



**PHASE I
ENVIRONMENTAL SITE ASSESSMENT**

October 30, 2007

For the Property at:
Northeast ¼ Section 19, Township 21 South, Range 18 East, MDB&M
Northern 148 acres of Kings County APN 36-170-032
Avenal, California 93204

TRC Project Number 125155

9301 Oakdale Avenue, Suite 210
Chatsworth, California 91311
(818) 772-0965



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Prepared For:

FEDERAL POWER AVENAL, LLC

Prepared By:

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Assessor's Parcel Map

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- B EDR Topographic Map Report
- C EDR Sanborn Map Report
- D Previous Phase I Report (TRC, 2001)
- E EDR Radius Map with GeoCheck
- F Central Valley RWQCB Records - PG&G Kettleman Compressor Station
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1.0 INTRODUCTION

1.1 STATEMENT OF PURPOSE

TRC performed this Phase I Environmental Site Assessment (ESA) for the property located on the northeast ¼ of Section 19, Township 21 South, Range 18 East, MDB&M, in the City of Avenal, Kings County, California. TRC prepared this report for Federal Power Avenal, LLC (Federal Power) in support of future site development and permitting requirements. The overall purpose of this assessment was to establish environmental conditions at the property based on information collected at the time of the investigation.

TRC performed this Phase I ESA in accordance with the American Society of Testing and Materials (ASTM) Method E 1527-05 (“Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”).

1.2 DETAILED SCOPE OF SERVICES

An environmental professional as defined by the “All Appropriate Inquiries” (AAI) Rule, or someone under his/her supervision, performed this Phase I ESA. The assessment consisted of the following tasks performed within the scope of ASTM E 1527-05:

Current Conditions

1. Visual observations of site conditions and inspection of facility to evaluate the nature and type of activities that have been or are being conducted at the subject property, in terms of the potential for release or threat of release of hazardous substances or petroleum products.
2. Visual inspection of abutting property, as practical from public areas, to evaluate the potential for affecting the subject property.
3. Description of the physical setting of the site
4. Interview with the site representative. Interview with local or state environmental agency representative, as applicable to each case.

Historical Conditions

Review of the following sources of historical use information, as readily accessible:

1. Historical aerial photographs,
2. Topographic maps
3. Sanborn maps,
4. Building department records,
5. City directories.

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6. Review of available data to establish whether an environmental lien has been recorded for the subject property.
7. Review of previous environmental reports provided to TRC, if applicable.
8. Environmental lien search or preliminary title reports, as provided by Client.
9. A chain of title search was not conducted as a component of this Phase I ESA report.

Environmental Agency Review

1. A review of federal, state, tribal and local environmental database information within the ASTM-specified distance from the subject site using a database service to access records. The purpose of this review is to determine potential for impact to the subject property from an off-site source.
2. Review of state and local environmental files pertaining to the subject site, as available at the applicable environmental agencies.

1.2.1 Non-Scope Considerations

ASTM E 1527-05 includes the following list of “additional issues” that are considerations outside the scope of the ASTM Phase I assessment practice: asbestos containing materials, radon, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, bio-agents and mold. None of these “additional issues,” other than asbestos, lead-based paint, mold and radon, were included as components of this Phase I ESA. However, some of these elements may have been completed in support of previous project activities.

1.3 SIGNIFICANT ASSUMPTIONS

TRC has assumed that the information sources utilized for this investigation provide complete and accurate information. Evaluations presented in this report are based exclusively on information provided by Federal Power, the site representative, interviewed personnel, available public records and observations made during the site visit.

1.4 LIMITATIONS AND EXCEPTIONS

TRC completed this Phase I assessment in substantial conformance with the ASTM E 1527-05 standard. In our opinion, no additions to, or deviations from, the ASTM work scope were made in completing this Phase I ESA.

The Phase I ESA is limited in nature and should not be construed to be a characterization of environmental regulatory compliance or of conditions above or below grade. The evaluations presented in this Phase I ESA are based on information provided by Federal Power, interviewed personnel, available site records, readily accessible historical documents and observations made

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during the site reconnaissance. TRC did not independently verify information supplied to TRC from regulatory files reviewed as a component of this investigation.

TRC performed this Phase I ESA in a competent and professional manner in accordance with sound consulting practices and procedures. No warranty is provided regarding the actual site conditions described in this report beyond matters amenable to visual confirmation within the limits of this site assessment program. We make no representation or warranty regarding the accuracy or reliability of information or documents provided by others that are contained or relied on herein.

Data Gaps:

No data gaps were encountered during this Phase I ESA, as defined by ASTM E-1527-05 to identify subject site conditions indicative of releases or threatened releases of hazardous substances and petroleum hydrocarbons. Our opinion is limited by the conditions prevailing at the time our work is performed.

1.5 SPECIAL TERMS AND CONDITIONS

No special terms or conditions were imposed on this Phase I ESA.

1.6 USER RELIANCE

TRC prepared this report for the use of Federal Power. Other than mentioned here, there are no third party rights or benefits conferred under this report. Any use of the contents of this report by any third party, other than those named here, is at the sole risk of that party.

2.0 SITE DESCRIPTION

2.1 LOCATION AND LEGAL DESCRIPTION

This assessment was performed for the property comprising the majority of the northeast ¼ of Section 19, Township 21 South, Range 18 East, MDB&M, in the City of Avenal, Kings County, California (Figure 1). The property is located south of Avenal Cutoff Road and east of the San Luis Canal of the California Aqueduct. The subject property consists of the northeast 148 acres of Kings County Assessor Parcel Number (APN) 36-170-032. In its entirety, the Assessor's Parcel encompasses approximately 608 acres. A copy of the assessor parcel map is provided in the Figure section of this report.

2.2 SITE AND VICINITY GENERAL CHARACTERISTICS

No structures currently exist on the subject property. The property consists of row crop farmland, operated by Kochergen Farms.

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The property is within the City of Avenal. The subject property is zoned by the City of Avenal for industrial use. Surrounding properties consist of farmland (i.e., orchards), the City of Avenal Water Treatment Plant, and the California Aqueduct.

2.3 CURRENT USE OF THE PROPERTY

The property consists of row crop farmland, operated by Kochergen Farms. According to Mr. Mike Kochergen, the subject property is used as an organic, row crop, farm. As of the date of the site inspection performed on October 2, 2007, the most recent crop of wheat had been harvested and the farmland was in a fallow state consisting of wheat stubble and weeds. No buildings or other improvements or structures were observed on the subject property at the time of the site inspection.

2.4 CURRENT USE OF THE ADJOINING PROPERTIES

TRC performed a visual examination of the surrounding area on the same day as the subject property inspection. Observations of surrounding sites were limited to accessible public areas and areas that could be readily observed from the subject property. The names and locations of the immediately adjacent sites are provided in Figure 2.

Agricultural fields, consisting primarily of almond orchards managed by Kochergen Farms surround the property to the north, west and south. North of the property is Avenal Cut-off Road, beyond which are additional farmlands. The City of Avenal Water Treatment Plant is located on the adjoining property to the east. The San Luis Canal of the California Aqueduct is located approximately 200 feet to the northeast of the subject property at its closest point.

2.5 PHYSICAL SETTING

The subject property is located at an elevation of approximately 335 feet above mean sea level (msl), according to the La Cima, California USGS topographic map. Surface topography in the vicinity of the site is nearly flat and slopes gently to the east-northeast from the Kettleman Hills located approximately 2 miles to the southwest of the subject property.

The subject property is located within the southern portion of the San Joaquin Valley, within the Great Valley geomorphic province. Soils in the area consist primarily of non-marine sedimentary deposits of Quaternary alluvium. The area is underlain by unconsolidated to semi-consolidated layers of clay, silt, sand and gravel (Source: TRC, 2001).

The subject property is located within the Tulare Lake drainage Basin, which is an area of internal drainage within the San Joaquin Valley. Previously, surface waters within this basin drained into the Tulare, Buena Vista, or Kern lake beds. By the mid-1900s, surface water was diverted away from these lakes following construction of the Sierran dams and the San Joaquin Valley canal systems. Groundwater in this region reportedly consists of three distinct aquifer zones. The first is unconfined to semi-confined, made up of Recent, Pleistocene, and possibly

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Pliocene age alluvial deposits underlain by the Corcoran Clay. The second aquifer is confined beneath the Corcoran Clay in alluvial lake deposits of Pleistocene age and older. The third aquifer is a saline water aquifer contained in marine sediments of middle Pliocene or older age (TRC, 2001).

Area-specific groundwater information was obtained from the review of records at the Regional Water Quality Control Board for the Pacific Gas & Electric Compressor Station located at 34453 Plymouth Avenue in Avenal, California. Locally, shallow groundwater elevations have reportedly ranged from approximately 50 feet below mean sea level (msl) to 100 feet above msl. Based on the average elevation of the subject property, groundwater is expected to occur at depths ranging from approximately 235 to 385 feet below grade (Alisto Engineering, 1999). The groundwater flow direction in the vicinity of the subject property is reportedly oriented toward the west (Alisto, 2006). Prior to completing construction of the California Aqueduct in 1972, groundwater pumping was more extensive in the area and the local groundwater flow direction was oriented toward the north to northeast (Alisto, 2006).

Groundwater was reported as sodium sulfate type, with field electrical conductivity in the upper unconfined aquifer ranging from 900 to 1,800 microSeimens/centimeter, or approximately 580 to 1,230 mg/L of total dissolved solids (TDS). Alisto reported that due to elevated levels of TDS and objectionable taste, groundwater in this region has not been considered suitable for domestic or potable use (Alisto, 2006).

Additional details regarding groundwater quality are provided in Section 5.2.2.

3.0 USER PROVIDED INFORMATION

No first party information was collected from Federal Power during the completion of this Phase I ESA. However, TRC interviewed Mr. Mike Kochergen, the previous owner of the subject property.

3.1 TITLE RECORDS

A 50-year chain-of title record was not obtained as a component of this Phase I ESA.

3.2 USER QUESTIONNAIRE

A. *Has the user determined that the subject site's Title contains environmental liens or other information related to the environmental condition of the property, including engineering and institutional controls and Activity and Use Limitations (AULs), as defined by the ASTM? (See 40 CFR 312.25 and 312.26.)*

A specific search for environmental liens was not performed for this property. However, based on our research, including the historical and current uses of the property, and the contacted

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environmental agencies, it is unlikely that any environmental lien would have been recorded.

- B. Has the user specialized knowledge about previous ownership or uses of the property that may be material to identify conditions indicative of releases or threatened releases? (See 40 CFR 312.28.)*

A previous Phase I ESA was performed on the subject property in 2001. Details regarding the general findings of the previous Phase 1 ESA are provided in Section 4.6.

- C. Has the user prior knowledge that the price of the subject site has been reduced for environmentally related reasons? (See 40 CFR 312.29.)*

TRC was not made aware of any price reductions as related to environmental conditions.

- D. Is the user aware of commonly known or reasonably ascertainable information about the subject site including whether or not the presence of contamination is likely on the subject site and to what degree it can be detected? (See 40 CFR 312.30 and 312.31.)*

A previous Phase I ESA was performed on the subject property in 2001. Details regarding the general findings of the previous Phase 1 ESA are provided in Section 4.6.

3.3 REASON FOR PERFORMING PHASE I

The purpose of this Phase I ESA is to fulfill the requirement related to Federal Power's application for certification to the California Energy Commission, with respect to determining the potential environmental conditions at the site.

4.0 HISTORICAL INFORMATION

4.1 HISTORICAL USE INFORMATION ON THE PROPERTY

A review of historical information was performed to identify past uses of the subject property and adjacent sites that may pose an environmental concern. TRC reviewed the following sources of information during the course of this investigation:

- Aerial Photographs;
- USGS Topographic Maps;
- Sanborn Maps;
- City of Avenal Building and Safety Department;
- City Directories; and
- Previous Reports

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4.2 AERIAL PHOTOGRAPHS

Aerial photographs are a recommended source of historical research for a Phase I ESA. The general land use can often be discerned from the type and layout of structures visible in an aerial photograph. However, specific elements of a site operation cannot normally be determined from the photographs. With this in mind, TRC reviewed historical aerial photographs obtained from EDR. Aerial photographs were available for the vicinity of the subject property from 1981 to 2002 (see Appendix A). The following is a summary of TRC's observations from the aerial photograph review:

YEAR/ SOURCE	SCALE	COMMENTS
1981/WSA	1" = 690 ft	Avenal Cutoff Road and the California Aqueduct were observed in this photograph. The City of Avenal Water Treatment Plant was observed to the east of the subject property, including the dirt road from Avenal Cutoff Road to the Water Treatment Plant. The subject property and all surrounding area were observed as cultivated fields.
1994/USGS	1" = 666 ft	The subject property was observed as cultivated fields. No significant changes were observed for the surrounding areas except that the area to the north of the subject property (i.e., between the dirt road and Avenal Cutoff Road) had been developed as an almond orchard.
2002/USGS	1" = 666 ft	The subject property was observed as cultivated field. No significant changes were observed for the surrounding areas except the area to the north of Avenal Cutoff Road had been planted as an orchard.

The earliest aerial photographs provided by EDR date to 1981. However, aerial photographs from 1967 and 1973 were reviewed as a component of the previous Phase I ESA performed by TRC (TRC, 2001). These photographs depict conditions that are similar to those observed in the 1981 aerial photograph (i.e., the general area was observed as agricultural fields). The City of Avenal Water Treatment Plant was first observed on the 1973 photograph.

Review of historical aerial photographs from this and previous environmental investigations indicate that the subject property and surrounding area was used for agricultural purposes since some time prior to 1967. The City of Avenal Water Treatment Plant was constructed in the late 1960s or early 1970s. The subject property consisted of a cultivated field in all reviewed photographs. No structures or improvements were observed on the subject property in any of the aerial photographs reviewed.

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4.3 HISTORICAL TOPOGRAPHIC MAPS

TRC reviewed available historic USGS Topographic Quadrangle Maps for information regarding past uses of the property. The following maps were obtained from EDR and reviewed for this Phase I ESA:

- 1912; Coalinga, California; Scale 1: 125,000
- 1930; Cima, California; Scale 1:24,000
- 1934; Cima, California; Scale: 1:31,680;
- 1947; Polvadero Gap, California; Scale: 1:50,000
- 1954; Cima, California; Scale: 1:24,000;
- 1963; Cima, California; Scale: 1:24,000;
- 1971; Cima, California; Scale: 1:24,000;
- 1978; Cima, California; Scale: 1:24,000;

No specific details were evident in the 1912 topographic map. On the 1930 and 1934 maps, no development was indicated at the subject and adjoining areas. The Fresno County/Kings County line was illustrated on these maps. The PG&E plant was indicated about 1.5 miles to the southwest of the subject property. Avenal Cutoff Road was indicated on the 1930 map.

The Avenal Cutoff Road was indicated on the 1947 map, as well as the dirt road immediately north of the subject property. No changes were indicated on the 1954 and 1963 maps. The California Aqueduct was indicated on the 1971 and 1978 maps. Copies of the topographic maps are provided in Appendix B.

4.4 SANBORN MAPS

The Sanborn Mapping and Geographic Information Service began producing maps of industrial areas across the U.S.A. for fire insurance purposes in the 1860's. These maps detail property use, construction of buildings and related fire risks. The Sanborn archives were searched by EDR. However, no maps depicting the subject property or surrounding area were reportedly identified. A copy of the EDR Sanborn Map report is provided in Appendix C.

4.5 CITY OF AVENAL BUILDING AND SAFETY DEPARTMENT

TRC contacted the City of Avenal Building Department to inquire about any records for the property. No records pertaining to the subject property were reportedly identified in the City of Avenal Building Department files. Based on the City of Avenal Zoning map, the subject property is located in an area zoned for industrial use.

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4.6 HISTORICAL CITY DIRECTORIES

Research regarding the availability of historical city directories was ordered from EDR. However, since a street address has not been assigned to any portion of the subject property, no listings would be available.

4.7 PREVIOUS ENVIRONMENTAL REPORTS

TRC reviewed a previous Phase 1 Environmental Site Assessment that was prepared for the subject property:

TRC, 2001: Phase I Environmental Site Assessment for Property at: Northeast ¼ Section 19, Township 21 South, Range 18 East, Avenal, California, August 3.

A portion of this report is provided in Appendix D.

At the time of the site inspection by TRC staff on March 14, 2001, the entire subject property was observed as active agricultural land. TRC indicated that at the time of the site visit, the property was plowed with no vegetation on the majority of the property. No use or storage of hazardous materials was observed. According to interviews performed as a component of this investigation, pesticide use at the property was in accordance with limitations set by the County of Kings Department of the Agricultural Commissioner. The report indicated that according to Mr. Alex Kochergen, pesticide was generally applied by airplane, truck or hand-held sprayer. No mixing or storage of pesticides has reportedly been conducted at the subject property. No other item of environmental significance was found with the subject property.

Historically, the subject property has been used as a cultivated field by the Kochergen family since 1950. Sometime prior to 1950, the subject property is may have been used for livestock grazing.

No regulatory agency file records pertaining to the subject property were identified by any of the regulatory agencies contacted. However, TRC reviewed relevant documents and/or performed interviews for several properties located near or in the general vicinity of the subject property. Additional information regarding these properties is provided in the following paragraphs.

City of Avenal Water Treatment Plant: This plant is located immediately east of the subject property. Chemicals stored are typical for water treatment operations, and included chlorine gas (approximately 6,000 pounds), aluminum sulfate (approximately 9,000 gallons), aluminum chloride hydroxide (approximately 2,100 gallons) and zinc orthophosphate (approximately 1,000 gallons). The water treatment plant treats water obtained from the California Aqueduct for municipal distribution to residents and water users in the City of Avenal. The on-site ponds are used for percolation/evaporation of system backflush water. No releases were reported for this facility. From the description provided in the report, operations are consistent for a small purveyor of drinking water.

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Pacific Gas & Electric (PG&E) Kettleman Compressor Station. TRC also reviewed that files associated with the Pacific Gas & Electric (PG&E) Kettleman Compressor Station, located approximately 1.5 miles southwest of the subject property. TRC updated the records review as a component of this investigation. Details from the updated file review are provided in Section 5.1.2.

The previous Phase 1 ESA concluded that no Recognized Environmental Conditions, as defined by ASTM E-1527, were found for the subject property. No additional investigation or analysis was recommended.

4.8 HISTORICAL USE SUMMARY

The review of the historical records indicated that the general area of the subject property has been used for agricultural purposes. Avenal Cutoff Road appears to have been constructed in the late 1920s. The PG&E Kettleman Compressor Station, located about 1.5 miles to the southwest of the subject property, has been in operation since 1929. The California Aqueduct was first observed in the 1971 topographic map. The City of Avenal Water Treatment Plant, located immediately to the east of the subject property, was constructed in the mid 1970s.

Subject Property: The subject property has been used as a cultivated field by the Kochergen family since 1950. Prior use was indicated as potential sheep grazing land.

5.0 RECORDS REVIEW

5.1 STANDARD ENVIRONMENTAL RECORD SOURCES

Various federal and state regulations require that government agencies maintain records of environmental permits, properties known to be affected by regulated compounds and properties under investigation by the government for alleged violations of hazardous material regulations. TRC contracted EDR, a specialized research firm, to provide an electronic search of such data files with the ASTM-specified minimum distances. A complete copy of the EDR Radius Map report is provided in Appendix E. EDR's report includes a summary table that provides descriptions of the databases searched, the number of sites found in each database, and the approximate distance from each listing to the subject property.

5.1.1 Subject Property

The subject property was not listed on any of the databases reviewed by EDR.

5.1.2 Adjacent Sites

Typically, groundwater would represent the migration medium of potential interest for contaminants that may travel significant distances from an original release source.

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Surrounding properties with known environmental conditions may be of potential concern with regard to contaminant migration if they are located at an upgradient direction with respect to groundwater flow. Releases from sites that are located in cross-gradient or down-gradient directions are less likely to adversely affect the subject property.

Groundwater flow direction is reported in a predominantly western direction. However, local groundwater flow direction may also be influenced by the pumping of agricultural wells. Consequently, the true groundwater flow direction is not known.

Due to the size of the subject property (i.e., approximately 148 acres), the requested database search distances were extended by one mile. The following sites were listed on one or more of the databases searched by EDR:

Kochergen Farms Composting, Avenal Cutoff Road and Omaha Avenue, Avenal. This site is located about $\frac{3}{4}$ of a mile to the west-southwest of the subject property. It was listed on the Landfill database for a permit issued in 2003, allowing composting of green waste material. Based on the type of operation and distance from the subject property, it is unlikely that a release from this site would adversely impact the subject property.

Kochergen Properties: 15485 W. Republic, Huron. According to the EDR report, this site is located approximately 1 mile to the north-northeast of the subject property. This facility was listed on the Landfill and Fresno County CUPA (i.e., local agency) databases. Based on information provided in the EDR report and reviewed as part of the TRC 2001 Phase 1 ESA report, a permit was issued in 1996 for land-farming of food-related waste (i.e., used grease). The EDR database report indicates that landfarming operations stopped in 2003. Based on the type of material applied to land, and distance from the subject property, it is unlikely that the reported activity would have adversely impacted the subject property.

Other Sites: No other sites were reported in the EDR database. Note that based on our review of the 2001 Phase I ESA, the PG&E Compressor Station is located about 1.5 mile to the southwest of the subject property. This site is regulated by the Regional Water Quality Control Board, and the associated file was reviewed at the RWQCB Fresno office. Information regarding this review is summarized in Section 5.2.2.

Unmapped Sites: Unmapped sites were included in the EDR report. However, it appears that the unmapped sites are not located in the general vicinity of the subject property.

5.2 ADDITIONAL ENVIRONMENTAL RECORD SOURCES

The subject property is located within the jurisdiction of the environmental agencies listed below. TRC contacted these agencies for regulatory file information pertaining to the subject property:

- Kings County Department of Environmental Health;

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- California Regional Water Quality Control Board, Central Valley Region;
- California EPA Department of Toxic Substances Control;
- San Joaquin Valley Air Pollution Control District; and
- California Department of Conservation, Division of Oil, Gas & Geothermal Resources.

It should be noted that these agencies maintain file records based on the street addresses assigned to the properties. Since no street addresses have been assigned, no records for the subject property were identified in the regulatory agency files. However, regulatory agency records were obtained for other nearby properties which may potential result in adverse impacts to the subject property.

5.2.1 Kings County Department of Environmental Health

The Kings County Department of Environmental Health (Kings County DEH) is the local agency regulating the use of hazardous materials, management of regulated wastes and management of underground storage tanks (USTs) within the area of the subject property. The Kings County DEH maintains records of these sites based on assigned street addresses. Since no street addresses have been assigned to the subject property, no records pertaining to the subject property were identified in the Kings County DEH files.

5.2.2 California Regional Water Quality Control Board

The subject property is within the boundaries and jurisdiction of the California Regional Water Quality Control Board (CRWQCB) – Central Valley Region. TRC contacted the CRWQCB to determine whether the subject property had any discharge permits or had been investigated with regard to potential violations. The CRWQCB keeps records of the sites with respect to the street address. Since no street addresses have been assigned to the subject property, no records pertaining to the subject property were identified in the CRWQCB files.

TRC reviewed records regarding the Pacific Gas & Electric Kettleman Compressor Station located at 34453 Plymouth Avenue (approximately 1.5 miles to the southeast of the subject property). Documents obtained from the CRWQCB and reviewed as a component of this investigation include:

Alisto, 1998. Alisto Engineering. Groundwater Monitoring and Sampling Report, April 1, to June 30, 1998, Pacific Gas and Electric Company Kettleman Compressor Station, July.

Alisto, 1999. Alisto Engineering. Groundwater Monitoring and Sampling Report 1999, Pacific Gas and Electric Company Kettleman Compressor Station, October.

Waste Discharge Requirements 89-063 and 99-145

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Alisto, 2006: Alisto Engineering. Closure Certification Report, - Class II Surface Impoundments, Pacific Gas and Electric Company Kettleman Compressor Station, January.

Miscellaneous correspondence to and from the CRWQCB.

Facility History

PG&E has operated the Kettleman Compressor Station, a natural gas compressor facility, since 1929. Waste water generated at this PG&E site is derived from cooling tower blowdown and site maintenance activities. Maintenance activities typically include descaling copper-alloy cooling water systems of the main heat exchangers, draining of the closed cooling system and equipment degreasing. All oily wastewater is first drained to a sump and then to an oil-water separator prior to discharge to surface impoundments.

Between 1929 and 1989, PG&E operated five unlined surface impoundments for wastewater disposal. These surface impoundments were subsequently closed in 1994. The discharge was not regulated by waste discharge requirements. The report documenting closure of these impoundments was not part of the documents reviewed by TRC at the RWQCB offices as this document had been archived for offsite storage. Available records reviewed indicate that a chromium-based corrosion inhibitor was added to the cooling tower makeup water between 1959 and 1979.

In 1989, four Class II surface impoundments were constructed for management of the wastewater. Each impoundment consisted of surface dimensions of approximately 450 feet by 175 feet and varied in depth from 9 to 15 feet. The impoundments were triple-lined with HDPE geomembranes and included leachate collection and removal systems (LCRS). The 1999 Waste Discharge Requirements associated with these surface impoundments require that groundwater monitoring be performed if leachate is detected in any of the four lysimeters that surround each pond. No leachate has reportedly been observed in any of the lysimeters. Consequently, no groundwater monitoring has been required for these surface impoundments. In 2005, the four surface impoundments were closed in accordance with a CRWQCB approved closure plan.

In 2002, PG&E upgraded the Kettleman facility by replacing the water-cooled reciprocating engines with air-cooled turbines for natural gas compression. This upgrade eliminated the blow-down water from the cooling towers and only a small quantity of process cooling water is reportedly generated at the site. The RWQCB records indicated that the cooling system water is derived from the City of Avenal water supply and no additives are introduced into the water. The RWQCB approved the use of the process cooling water for landscaping irrigation. The RWQCB indicated that this discharge complies with Resolution No. R5-2003-0008 for the category Air Conditioner, Cooling and Elevated Temperature Water Discharged to Land, and therefore, waste discharge requirements for the wastewater discharged are waived. This waiver expires on January 31, 2008 and will require renewal.

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Groundwater Monitoring

The most recent groundwater monitoring events conducted from the PG&E Kettleman Compressor station were conducted in 1998 and 1999. Quarterly groundwater monitoring and sampling was performed between 1994 and 1998 and one time groundwater monitoring was performed in 1999. The monitored wells included two wells (21S/17E/25-F2 and 25-F3) located on PG&E site near the four former unlined impoundments and four offsite monitoring wells identified below:

- 21S/17E/25-D1
- 21S/17E/25-D2 (located immediately to the north of the PG&E station),
- 21S/17E/24N2 (located north of the PG&E station), and
- 21S/17E/30-P1 (located southeast of the PG&E Station).

The groundwater samples obtained from the six groundwater monitoring wells have been analyzed for total chromium and hexavalent chromium. The Alisto 1998 and 1999 reports summarized the groundwater analysis as follows:

“Review of historical analytical data for groundwater samples collected from the PG&E monitoring wells and selected nearby irrigation water supply wells indicated that hexavalent chromium has not been detected above the method detection limit (MDL) of 0.01 mg/L since April 1994. Total chromium has also not been detected above the MDL or the practical quantitation limit (PQL) of 0.02 mg/L since August 1994.”

The RWQCB concurred with this finding and approved the cessation of the groundwater monitoring program (RWQCB, 1998). In the evaluation of the groundwater monitoring data, RWQCB staff indicated that sporadic detections of chromium at or slightly above the detection limit for the onsite wells was mostly associated with a lack of sample filtration. RWQCB staff also attributed the “detection of chromium near the detection limit” for an offsite well to the same rationale.

Additional groundwater data, specifically chromium concentrations, for the general area of the subject property was obtained from:

Duke Energy Avenal, LLC – Application for Certification California Energy Commission, Responses to January 24, 2002 Data Requests, February.

Response to Data Request No. 81, summarizes the groundwater quality with respect to chromium as follows:

“...Based on review of the Regional Water Quality Control Board’s file on the compressor station, chromium contamination has been decreasing since 1988. Since that time, attenuation mechanisms have reduced the concentration of chromium to below detection

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limits. Exhibit 81-1 provides a summary of relevant data obtained from the Regional Water Quality Control Board's file for the compressor station. As shown in Exhibit 81-1, chromium concentrations have been low for the last 8 years or more, and during the last four years, none of the wells monitored have exhibited detectable chromium."

Copies of selected records are provided in Appendices F and G.

5.2.3 California EPA Department of Toxic Substances Control

The California EPA Department of Toxic Substances Control (DTSC) was contacted to determine whether the subject property had any hazardous waste permits or had been investigated by the DTSC. The DTSC maintains records of these sites based on assigned street addresses. Since no street addresses have been assigned to the subject property, no records pertaining to the subject property were identified in the DTSC files.

5.2.4 San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) regulates the air quality in the area of the subject property. The SJVAPCD maintains records of these sites based on assigned street addresses. Since no street addresses have been assigned to the subject property, no records pertaining to the subject property were identified in the SJVAPCD files.

5.2.5 California Department of Conservation, Division of Oil, Gas

Numerous areas of Southern California produce oil and gas from commercially viable fields. Over the past century, large numbers of commercial development and wildcat exploration wells have been drilled throughout the area. Improperly drilled or abandoned wells present potential hazards from gas seeps and other concerns may exist due to hazardous material handling during well construction.

TRC searched the California Department of Conservation Division of Oil, Gas & Geothermal Resources (DOGG) website (www.consrv.ca.gov) to determine if petroleum exploration activities had occurred in the vicinity of the property. The property is not located within a known oil field and no oil production wells or dry holes were identified in the vicinity of the subject property (Reference: Wildcat Map W5-1). The oil production-related features were two dry holes located approximately 1 mile to the south of the subject property (within Section 30, T21S, R18E, MDB&M).

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6.0 SITE RECONNAISSANCE

6.1 METHODOLOGY AND LIMITING CONDITIONS

TRC performed a visual inspection of the subject property on October 2, 2007. Photographs are presented in Appendix H. Mr. Mike Kochergen, the former property owner, was interviewed as part of the site inspection. No quantitative field activities were conducted during the site inspection for the Phase I ESA.

6.2 GENERAL SITE SETTING

The subject property consists of the northern 148 acres of parcel 36-170-032, located immediately south of a dirt road crossing Avenal Cutoff Road. The City of Avenal Water Treatment Plant and the California Aqueduct are located to the east of the property. Orchards are located to the north, south and west of the property. No structures or visible improvements were observed on the subject property.

6.3 OBSERVATIONS

The following are descriptions of the general observations made during the site reconnaissance at the subject property.

6.3.1 General Observation of Buildings and Site Operations

The subject property consists of cultivated land used for row crops. Mr. Kochergen indicated that the organic farming is currently practiced at the property and that this land will be certified as an organic farm in February 2008. The most recent crop harvested at the site was wheat. As of the date of the site inspection, the wheat crop had been harvested and the overall area contained wheat stubble or was overgrown with weeds. No litter was observed at the subject property. No items of environmental concern, such as stained soils, drums or other containers were observed at the time of the site inspection.

6.3.2 Use of Hazardous Substances and Petroleum Products

No use or storage of hazardous materials or petroleum products was observed at the property at the time of the site inspection. In addition, organic farming is practiced at the subject property, and chemical herbicides or pesticides are no longer applied. Historical applications of herbicides or pesticides include aerial spraying and mechanical and hand spray applications.

6.3.3 Waste Management and Disposal

TRC did not observe the generation of regulated waste at the subject property.

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6.3.4 Hazardous Substance Containers

Underground Storage Tanks

No visual evidence (i.e. pipes, vents, pumps, and stains) indicating the presence of USTs on-site was apparent on the subject property. In addition, historical records review and the regulatory records review did not indicate evidence of the current or historical presence of USTs on the subject property.

Aboveground Storage Tanks

No aboveground storage tanks (ASTs) were observed on the subject property, at the time of the site inspection. In addition, no indication of the current or historical presence of ASTs was identified in the historical records reviewed as a component of this investigation.

Clarifiers and Sumps

No clarifiers or sumps were observed on the subject property at the time of the site inspection. In addition, no indications of the current or historical presence of clarifiers or sumps were observed in regulatory files reviewed as a component of this investigation.

6.3.5 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are industrial chemicals widely used for their heat transfer properties. These substances were used in electrical transformers, hydraulic fluids and electrical equipment such as fluorescent light ballasts. PCBs are stable compounds that persist in the environment after a spill or improper disposal. Since 1978, the use of PCBs has been prohibited in most products. Fluorescent light ballasts manufactured since that time must state that they contain no PCBs. California currently only regulates fluorescent light tube disposal if more than 25 are disposed at any one time.

No electrical equipment suspect of containing PCBs was observed at the subject property at the time of the site inspection.

6.3.6 Asbestos

Asbestos is a naturally occurring fibrous mineral that was extensively used in the past for its insulation qualities. Asbestos fibers may be present in thermal insulation, fireproofing material, vinyl floor tiles, mastic, wallboard, ceiling tiles and a number of other building materials. After asbestos was determined to be carcinogenic, its use was severely restricted in the late 1970's. Building materials are classified as Asbestos Containing Material (ACM) if they contain greater than 1% asbestos. Such material is considered a hazardous material and must be properly disposed when removed.

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No buildings or structures are located at the subject property. Consequently, no suspect ACM building materials were observed on the subject property.

6.3.7 Lead-Based Paint

Since no buildings are located on the subject property, no suspect lead-based paint is present.

6.3.8 Potential Mold Issues

Since no buildings are located on the subject property, potential for mold is not applicable.

6.3.9 Radon

Radon is an odorless, radioactive gas that occurs naturally in soil, rock and building materials and results from the natural radioactive decay of radium and uranium. In outdoor air, concentrations of radon are generally diluted to concentrations that do not pose a significant threat to human health. In enclosed spaces such as homes or offices, and basements, radon may accumulate to concentrations that may pose a human health risk. The concentration of radon indoor air is influenced by factors related to the building construction, ventilation system and concentration of radon in the underlying soil and rock.

The EPA has designated three zones of classification indicating the predicted average indoor screening level of radon per county. Kings County is classified in Zone 3, which indicated a predicted level below 2.0 picoCuries per liter (pCi/l). The EPA has set 4.0 pCi/l as the concentration at which corrective action is recommended. Based on the predicted average concentration, radon is not anticipated to be present at concentrations that warrant additional consideration at the subject property.

6.3.10 Wells

No groundwater monitoring or production wells were identified on the subject property during this investigation.

6.3.11 Other Conditions of Concern

In accord with the ASTM standard, TRC made the following observations:

- TRC observed no evidence of significant staining at the subject property at the time of the site reconnaissance.
- TRC observed no evidence of pits, ponds and/or lagoons at the subject property at the time of the site reconnaissance;
- TRC noted no evidence of strong, pungent or noxious odors on the subject property at the time of the site reconnaissance; and

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- TRC observed no evidence of stressed vegetation at the subject property at the time of the site reconnaissance.

6.4 INTERVIEW WITH OWNER, SITE MANAGER OR OCCUPANTS

For this Phase I ESA, TRC interviewed Mr. Mike Kochergen, of Kochergen Farms, owner of the subject property. Mr. Kochergen indicated that farming operations at the subject property changed to organic type farming, and chemicals are no longer used on the crops. He indicated that organic certification for the subject property will be issued in February 2008.

Mr. Kochergen indicated that the subject property has been farmed by his family since 1950. No storage or mixing of pesticides or herbicides has been conducted at the subject property.

No groundwater wells are located at the subject property. He indicated that Kochergen Farms is allocated canal water for farming operations.

No items of environmental concern were identified during the interview process.

6.5 INTERVIEW WITH LOCAL GOVERNMENT OFFICIALS

No open regulatory issues were identified for the subject property during this Phase 1 ESA. Consequently, no local government officials were interviewed.

6.6 INTERVIEW WITH OTHERS

With the exception of the interview summarized in Section 6.4, no other individuals were interviewed as a component of this investigation.

7.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 SUMMARY

TRC performed this Phase I ESA in conformance with the scope and limitations of ASTM E1527-05 for the subject property comprising the majority of the northeast ¼ of Section 19, Township 21 South, Range 18 East, MDB&M, in the City of Avenal, Kings County, California. The following is a summary of our findings from this and previous investigation activities:

- The subject property is located south of Avenal Cutoff Road, west of the San Luis Canal of the California Aqueduct. The subject property consists of the northeast 148 acres of Kings County Assessor Parcel Number (APN) 36-170-032. The overall parcel encompasses approximately 608 acres within the City of Avenal, California. The subject property is currently zoned by the City of Avenal for industrial use. Surrounding properties consist of farmland (orchards), the City of Avenal Water Treatment Plant, and the California Aqueduct.

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- The review of the historical records indicated that the general area of the subject property has been used for agricultural purposes. Avenal Cutoff Road appears to have been constructed in the late 1920s. The PG&E Kettleman Compressor Station, located about 1.5 miles to the southwest of the subject property, has been in operation since 1929. The California Aqueduct was first observed in 1971 topographic map. The City of Avenal Water Treatment Plant, immediately to the east of the subject property, was constructed in the mid 1970s.

The subject property has been used as a cultivated field by the Kochergen family since 1950. Prior to 1950, the subject property may have been used for livestock grazing.

- The property consists of row crop farmland, operated by Kochergen Farms. According to Mr. Mike Kochergen, the subject property is used as an organic, row crop, farm. The last wheat crop had already been harvested at the time of the site inspection conducted on October 2, 2007. At the time of the site inspection, the overall field consisted of wheat stubble, overgrown with weeds. No buildings or other improvements were observed on the subject property at the time of the site inspection.
- No use or storage of hazardous materials or petroleum products was observed at the property at the time of the site inspection. In addition, organic farming is practiced at the subject property, and chemical herbicides or pesticides are no longer applied.
- TRC did not observe the generation of regulated waste at the subject property.
- No underground storage tanks, aboveground storage tanks, clarifiers or sumps were observed on the subject property at the time of the site inspection. In addition, no evidence of the historical presence of these features was identified in the regulatory agency files reviewed as a component of this investigation.
- The PG&E Kettleman Compressor Station (PG&E site) is located at 34453 Plymouth Avenue, approximately 1.5 miles to the southwest of the subject property. Regulatory agency records reviewed as a component of this investigation indicate that a chromium-based corrosion inhibitor was added to the cooling tower makeup water between 1959 and 1979. Process wastewater, consisting primarily of cooling tower blowdown, was previously discharged to unlined ponds. Groundwater monitoring was performed to evaluate the concentrations of chromium in groundwater associated with the discharge of cooling tower blowdown to the former unlined ponds. In 1998, the CRWQCB approved cessation of the groundwater monitoring program.
- Based on the environmental records reviewed during this investigation, there is a low likelihood that the subject property has been affected by activities and/or releases of hazardous substances from other offsite sources or surrounding properties.

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7.2 CONCLUSIONS AND RECOMMENDATIONS

TRC performed this Phase I ESA in conformance with the scope and limitations of ASTM E1527-05 for the subject property located at located at the northeast ¼ of Section 19, Township 21 South, Range 18 East, MDB&M, in the City of Avenal, Kings County, California. The subject property consists of the northeast 148 acres of Kings County Assessor Parcel Number (APN) 36-170-032. Any exceptions to, or deletions from, this standard are described in **Section 8.0** of this report.

A “recognized environmental condition” (REC) is defined by ASTM as the “presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.” A “historical recognized environmental condition” (HREC) is defined by ASTM as an “environmental condition which in the past would have been considered a recognized environmental condition, but which may or may not be considered a recognized environmental condition currently.”

TRC’s assessment revealed no evidence classified as a REC or a HREC associated with the subject property. No further investigation or analysis is recommended at this time.

8.0 DEVIATIONS

TRC has performed a Phase I ESA in conformance with the scope and limitations of ASTM E1527-05. There were no exceptions to, or deletions, from this method during performance of the Phase I ESA.

9.0 ADDITIONAL SERVICES

No additional services were provided as a component of this evaluation.

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10.0 REFERENCES

Avenal, City of, Department of Building and Safety, 2007, records review, October 2007.

California Environmental Protection Agency Department of Toxic Substances Control, telecon, September 2007.

California Regional Water Quality Control Board, Central Valley Region, records review, October 2007.

Environmental Data Resources, Incorporated (EDR), Aerial Photography Print Service, Inquiry No. 2041704.5, October 2, 2007.

EDR, 2007, Radius Map with Geotcheck Report, Inquiry No. 2041704.1s, October 1, 2007.

EDR, 2006, Sanborn Map Report, Inquiry No. 2041704.3s, October 1, 2007.

EDR, 2006, Topographic Map Report, Inquiry No. 2041704.4, October 1, 2007.

Kings County, Department of Environmental Health, telecon, 2007.

San Joaquin Valley Air Pollution Control District, telecon, 2007.

Alisto, 1999: Groundwater Monitoring and Sampling Report 1999, Pacific Gas and Electric Company Kettleman Compressor Station, October

Alisto, 2006: Closure Certification Report, - Class II Surface Impoundments, Pacific Gas and Electric Company Kettleman Compressor Station, January

Duke Energy Avenal, LLC – Application for Certification California Energy Commission, Responses to January 24, 2002 Data Requests, February

TRC, 2001: Phase I Environmental Site Assessment for Property at: Northeast ¼ Section 19, Township 21 South, Range 18 East, Avenal, California, August 3.

Various referenced reports

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11.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

TRC's program manager for this assignment was Mr. J. Todd Stanford. Mr. Stanford is a Principal Scientist with TRC. Mr. Stanford has been a State of California Registered Environmental Assessor (REA) since 1991, and has more than 18 years of environmental consulting experience. In his career, Mr. Stanford has prepared and reviewed hundreds of environmental due diligence evaluations including Phase I ESAs and Environmental Transaction Screen reports for property transactions. In addition, Mr. Stanford has performed environmental assessment and remediation of several hundred environmentally impacted properties throughout the United States.

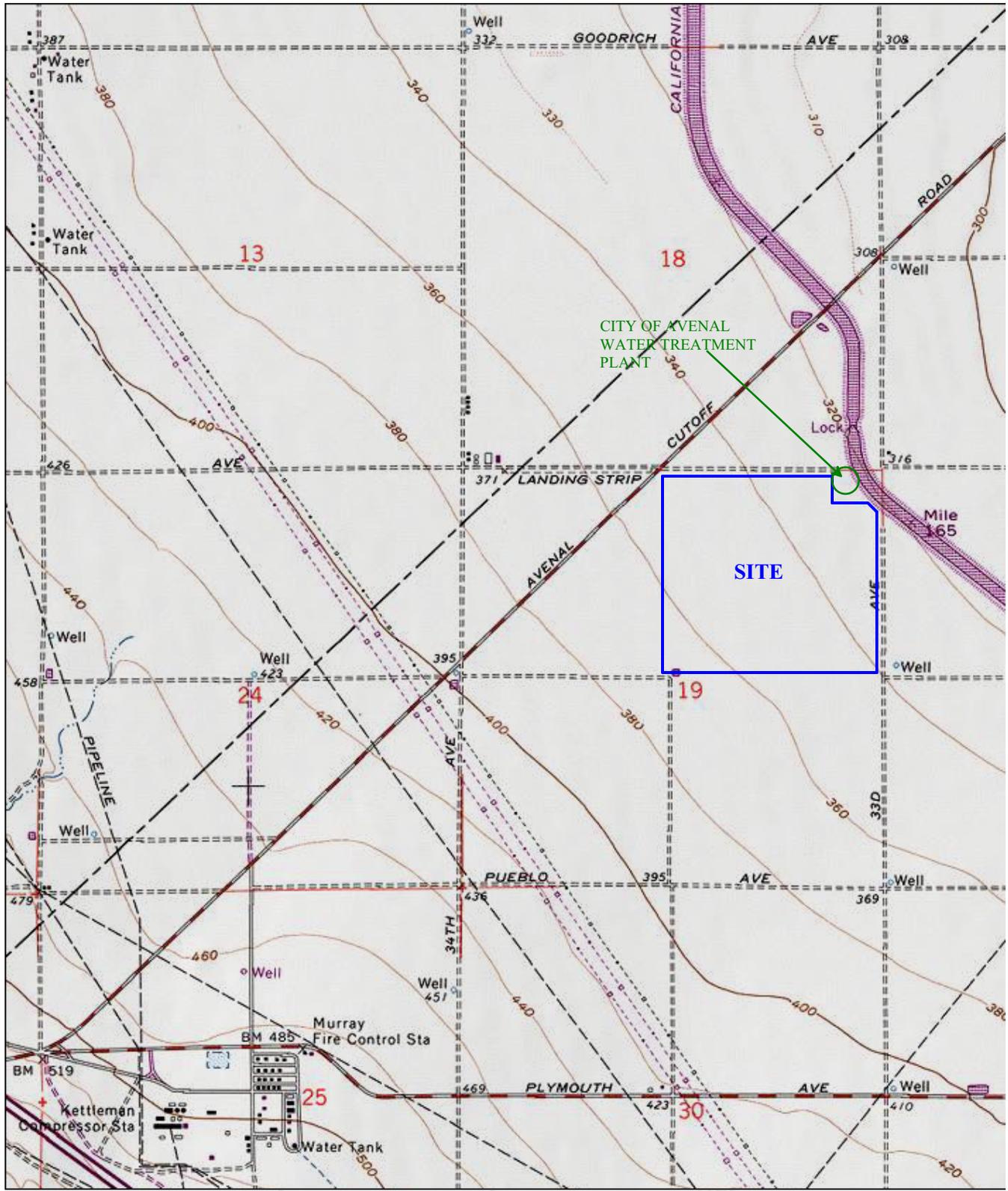
The site inspector and principal report author was Ms. Carole Missirlian, P.E. Ms. Missirlian has 18 years of experience, including performing hundreds of Phase I ESAs, Environmental Transaction Screen reports and similar environmental assessments of commercial, industrial, and residential buildings and of vacant lands. Ms. Missirlian has extensive experience in conducting remedial investigations and providing analysis of site-specific environmental regulatory issues. She is a State of California Professional Engineer (Civil) and a State of California REA.

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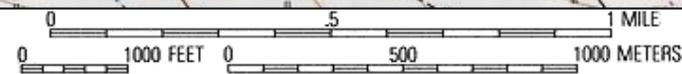
Northeast 148 acres of APN 36-170-032, Avenal, CA

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FIGURES



TN \nearrow MN
14°



Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

Source
USGS Topo Map
La Cima Quadrangle



**Figure 1 - Site Location Map
Federal Power - Avenal Cutoff Rd.
Avenal, California**



9301 Oakdale Ave., Suite 210, Chatsworth, California 91311

KINGS COUNTY ASSESSOR'S MAP 1

SEC'S. 16, 17, 18, 19, 20 & 21-21-18

36-17

THIS MAP IS FOR ASSESSMENT PURPOSES ONLY
 IT IS NOT TO BE CONSTRUED AS PORTRAYING
 LEGAL OWNERSHIP OF DIVISIONS OF LAND FOR
 PURPOSES OF ZONING OR SUBDIVISION LAW.
 DECEMBER 2006

