NAD 83	Active -- Recorded by DOGGR
Centroid of Sump #2	35°24'18.04"N	119°45'9.79"W	NAD 83	Active -- Recorded by DOGGR

**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 Richardson Lease (Facility) in the Cymric Oil Field was inspected to ascertain the status of two sumps identified by the DOGGR as active. Disposal operations are not regulated by WDRs. Photographs were taken to document conditions observed (see page 4). Staff observed the following conditions for Sumps #1 and #2:

- Oil stained soil;
- Fluid in the sump;
- Oil on the fluid surface;
- Active discharge of fluid into the sump;
- Freeboard and netting appeared adequate;
- One inlet pipe in each sump;

Kenneth Beard with KB Oil Company stated that the sumps are used for the disposal of oil field produced wastewater via percolation and evaporation. The discharge to a sump without WDRs is a violation of Section 13260(a) of the California Water Code.

**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.

### DISCUSSION OF SAMPLING RESULTS

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

No sample was collected.

### CONCLUSIONS

Summarize the conclusions of the inspection(s) below.

1. The Facility contains two unlined sumps that were being used for the disposal of oil field produced wastewater.
2. The discharge of oil field produced wastewater to a sump without WDRs is a violation of Section 13260(a) of the California Water Code.
3. Netting and freeboard appeared to be adequate.

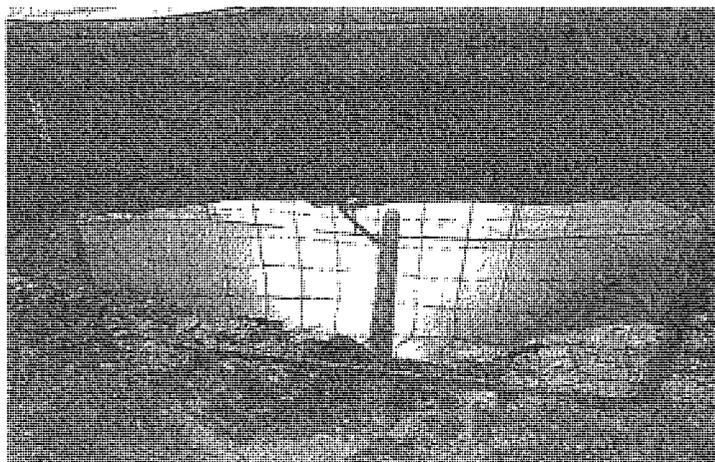
PHOTOGRAPHS



Photograph 1. – Aerial of the facility in 2014.



Photograph 2. – View of Sumps #1 and #2 looking west.



Photograph 3. – View of an active discharge into Sump #1.



Photograph 4. – View of an active discharge into Sump #2.

<u>5F</u>	<u>N/A</u>	<b>FACILITIES INSPECTION REPORT</b>		<u>N/A</u>	<u>1/4</u>
<small>OFFICE</small> <u>N/A</u>	<small>WDID</small> <u>400091</u>	<small>PROGRAM</small> <u>23780</u>	<small>PAGE NO.</small> <u>813668</u>	<small>PARTY ID</small>	<small>PLACE ID</small>
<small>ORDER NO.</small>	<small>REG MEASURE ID</small>				
<u>KB OIL COMPANY</u>			<u>CYMRIC OIL FIELD; ROCO LEASE</u>		
<small>DISCHARGER NAME</small>			<small>FACILITY NAME</small>		
<u>PO BOX 207</u>			<u>SECTION 18, T29S, R21E, MDB&amp;M</u>		
<small>STREET ADDRESS</small>			<small>STREET ADDRESS</small>		
<u>TAFT, CA 93268</u>			<u>KERN COUNTY</u>		
<small>CITY, STATE, ZIP CODE</small>			<small>CITY, STATE, ZIP CODE</small>		
<u>KENNETH BEARD</u>			<u>KENNETH BEARD</u>		
<small>DISCHARGER CONTACT PERSON</small>			<small>FACILITY CONTACT PERSON</small>		
<u>(661) 345-4596</u>		<u>(661) 765-4677</u>			
<small>TELEPHONE NO.</small>	<small>E-MAIL ADDRESS</small>	<small>TELEPHONE NO.</small>	<small>E-MAIL ADDRESS</small>		

**GENERAL INSPECTION INFORMATION**

Inspection Type: A Type Compliance Inspection Lead Inspector: Joshua Mahoney

1/23/2015 to 1/23/2015 12:30 PM Cloudy, Sunny  
INSPECTION DATE(S) INSPECTION TIME GENERAL WEATHER CONDITIONS

**INSPECTION ATTENDEE(S)**

<u>Joshua Mahoney</u>	<u>Central Valley Water Board</u>	<u>(559) 445-5116</u>	<u>Joshua.Mahoney@waterboards.ca.gov</u>
<small>NAME</small>	<small>COMPANY/AGENCY</small>	<small>TELEPHONE NO.</small>	<small>E-MAIL ADDRESS</small>
<u>Kenneth Beard</u>	<u>KB Oil Company</u>	<u>(661) 345-4596</u>	
<small>NAME</small>	<small>COMPANY/AGENCY</small>	<small>TELEPHONE NO.</small>	<small>E-MAIL ADDRESS</small>
<small>NAME</small>	<small>COMPANY/AGENCY</small>	<small>TELEPHONE NO.</small>	<small>E-MAIL ADDRESS</small>

**INSPECTION SUMMARY (for CIWQS entry – 500 character maximum)**

The Roco Lease in the Cymric Oil Field was inspected to ascertain the status of three surface impoundments (sumps) identified by the California Division of Oil, Gas, and Geothermal Resources (DOGGR) as active. Staff observed fluid in two sumps. Disposal operations at the facility are not regulated by Waste Discharge Requirements (WDRs).

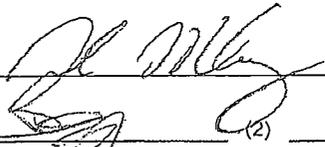
**INSPECTION VIOLATIONS SUMMARY (if applicable)**

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	988017	Unauthorized Discharge	Fluid observed in Sumps #1 and #2	Section 13260(a) of the California Water Code
V2				
V3				
V4				
V5				
V6				

**OTHER VIOLATIONS (if applicable)**

SMR violations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Evaluated	Notes:
File Review violations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Evaluated	Notes:

Lead Inspector ID: 470254 Signature:  Date: 2/24/15

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

Filename: Roco Lease; Cymric Oil Field CIWQS Entry Date: 3/17/2015 CIWQS Inspection ID: 19671712

**FACILITIES INSPECTION REPORT**  
**KB OIL AND GAS COMPANY**  
**ROCO LEASE, CYMRIC OIL FIELD**

**FACILITY INFORMATION**

Crude oil production facility. Tank farm with oil and water separation tanks.

Active

FACILITY DESCRIPTION (e.g., total area in acres, number of waste management units, etc.)

STATUS (active, inactive, closed)

Oil field production wastewater.

Oil/Gas Extraction

WASTE TYPES

FACILITY CLASSIFICATION

Wastewater is piped to the sumps for disposal via percolation and evaporation.

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

**BACKGROUND**

The sumps on the Roco Lease are unregulated and have not previously been inspected.

**INSPECTION GIS DATA**

GIS Equipment used:

	MANUFACTURER	MODEL	SERIAL NO.	DATUM
Description of Measured Point	Latitude	Longitude	Datum	Comments
Centroid of Sump #1	35°23'55.43"N	119°45'4.83"W	NAD 83	Active – Recorded by DOGGR
Centroid of Sump #2	35°23'55.62"N	119°45'3.93"W	NAD 83	Active – Recorded by DOGGR
Centroid of Sump #3	35°23'56.11"N	119°45'3.23"W	NAD 83	Active – Recorded by DOGGR

**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 Roco Lease (Facility) in the Cymric Oil Field was inspected to ascertain the status of three sumps identified by the DOGGR as active. Disposal operations are not regulated by WDRs. Photographs were taken to document conditions observed (see page 4). Staff observed the following conditions:

**Sump #1**

- Oil stained soil;
- Fluid in sump;
- Oil on the fluid surface;
- Freeboard and netting appeared to be adequate;
- Two inlet pipes were observed;

**Sump #2**

- Oil stained soil;
- Active discharge of fluid into the sump;
- Oil on the fluid surface;
- Freeboard and netting appeared to be adequate;
- Two inlet pipes and an overflow pipe to Sump #3;

**Sump #3**

- No fluid;
- Oil stained soil;
- Pipe from Sump #2;
- No netting;

Kenneth Beard with KB Oil Company stated that the sumps are used for the disposal of oil field produced wastewater via percolation and evaporation. The discharge to sumps without WDRs is a violation of Section 13260(a) of the California Water Code.

**FACILITIES INSPECTION REPORT**  
**KB OIL AND GAS COMPANY**  
**ROCO LEASE, CYMRIC OIL FIELD**

**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.
JGM152301-2	Sample was collected from the wastewater tank	12:30 PM	
SAMPLE ID	SAMPLE DESCRIPTION/OBSERVATIONS	SAMPLE TIME (hours)	PHOTO NO.
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).

Staff collected a sample of wastewater from the tank with the assistance of Kenneth Beard. The samples were submitted to Moore Twining and Associates, and are attached to this inspection report. The wastewater analysis for electrical conductivity, chloride, and boron were 36,000 uhmos/cm, 14,000 mg/l, and 170 mg/l, respectively.

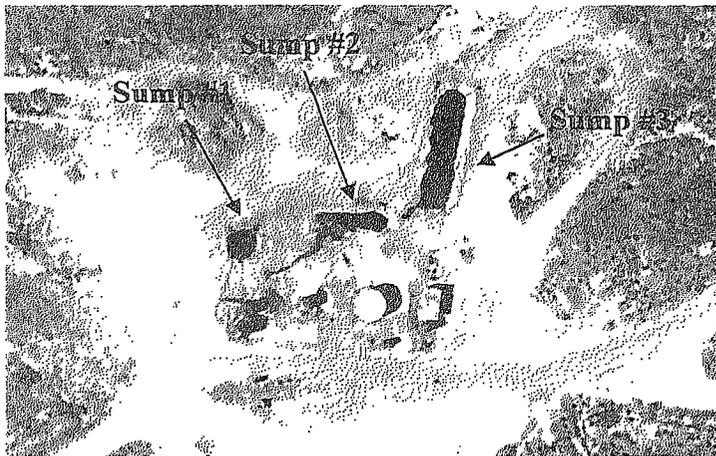
**CONCLUSIONS**

Summarize the conclusions of the inspection(s) below.

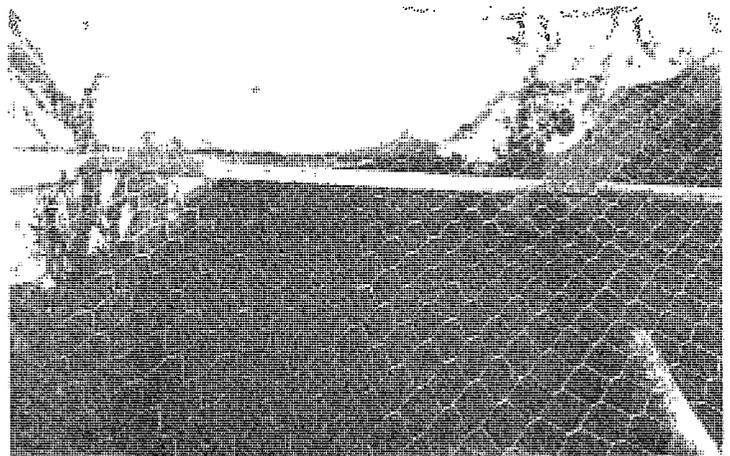
1. The Facility contains three unlined sumps that were being used for the disposal of oil field produced wastewater.
2. The discharge of oil field produced wastewater to a sump without WDRs is a violation of Section 13260(a) of the California Water Code.
3. Netting and freeboard appeared to be adequate.

FACILITIES INSPECTION REPORT  
KB OIL AND GAS COMPANY  
ROCO LEASE, CYMRIC OIL FIELD

PHOTOGRAPHS



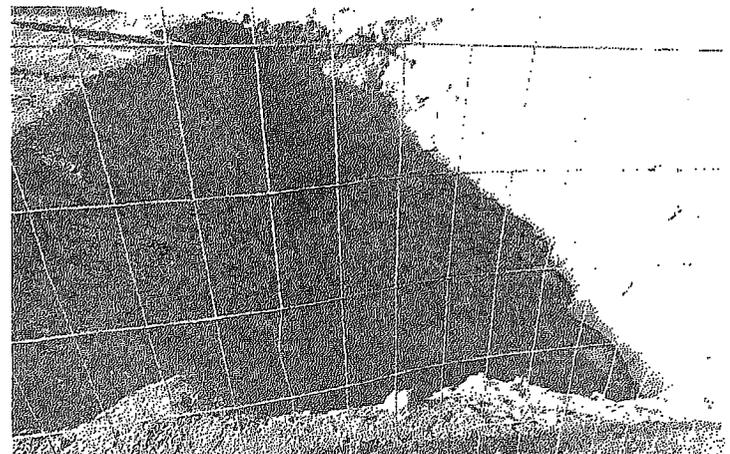
Photograph 1. – Aerial of the facility.



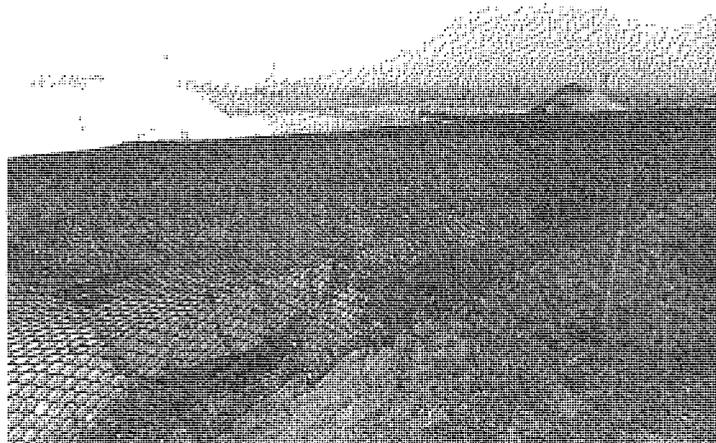
Photograph 2. – View of an active discharge into Sump #1.



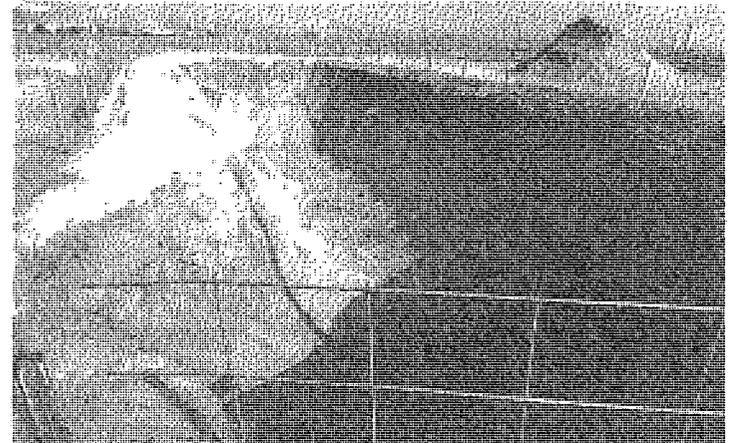
Photograph 3. – View of Sumps #1 and #2 looking west.



Photograph 4. – View of an active discharge into Sump #2.



Photograph 5. – View of Sumps #2 and #3 looking northwest.



Photograph 6. – View of Sump #3 looking north.

5F  
OFFICE  
N/A  
ORDER NO.

5D153211N01  
WDID  
400087  
REG MEASURE ID

# FACILITIES INSPECTION REPORT

N/A  
PROGRAM  
23780  
PARTY ID

1/4  
PAGE NO.  
813661  
PLACE ID

KB OIL COMPANY	CYMRIC OIL FIELD; MILLER & LUX FEE LEASE
DISCHARGER NAME	FACILITY NAME
PO BOX 207	SECTION 18, T29S, R21E, MDB&M
STREET ADDRESS	STREET ADDRESS
TAFT, CA 93268	KERN COUNTY
CITY, STATE, ZIP CODE	CITY, STATE, ZIP CODE
KENNETH BEARD	KENNETH BEARD
DISCHARGER CONTACT PERSON	FACILITY CONTACT PERSON
(661) 345-4596	(661) 765-4677
TELEPHONE NO.	TELEPHONE NO.
E-MAIL ADDRESS	E-MAIL ADDRESS

## GENERAL INSPECTION INFORMATION

Inspection Type: B Type Compliance Inspection      Lead Inspector: Joshua Mahoney

1/23/2015 to 1/23/2015      1:30 PM      Cloudy, Sunny

INSPECTION DATE(S)      INSPECTION TIME      GENERAL WEATHER CONDITIONS

### INSPECTION ATTENDEE(S)

<u>Joshua Mahoney</u>	<u>Central Valley Water Board</u>	<u>(559) 445-5116</u>	<u>Joshua.Mahoney@waterboards.ca.gov</u>
NAME	COMPANY/AGENCY	TELEPHONE NO.	E-MAIL ADDRESS
<u>Kenneth Beard</u>	<u>KB Oil Company</u>	<u>(661) 345-4596</u>	
NAME	COMPANY/AGENCY	TELEPHONE NO.	E-MAIL ADDRESS
NAME	COMPANY/AGENCY	TELEPHONE NO.	E-MAIL ADDRESS

## INSPECTION SUMMARY (for CIWQS entry – 500 character maximum)

The Miller & Lux Fee Lease in the Cymric Oil Field was inspected to ascertain the status of a surface impoundment (sump) identified by the California Division of Oil, Gas, and Geothermal Resources (DOGGR) as idle. No fluid was observed in the sump. Disposal operations at the facility are not regulated by Waste Discharge Requirements (WDRs).

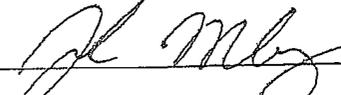
## INSPECTION VIOLATIONS SUMMARY (if applicable)

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				
V2				
V3				
V4				
V5				
V6				

## OTHER VIOLATIONS (if applicable)

SMR violations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Evaluated	Notes:
File Review violations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Evaluated	Notes:

Lead Inspector ID: 470254      Signature:       Date: 3/24/15

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

Filename: Miller & Lux Fee Lease; Cymric Oil Field      CIWQS Entry Date: 3/18/2015      CIWQS Inspection ID: 19671707

**FACILITY INFORMATION**

Crude oil production facility. Tank farm with oil and water separation tanks. Idle  
FACILITY DESCRIPTION (e.g., total area in acres, number of waste management units, etc.) STATUS (active, inactive, closed)

Oil field production wastewater. Oil/Gas Extraction  
WASTE TYPES FACILITY CLASSIFICATION

Tank farm was removed and no longer operational. Fluid sent to the Anderson lease for disposal  
DISPOSAL DESCRIPTION (e.g., composting, landfill, surface impoundment, etc.)

**BACKGROUND**

The sump at the Miller & Lux Fee Lease is unregulated and has not previously been inspected.

**INSPECTION GIS DATA**

GIS Equipment used: \_\_\_\_\_

	MANUFACTURER	MODEL	SERIAL NO.	DATUM
Description of Measured Point	Latitude	Longitude	Datum	Comments
Centroid of the sump	35°24'11.37"N	119°44'59.42"W	NAD 83	Idle – Recorded by DOGGR

**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 Miller & Lux Fee Lease (Facility) in the Cymric Oil Field was inspected to ascertain the status of a sump identified by the DOGGR as idle. Disposal operations are not regulated by WDRs. Photographs were taken to document conditions observed (see page 4). Staff observed the following conditions for the sump:

- Minor oil stained soil;
- No fluid or visual indication of a recent discharge;
- No netting;
- No inlet pipes into the sump;

Kenneth Beard with KB Oil Company stated that the sump is not being used for the disposal of oil field produced wastewater. Kenneth Beard stated that the tank farm has been removed and all fluids are directed to the Anderson Lease for separation and disposal.

**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.

**DISCUSSION OF SAMPLING RESULTS**

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

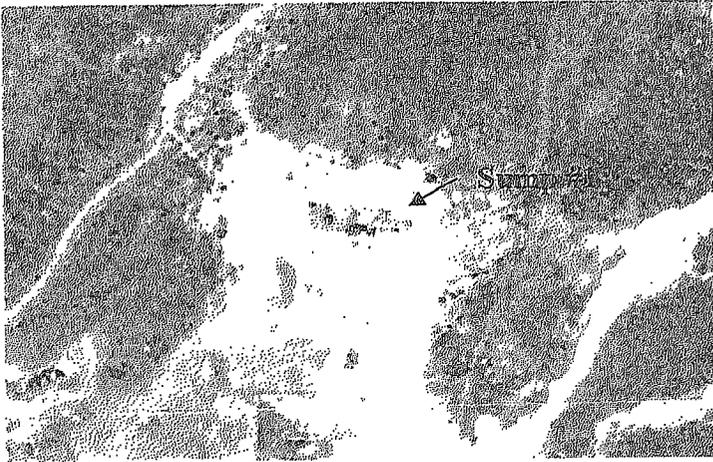
No water sample collected

**CONCLUSIONS**

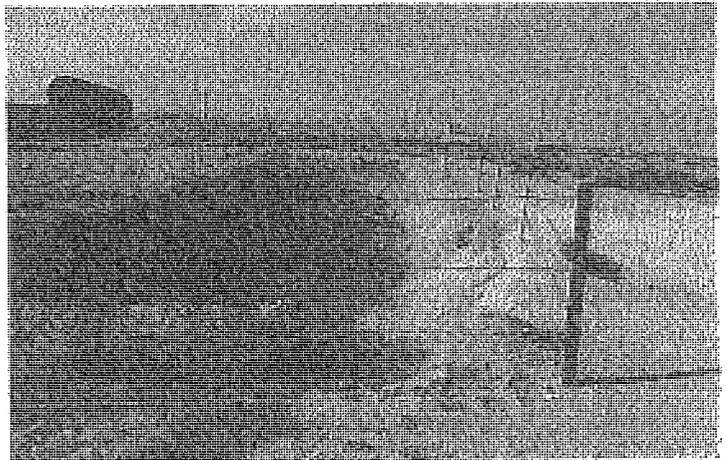
Summarize the conclusions of the inspection(s) below.

1. The Facility contains an unlined sump with the potential to be used for the disposal of oil field produced wastewater.
2. The discharge of oil field produced wastewater to a sump without WDRs is a violation of Section 13260(a) of the California Water Code.
3. No fluid or visual indication of a recent discharge was observed.

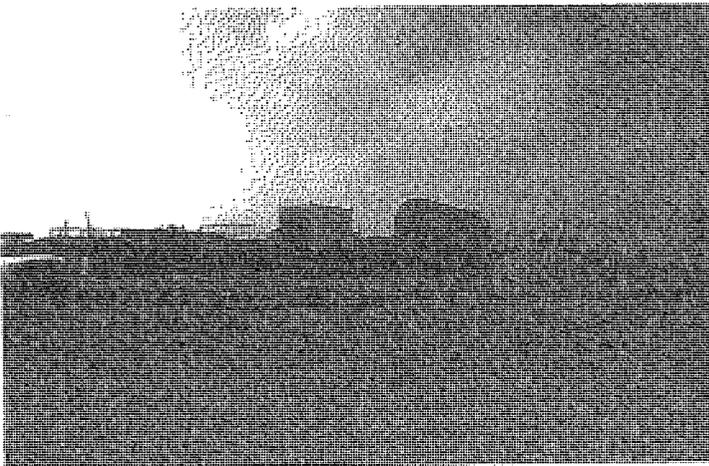
PHOTOGRAPHS



Photograph 1. – Aerial of the facility in 2014.



Photograph 2. – View of the sump looking west.



Photograph 3. – View of previous location of the tank farm.

**ATTACHMENT 2.**

**LABORATORY REPORTS**



Ken Beard Sr.  
K B Oil Gas  
P.O. Box 207  
Taft, CA 93268

17 June 2015

RE: RWQCB Testing

Work Order: 1502448

Dear Client:

Enclosed is an analytical report for the above referenced project. The samples included in this report were received on 09-Jun-15 15:40 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Meredith Sprister', is written in black ink.

Meredith Sprister

Project Manager



Oilfield Environmental and Compliance, INC.

K B Oil Gas  
P.O. Box 207  
Taft CA, 93268

Project: RWQCB Testing  
Project Number: Salt Creek  
Project Manager: Ken Beard Sr.

Reported:  
17-Jun-15 11:52

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Richardson S-2964-7-1	1502448-01	Produced Water	09-Jun-15 08:00	09-Jun-15 15:40
Roco S-2964-4-1	1502448-02	Produced Water	09-Jun-15 08:30	09-Jun-15 15:40
Anderson S-2964-9-0	1502448-03	Produced Water	09-Jun-15 08:50	09-Jun-15 15:40
Ball S-2964-1-1	1502448-04	Produced Water	09-Jun-15 09:40	09-Jun-15 15:40

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Anderson S-2964-9-0**  
**1502448-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	430	10	mg/L	1	B5F0376	12-Jun-15	12-Jun-15	SM 2320B	
Bicarbonate, CaCO3	430	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	29000	10	"	"	B5F0389	13-Jun-15	13-Jun-15	2540C	

**Anions by EPA Method 300.0**

Bromide	36	8.0	mg/L	20	B5F0287	10-Jun-15	10-Jun-15	EPA 300.0	
Chloride	13000	400	"	1000	"	"	11-Jun-15	"	
Nitrate as N	ND	8.0	"	20	"	"	10-Jun-15	"	R-06
Sulfate	ND	8.0	"	"	"	"	10-Jun-15	"	R-06

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	19	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	210	5.0	"	50	"	"	10-Jun-15	"	
Cadmium	ND	0.0050	"	1	"	"	10-Jun-15	"	
Calcium	2700	10	"	50	"	"	10-Jun-15	"	
Chromium	ND	0.010	"	1	"	"	10-Jun-15	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	13	0.050	"	"	"	"	"	"	
Lead	0.027	0.010	"	"	"	"	"	"	
Lithium	5.3	0.025	"	"	"	"	"	"	
Magnesium	69	0.050	"	"	"	"	"	"	
Manganese	0.92	0.010	"	"	"	"	"	"	
Mercury	ND	0.0020	"	"	B5F0312	10-Jun-15	10-Jun-15	EPA 7470A	R-01
Molybdenum	ND	0.0050	"	"	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Nickel	0.0066	0.0050	"	"	"	"	"	"	
Potassium	71	1.0	"	"	"	"	"	"	
Selenium	0.094	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	5200	50	"	50	"	"	10-Jun-15	"	
Strontium	120	0.50	"	"	"	"	"	"	
Thallium	ND	0.020	"	1	"	"	10-Jun-15	"	

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772

FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Anderson S-2964-9-0**  
**1502448-03 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Vanadium	ND	0.050	mg/L	1	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Zinc	0.13	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>450</b>	<b>5.1</b>	<b>mg/L</b>	<b>50</b>	<b>B5F0421</b>	<b>15-Jun-15</b>	<b>15-Jun-15</b>	<b>EPA 8015M</b>	
-------------------------------	------------	------------	-------------	-----------	----------------	------------------	------------------	------------------	--

<i>Surrogate: o-Terphenyl</i>		117 %	50-150		"	"	"	"	
-------------------------------	--	-------	--------	--	---	---	---	---	--

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

<b>Benzene</b>	<b>200</b>	<b>10</b>	<b>ug/L</b>	<b>20</b>	<b>B5F0328</b>	<b>11-Jun-15</b>	<b>11-Jun-15</b>	<b>EPA 8260B</b>	
<b>Ethylbenzene</b>	<b>31</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Toluene</b>	<b>ND</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Xylenes (total)</b>	<b>23</b>	<b>10</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	

<i>Surrogate: Dibromofluoromethane</i>		98.6 %	70-130		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	70-130		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		93.3 %	70-130		"	"	"	"	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

<b>Acenaphthene</b>	<b>12</b>	<b>2.0</b>	<b>ug/L</b>	<b>20</b>	<b>B5F0364</b>	<b>12-Jun-15</b>	<b>12-Jun-15</b>	<b>EPA 8270M SIM</b>	
Acenaphthylene	ND	2.0	"	"	"	"	"	"	
Anthracene	ND	2.0	"	"	"	"	"	"	
Benz(a)anthracene	ND	2.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	2.0	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	2.0	"	"	"	"	"	"	
Benzo (a) pyrene	ND	2.0	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	2.0	"	"	"	"	"	"	
<b>Chrysene</b>	<b>18</b>	<b>2.0</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Dibenz (a,h) anthracene	ND	2.0	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>7.3</b>	<b>2.0</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
<b>Fluorene</b>	<b>96</b>	<b>10</b>	<b>"</b>	<b>100</b>	<b>"</b>	<b>"</b>	<b>15-Jun-15</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	2.0	"	20	"	"	12-Jun-15	"	
<b>Naphthalene</b>	<b>8.8</b>	<b>2.0</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	ISlowA
<b>Phenanthrene</b>	<b>240</b>	<b>10</b>	<b>"</b>	<b>100</b>	<b>"</b>	<b>"</b>	<b>15-Jun-15</b>	<b>"</b>	
<b>Pyrene</b>	<b>11</b>	<b>2.0</b>	<b>"</b>	<b>20</b>	<b>"</b>	<b>"</b>	<b>12-Jun-15</b>	<b>"</b>	

<i>Surrogate: p-Terphenyl-d14</i>		75.0 %	39-177		"	"	"	"	
-----------------------------------	--	--------	--------	--	---	---	---	---	--

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.:

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Ball S-2964-1-1**  
**1502448-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	2600	10	mg/L	1	B5F0376	12-Jun-15	12-Jun-15	SM 2320B	
Bicarbonate, CaCO3	2600	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	20000	10	"	"	B5F0389	13-Jun-15	13-Jun-15	2540C	

**Anions by EPA Method 300.0**

Bromide	76	8.0	mg/L	20	B5F0287	10-Jun-15	10-Jun-15	EPA 300.0	
Chloride	11000	400	"	1000	"	"	11-Jun-15	"	
Nitrate as N	ND	8.0	"	20	"	"	10-Jun-15	"	R-06
Sulfate	ND	8.0	"	"	"	"	"	"	R-06

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	13	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	91	5.0	"	50	"	"	10-Jun-15	"	
Cadmium	ND	0.0050	"	1	"	"	10-Jun-15	"	
Calcium	200	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	11	0.050	"	"	"	"	"	"	
Lead	0.012	0.010	"	"	"	"	"	"	
Lithium	4.5	0.025	"	"	"	"	"	"	
Magnesium	93	0.050	"	"	"	"	"	"	
Manganese	0.40	0.010	"	"	"	"	"	"	
Mercury	ND	0.0020	"	"	B5F0312	10-Jun-15	10-Jun-15	EPA 7470A	R-01
Molybdenum	ND	0.0050	"	"	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Nickel	0.0059	0.0050	"	"	"	"	"	"	
Potassium	160	1.0	"	"	"	"	"	"	
Selenium	0.093	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	7400	50	"	50	"	"	10-Jun-15	"	
Strontium	9.2	0.010	"	1	"	"	10-Jun-15	"	
Thallium	ND	0.020	"	"	"	"	"	"	

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Ball S-2964-1-1**  
**1502448-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Vanadium	ND	0.050	mg/L	1	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>73</b>	<b>2.0</b>	<b>mg/L</b>	<b>20</b>	<b>B5F0421</b>	<b>15-Jun-15</b>	<b>15-Jun-15</b>	<b>EPA 8015M</b>	
<i>Surrogate: o-Terphenyl</i>		<i>113 %</i>	<i>50-150</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

**Volatile Organic Compounds by EPA Method 8260B**

**R-05**

Benzene	ND	10	ug/L	20	B5F0328	11-Jun-15	11-Jun-15	EPA 8260B	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Toluene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		<i>99.0 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>96.8 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>93.7 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

Acenaphthene	ND	2.1	ug/L	20	B5F0364	12-Jun-15	15-Jun-15	EPA 8270M SIM	
Acenaphthylene	ND	2.1	"	"	"	"	"	"	
Anthracene	ND	2.1	"	"	"	"	"	"	
Benz(a)anthracene	ND	2.1	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	2.1	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	2.1	"	"	"	"	"	"	
Benzo (a) pyrene	ND	2.1	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	2.1	"	"	"	"	"	"	
Chrysene	ND	2.1	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	2.1	"	"	"	"	"	"	
Fluoranthene	ND	2.1	"	"	"	"	"	"	
Fluorene	ND	2.1	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	2.1	"	"	"	"	"	"	
Naphthalene	ND	2.1	"	"	"	"	"	"	
<b>Phenanthrene</b>	<b>9.8</b>	2.1	"	"	"	"	"	"	
Pyrene	ND	2.1	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl-d14</i>		<i>125 %</i>	<i>39-177</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	<b>Reported:</b> 17-Jun-15 11:52
---	--	-------------------------------------

**Ball S-2964-1-1**  
**1502448-04 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	--------------------	-------	----------	-------	----------	----------	--------	-------



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Richardson S-2964-7-1**  
**1502448-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	4300	10	mg/L	1	B5F0376	12-Jun-15	12-Jun-15	SM 2320B	
Bicarbonate, CaCO3	4300	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	18000	10	"	"	B5F0389	13-Jun-15	13-Jun-15	2540C	

**Anions by EPA Method 300.0**

Bromide	34	8.0	mg/L	20	B5F0287	10-Jun-15	10-Jun-15	EPA 300.0	
Chloride	6900	400	"	1000	"	"	11-Jun-15	"	
Nitrate as N	ND	8.0	"	20	"	"	10-Jun-15	"	R-06
Sulfate	12	8.0	"	"	"	"	10-Jun-15	"	

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	5.9	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	47	5.0	"	50	"	"	10-Jun-15	"	
Cadmium	ND	0.0050	"	1	"	"	10-Jun-15	"	
Calcium	54	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	ND	0.050	"	"	"	"	"	"	
Lead	ND	0.010	"	"	"	"	"	"	
Lithium	1.4	0.025	"	"	"	"	"	"	
Magnesium	84	0.050	"	"	"	"	"	"	
Manganese	ND	0.010	"	"	"	"	"	"	
Mercury	ND	0.0020	"	"	B5F0312	10-Jun-15	10-Jun-15	EPA 7470A	R-01
Molybdenum	ND	0.0050	"	"	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	76	1.0	"	"	"	"	"	"	
Selenium	0.12	0.050	"	"	"	"	"	"	

Oilfield Environmental and Compliance

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.

307 Roemer Way, Suite 300, Santa Maria, CA 93454

www.oecusa.com

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Richardson S-2964-7-1**  
**1502448-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Silver	ND	0.010	mg/L	1	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Sodium	6300	50	"	50	"	"	10-Jun-15	"	
Strontium	13	0.010	"	1	"	"	10-Jun-15	"	
Thallium	ND	0.020	"	"	"	"	"	"	
Vanadium	ND	0.050	"	"	"	"	"	"	
Zinc	ND	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>160</b>	<b>2.1</b>	<b>mg/L</b>	<b>20</b>	<b>B5F0421</b>	<b>15-Jun-15</b>	<b>15-Jun-15</b>	<b>EPA 8015M</b>	
<i>Surrogate: o-Terphenyl</i>		<i>84.9 %</i>	<i>50-150</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

**Volatile Organic Compounds by EPA Method 8260B**

**HDSP, R-01**

Benzene	ND	10	ug/L	20	B5F0328	11-Jun-15	11-Jun-15	EPA 8260B	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Toluene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		<i>99.0 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>97.0 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>94.4 %</i>	<i>70-130</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

<b>Accenaphthene</b>	<b>1.9</b>	<b>0.52</b>	<b>ug/L</b>	<b>5</b>	<b>B5F0364</b>	<b>12-Jun-15</b>	<b>12-Jun-15</b>	<b>EPA 8270M</b>	
								<b>SIM</b>	
Acenaphthylene	ND	0.52	"	"	"	"	"	"	
Anthracene	ND	0.52	"	"	"	"	"	"	
Benz(a)anthracene	ND	0.52	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.52	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.52	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.52	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.52	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.62</b>	<b>0.52</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>ISlowA</b>
Dibenz (a,h) anthracene	ND	0.52	"	"	"	"	"	"	
Fluoranthene	ND	0.52	"	"	"	"	"	"	
<b>Fluorene</b>	<b>2.4</b>	<b>0.52</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	0.52	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>1.5</b>	<b>0.52</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Richardson S-2964-7-1**  
**1502448-01 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

<b>Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring</b>									<b>R-05</b>
Phenanthrene	14	0.52	ug/L	5	B5F0364	12-Jun-15	12-Jun-15	EPA 8270M SIM	
Pyrene	ND	0.52	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		93.8 %	39-177		"	"	"	"	

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Roco S-2964-4-1**  
**1502448-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

**Wet Chemistry by EPA or APHA Standard Methods**

Total Alkalinity, CaCO3	340	10	mg/L	1	B5F0376	12-Jun-15	12-Jun-15	SM 2320B	
Bicarbonate, CaCO3	340	10	"	"	"	"	"	"	
Carbonate, CaCO3	ND	10	"	"	"	"	"	"	
Hydroxide, CaCO3	ND	10	"	"	"	"	"	"	
Total Dissolved Solids	22000	10	"	"	B5F0389	13-Jun-15	13-Jun-15	2540C	

**Anions by EPA Method 300.0**

Bromide	41	8.0	mg/L	20	B5F0287	10-Jun-15	10-Jun-15	EPA 300.0	
Chloride	12000	400	"	1000	"	"	11-Jun-15	"	
Nitrate as N	ND	8.0	"	20	"	"	10-Jun-15	"	R-06
Sulfate	ND	8.0	"	"	"	"	10-Jun-15	"	R-06

**Total Metals by EPA 6000/7000 Series Methods**

Antimony	ND	0.050	mg/L	1	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Arsenic	ND	0.020	"	"	"	"	"	"	
Barium	14	0.020	"	"	"	"	"	"	
Beryllium	ND	0.010	"	"	"	"	"	"	
Boron	150	5.0	"	50	"	"	10-Jun-15	"	
Cadmium	ND	0.0050	"	1	"	"	10-Jun-15	"	
Calcium	420	0.20	"	"	"	"	"	"	
Chromium	ND	0.010	"	"	"	"	"	"	
Cobalt	ND	0.010	"	"	"	"	"	"	
Copper	ND	0.020	"	"	"	"	"	"	
Iron	1.1	0.050	"	"	"	"	"	"	
Lead	ND	0.010	"	"	"	"	"	"	
Lithium	2.7	0.025	"	"	"	"	"	"	
Magnesium	170	0.050	"	"	"	"	"	"	
Manganese	0.014	0.010	"	"	"	"	"	"	
Mercury	ND	0.0020	"	10	B5F0312	10-Jun-15	10-Jun-15	EPA 7470A	R-01
Molybdenum	0.026	0.0050	"	1	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Nickel	ND	0.0050	"	"	"	"	"	"	
Potassium	130	1.0	"	"	"	"	"	"	
Selenium	0.11	0.050	"	"	"	"	"	"	
Silver	ND	0.010	"	"	"	"	"	"	
Sodium	6900	50	"	50	"	"	10-Jun-15	"	
Strontium	54	0.50	"	"	"	"	"	"	
Thallium	ND	0.020	"	1	"	"	10-Jun-15	"	

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Roco S-2964-4-1**  
**1502448-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

**Oilfield Environmental and Compliance**

**Total Metals by EPA 6000/7000 Series Methods**

Vanadium	ND	0.050	mg/L	1	B5F0303	10-Jun-15	10-Jun-15	EPA 6010B	
Zinc	0.057	0.050	"	"	"	"	"	"	

**TEPH by GC FID**

<b>TPH Oil Crude (C8-C40)</b>	<b>140</b>	<b>5.2</b>	<b>mg/L</b>	<b>50</b>	<b>B5F0421</b>	<b>15-Jun-15</b>	<b>16-Jun-15</b>	<b>EPA 8015M</b>	
-------------------------------	------------	------------	-------------	-----------	----------------	------------------	------------------	------------------	--

Surrogate: *o*-Terphenyl 126 % 50-150 " " " "

**Volatile Organic Compounds by EPA Method 8260B**

**HDSP, R-05**

Benzene	ND	10	ug/L	20	B5F0328	11-Jun-15	11-Jun-15	EPA 8260B	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Toluene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane 100 % 70-130 " " " "  
 Surrogate: Toluene-d8 97.4 % 70-130 " " " "  
 Surrogate: 4-Bromofluorobenzene 91.9 % 70-130 " " " "

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring**

**R-05**

<b>Acenaphthene</b>	<b>6.0</b>	<b>2.1</b>	<b>ug/L</b>	<b>20</b>	<b>B5F0364</b>	<b>12-Jun-15</b>	<b>15-Jun-15</b>	<b>EPA 8270M</b>	
								<b>SIM</b>	
Acenaphthylene	ND	2.1	"	"	"	"	"	"	
Anthracene	ND	2.1	"	"	"	"	"	"	
Benz(a)anthracene	ND	2.1	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	2.1	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	2.1	"	"	"	"	"	"	
Benzo (a) pyrene	ND	2.1	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	2.1	"	"	"	"	"	"	
Chrysene	ND	2.1	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	2.1	"	"	"	"	"	"	
Fluoranthene	ND	2.1	"	"	"	"	"	"	
<b>Fluorene</b>	<b>10</b>	<b>2.1</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Indeno (1,2,3-cd) pyrene	ND	2.1	"	"	"	"	"	"	
Naphthalene	ND	2.1	"	"	"	"	"	"	
<b>Phenanthrene</b>	<b>12</b>	<b>2.1</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	
Pyrene	ND	2.1	"	"	"	"	"	"	

Surrogate: *p*-Terphenyl-d14 75.0 % 39-177 " " " "

Oilfield Environmental and Compliance

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.

307 Roemer Way, Suite 300, Santa Maria, CA 93454

www.oecusa.com

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Roco S-2964-4-1**  
**1502448-02 (Produced Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	--------------------	-------	----------	-------	----------	----------	--------	-------

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Wet Chemistry by EPA or APHA Standard Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------	-------

**Batch B5F0376 - Wetchem default method**

<b>Blank (B5F0376-BLK1)</b>		Prepared & Analyzed: 12-Jun-15								
Total Alkalinity, CaCO3	ND	10	mg/L							
Bicarbonate, CaCO3	ND	10	"							
Carbonate, CaCO3	ND	10	"							
Hydroxide, CaCO3	ND	10	"							

<b>LCS (B5F0376-BS1)</b>		Prepared & Analyzed: 12-Jun-15								
Total Alkalinity, CaCO3	2160	10	mg/L	2500		86.3	80-120			
Bicarbonate, CaCO3	ND	10	"	0.00			80-120			
Carbonate, CaCO3	2090	10	"	2500		83.5	80-120			
Hydroxide, CaCO3	ND	10	"	0.00			80-120			

<b>Duplicate (B5F0376-DUP1)</b>		Source: 1502482-01		Prepared & Analyzed: 12-Jun-15						
Total Alkalinity, CaCO3	592	10	mg/L		586			1.02	20	
Bicarbonate, CaCO3	592	10	"		586			1.02	20	
Carbonate, CaCO3	ND	10	"		ND				20	
Hydroxide, CaCO3	ND	10	"		ND				20	

<b>Duplicate (B5F0376-DUP2)</b>		Source: 1502487-01		Prepared & Analyzed: 12-Jun-15						
Total Alkalinity, CaCO3	1110	10	mg/L		1100			0.721	20	
Bicarbonate, CaCO3	1110	10	"		1100			0.721	20	
Carbonate, CaCO3	ND	10	"		ND				20	
Hydroxide, CaCO3	ND	10	"		ND				20	

**Batch B5F0389 - 2540 C TDS Prep**

<b>Blank (B5F0389-BLK1)</b>		Prepared & Analyzed: 13-Jun-15								
Total Dissolved Solids	ND	10	mg/L							



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Wet Chemistry by EPA or APHA Standard Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5F0389 - 2540 C TDS Prep</b>										
<b>LCS (B5F0389-BS1)</b>					Prepared & Analyzed: 13-Jun-15					
Total Dissolved Solids	1100	10	mg/L	1000		111	75-125			
<b>LCS Dup (B5F0389-BSD1)</b>					Prepared & Analyzed: 13-Jun-15					
Total Dissolved Solids	1100	10	mg/L	1000		111	75-125	0.00	10	
<b>Duplicate (B5F0389-DUP1)</b>					Source: 1502448-01 Prepared & Analyzed: 13-Jun-15					
Total Dissolved Solids	19000	10	mg/L		18000			7.10	10	

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Anions by EPA Method 300.0 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5F0287 - EPA 300.0/300.1 Anions Prep</b>										
<b>Blank (B5F0287-BLK1)</b> Prepared & Analyzed: 10-Jun-15										
Bromide	ND	0.40	mg/L							
Nitrate as N	ND	0.40	"							
<b>Blank (B5F0287-BLK2)</b> Prepared: 10-Jun-15 Analyzed: 11-Jun-15										
Chloride	ND	0.40	mg/L							
Sulfate	ND	0.40	"							
<b>LCS (B5F0287-BS1)</b> Prepared & Analyzed: 10-Jun-15										
Bromide	5.08	0.40	mg/L	5.00		102	90-110			
Nitrate as N	4.89	0.40	"	5.00		97.8	90-110			
<b>LCS (B5F0287-BS2)</b> Prepared: 10-Jun-15 Analyzed: 11-Jun-15										
Chloride	5.16	0.40	mg/L	5.00		103	90-110			
Sulfate	5.33	0.40	"	5.00		107	90-110			
<b>LCS Dup (B5F0287-BSD1)</b> Prepared & Analyzed: 10-Jun-15										
Bromide	5.06	0.40	mg/L	5.00		101	90-110	0.355	20	
Nitrate as N	6.26	0.40	"	5.00		125	90-110	24.6	20	QM-09, QR-04
<b>LCS Dup (B5F0287-BSD2)</b> Prepared: 10-Jun-15 Analyzed: 11-Jun-15										
Chloride	4.99	0.40	mg/L	5.00		99.8	90-110	3.43	20	
Sulfate	5.20	0.40	"	5.00		104	90-110	2.39	20	
<b>Duplicate (B5F0287-DUP1)</b> Source: 1502440-04 Prepared & Analyzed: 10-Jun-15										
Bromide	0.157	0.40	mg/L		0.154			1.93	20	
Nitrate as N	ND	0.40	"		ND				20	
<b>Duplicate (B5F0287-DUP2)</b> Source: 1502440-04RE1 Prepared: 10-Jun-15 Analyzed: 11-Jun-15										
Chloride	32.3	8.0	mg/L		33.6			4.13	20	
Sulfate	228	8.0	"		230			0.969	20	



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Anions by EPA Method 300.0 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B5F0287 - EPA 300.0/300.1 Anions Prep**

<b>Matrix Spike (B5F0287-MS1)</b>		<b>Source: 1502440-04</b>			<b>Prepared &amp; Analyzed: 10-Jun-15</b>					
Bromide	5.62	0.42	mg/L	5.26	0.154	104	80-120			
Nitrate as N	5.14	0.42	"	5.26	ND	97.6	80-120			
<b>Matrix Spike (B5F0287-MS2)</b>		<b>Source: 1502450-05</b>			<b>Prepared &amp; Analyzed: 10-Jun-15</b>					
Bromide	119	8.4	mg/L	105	0.575	112	80-120			
Nitrate as N	103	8.4	"	105	0.203	97.6	80-120			
<b>Matrix Spike (B5F0287-MS3)</b>		<b>Source: 1502440-04RE1</b>			<b>Prepared: 10-Jun-15 Analyzed: 11-Jun-15</b>					
Chloride	143	8.4	mg/L	105	33.6	104	80-120			
Sulfate	356	8.4	"	105	230	119	80-120			
<b>Matrix Spike (B5F0287-MS4)</b>		<b>Source: 1502450-05RE1</b>			<b>Prepared: 10-Jun-15 Analyzed: 11-Jun-15</b>					
Chloride	470	21	mg/L	263	186	108	80-120			
Sulfate	439	21	"	263	141	113	80-120			



Oilfield Environmental and Compliance, INC.

K B Oil Gas	Project: RWQCB Testing	Reported:
P.O. Box 207	Project Number: Salt Creek	17-Jun-15 11:52
Taft CA, 93268	Project Manager: Ken Beard Sr.	

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B5F0303 - EPA 3010A**

**Blank (B5F0303-BLK1)** Prepared & Analyzed: 10-Jun-15

Antimony	ND	0.050	mg/L							
Arsenic	ND	0.020	"							
Barium	ND	0.020	"							
Beryllium	ND	0.010	"							
Boron	ND	0.10	"							
Cadmium	ND	0.0050	"							
Calcium	ND	0.20	"							
Chromium	ND	0.010	"							
Cobalt	ND	0.010	"							
Copper	ND	0.020	"							
Iron	ND	0.050	"							
Lead	ND	0.010	"							
Lithium	ND	0.025	"							
Magnesium	ND	0.050	"							
Manganese	ND	0.010	"							
Molybdenum	ND	0.0050	"							
Nickel	ND	0.0050	"							
Potassium	ND	1.0	"							
Selenium	ND	0.050	"							
Silver	ND	0.010	"							
Sodium	ND	1.0	"							
Strontium	ND	0.010	"							
Thallium	ND	0.020	"							
Vanadium	ND	0.050	"							
Zinc	ND	0.050	"							

**LCS (B5F0303-BS1)**

Prepared & Analyzed: 10-Jun-15

Antimony	2.15	0.050	mg/L	2.00	107	80-120
Arsenic	2.07	0.020	"	2.00	104	80-120
Barium	2.20	0.020	"	2.00	110	80-120
Beryllium	2.19	0.010	"	2.00	110	80-120
Boron	1.95	0.10	"	2.00	97.3	80-120
Cadmium	2.18	0.0050	"	2.00	109	80-120
Calcium	10.6	0.20	"	10.0	106	80-120
Chromium	2.07	0.010	"	2.00	104	80-120
Cobalt	2.18	0.010	"	2.00	109	80-120
Copper	2.13	0.020	"	2.00	106	80-120
Iron	10.8	0.050	"	10.0	108	80-120
Lead	2.23	0.010	"	2.00	112	80-120
Lithium	2.13	0.025	"	2.00	106	80-120
Magnesium	11.3	0.050	"	10.0	113	80-120

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B5F0303 - EPA 3010A**

LCS (B5F0303-BS1) <span style="float: right;">Prepared &amp; Analyzed: 10-Jun-15</span>										
Manganese	10.9	0.010	mg/L	10.0		109	80-120			
Molybdenum	2.17	0.0050	"	2.00		109	80-120			
Nickel	2.21	0.0050	"	2.00		110	80-120			
Potassium	10.8	1.0	"	10.0		108	80-120			
Selenium	2.08	0.050	"	2.00		104	80-120			
Silver	0.104	0.010	"	0.100		104	80-120			
Sodium	10.5	1.0	"	10.0		105	80-120			
Strontium	2.23	0.010	"	2.00		112	80-120			
Thallium	2.22	0.020	"	2.00		111	80-120			
Vanadium	2.19	0.050	"	2.00		110	80-120			
Zinc	2.16	0.050	"	2.00		108	80-120			

LCS Dup (B5F0303-BSD1) <span style="float: right;">Prepared &amp; Analyzed: 10-Jun-15</span>										
Antimony	2.16	0.050	mg/L	2.00		108	80-120	0.696	20	
Arsenic	2.12	0.020	"	2.00		106	80-120	2.10	20	
Barium	2.22	0.020	"	2.00		111	80-120	0.816	20	
Beryllium	2.20	0.010	"	2.00		110	80-120	0.364	20	
Boron	2.00	0.10	"	2.00		100	80-120	2.79	20	
Cadmium	2.20	0.0050	"	2.00		110	80-120	0.639	20	
Calcium	10.9	0.20	"	10.0		109	80-120	2.14	20	
Chromium	2.14	0.010	"	2.00		107	80-120	3.04	20	
Cobalt	2.19	0.010	"	2.00		110	80-120	0.594	20	
Copper	2.18	0.020	"	2.00		109	80-120	2.37	20	
Iron	11.0	0.050	"	10.0		110	80-120	1.74	20	
Lead	2.25	0.010	"	2.00		112	80-120	0.893	20	
Lithium	2.18	0.025	"	2.00		109	80-120	2.14	20	
Magnesium	11.4	0.050	"	10.0		114	80-120	0.441	20	
Manganese	11.1	0.010	"	10.0		111	80-120	1.81	20	
Molybdenum	2.21	0.0050	"	2.00		111	80-120	1.87	20	
Nickel	2.23	0.0050	"	2.00		111	80-120	0.811	20	
Potassium	10.8	1.0	"	10.0		108	80-120	0.277	20	
Selenium	2.13	0.050	"	2.00		107	80-120	2.52	20	
Silver	0.105	0.010	"	0.100		105	80-120	0.763	20	
Sodium	10.7	1.0	"	10.0		107	80-120	1.41	20	
Strontium	2.24	0.010	"	2.00		112	80-120	0.224	20	
Thallium	2.24	0.020	"	2.00		112	80-120	0.943	20	
Vanadium	2.22	0.050	"	2.00		111	80-120	1.40	20	
Zinc	2.17	0.050	"	2.00		108	80-120	0.601	20	

Oilfield Environmental and Compliance

*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.*

307 Roemer Way, Suite 300, Santa Maria, CA 93454

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas  
P.O. Box 207  
Taft CA, 93268

Project: RWQCB Testing  
Project Number: Salt Creek  
Project Manager: Ken Beard Sr.

Reported:  
17-Jun-15 11:52

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B5F0303 - EPA 3010A**

Duplicate (B5F0303-DUP1)	Source: 1502448-01			Prepared & Analyzed: 10-Jun-15						
Antimony	ND	0.050	mg/L		ND				20	
Arsenic	ND	0.020	"		ND				20	
Barium	5.61	0.020	"		5.94			5.66	20	
Beryllium	ND	0.010	"		ND				20	
Cadmium	ND	0.0050	"		ND				20	
Calcium	49.9	0.20	"		53.8			7.46	20	
Chromium	ND	0.010	"		ND				20	
Cobalt	ND	0.010	"		ND				20	
Copper	ND	0.020	"		ND				20	
Iron	0.0417	0.050	"		0.0409			1.94	20	
Lead	ND	0.010	"		ND				20	
Lithium	1.28	0.025	"		1.37			7.02	20	
Magnesium	77.8	0.050	"		84.5			8.22	20	
Manganese	0.00570	0.010	"		0.00550			3.57	20	
Molybdenum	ND	0.0050	"		ND				20	
Nickel	0.00340	0.0050	"		ND				20	
Potassium	71.6	1.0	"		75.7			5.58	20	
Selenium	0.106	0.050	"		0.117			9.93	20	
Silver	ND	0.010	"		ND				20	
Strontium	12.1	0.010	"		12.5			3.66	20	
Thallium	ND	0.020	"		ND				20	
Vanadium	ND	0.050	"		ND				20	
Zinc	ND	0.050	"		ND				20	

Duplicate (B5F0303-DUP2)	Source: 1502448-01RE1			Prepared & Analyzed: 10-Jun-15						
Boron	46.1	5.0	mg/L		47.3			2.43	20	
Sodium	6220	50	"		6340			1.83	20	

Oilfield Environmental and Compliance

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.

307 Roemer Way, Suite 300, Santa Maria, CA 93454

www.oecusa.com

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B5F0303 - EPA 3010A**

Matrix Spike (B5F0303-MS1)	Source: 1502448-01			Prepared & Analyzed: 10-Jun-15						
Antimony	2.22	0.050	mg/L	2.00	ND	111	82-127			
Arsenic	2.40	0.020	"	2.00	ND	120	83-130			
Barium	8.34	0.020	"	2.00	5.94	120	76-136			
Beryllium	2.16	0.010	"	2.00	ND	108	78-123			
Cadmium	2.11	0.0050	"	2.00	ND	106	86-120			
Calcium	64.4	0.20	"	10.0	53.8	106	82-128			
Chromium	2.16	0.010	"	2.00	ND	108	80-123			
Cobalt	1.96	0.010	"	2.00	ND	97.9	80-123			
Copper	2.24	0.020	"	2.00	ND	112	81-128			
Iron	10.6	0.050	"	10.0	0.0409	106	88-120			
Lead	1.88	0.010	"	2.00	ND	93.8	71-128			
Lithium	4.48	0.025	"	2.00	1.37	156	57-156			
Magnesium	92.8	0.050	"	10.0	84.5	83.9	83-123			
Manganese	10.6	0.010	"	10.0	0.00550	106	74-131			
Molybdenum	2.08	0.0050	"	2.00	ND	104	85-122			
Nickel	2.03	0.0050	"	2.00	ND	102	85-121			
Potassium	92.3	1.0	"	10.0	75.7	166	73-141			QM-4X
Selenium	2.29	0.050	"	2.00	0.117	108	50-151			
Silver	0.127	0.010	"	0.100	ND	127	71-136			
Strontium	15.1	0.010	"	2.00	12.5	130	67-142			
Thallium	1.62	0.020	"	2.00	ND	80.9	61-134			
Vanadium	2.28	0.050	"	2.00	ND	114	82-126			
Zinc	2.20	0.050	"	2.00	ND	110	88-123			

Matrix Spike (B5F0303-MS2)	Source: 1502448-01RE1			Prepared & Analyzed: 10-Jun-15						
Boron	52.4	5.0	mg/L	2.00	47.3	254	71-134			QM-4X
Sodium	6560	50	"	10.0	6340	NR	75-125			QM-4X

Oilfield Environmental and Compliance

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.

307 Roemer Way, Suite 300, Santa Maria, CA 93454

www.oecusa.com

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
<b>Batch B5F0312 - EPA 7470A Prep</b>										
<b>Blank (B5F0312-BLK1)</b>				Prepared & Analyzed: 10-Jun-15						
Mercury	ND	0.00020	mg/L							
<b>LCS (B5F0312-BS1)</b>				Prepared & Analyzed: 10-Jun-15						
Mercury	0.0105	0.00020	mg/L	0.0100		105	85-115			
<b>LCS Dup (B5F0312-BSD1)</b>				Prepared & Analyzed: 10-Jun-15						
Mercury	0.0107	0.00020	mg/L	0.0100		107	85-115	1.96	20	
<b>Duplicate (B5F0312-DUP3)</b>				Source: 1502448-02RE2 Prepared & Analyzed: 10-Jun-15						
Mercury	ND	0.0020	mg/L		ND				20	
<b>Matrix Spike (B5F0312-MS1)</b>				Source: 1502448-02 Prepared & Analyzed: 10-Jun-15						
Mercury	0.00242	0.00020	mg/L	0.0100	ND	24.2	75-125			QM-05
<b>Matrix Spike Dup (B5F0312-MSD1)</b>				Source: 1502448-02 Prepared & Analyzed: 10-Jun-15						
Mercury	0.00236	0.00020	mg/L	0.0100	ND	23.6	75-125	2.51	20	QM-05
<b>Post Spike (B5F0312-PS3)</b>				Source: 1502448-02RE2 Prepared & Analyzed: 10-Jun-15						
Mercury	4.34		ug/L	5.00	-0.00630	86.8	85-115			

Oilfield Environmental and Compliance

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.

307 Roemer Way, Suite 300, Santa Maria, CA 93454

www.oecusa.com

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**TEPH by GC FID - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B5F0421 - EPA 3510C</b>										
<b>Blank (B5F0421-BLK1)</b>										
					Prepared: 15-Jun-15 Analyzed: 16-Jun-15					
TPH Oil Crude (C8-C40)	ND	0.10	mg/L							
Surrogate: o-Terphenyl	0.106		"	0.100		106	50-150			
<b>LCS (B5F0421-BS1)</b>										
					Prepared: 15-Jun-15 Analyzed: 16-Jun-15					
TPH Oil Crude (C8-C40)	1.97	0.10	mg/L	2.00		98.4	70-130			
Surrogate: o-Terphenyl	0.112		"	0.100		112	50-150			
<b>LCS Dup (B5F0421-BSD1)</b>										
					Prepared: 15-Jun-15 Analyzed: 16-Jun-15					
TPH Oil Crude (C8-C40)	2.21	0.10	mg/L	2.00		110	70-130	11.6	20	
Surrogate: o-Terphenyl	0.0966		"	0.100		96.6	50-150			



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B5F0328 - EPA 5030B VOCGCMS**

<b>Blank (B5F0328-BLK1)</b>		Prepared & Analyzed: 11-Jun-15								
Benzene	ND	0.50	ug/L							
Ethylbenzene	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Surrogate: Dibromofluoromethane	12.6		"	12.5		101	70-130			
Surrogate: Toluene-d8	12.0		"	12.5		96.2	70-130			
Surrogate: 4-Bromofluorobenzene	10.9		"	12.5		87.4	70-130			

<b>LCS (B5F0328-BS1)</b>		Prepared & Analyzed: 11-Jun-15								
Benzene	28.1	0.50	ug/L	25.0		113	70-130			
Toluene	26.3	0.50	"	25.0		105	70-130			
Surrogate: Dibromofluoromethane	12.4		"	12.5		98.8	70-130			
Surrogate: Toluene-d8	12.0		"	12.5		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	11.0		"	12.5		88.0	70-130			

<b>LCS Dup (B5F0328-BSD1)</b>		Prepared & Analyzed: 11-Jun-15								
Benzene	27.6	0.50	ug/L	25.0		110	70-130	2.08	20	
Toluene	25.7	0.50	"	25.0		103	70-130	2.31	20	
Surrogate: Dibromofluoromethane	12.4		"	12.5		99.1	70-130			
Surrogate: Toluene-d8	12.0		"	12.5		95.8	70-130			
Surrogate: 4-Bromofluorobenzene	11.1		"	12.5		88.6	70-130			

<b>Duplicate (B5F0328-DUP1)</b>		Source: 1502450-01		Prepared & Analyzed: 11-Jun-15						
Benzene	36.7	0.50	ug/L		36.8			0.327	20	
Ethylbenzene	7.09	0.50	"		6.63			6.71	20	
Toluene	4.64	0.50	"		4.60			0.866	20	
Xylenes (total)	5.03	0.50	"		4.65			7.85	20	
Surrogate: Dibromofluoromethane	12.6		"	12.5		101	70-130			
Surrogate: Toluene-d8	12.3		"	12.5		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	12.0		"	12.5		95.8	70-130			

Oilfield Environmental and Compliance

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.

307 Roemer Way, Suite 300, Santa Maria, CA 93454

www.oecusa.com

TEL: (805) 922-4772

FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B5F0328 - EPA 5030B VOCGCMS**

Matrix Spike (B5F0328-MS1)	Source: 1502450-02			Prepared & Analyzed: 11-Jun-15						
Benzene	65.3	0.50	ug/L	25.0	37.1	113	70-130			E
Toluene	31.0	0.50	"	25.0	4.55	106	70-130			
Surrogate: Dibromofluoromethane	12.5		"	12.5		100	70-130			
Surrogate: Toluene-d8	12.4		"	12.5		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	11.9		"	12.5		95.4	70-130			



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B5F0364 - EPA 3510C MS**

<b>Blank (B5F0364-BLK1)</b>				Prepared & Analyzed: 12-Jun-15						
Acenaphthene	ND	0.10	ug/L							
Acenaphthylene	ND	0.10	"							
Anthracene	ND	0.10	"							
Benz(a)anthracene	ND	0.10	"							
Benzo (b) fluoranthene	ND	0.10	"							
Benzo (k) fluoranthene	ND	0.10	"							
Benzo (a) pyrene	ND	0.10	"							
Benzo (g,h,i) perylene	ND	0.10	"							
Chrysene	ND	0.10	"							
Dibenz (a,h) anthracene	ND	0.10	"							
Fluoranthene	ND	0.10	"							
Fluorene	ND	0.10	"							
Indeno (1,2,3-cd) pyrene	ND	0.10	"							
Naphthalene	ND	0.10	"							
Phenanthrene	ND	0.10	"							
Pyrene	ND	0.10	"							
<i>Surrogate: p-Terphenyl-d14</i>	0.950		"	0.800		119	39-177			

<b>LCS (B5F0364-BS1)</b>				Prepared & Analyzed: 12-Jun-15						
Acenaphthene	0.530	0.10	ug/L	0.800		66.2	53-105			
Acenaphthylene	0.560	0.10	"	0.800		70.0	48-110			
Anthracene	0.750	0.10	"	0.800		93.8	54-120			
Benz(a)anthracene	0.830	0.10	"	0.800		104	46-131			
Benzo (b) fluoranthene	0.690	0.10	"	0.800		86.2	45-153			
Benzo (k) fluoranthene	0.710	0.10	"	0.800		88.8	63-154			
Benzo (a) pyrene	0.760	0.10	"	0.800		95.0	56-134			
Benzo (g,h,i) perylene	0.930	0.10	"	0.800		116	36-164			
Chrysene	0.820	0.10	"	0.800		102	72-125			
Dibenz (a,h) anthracene	1.06	0.10	"	0.800		132	44-154			
Fluoranthene	0.780	0.10	"	0.800		97.5	71-118			
Fluorene	0.640	0.10	"	0.800		80.0	45-122			
Indeno (1,2,3-cd) pyrene	0.960	0.10	"	0.800		120	40-155			
Naphthalene	0.470	0.10	"	0.800		58.8	49-99			
Phenanthrene	0.670	0.10	"	0.800		83.8	49-117			
Pyrene	0.810	0.10	"	0.800		101	71-119			
<i>Surrogate: p-Terphenyl-d14</i>	0.870		"	0.800		109	39-177			

Oilfield Environmental and Compliance

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.

307 Roemer Way, Suite 300, Santa Maria, CA 93454

www.oecusa.com

TEL: (805) 922-4772  
FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas P.O. Box 207 Taft CA, 93268	Project: RWQCB Testing Project Number: Salt Creek Project Manager: Ken Beard Sr.	Reported: 17-Jun-15 11:52
---	--	------------------------------

**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B5F0364 - EPA 3510C MS**

LCS Dup (B5F0364-BSD1)				Prepared & Analyzed: 12-Jun-15						
Acenaphthene	0.710	0.10	ug/L	0.800		88.8	53-105	29.0	30	
Acenaphthylene	0.720	0.10	"	0.800		90.0	48-110	25.0	30	
Anthracene	0.860	0.10	"	0.800		108	54-120	13.7	30	
Benz(a)anthracene	0.910	0.10	"	0.800		114	46-131	9.20	30	
Benzo (b) fluoranthene	0.760	0.10	"	0.800		95.0	45-153	9.66	30	
Benzo (k) fluoranthene	0.780	0.10	"	0.800		97.5	63-154	9.40	30	
Benzo (a) pyrene	0.910	0.10	"	0.800		114	56-134	18.0	30	
Benzo (g,h,i) perylene	0.980	0.10	"	0.800		122	36-164	5.24	30	
Chrysene	0.870	0.10	"	0.800		109	72-125	5.92	30	
Dibenz (a,h) anthracene	1.09	0.10	"	0.800		136	44-154	2.79	30	
Fluoranthene	0.880	0.10	"	0.800		110	71-118	12.0	30	
Fluorene	0.780	0.10	"	0.800		97.5	45-122	19.7	30	
Indeno (1,2,3-cd) pyrene	0.980	0.10	"	0.800		122	40-155	2.06	30	
Naphthalene	0.560	0.10	"	0.800		70.0	49-99	17.5	30	
Phenanthrene	0.760	0.10	"	0.800		95.0	49-117	12.6	30	
Pyrene	0.900	0.10	"	0.800		112	71-119	10.5	30	
Surrogate: p-Terphenyl-d14	0.940		"	0.800		118	39-177			

Oilfield Environmental and Compliance

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.

307 Roemer Way, Suite 300, Santa Maria, CA 93454

www.oecusa.com

TEL: (805) 922-4772

FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

K B Oil Gas  
P.O. Box 207  
Taft CA, 93268

Project: RWQCB Testing  
Project Number: Salt Creek  
Project Manager: Ken Beard Sr.

Reported:  
17-Jun-15 11:52

### Notes and Definitions

- R-06 The Reporting Limit has been raised to account for the presence of high levels of analytes.
- R-05 The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
- R-01 The Reporting Limit has been raised to account for matrix interference.
- QR-04 The RPD exceeded the QC control limits.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- QM-09 The spike recovery was outside acceptance limits for the LCSD. The batch was accepted based on acceptable LCS recovery.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
- ISlowA The internal standard associated with this analyte fails the method criteria on the low side. Results may be biased high.
- HDSP Sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Oilfield Environmental and Compliance

307 Roemer Way, Suite 300, Santa Maria, CA 93454

*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.*

[www.oecusa.com](http://www.oecusa.com)

TEL: (805) 922-4772  
FAX: (805) 925-3376



**DAVI LABORATORIES, ENVIRONMENTAL ASSOCIATES**  
 730 Alfred Nobel Dr, Hercules CA 94547

**ANALYTICAL RESULTS  
 REPORT**

Company: **Oilfield Environmental and Compliance**  
 Address: 307 Roemer Way, Suite 300  
 Santa Maria Ca 93454

Project Manager: Marissa L. Censullo  
 Report Date: June 27, 2015  
 P. O. Number: **1502448**

TABLE I								
Sample ID	Collection Date	Time	Matrix	EPA Method	Analyses	Results pCi/L	2 Siga error	MDA
1502448-01	6/15/2015	800		SM7110B	Gross Alpha	5.02	±	0.51
				SM7110B	Gross Beta	4.03	±	3.84
				SM7500UC	Uranium n	1.72	±	0.02
				SM7500UC(908)	Uranium rad	1.69	±	0.26
				SM7500RaC	Radium 226	2.14	±	0.4
				SM7500RaD	Radium 228	0.03	±	0.45
1502448-02	6/15/2015	830	Oily Emulsion	9310	Gross Alpha	2.75	±	0.83
				9310	Gross Beta	9.79	±	4.93
				DOE-04	Uranium n	1.11	±	0.02
				DOE-04(908)	Uranium rad	0.70	±	0.46
				9315	Radium 226	1.37	±	0.54
				9320	Radium 228	7.32	±	0.24
				1502448-03	6/15/15	850	Oily water	SM7110B
SM7110B	Gross Beta	18.35	±					1.56
SM7500UC	Uranium n	5.35	±					0.02
SM7500UC(908)	Uranium rad	2.51	±					0.32
SM7500RaC	Radium 226	0.48	±					0.5
SM7500RaD	Radium 228	5.63	±					1.89

Company:  
 Project Manager:  
 Report Date:  
 P. O. Number:

**Oilfield Environmental and Compliance**  
 Marissa L. Censullo  
 June 27, 2015  
 1502448

**TABLE I**

Sample ID	Collection		Matrix	EPA Method	Analyses	Results		2 Sima error	MDA
	Date	Time				pCi/L			
1502448-04	6/15/15	1600	Oily Water	SM7110B	Gross Alpha	3.99	±	0.85	0.57
				SM7110B	Gross Beta	7.74	±	1.66	2.2
				SM7500UC	Uranium n	3.56	±	1.04	0.02
				SM7500UC(908	Uranium rad	1.82	±	0.47	0.6
				SM7500RaC	Radium 226	0.50	±	0.41	0.44
				SM7500RaD	Radium 228	2.65	±	0.93	1.25

Analyses Date: 6/26/2015

**TABLE II QA/QC**

Analyses	Spike Added	Detected Activity		% Agreement
Gross Alpha	165.00 pCi/L	164.73	pCi/L	98.25
Gross Beta	587.70 pCi/L		pCi/L	
Uranium n	256.02 pCi/L	249.25	pCi/L	97.36
Ra 226	17.90 pCi/L	16.48	pCi/L	92.07
Ra 228	485.85 pCi/L	459.80	pCi/L	95.00
Strontium	587.65 pCi/L	577.80	pCi/L	98.32
Tritium	284.94 pCi/L	263.68	pCi/L	92.54

*Patricia Davi*

Patricia Davi  
 QA/QC Manager  
 Davi Laboratories





# SAMPLE RECEIPT

Rev. 01/15/10

CLIENT: K B Oil

OEC ID #: 1502448

Temp: 5-5 °C

Acceptable Range: 0°C to 6°C

COC RECEIVED

DATE/TIME: 6-9-15 0540

RECEIPT LOGIN

DATE/TIME: 6-9-15 0730

REFRIGERATOR(S): 8, Dawn

### SAMPLE TRANSPORT, RECEIPT, CONDITION & PRESERVATION:

- OEC Courier/Sampler
  - Delivery (Other than OEC Courier)
  - Samples Received on Ice
  - Samples Received Outside Temp. Range\*
  - Samples Direct from field (Outside Temp)
  - After-Hours Outside Drop-off [Brought Inside]
- (Initials/Date/Time):

- COC document(s) received with samples
- Correct containers for analysis requested
- Container(s) intact and in good condition
- Container label(s) consistent with COC
- OEC preservative added (\*\*note std ID)
- Proper preservation on sample label(s)
- VOA containers free of headspace
- Tedlar Bags free of condensation

- |                                     |                                     |                                     |
|-------------------------------------|-------------------------------------|-------------------------------------|
| Yes                                 | No                                  | N/A                                 |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

- (\*) PROBLEM CHAIN FORM NEEDED
- Custody Seals (circle): Present / Absent
  - Samples / Coolers
  - Intact / Broken\*
  - Method of Shipment & Tracking # (if applicable):
  - (\*\*) OEC Preservative ID: HNO3
  - Dissolved Metals Filtration: (Date/Init/Preserve.ID): 6/9/15

### CONTAINERS, COC CHANGES AND/OR CORRECTIONS

### CHANGES AUTHORIZED BY:

OEC ID	Client ID *** (if blank, refer to COC)	Container Description	Preservative	ResCl / pH	Matrix	Date/Time Sampled ***	Comments / Remarks / Condition Notes, Etc.
1-4 A-B		2-1L Amber ea	-	-			
1-4 C-P		4-1L poly ea	-	-			1-4 P Dawn
1-4 H		2-250 mL poly	HNO3	7**			1-4 H Dawn
3H		1 ↓	↓	↓			
2-4 C-H		2-250 mL poly ea	HNO3	2			
3G		1 ↓	↓	↓			
1-3-4 I-K		3-400 mL VOA's a	HCl	-			
2-1-J		2-400 mL VOA's	HCl	-			

RECEIPT LOGIN BY: [Signature]

RECEIPT REVIEWED BY: [Signature]



# PROBLEM CHAIN

CLIENT: K Boil Gas.

OEC ID #: 150 2448

ISSUES RECORDED BY (DATE/TIME/INITIALS): 6/9/15/1750/GSH

**ISSUE(S):** PLEASE PROVIDE DETAILS OF ISSUE(S) BELOW - Samples/Containers Affected, as necessary.

Samples Received Outside Temp. Range (see below)    
 NO COC document(s) received with samples    
 Container(s) NOT intact or in good condition  
 Incorrect containers for analysis requested    
 Container label(s) NOT consistent with COC    
 Custody Seals Broken  
 OTHER: (if multiple, identify with numbers)

① 150 2448 - 2I and 2J Have Head space  
150 2448 - 1I, 1J, and 1K Have Headspace

② containers 1G, 1H, and 3H out of pH range

**RESOLUTIONS:** MINIMUM INFO: Issue#[if necessary] - Description - Contact Type (Verbal, email, etc.) - Client Authorization Contact - Date/Time/Initials

① Marked "x" on containers with Head space for analyst

② added 1.0 mL of concentrated HNO<sub>3</sub> (4690185) to each container to bring pH < 2

FINAL RESOLUTION OF ISSUES BY (DATE/TIME/INITIALS): 6/11/15/1754/GSH



Oilfield Environmental & Compliance, Inc.

307 Roemer Way, Suite 300, Santa Maria, Ca 93454

101 Adkisson Way, Taft, Ca 93268

Phone: 805-922-4772 / 661-762-9143

AR@oecusa.com

Date: 06/09/15

Employee Name: Brandon Ganster

Client Name: K&B Oil

Project / Site Name: RWQCIB Testing

Roundtrip Drive Time: 80 min / hr 10 min

Roundtrip Drive Mileage: 56

Start Field Time: 0800

Stop Field Time: 0950

Start Field Mileage: 109534

Stop Field Mileage: 109506

Consumables:

Description / Comment:

Collected (4) PW samples for Sec. 13267 Order testing. Sample locations provided by operator (Tom)

Admin Use:

Name:

Initials:

Date:

Total Drive Time:

Total Field Time:

Total Drive Mileage:

Total Field Mileage:

TICKET NO. 3624

## ATTACHMENT B

### Water Quality Analysis

Wastewater samples collected from the ponds shall be analyzed by a laboratory certified by the Environmental Laboratory Accreditation Program using currently applicable United States Environmental Protection Agency-approved analytical methods for water for the following:

- A. Total dissolved solids;
- B. Metals listed in California Code of Regulations, title 22, section 66261.24. subdivision (a)(2)(A);
- C. Benzene, toluene, ethylbenzene, and xylenes;
- D. Total petroleum hydrocarbons as crude oil;
- E. Polynuclear aromatic hydrocarbons (including acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, chrysene, dibenzo[a,h]anthracene, fluoranthene, fluorine, indeno[1,2,3-cd]pyrene, naphthalene, phenanthrene, and pyrene);
- F. Radionuclides listed under California Code of Regulations, title 22, Table 64442;
- G. Major and minor cations (including sodium, potassium, magnesium, and calcium);
- H. Major and minor anions (including nitrate, chloride, sulfate, carbonate, bicarbonate, and bromide);
- I. Trace elements (including lithium, strontium, boron, iron, and manganese).

### Reporting Requirements

Water Quality information shall be submitted in a technical report that includes at a minimum:

- A. Site plan(s) with the location(s) of where the samples were collected;
- B. A description of how the samples, representative of the pond contents, were collected;

Table(s) of analytical results organized by pond number with the data also submitted electronically as an Excel spreadsheet.

**ATTACHMENT 3.**

**ASSESSOR'S PARCEL MAPS AND PROPERTY OWNERSHIP DATA SHEETS**





**Search Results**

Search Parcel Map More Actions Print Logout

**Property Description for 098-141-09-6 - Secured**

**Parcel Number** 098-141-09-6  
**Tax Number** 098-141-09-00-8  
**Owner Name** BEARD KENNITH C & PATRICIA J

**Mailing Address**  
P O BOX 42108  
BAKERSFIELD CA 93304  
**Situs Address**  
8962 LOKERN W RD  
BUTTONWILLOW

**Tax Rate Area**  
058-000 - BELRIDGE

**Use Code**  
5000 - UNDEVELOPED LAND >20AC MT/DES

**Roll Type** 1 - Secured

**Legal Acres - Lot Sq. Ft.**  
63.00 acres - 2,671,228.50 sq. ft. (approx.)

**Width x Length - Lat/Lon**  
2,253.50 x 1,947.00 - 35.3995/-119.7541

**Legal Description**  
SECTION 18 , TOWNSHIP 29 , RANGE 21, QUARTER  
**Unformatted Legal**  
\*NW1/4 OF SE1/4 OF SE1/4-SW1/4 OF SE1/4 OF

**Ag Preserve** No  
**Prop. 8 Date** No Prop. 8  
**Supervisorial District** 4 - David Couch

**Map**

Map Data Terms of Use

Assessed Values Permits Characteristics Current Bills

**Assessed Value**

**Anticipated Assessment for next Lien Date**

Land	30,851
Improvement	0
Other Improvements	0
Personal Property	0
Mineral	0
<b>Total Assessed Value</b>	30,851
Exemption	(0)
<b>Net Assessed Value</b>	30,851

All data is sourced from public documents and is deemed accurate but is not guaranteed





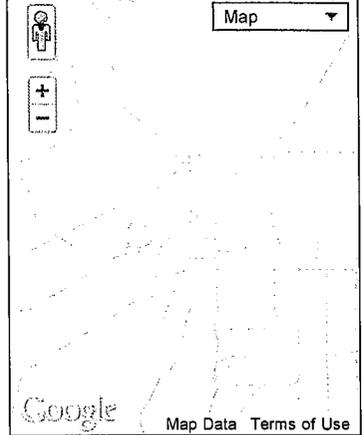
**Search Results**

**Property Description for 098-141-10-4 - Secured**

**Map**

Parcel Number 098-141-10-4  
 Tax Number 098-141-10-00-0  
 Owner Name BEARD KENNITH C & PATRICIA J  
**Tax Rate Area**  
 058-000 - BELRIDGE  
**Use Code**  
 0080 - VAC 7-20 AC NO R2 3 4 COMM IND  
**Roll Type 1 - Secured**  
**Legal Acres - Lot Sq. Ft.**  
 16.64 acres - 764,610.06 sq. ft. (approx.)  
**Width x Length - Lat/Lon**  
 707.00 x 1,301.00 - 35.3994/-119.7499

**Mailing Address**  
 P O BOX 42108  
 BAKERSFIELD CA 93304  
**Situs Address**  
 No Situs Available  
**Legal Description**  
 SECTION 18 , TOWNSHIP 29 , RANGE 21, QUARTER  
**Unformatted Legal**  
 \*NE1/4 OF SE1/4 OF SE1/4-E 440FT OF SE1/4  
**Ag Preserve No**  
**Prop. 8 Date** No Prop. 8  
**Supervisorial District 4 - David Couch**



Assessed Values Permits Characteristics Current Bills

**Assessed Value**

**Anticipated Assessment for next Lien Date**

Land	8,109
Improvement	0
Other Improvements	0
Personal Property	0
Mineral	0
<b>Total Assessed Value</b>	<b>8,109</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>8,109</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed





**Search Results**

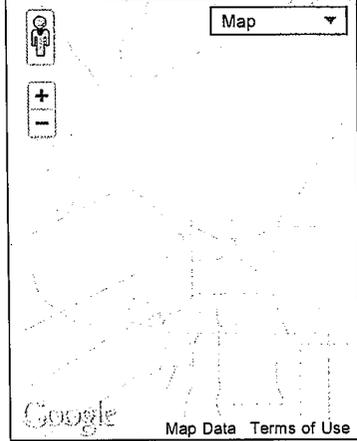
Search Parcel Map More Actions Print Logout

**Property Description for 098-141-11-2 - Secured**

**Map**

Parcel Number 098-141-11-2  
 Tax Number 098-141-11-00-3  
 Owner Name BEARD KENNITH C & PATRICIA J  
 Tax Rate Area  
 058-000 - BELRIDGE  
 Use Code  
 4400 - GRAZING OR DRY FARM LAND  
 Roll Type 1 - Secured  
 Legal Acres - Lot Sq. Ft.  
 3.32 acres - 169,258.14 sq. ft. (approx.)  
 Width x Length - Lat/Lon  
 695.50 x 257.75 - 35.4025/-119.7501

Mailing Address  
 P O BOX 42108  
 BAKERSFIELD CA 93304  
 Situs Address  
 No Situs Available  
 Legal Description  
 SECTION 18 , TOWNSHIP 29 , RANGE 21, QUARTER  
**Unformatted Legal**  
 \*PTN EXCL MR  
 Ag Preserve No  
 Prop. 8 Date No Prop. 8  
 Supervisorial District 4 - David Couch



Assessed Values Characteristics Current Bills

**Assessed Value**

**Anticipated Assessment for next Lien Date**

Land	1,607
Improvement	0
Other Improvements	0
Personal Property	0
Mineral	0
<b>Total Assessed Value</b>	<b>1,607</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>1,607</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed





**Search Results**

Search Parcel Map More Actions Print Logout

**Property Description for 098-141-12-0 - Secured**

**Map**

Map

Google Map Data Terms of Use

**Parcel Number** 098-141-12-0

**Tax Number** 098-141-12-00-6

**Owner Name** BEARD KENNITH C & PATRICIA J

**Tax Rate Area**  
058-000 - BELRIDGE

**Use Code**  
4400 - GRAZING OR DRY FARM LAND

**Roll Type** 1 - Secured

**Legal Acres - Lot Sq. Ft.**  
70.00 acres - 3,106,898.75 sq. ft. (approx.)

**Width x Length - Lat/Lon**  
2,734.50 x 1,969.75 - 35.4027/-119.7543

**Mailing Address**  
P O BOX 42108  
BAKERSFIELD CA 93304

**Situs Address**  
No Situs Available

**Legal Description**  
SECTION 18 , TOWNSHIP 29 , RANGE 21, QUARTER  
**Unformatted Legal**  
\*N1/2 OF NE1/4 OF SE1/4-SW1/4 OF NE1/4 OF

**Ag Preserve** No

**Prop. 8 Date** No Prop. 8

**Supervisorial District** 4 - David Couch

Assessed Values Characteristics Current Bills

**Assessed Value**

**Anticipated Assessment for next Lien Date**

Land	34,085
Improvement	0
Other Improvements	0
Personal Property	0
Mineral	0
<b>Total Assessed Value</b>	<b>34,085</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>34,085</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed

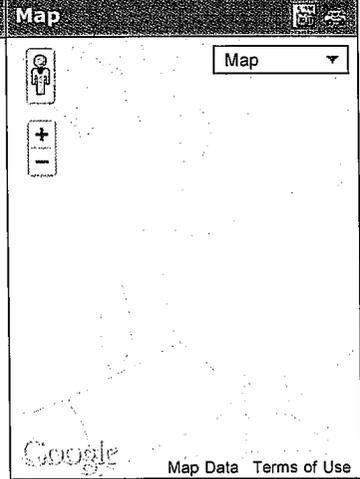




**Search Results**

**Property Description for 098-141-13-8 - Secured**

**Map**



Map

Google Map Data Terms of Use

**Parcel Number** 098-141-13-8  
**Tax Number** 098-141-13-01-8  
**Owner Name** POPPINO STEPHEN L

**Mailing Address**  
 2036 SHERRY DR  
 TWIN FALLS ID 83301-7022

**Situs Address**  
 No Situs Available

**Legal Description**  
 SECTION 18 , TOWNSHIP 29 , RANGE 21, QUARTER  
**Unformatted Legal**  
 \*UND 1/8 INT S1/2 OF NE1/4-NE1/4 OF NE1/4

**Ag Preserve** No

**Prop. 8 Date** No Prop. 8

**Supervisorial District** 4 - David Couch

**Tax Rate Area**  
 058-000 - BELRIDGE

**Use Code**  
 5000 - UNDEVELOPED LAND >20AC MT/DES

**Roll Type** 1 - Secured

**Legal Acres - Lot Sq. Ft.**  
 120.00 acres - 5,308,284.50 sq. ft. (approx.)

**Width x Length - Lat/Lon**  
 2,714.50 x 2,672.25 - 35.4076/-119.7528

- Assessed Values
- Documents
- Documents By Name
- Characteristics
- Current Bills

Assessed Value	
Anticipated Assessment for next Lien Date	
Land	721
Improvement	0
Other Improvements	0
Personal Property	0
Mineral	0
<b>Total Assessed Value</b>	721
Exemption	(0)
<b>Net Assessed Value</b>	721

All data is sourced from public documents and is deemed accurate but is not guaranteed





**Search Results**

Search Parcel Map More Actions Print Logout

<b>Property Description for 098-141-41-9 - Producing Mineral</b>		<b>Map</b>
<p><b>Parcel Number</b> 098-141-41-9</p> <p><b>Tax Number</b> 098-141-41-00-0</p> <p><b>Owner Name</b> KB OIL &amp; GAS</p> <p><b>Tax Rate Area</b> 058-000 - BELRIDGE</p> <p><b>Use Code</b> 8201 - PRODUCTIVE MINERAL RIGHTS</p> <p><b>Roll Type</b> 2 - Producing Mineral</p> <p><b>Legal Acres - Lot Sq. Ft.</b> 0.00 acres - 0.00 sq. ft. (approx.)</p> <p><b>Width x Length - Lat/Lon</b> 0.00 x 0.00 - 0.0000/ 0.0000</p>	<p><b>Mailing Address</b> P O BOX 42108 BAKERSFIELD CA 93304</p> <p><b>Situs Address</b> No Situs Available</p> <p><b>Legal Description</b> SECTION 18 , TOWNSHIP 29 , RANGE 21, QUARTER</p> <p><b>Ag Preserve</b> No</p> <p><b>Prop. 8 Date</b> No Prop. 8</p> <p><b>Supervisorial District</b> 4 - David Couch</p>	<p>Map not currently available for this parcel...</p>

Assessed Values Documents By Name Characteristics Current Bills

Assessed Value	
Anticipated Assessment for next Lien Date	
Land	14,459
Improvement	6,266
Other Improvements	69,383
Personal Property	0
Mineral	1,301,333
<b>Total Assessed Value</b>	<b>1,391,441</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>1,391,441</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed





**Search Results**

Search Parcel Map More Actions Print Logout

**Property Description for 098-141-42-7 - Producing Mineral**

**Map**

**Parcel Number** 098-141-42-7  
**Tax Number** 098-141-42-00-3  
**Owner Name** KB OIL & GAS

**Mailing Address**  
 P O BOX 42108  
 BAKERSFIELD CA 93304  
**Situs Address**  
 No Situs Available

**Tax Rate Area**  
 058-000 - BELRIDGE  
**Use Code**  
 8201 - PRODUCTIVE MINERAL RIGHTS

**Legal Description**  
 SECTION 18 , TOWNSHIP 29 , RANGE 21, QUARTER

**Roll Type** 2 - Producing Mineral

**Ag Preserve** No

**Legal Acres - Lot Sq. Ft.**  
 0.00 acres - 0.00 sq. ft. (approx.)

**Prop. 8 Date** No Prop. 8

**Supervisorial District** 4 - David Couch

**Width x Length - Lat/Lon**  
 0.00 x 0.00 - 0.0000/ 0.0000

Map not currently available for this parcel...

Assessed Values Documents Documents By Name Characteristics Current Bills

**Assessed Value**

**Anticipated Assessment for next Lien Date**

Land	3,288
Improvement	4,482
Other Improvements	0
Personal Property	0
Mineral	2,609
<b>Total Assessed Value</b>	<b>10,379</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>10,379</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed





### Search Results

Search 
 Parcel Map 
 More Actions 
 Print 
 Logout

**Property Description for 098-141-43-5 - Producing Mineral**

**Map**

**Parcel Number** 098-141-43-5  
**Tax Number** 098-141-43-00-6  
**Owner Name** KB OIL & GAS

**Mailing Address**  
 P O BOX 42108  
 BAKERSFIELD CA 93304  
**Situs Address**  
 No Situs Available

**Tax Rate Area**  
 058-000 - BELRIDGE  
**Use Code**  
 8201 - PRODUCTIVE MINERAL RIGHTS  
**Roll Type** 2 - Producing Mineral

**Legal Description**  
 SECTION 18 , TOWNSHIP 29 , RANGE 21, QUARTER

**Ag Preserve** No  
**Prop. 8 Date** No Prop. 8

**Legal Acres - Lot Sq. Ft.**  
 0.00 acres - 0.00 sq. ft. (approx.)

**Supervisorial District** 4 - David Couch

**Width x Length - Lat/Lon**  
 0.00 x 0.00 - 0.0000/ 0.0000

Map not currently available for this parcel...

[Assessed Values](#) | 
 [Documents By Name](#) | 
 [Characteristics](#) | 
 [Current Bills](#)

**Assessed Value**

**Anticipated Assessment for next Lien Date**

Land	3,978
Improvement	1,734
Other Improvements	0
Personal Property	0
Mineral	306
<b>Total Assessed Value</b>	<b>6,018</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>6,018</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed





**Search Results**

Search Parcel Map More Actions Print Logout

Property Description for 098-141-44-3 - Producing Mineral		Map
<p><b>Parcel Number</b> 098-141-44-3</p> <p><b>Tax Number</b> 098-141-44-00-9</p> <p><b>Owner Name</b> KB OIL &amp; GAS</p> <p><b>Tax Rate Area</b> 058-000 - BELRIDGE</p> <p><b>Use Code</b> 8201 - PRODUCTIVE MINERAL RIGHTS</p> <p><b>Roll Type</b> 2 - Producing Mineral</p> <p><b>Legal Acres - Lot Sq. Ft.</b> 0.00 acres - 0.00 sq. ft. (approx.)</p> <p><b>Width x Length - Lat/Lon</b> 0.00 x 0.00 - 0.0000/ 0.0000</p>	<p><b>Mailing Address</b> P O BOX 42108 BAKERSFIELD CA 93304</p> <p><b>Situs Address</b> No Situs Available</p> <p><b>Legal Description</b> SECTION 18 , TOWNSHIP 29 , RANGE 21, QUARTER</p> <p><b>Ag Preserve</b> No</p> <p><b>Prop. 8 Date</b> No Prop. 8</p> <p><b>Supervisory District</b> 4 - David Couch</p>	<p>Map not currently available for this parcel...</p>

Assessed Values Documents Documents By Name Characteristics Current Bills

Assessed Value	
Anticipated Assessment for next Lien Date	
Land	14,824
Improvement	15,545
Other Improvements	22,959
Personal Property	0
Mineral	348,642
<b>Total Assessed Value</b>	<b>401,970</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>401,970</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed





### Search Results

Search Parcel Map More Actions Print Logout

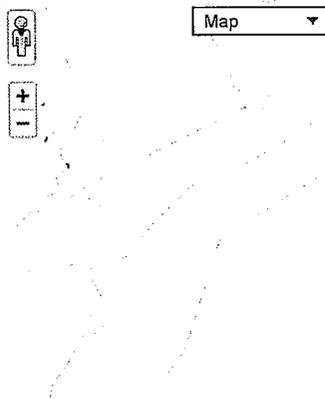
#### Property Description for 098-142-51-6 - Secured

**Parcel Number** 098-142-51-6  
**Tax Number** 098-142-51-00-6  
**Owner Name** TWISSELMAN CARL F II & MARTHA M  
**Tax Rate Area**  
 058-000 - BELRIDGE  
**Use Code**  
 4400 - GRAZING OR DRY FARM LAND  
**Roll Type** 1 - Secured  
**Legal Acres - Lot Sq. Ft.**  
 340.44 acres - 14,607,414.00 sq. ft. (approx.)  
**Width x Length - Lat/Lon**  
 2,762.50 x 7,893.75 - 35.3934/-119.7616

**Mailing Address**  
 9501 LOKERN W RD  
 MC KITTRICK CA 93251  
**Situs Address**  
 KERN COUNTY  
**Legal Description**  
 SECTION 19 , TOWNSHIP 29 , RANGE 21, QUARTER  
**Ag Preserve** Yes  
**Prop. 8 Date** No Prop. 8  
**Supervisorial District** 4 - David Couch

Map

Map



Google Map Data Terms of Use

Assessed Values Characteristics Current Bills

#### Assessed Value

##### Anticipated Assessment for next Lien Date

Land	9,674
Improvement	0
Other Improvements	0
Personal Property	0
Mineral	0
<b>Total Assessed Value</b>	<b>9,674</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>9,674</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed





**Search Results**

Search Parcel Map More Actions Print Logout

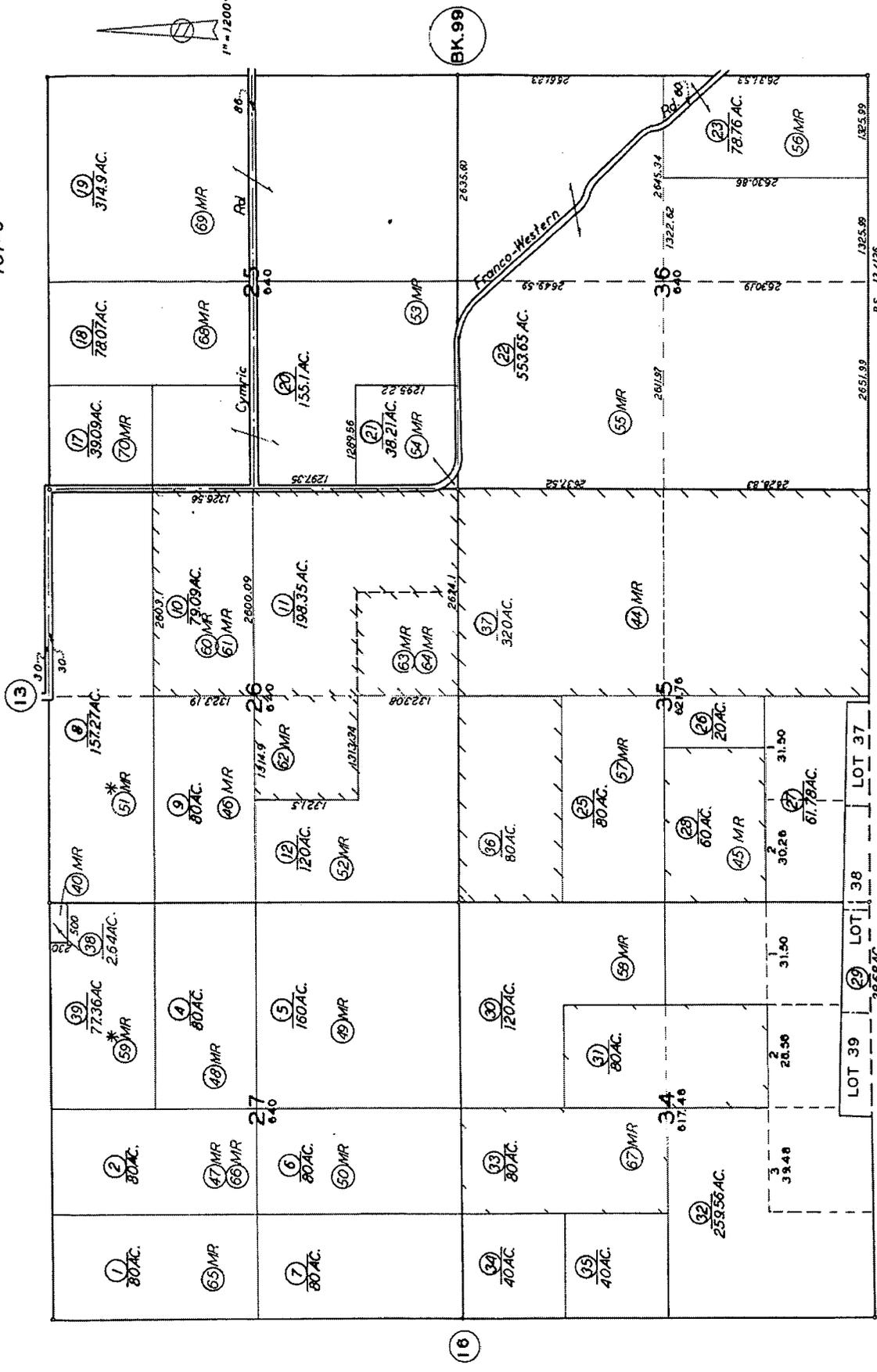
Property Description for 098-142-30-0 - Producing Mineral		Map
<p><b>Parcel Number</b> 098-142-30-0</p> <p><b>Tax Number</b> 098-142-30-00-5</p> <p><b>Owner Name</b> BEARD KENNETH C</p> <p><b>Tax Rate Area</b> 058-000 - BELRIDGE</p> <p><b>Use Code</b> 8201 - PRODUCTIVE MINERAL RIGHTS</p> <p><b>Roll Type</b> 2 - Producing Mineral</p> <p><b>Legal Acres - Lot Sq. Ft.</b> 0.00 acres - 0.00 sq. ft. (approx.)</p> <p><b>Width x Length - Lat/Lon</b> 0.00 x 0.00 - 0.0000/ 0.0000</p>	<p><b>Mailing Address</b> P O BOX 42108 BAKERSFIELD CA 93304</p> <p><b>Situs Address</b> No Situs Available</p> <p><b>Legal Description</b> SECTION 19 , TOWNSHIP 29 , RANGE 21, QUARTER</p> <p><b>Ag Preserve</b> No</p> <p><b>Prop. 8 Date</b> No Prop. 8</p> <p><b>Supervisory District</b> 4 - David Couch</p>	<p>Map not currently available for this parcel...</p>

Assessed Values Characteristics Current Bills

Assessed Value	
Anticipated Assessment for next Lien Date	
Land	12,304
Improvement	5,232
Other Improvements	1,724
Personal Property	0
Mineral	5,656
<b>Total Assessed Value</b>	<b>24,916</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>24,916</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed





Note: This map is for assessment purposes only. It is not to be construed as purporting legal ownership or divisions of land for purposes of zoning or subdivision law.

BK.156

ASSESSORS MAP NO. 98-15  
COUNTY OF KERN



**Search Results**

Search Parcel Map More Actions Print Logout

**Property Description for 098-150-28-7 - Secured**

**Map**

**Parcel Number** 098-150-28-7  
**Tax Number** 098-150-28-01-8  
**Owner Name** HOUSEHOLDER HAROLD & DEANNA FAM TRUST  
**Tax Rate Area** 101-006 - MC KITTRICK  
**Use Code** 5000 - UNDEVELOPED LAND >20AC MT/DES  
**Roll Type** 1 - Secured  
**Legal Acres - Lot Sq. Ft.** 60.00 acres - 2,478,998.50 sq. ft. (approx.)  
**Width x Length - Lat/Lon** 1,996.00 x 1,272.75 - 35.3595/-119.6925

**Mailing Address** 1453 SCOTT W AV FRESNO CA 93711-3006  
**Situs Address** No Situs Available  
**Legal Description** SECTION 35 , TOWNSHIP 29 , RANGE 21, QUARTER  
**Unformatted Legal** \*UND 1/2 INT NW1/4 OF SW1/4-W1/2 OF NE1/4  
**Ag Preserve** No  
**Prop. 8 Date** No Prop. 8  
**Supervisorial District** 4 - David Couch

Assessed Values Documents Characteristics Current Bills

**Assessed Value**

**Anticipated Assessment for next Lien Date**

Land	1,660
Improvement	0
Other Improvements	0
Personal Property	0
Mineral	0
<b>Total Assessed Value</b>	<b>1,660</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>1,660</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed





**Search Results**

Search Parcel Map More Actions Print Logout

Property Description for 098-150-45-1 - Producing Mineral		Map
Parcel Number 098-150-45-1	Mailing Address P O BOX 42108 BAKERSFIELD CA 93304	Map not currently available for this parcel...
Tax Number 098-150-45-00-8	Situs Address No Situs Available	
Owner Name KB OIL & GAS	Legal Description SECTION 35 , TOWNSHIP 29 , RANGE 21, QUARTER	
Tax Rate Area 101-006 - MC KITTRICK	Ag Preserve No	
Use Code 8201 - PRODUCTIVE MINERAL RIGHTS	Prop. 8 Date No Prop. 8	
Roll Type 2 - Producing Mineral	Supervisory District 4 - David Couch	
Legal Acres - Lot Sq. Ft. 0.00 acres - 0.00 sq. ft. (approx.)		
Width x Length - Lat/Lon 0.00 x 0.00 - 0.0000/ 0.0000		

Assessed Values Documents By Name Characteristics Current Bills

Assessed Value	
Anticipated Assessment for next Lien Date	
Land	4,182
Improvement	1,734
Other Improvements	100
Personal Property	0
Mineral	2,040
<b>Total Assessed Value</b>	<b>8,056</b>
Exemption	(0)
<b>Net Assessed Value</b>	<b>8,056</b>

All data is sourced from public documents and is deemed accurate but is not guaranteed

