ConocoPhillips
76 Broadway
Sacramento, California 95818

November 21, 2005

Mr. Jerry Wickham
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Re: **Report Transmittal**
Revised Additional Soil and Groundwater Investigation Work Plan
76 Service Station #7376
4191 First Street,
Pleasanton, CA

Dear Mr. Wickham:

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact

Shelby S. Lathrop (Contractor)
ConocoPhillips
Risk Management & Remediation
76 Broadway
Sacramento, CA 95818
Phone: 916-558-7609
Fax: 916-558-7639

Sincerely,

Thomas Kosel
Risk Management & Remediation

Attachment

TRC

Customer-Focused Solutions

November 21, 2005 TRC Project No. 42-0184-04

Mr. Jerry Wickham
Hazardous Materials Specialist
Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94502-6577

SITE: 76 STATION NO. 7376
4191 FIRST STREET
PLEASANTON, CALIFORNIA

RE: REVISED ADDITIONAL SOIL AND GROUNDWATER INVESTIGATION WORK PLAN

Dear Mr. Wickham:

On behalf of ConocoPhillips Company (ConocoPhillips), TRC submits this revised work plan for additional site assessment at 76 Station No. 7376, located at 4191 First Street in Pleasanton, California (Figure 1). TRC's *Additional Soil and Groundwater Investigation Work Plan*, was submitted to the Alameda County Health Care Services (ACHCS) on March 23, 2005. The revised work plan was prepared pursuant to technical comments and requested revisions provided in the ACHCS letter, *Fuel Leak Case No. RO0000361, Unocal #7376, 4191 First Street, Pleasanton, CA*, dated September 29, 2005.

1.0 PROJECT OBJECTIVES AND SCOPE OF WORK

The objective of this assessment is to identify potential shallow or perched water-bearing zones and to characterize the vertical and lateral distribution of dissolved-phase hydrocarbons, including methyl tertiary butyl ether (MTBE), in soil and groundwater.

The scope of work for this assessment includes the following:

- Advancement of Cone Penetration Test (CPT) borings at three onsite and four offsite locations.
- Collection of depth-discreet grab groundwater samples for analysis at a state certified laboratory.
- Based on CPT findings, construction of additional groundwater monitoring wells.
- Collection of groundwater and soil samples for analysis at a state certified laboratory.
- Preparation of a final technical report documenting CPT boring activities, well installation and development, groundwater sampling procedures, laboratory results, waste characterization, and disposal.

1590 Solano Way, Suite A • Concord, California 94520
Telephone 925-688-1200 • Fax 925-688-0388

2.0 SITE DESCRIPTION

The site is currently an active 76 service station located on the northern corner of First Street and Ray Street in Pleasanton, California (Figure 1). The site is bounded to the northwest by a former Southern Pacific Railroad right-of-way currently owned by Alameda County to the north and northeast by a commercial building, to the southeast by First Street, and to the southwest by Ray Street. There is an underground Santa Fe Pacific petroleum pipeline presently located adjacent to the northwest edge of the site. Properties in the immediate site vicinity are used for a mix of residential and commercial purposes. A Shell service station is located to the east of the site. The site is located at an approximate elevation of 366 feet above mean sea level. Current site facilities consist of a cashier's kiosk, four product dispenser islands and two 12,000-gallon double-wall fiberglass gasoline underground storage tanks (USTs). There are currently 12 active groundwater-monitoring wells and one former groundwater monitoring well at and in the site vicinity. Locations of the pertinent site features are shown on the Figure 2.

Geology and Hydrogeology

The subject site is located at the base of the northwest end of the Valle De San Jose. The site is underlain by Holocene age coarse-grained alluvium interpreted to be alluvial fan deposits. These deposits are composed of unconsolidated, well bedded, moderately sorted, permeable sand and silt, with coarse sand and gravel becoming abundant toward fan heads and in narrow canyons (Helley, 1979). The site is also located approximately 1,000 feet west and north of Pliocene and/or Pleistocene non-marine sedimentary Livermore Gravel (Diblee, 1980).

Previous subsurface studies performed by Applied GeoSystems (AGS), Kaprealian Engineering, Inc. (KEI), and Gettler Ryan Inc. (GR) indicate the site is underlain by alluvium to a maximum explored depth of 135.5 feet below grade (fbg). The alluvium consists of interbedded layers of silt, sand, clay and gravel in both the vadose and saturated zones (KEI, 1996, GR, 2000).

A review of Alameda County Flood Control and Water Conservation District-Zone 7 (1993) groundwater data indicated that the regional groundwater flow direction in the vicinity of the site was toward the northwest. The nearest surface water is Arroyo Valle, located approximately 700 feet northwest of the site.

The most recent quarterly monitoring and sampling event was conducted on March 17, 2005. Groundwater was measured between 60.42 (MW-5) and 81.33 (MW-6) feet below top of casing (ft btoc), and was reported to flow toward the west.

3.0 SITE BACKGROUND

The site was developed in 1899 as a warehouse to store grains and hay (Amador-Livermore Valley Historical Society, 1994). According to a Sanborn map, an "in-ground" storage tank for oil was installed onsite in 1907. A service station was first constructed on the site in 1976 (Enviros, 1995).

Between November 8, 1982 and February 8, 1985, the Pleasanton Fire Department (PFD) responded to five separate fuel releases at the site (PFD, 1988). The releases occurred prior to acquisition of the property by Unocal Corporation in 1988, and prior to ConocoPhillips assuming operations at the site.

June 1987: Three exploratory soil borings were advanced to depths ranging from 46.5 to 55 fbg. Soil samples contained low to moderate maximum concentrations of petroleum hydrocarbons. Groundwater was not encountered.

August 1987: Another soil boring was advanced to a depth of 66.5 fbg. Low to moderate concentrations of petroleum hydrocarbons were detected in a soil sample collected at 35 fbg. Groundwater was not encountered.

December 1987: Three monitoring wells were installed to a depth of 96.5 fbg. Maximum petroleum hydrocarbon concentrations in soils samples generally declined from low to moderate to low with increasing depth.

December 1987: Four 12,000-gallon underground storage tanks (USTs) were replaced with two 12,000-gallon double-walled USTs. An unknown volume of hydrocarbon-impacted soil was reportedly removed and transported to a Class I facility.

September 1994: A dispenser and product piping upgrade was performed with confirmation sampling. Over excavation was performed in the area of two soil samples with elevated hydrocarbon concentrations.

February 1995: Well MW-2 was destroyed because asphalt tar entered the well during repaving. It was replaced by MW-2B. Soil boring EB-1 was advanced to a total depth of 66 fbg. Twenty-nine soil samples were collected during drilling and submitted for analysis.

July 1996: Three monitoring wells were installed to depths of 75 to 93 fbg. Two were installed offsite on the former Southern Pacific Railroad right-of-way. A total of forty-seven soil samples were collected from the well borings and analyzed for total petroleum hydrocarbons as gasoline (TPH-g), benzene, toluene, ethyl benzene and xylenes (BTEX). Fuel fingerprinting was also conducted. Petroleum hydrocarbon concentrations in the range of total petroleum hydrocarbons as diesel (TPH-d), kerosene, motor oil, and unidentified extractable hydrocarbons were also identified in the samples.

June 1997: Free product was found in well MW-5 during quarterly monitoring activities.

December 1997: Entrix Inc. performed a forensic geochemical analysis on free product extracted from well MW-5. The free product was composed of a mixture of over 50% refined gasoline and heavier hydrocarbons, and appeared to be relatively fresh. The heavier hydrocarbon mixture had a carbon distribution ranging from about C13 to C33. This distribution is similar in nature to a very

weathered crude oil or Bunker C fuel, not refined petroleum products such as diesel #2, motor oil, lube oil, etc. (Entrix, 1997).

June/August 1998: Five onsite soil borings were advanced and two offsite down gradient monitoring wells were installed. A total of forty soil samples were collected and analyzed for petroleum hydrocarbons. In addition, two soil samples containing visible free product were collected from boring B-11 (near the former UST excavation) at 10.5 and 61 fbg and submitted for hydrocarbon fingerprinting. The results of these analyses indicated that the free product from both samples was composed of approximately 90% highly to severely weathered semi-volatile and high boiling components identified as crude oil and 10% of slightly weathered gasoline.

October-November 2000: One offsite soil boring (B-13) was advanced and two offsite monitoring wells were installed.

October 2003: Site environmental consulting responsibilities were transferred to TRC.

4.0 SITE ASSESSMENT ACTIVITIES

TRC proposes to advance three onsite and four offsite CPT borings for the purpose of characterizing site lithology, identifying potential shallow or perched water-bearing zones, and to assess groundwater quality. Proposed CPT boring locations are shown on Figure 2.

Based on the data generated by the CPT boring investigation, additional Site monitoring wells will be constructed for the purpose of assessing soil and groundwater quality and flow gradient. The proposed monitoring well locations and construction details will be provided to the ACHCS prior to the commencement of monitoring well construction activities.

4.1 Pre-Field Activities

Prior to commencing CPT boring and subsequent monitoring well installation activities, permits will be acquired from Zone 7 water district. Underground Service Alert (USA) will be notified at least two days prior to field activities to mark underground utilities at the property boundaries. Prior to drilling each boring, a pilot hole will be hand augured to approximately 5 fbg to verify the absence of buried utilities.

A site and job specific health and safety plan that promotes personnel safety and preparedness during the planned activities has been developed and is included in Appendix A. On the morning of the day that the field activities are to commence, a "tailgate" meeting will be conducted with all exclusion zone workers to discuss the health and safety issues and concerns related to the specific work.

4.2 CPT Borings

A CPT rig will be used to advance three separate co-located borings at three onsite and four offsite locations. Proposed CPT boring locations are shown on Figure 2. The CPT rig is equipped with an onboard computer system that will provide a continuous lithologic log and real time analysis of the subsurface conditions.

The initial boring at each location will be advanced to approximately 90 fbg or until refusal, using the integrated electronic cone system of the CPT rig to determine soil stratigraphy, relative density, and hydrogeologic conditions in the vicinity of the borings.

The second and third co-located borings will be advanced to potential water bearing zones, as identified from analysis of the data obtained from the initial data run, for hydropunch groundwater sampling.

The groundwater sample tool will be pushed to the proper groundwater sampling depths, the sampling screen will be exposed, and the groundwater sample will be collected. The use of separate co-located borings for each depth-discrete groundwater sample prevents the potential for cross-contamination during boring advancement.

Grab groundwater samples will be properly preserved and transported to a state-certified laboratory under appropriate chain-of-custody protocol. The samples will be analyzed for the following:

- Total petroleum hydrocarbons as diesel (TPH-d) by EPA Method 8015
- Total purgeable petroleum hydrocarbons (TPPH) by EPA Method 8260B
- Benzene, toluene, ethyl benzene, total xylenes (BTEX) by Method 8260B
- Methyl tertiary butyl ether (MTBE), tertiary butyl ether (TBA), di-isopropyl ether (DIPE), tertiary amyl ether (TAME), ethyl tertiary butyl ether (ETBE) 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), and ethanol by EPA Method 8260B.

4.3 Monitoring Well Installation

Based on the data obtained from the CPT boring investigation, groundwater-monitoring wells will be installed at the Site using a hollow-stem auger drill rig. Proposed monitoring well locations and construction details will be provided to the ACHCS for review and approval prior to remobilization and commencement of monitoring well construction activities. Soil samples will be collected at five-foot depth intervals using a split-spoon sampler. Samples will be collected for soil description in accordance with the Unified Soil Classification System (ASTM D-2487), field hydrocarbon vapor testing, and analysis at a state-certified laboratory. General field procedures to be followed during this investigation are discussed in Appendix B.

The soil samples will be screened in the field using a hand-held organic vapor meter equipped with a photo-ionization detector (PID). Samples will be selected for laboratory analysis based on the PID screening levels and any observed hydrocarbon impact such as staining, sheen, free product, or hydrocarbon odor. At least two soil samples per boring will be submitted to a state-certified laboratory for analysis, one of which will be the soil sample collected from the capillary fringe from each boring. The selected soil samples will be properly preserved and transported to the laboratory under appropriate chain-of-custody protocol. The soil samples will be analyzed for the following:

- Total petroleum hydrocarbons as diesel (TPH-d) by EPA Method 8015
- Total petroleum hydrocarbons as gasoline (TPH-g) by EPA Method 8260B
- Benzene, toluene, ethyl benzene, total xylenes (BTEX) by Method 8260B
- Methyl tertiary butyl ether (MTBE), tertiary butyl ether (TBA), di-isopropyl ether (DIPE), tertiary amyl ether (TAME), ethyl tertiary butyl ether (ETBE) 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), and ethanol by EPA Method 8260B..

The proposed monitoring wells will be constructed of 2-inch diameter polyvinyl chloride (PVC) blank (riser) and slotted screen (0.020). The well screen interval will be determined from lithologic data collected from the exploratory borings. The screen formation annulus will be filled with an appropriate filter pack material. The riser formation annulus will be properly sealed with hydrated bentonite chips and cement grout. The wellhead will be sealed with a watertight, lockable well cap. A flush-mounted, watertight, traffic-rated well box will be installed over the wellhead.

Following installation of the filter pack, the well will be developed (surged and bailed) to improve hydraulic communication between the geologic formation and the well. A wellhead reference point, typically a notch cut into the top of the well casing, will be surveyed relative to the surrounding site wells and the nearest benchmark. Future depth to groundwater measurements will be made from the wellhead reference point. Additional monitoring well installation procedures that will be followed are included in Appendix B.

4.4 Groundwater Monitoring and Sampling

Fluid level measurements and groundwater sampling will be conducted no sooner than 48 hours after development of the well. Fluid levels will be measured relative to the top of the casing with a precision of 0.01 feet. The presence and thickness of free phase product will also be checked in the well.

After measuring fluid levels, the wells will be purged and sampled. A groundwater sample will be collected from the well using a clean new disposable PVC bailer following standard sampling procedures (Appendix B). The groundwater samples will be appropriately preserved and submitted to a state-certified laboratory for analysis. Chain-of-Custody protocol will be followed, providing a continuous record of sample possession prior to analysis. The laboratory will analyze the groundwater samples for the following:

- Total petroleum hydrocarbons as diesel (TPH-d) by EPA Method 8015
- Total petroleum hydrocarbons as gasoline (TPH-g) by EPA Method 8260B
- Benzene, toluene, ethyl benzene, total xylenes (BTEX) by Method 8260B
- Methyl tertiary butyl ether (MTBE), tertiary butyl ether (TBA), di-isopropyl ether (DIPE), tertiary amyl ether (TAME), ethyl tertiary butyl ether (ETBE) 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), and ethanol by EPA Method 8260B.

4.5 Santa Fe Pacific Pipeline Investigation

A 10.75-inch diameter steel pipeline is located adjacent to the northwest edge of the site. The pipeline is owned and operated by Santa Fe Pacific Pipeline Partners and transports gasoline, diesel, and jet fuel. The California Department of Forestry and Fire Protection (CDFFP), in a letter dated September 9, 1997, indicated the pipeline is inspected every 5 years by an internal inspection device, which examines the pipe wall for anomalies resulting from internal or external corrosion or damage. The CDFFP engineering staff reviewed the results from a May 1996 inspection and found no anomalies in the pipeline near the Site. Additionally, the CDFFP indicated that no pipeline repairs or reported releases have occurred in the vicinity of the Site.

As part of the additional site investigation activities, TRC will confirm with the CDFFP, or current owner/operator of the pipeline, the integrity of the pipeline and request information on any (post-1996) anomalies, repairs, or reported releases along the section of pipeline adjacent to the site.

4.6 Waste Disposal

Soil cuttings and water generated during site assessment activities will be stored onsite in Department of Transportation (DOT)-approved 55-gallon drums pending disposal to an approved disposal/recycling facility. Waste manifests will be prepared for proper transport and disposal of the waste.

4.7 Site Assessment Report and Site Conceptual Model

Upon completion of the site assessment activities, a final report will be prepared which will include CPT boring results, boring logs, cross-sections, well construction details, laboratory analytical results, findings, and conclusions. Using data obtained during this investigation as well as historical data for the site, TRC will also prepare a Site Conceptual Model (SCM) according to the ACHCS format.

The Site Assessment Report will be submitted to the ACHCS within six weeks of the completion of the field activities. The SCM will be submitted at a later date as a separate document.

5.0 WORK SCHEDULE

Planned activities will be performed according to the following estimated completion schedule:

- Agency approval of work plan expected within eight weeks of submittal.
- Conduct CPT field activities within six weeks of agency approval of the work plan.
- Conduct monitoring well installation activities within six weeks of completions CPT field activities and ACHCS approval of proposed well locations.
- Submit technical report within six weeks of completion of field activities.

6.0 REFERENCES

Alameda County Health Care Services, 2005, Fuel Leak Case No. RO0000361, Unocal #7376, 4191 First Street, Pleasanton, CA, September 29, 2005.

Diblee, T. W. Jr., 1980, Preliminary Geological Map of the Livermore Quadrangle, Alameda and Contra Costa Counties, California: United States Geologic Survey Open File Report 80-533B.

Entrix, Inc., 1997, Forensic Geochemical Analysis of Free Product from MW-5, UNOCAL SS# 7376, Pleasanton, California: Project 351301 dated December 12, 1997.

Gettler-Ryan Inc, 2000, Well Subsurface Investigation Report at Tosco 76 Branded Facility No. 7376, 4191 First Street, Pleasanton, California: Report No. 140107.04, dated May 9, 2000.

Gettler-Ryan Inc., 2003, Interim Corrective Action Plan, Tosco (Unocal) Service Station #7376, 4191 First Street, Pleasanton, California: Report No. 140107.6, dated July 23, 2003.

Kaprealian Engineering Incorporated, 1996, Continuing Groundwater Investigation at Unocal Service Station No. 7376, 4191 First Street, Pleasanton, California: Report No. KEI-P94-0903.R5 dated November 4, 1996.

TRC, 2005, Additional Soil and Groundwater Investigation Work Plan, Unocal Service Station No. 7376, 4191 First Street, Pleasanton, California, March 23, 2005.

If you have any questions regarding this work plan, please call Keith Woodburne at (925) 688-2488.

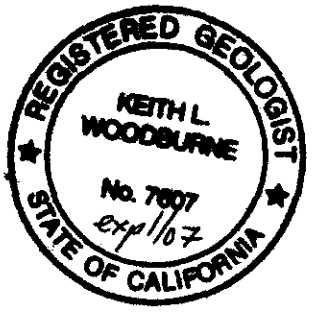
Sincerely,
TRC

Steve Kemnitz
Project Scientist

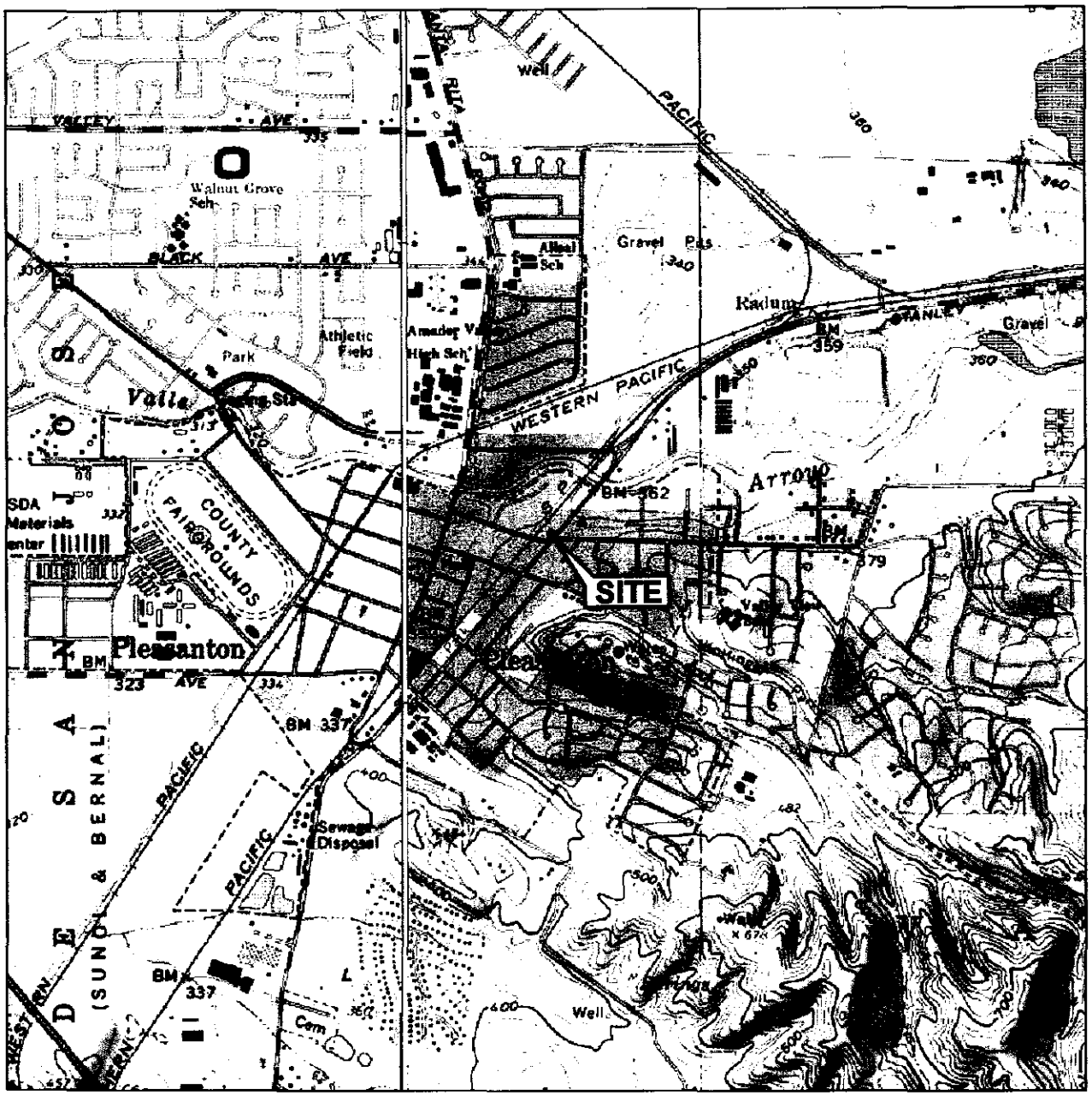
Keith Woodburne, P.G.
Senior Project Geologist

Attachments: Figure 1: Vicinity Map
Figure 2: Proposed CPT Boring Locations
Appendix A: Site Health and Safety Plan
Appendix B: General Field Procedures

cc: Shelby Lathrop, ConocoPhillips (electronic upload only)



FIGURES



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SOURCE:

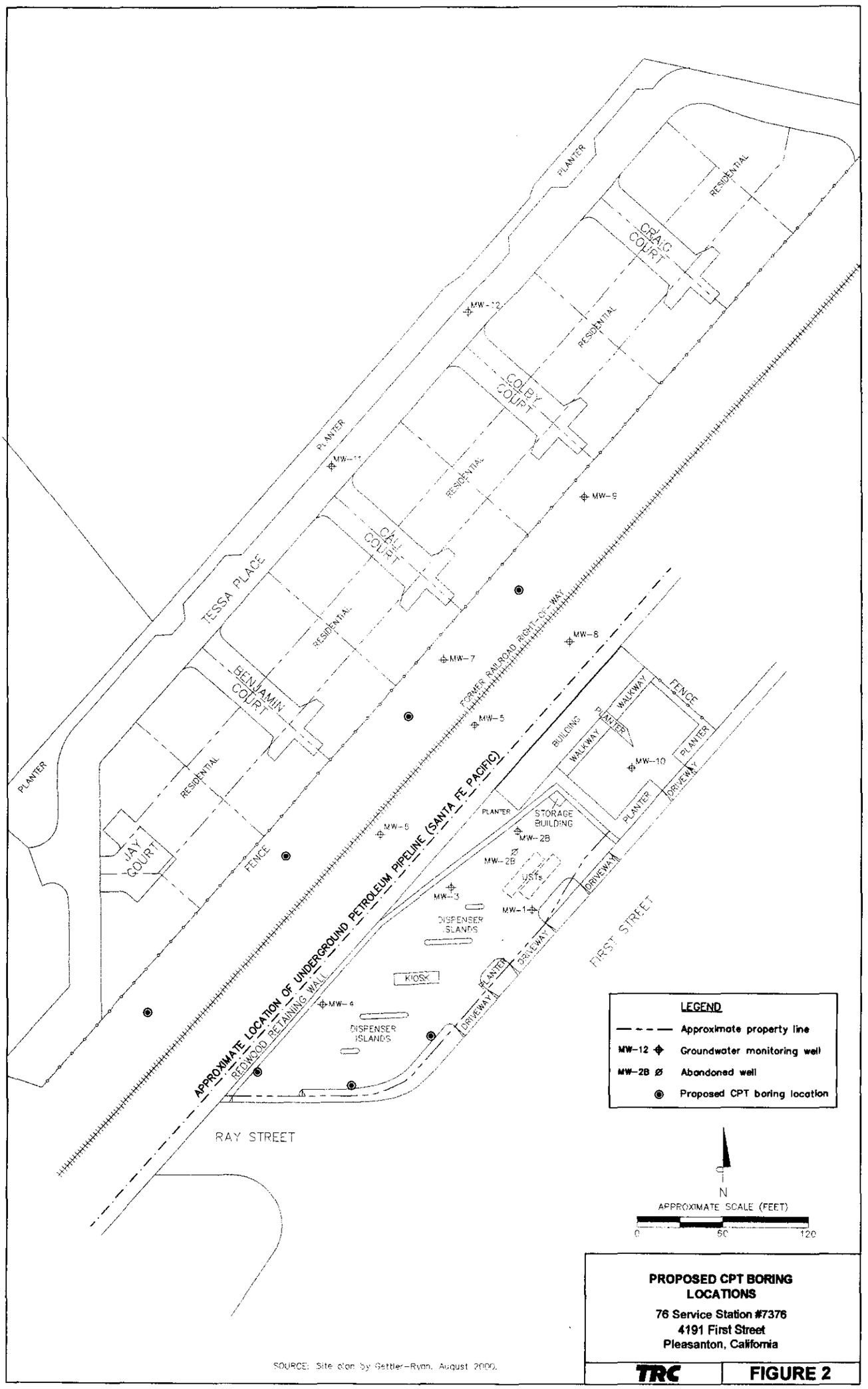
United States Geological Survey
7.5 Minute Topographic Maps:
Dublin and Livermore Quadrangles
California

VICINITY MAP

76 Service Station #7376
4191 First Street
Pleasanton, California

TRC

FIGURE 1



SOURCE: Site plan by Gettler-Ryan, August 2000.

PROPOSED CPT BORING LOCATIONS

76 Service Station #7376
4191 First Street
Pleasanton, California

TRC | **FIGURE 2**

TRC

Customer-Focused Solutions

SITE SPECIFIC HEALTH & SAFETY PLAN

76 Service Station #7376

Pleasanton, California

Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

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TABLES

ATTACHMENTS

ATTACHMENTS (cont.)

F TAILGATE SAFETY MEETING CHECKLIST AND HSP COMPLIANCE AGREEMENT

SITE SPECIFIC HEALTH AND SAFETY PLAN (HSP)

76 Service Station #7376
Pleasanton, California

1.0 INTRODUCTION

The purpose of this Health & Safety Plan (HSP) is to establish responsibilities, procedures and contingencies for the protection of TRC employees, contractors, visitors and the public while performing activities at the 76 Service Station No. 7376 located at 4191 First Street, Pleasanton, California (the Site). This site-specific HSP is to be implemented in conjunction with TRC Solutions, Inc (TRC) Health and Safety Programs, including the Injury and Illness Prevention Program (IIPP) and Hazard Communication Program.

The use of proper health and safety procedures in accordance with applicable OSHA regulations shall be required during site work. The procedures presented in this HSP are intended to serve as guidelines. They are not a substitute for sound judgment by site personnel.

1.1 KEY COMPANIES INVOLVED IN PROJECT

CUSTOMER OR CLIENT:	ConocoPhillips	
DESIGN ENGINEER:	TRC	
CONTRACTOR:	TRC	☐ NA
SUBCONTRACTOR:	Drilling subcontractor (specific drilling subcontractor has not been selected)	☐ NA

All subcontractor's will also prepare an HSP(s) for the proposed field activities. Their HSP(s) will supplement TRC's HSP.

1.2 SCOPE OF WORK

The proposed work will be performed by TRC, contractors and/or subcontractor (have yet to be selected) and will include but may not be limited to the following activities:

- Advancement of Cone Penetration Test (CPT) borings at three onsite and four offsite locations.
- Collection of depth-discreet grab groundwater samples for analysis at a state certified laboratory.
- Based on CPT findings, construction of additional groundwater monitoring wells.
- Conduct quarterly groundwater monitoring on newly installed and existing monitoring wells.

2.0 SITE INFORMATION

This HSP considers the physical, chemical, and biological hazards that may be encountered during work activities at the site. Operations associated with this HSP will be conducted in accordance with the scope of work and approved design drawings/specifications.

Summary information for this project is provided in the following table:

Table 1: Site Information

Anticipated Work Period: Site description (see Attachment A for site map):	January 2006 to April 2006 The site is currently an active 76 service station located on the northern corner of First Street and Ray Street in Pleasanton, California. The site is bounded to the northwest by a former Southern Pacific Railroad right-of-way currently owned by Alameda County to the north and northeast by a commercial building, to the southeast by First Street, and to the southwest by Ray Street. There is an underground Santa Fe Pacific petroleum pipeline presently located adjacent to the northwest edge of the site.
Approximate depth to groundwater:	60 to 80 fbg
Contaminants of concern (see Attachment B):	Total petroleum hydrocarbons as diesel (TPH-d), total petroleum hydrocarbons as gasoline (TPH-g), Benzene, toluene, ethyl benzene, total xylenes (BTEX), Methyl tertiary butyl ether (MTBE), tert-butyl ether (TBA), di-isopropyl ether (DIPE), tert-amyl ether (TAME), ethyl tert-butyl ether (ETBE) 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), and ethanol.

3.0 ROLES & RESPONSIBILITIES

Contact information and names of key project personnel are listed below. A description of their responsibilities follows.

Table 2: Key Project Personnel and Contact Information

Role	Name	Contact Information
TRC Personnel		
TRC Project Manager/Supervisor	Keith Woodburne	(925) 688-2488 (925) 260-1373 cell
TRC Site Safety Officer (SSO)	TRC Project Engineer/Geologist	
TRC Assistant Site Safety Officer (Assistant SSO)	TRC Project Engineer/Geologist	
Contractor/Subcontractor Personnel ■ NA		
☐ Contractor / ☐ Subcontractor Company Name: **Contractors not selected**		
Site Safety Officer (SSO)		
Assistant Site Safety Officer (SSO)		
☐ Contractor / ☐ Subcontractor Company Name:		
Site Safety Officer (SSO)		
Assistant Site Safety Officer (SSO)		

TRC Site Safety Officer or Assistant Safety Officer must report all site incidents immediately to the TRC Project Manager

TRC PM/Supervisor must report all incidents INVOLVING PERSONAL INJURY immediately to:		
TRC Human Resources Manager	Jenny Rue	(949) 341-7436 – office (949) 337-2625 - cell
TRC PM/Supervisor must report all incidents NOT INVOLVING PERSONAL INJURY within 24 hours to:		
TRC EHS Supervisor	Greg Burket	(949) 341-7403 – office (949) 283-4313 - cell

3.1 TRC Project Manager/Supervisor

- Overall responsibility for development of a complete and accurate HSP. The HSP shall account for all foreseeable hazards.
- Responsible for the management and technical direction of all aspects of the project.
- Ensure the completion of periodic site inspections.
- Conduct incident investigations.
- Delegate responsibility for field implementation of the HSP to TRC Site Safety Officer.

3.2 Site Safety Officers (SSO) – TRC & Contractor Personnel

- Responsible for the daily implementation of the HSP.
- Ensures HSP is available onsite and that the plan is understood and signed by all personnel entering the site. (See **Attachment F** "Safety Compliance Agreement").
- Conducts (or coordinates the completion of) Tailgate Safety Meetings and ensures documentation of these meeting is available for review.
- Uses JSAs to emphasize hazards and protective measures discussed in the HSP.
- Communicates any revisions to the scope of work or HSP to affected personnel and Project Manager/Supervisor.
- Implements emergency response procedures.

3.3 Assistant Site Safety Officer (Asst SSO) – TRC & Contractor Personnel

- In the event the SSO is not on site, the Assistant SSO will assume the responsibilities of the SSO.
- It is TRC's intent to have a TRC SSO or Assistant SSO available onsite during work activities. On the occasion neither person are physically onsite, they will be available by phone or pager. See "Table 2: Key Project Personnel and Contact Information".

3.4 TRC Employees

- Responsible for understanding and complying with this HSP, including the JSAs.
- Are required to participate in Tailgate Safety Meetings prior to commencement of site work.
- Must acknowledge an understanding of the HSP by signing the "Safety Compliance Agreement" (See **Attachment F**).

3.5 Contractors & Subcontractors

A copy of the HSP will be made available to each designated Contractor/Subcontractor (from now on to be referred to "Contractors") Site Health and Safety Officer (SSO) prior to coming to the site. Upon review or briefing of the HSP, each contractor and their personnel working at the site will be required to sign the "Safety Compliance Agreement" (See Appendix F) to verify their understanding and willingness to comply with the HSP.

TRC hires Contractors to apply their technical expertise to specific work tasks (i.e. construction, drilling, grading and heavy equipment operation/maintenance). Although TRC has a certain level of knowledge in these areas, the contractor is most knowledgeable of the hazards within their particular area of expertise and is in the best position to implement and monitor an effective H&S program. Contractors are required to follow and operate within their company's health and safety program and policies. TRC will exercise reasonable care to prevent and detect safety violations on the site. However, direct supervision of contractor employee safety is the responsibility of the contractor.

Contractors are to designate a company representative as their own Site Safety Officer and, if applicable, Assistant Safety Officer. This individual shall monitor the contractor's employees and ensure that safe working procedures are being followed. The Site Safety Officer and, if applicable, Assistant Safety Officer shall be identified to the TRC in writing, either by email, letter or by having the individual sign and provide contact information on "Safety Compliance Agreement" (See **Attachment F**).

Contractors are to:

- Provide a copy of their HSP to the TRC SSO or Project Manager/Supervisor before work commences.
- Provide safety equipment and personal protective equipment for their employees.
- Ensure their equipment is in proper working order and their employees are trained and medically fit to complete the work assigned to them.
- Upon request, provide evidence that personnel working at the site have received the necessary training, certifications and, if applicable, medical surveillance.

The Contractor must inform the TRC SSO if the risks associated with a particular task exceeds day-to-day safety requirements and necessitate additional safety precautions to protect the employees performing the particular task. In such cases, TRC may dictate that additional safety precautions be implemented. In the event a discrepancy arises between contractor safety procedures and those of TRC, the more stringent is to be implemented.

3.6 Visitors / Regulatory Agents

- Visitors / regulatory agents will be provided an overview of the basic site safety information. A copy of this HSP will be made available for review.
- All visitors / regulatory agents are required to sign-in on "Safety Compliance Agreement" (See **Attachment F**) each time they enter the project site.
- Visitors / regulatory agents should be escorted by a TRC or designated contractor employee and should not be allowed to move about the site alone.

4.0 COMMUNICATION

Communication is an important aspect of project safety and this HSP. There are several processes incorporated in this HSP to ensure communication of health and safety hazards.

- Pre-job Project Planning meetings to discuss the scope of work and potential hazards
- Site walkdowns with the TRC workgroup, subcontractors and the customer/client.
- Development of site-specific HSP and JSAs.

- Communication and acknowledgement of understanding of HSP & JSAs by signing the "Safety Compliance Agreement" (See **Attachment F**)
- Tailgate meetings emphasizing that hazard assessment is a continuous process, and any potentially unsafe actions or condition are to be communicated immediately to the SSO.
- Communicating results of field observations/audits. Visual observations are to be conducted daily by the SSO. Periodic field observations will also be recorded on the TRC Field Observation Form (TRC IIPP, Appendix H). Results from either observation will be communicated during Tailgate Safety Meetings.

5.0 REVISIONS TO HSP

If a situation arises where the HSP requires revision, the following option are available:

- Except in the case of emergency situations, no deviations from the HSP may be implemented without the prior notification and approval of the TRC Site Safety Officer (SSO).
- If HSP revisions are minor (i.e. not involving significant changes to the scope of work, associated hazards or PPE requirements), the TRC Site Safety Officer (SSO) can make hand-written revisions to the HSP in the field. HSP Revisions must then be communicated to affected personnel and the Project Manager/Supervisor.
- If HSP revisions are substantial (i.e. not involving significant changes to the scope of work, associated hazards or PPE requirements), the TRC Site Safety Officer (SSO) must consult with the Project Manager/Supervisor before making revisions. The TRC Site Safety Officer (SSO) can make hand-written revisions to the HSP in the field. HSP Revisions must then be communicated to affected personnel and the Project Manager/Supervisor. It is up to the discretion of the Project Manager/Supervisor whether a revised HSP will be reissued to replace the original HSP on the work site.

6.0 HAZARD ASSESSMENT

Hazard assessment is essential for establishing hazard prevention measures. Below is a list of potential physical, chemical and biological hazards associated with various TRC project sites. Not all hazards apply to this site-specific HSP. In addition, the list is not all-inclusive and may require additional hazards associated with a particular project/site to be added.

Please check, or add applicable hazards or hazardous tasks, hazards associated with the scope of work described in this HSP (Section 1.2). A JSA shall be developed to address each of the indicated hazards or hazardous tasks. JSAs are included in **Attachment E** of this HSP.

6.1 Physical Hazards

☐ Excavation & Trenching (where personnel will be entering the excavation)
☒ Heavy Equipment (not drilling related)
☒ Drilling
☒ Overhead lines
☒ Underground utilities
☒ Energy Control – Lock out / Tag out
☐ Flammable Atmospheres (> 10% LEL)
☒ Traffic - vehicular and pedestrian
☒ Trips, Slips & Falls
☒ Head, foot, eye, and back injuries
☐ Falling objects
☐ Working from elevated surface (> 6ft); Fall Protection / Fall Arrest
☐ Ladders Use
☒ Sharp objects

Equipment
☒ Electrical equipment (including powered hand tools)
☒ Hydraulic equipment
☒ Pneumatic equipment

Non-Powered Hand Tool
☐ Cutting equipment
☒ Hammers, shovels, screwdrivers
☐ _____ (Additional equipment)

☐ Welding hazards
☐ Confined Spaces

6.2 Chemical Hazards

MSDS are to be included with the HSP whenever a hazardous material (not waste) is stored or utilized at the work site. No MSDSs are required for the proposed scope of work.

☒ Refined Petroleum products / waste oil
☐ Asbestos
☐ Serpentine Soils
☐ PCE, TCE
☐ Ozone
☐ Hydrogen Sulfide

☐ Landfill Gases
☒ Environmental samples, soil cuttings, decontamination water, dust (nuisance, silica)

6.3 Biological Hazards

☒ Noise Exposure
☐ Heat Stress
☐ Cold Stress
☐ Weather - heat, cold, rain, fog
☐ Poisonous Plants
☐ Animals/Insects
☐ Misc Pathogens

7.0 GENERAL SAFETY RULES

This section presents general safety rules for all persons working at the project site. Failure to follow safety protocols and/or continued negligence of health and safety policies will result in expulsion of a worker or firm from the site and may result in termination of employment.

1. Horseplay, fighting, gambling or the possession of firearms are not permitted.
2. Work shall be well planned and supervised to prevent injuries. Supervisors shall assure that employees observe and obey safety rules and regulations.
3. An employee reporting for work who, in the opinion of his supervisor, is unable to perform his assigned duties in a safe and reasonable manner shall not be allowed on the job.
4. No employee shall be assigned a task without first having been instructed on proper methods, including safety training, of carrying out the task. Any employee who feels they have not received proper instruction shall notify their supervisor prior to carrying out the task.
5. Injuries and accidents shall be reported immediately to the immediate supervisor, who will then report it to the SSO.
6. There shall be no consumption of food or drink in operational areas of the site. Hands should be thoroughly cleansed prior to eating.
7. Smoking is not permitted on the site.
8. When personnel are conducting hazardous operations, there shall be at least one other person (buddy system) on duty in the immediate area as a backup in case of emergency.
9. Wear required personal protective equipment (PPE) in the workplace when appropriate and/or when specified in the site specific health & safety plan. Loose clothing and jewelry should not be worn when operating machinery.

10. Do not operate any machinery if you are not authorized or qualified to do so. If unsure how to operate a machine or perform any assigned task, ask the Project Manager/Supervisor before proceeding.
11. Do not operate motorized equipment until proper training and certification has been provided (e.g. forklifts, etc.)
12. No one shall knowingly be permitted or required to work while the employee's ability or alertness is so impaired by fatigue, illness or other causes that it might unnecessarily expose the employee or others to injury.
13. Alcohol and drugs are strictly prohibited on any TRC premises, customer property, and/or in Company vehicles. Employees shall not report to work under the influence of drugs or alcohol. Employees are prohibited from possessing, using, manufacturing, distributing, dispensing, selling or purchasing illegal drugs or other controlled substances (as defined under federal and state law).

8.0 PERSONAL PROTECTIVE EQUIPMENT

TRC and Contractor personnel are required to wear PPE appropriate for the task and potential physical, chemical and biological exposures. Selection of PPE is based on hazard assessment (i.e. JSAs) and air monitoring.

8.1 PPE Required by All Personnel at <u>All Times</u> on the work site

☒ Hard Hat
☒ Safety Shoes/Boots
☒ Safety Vest
☒ Eye Protection - ☒ glasses ☐ goggles ☐ face shield
☐ Hand Protection - ☐ leather ☐ nitrile ☐ other _____
☐ Hearing Protection
☐ Respiratory Protection - ☐ APR Particulate ☐ APR Chemical cartridge ☐ other _____
☐ Protective Clothing - ☐ Tyvex ☐ Nomex ☐ Coveralls ☐ other _____

8.2 PPE which should be <u>available</u> at all times on the work site

☐ Hard Hat
☐ Safety Shoes/Boots
☐ Safety Vest
☐ Eye Protection - ☐ glasses ☐ goggles ☐ face shield
☒ Hand Protection - ☒ leather ☒ nitrile ☐ other _____
☒ Hearing Protection
☐ Respiratory Protection - ☐ APR Particulate ☐ APR Chemical cartridge ☐ other _____
☐ Protective Clothing - ☐ Tyvex ☐ Nomex ☐ Coveralls ☐ other _____

8.3 PPE Required by a Specific Task

Task: CPT Borings

☒ Hard Hat
☒ Safety Shoes/Boots
☒ Safety Vest
☒ Eye Protection - ☒ glasses ☐ goggles ☐ face shield
☒ Hand Protection - ☒ leather ☐ nitrile ☐ other _____
☒ Hearing Protection
☐ Respiratory Protection - ☐ APR Particulate ☐ APR Chemical cartridge ☐ other _____
☐ Protective Clothing - ☐ Tyvex ☐ Nomex ☐ Coveralls ☐ other _____

Task: Monitoring Well Installation

☒ Hard Hat
☒ Safety Shoes/Boots
☒ Safety Vest
☒ Eye Protection - ☒ glasses ☐ goggles ☐ face shield
☒ Hand Protection - ☐ leather ☒ nitrile ☐ other _____
☒ Hearing Protection
☐ Respiratory Protection - ☐ APR Particulate ☐ APR Chemical cartridge ☐ other _____
☐ Protective Clothing - ☐ Tyvex ☐ Nomex ☐ Coveralls ☐ other _____

Task: Groundwater Monitoring and Sampling

☒ Hard Hat
☒ Safety Shoes/Boots
☒ Safety Vest
☒ Eye Protection - ☒ glasses ☐ goggles ☐ face shield
☒ Hand Protection - ☐ leather ☒ nitrile ☐ other _____
☐ Hearing Protection
☐ Respiratory Protection - ☐ APR Particulate ☐ APR Chemical cartridge ☐ other _____
☐ Protective Clothing - ☐ Tyvex ☐ Nomex ☐ Coveralls ☐ other _____

9.0 RESPIRATORY PROTECTION

For operations that require the use of a respirator, the TRC and Contractor SSOs must verify that Field Personnel are medically approved to use respiratory equipment, fit tested, and trained in the proper use of respirators. Only respirators that are NIOSH/MSHA approved are to be used.

Respiratory protection is mandatory if workers are required to complete tasks within a hazardous atmosphere. According to OSHA, a hazardous atmosphere is defined as:

- Flammable gas, vapor, or mist in excess of 10% of LEL.
- Atmospheric oxygen is below 19.5% or above 23.5%.
- When concentration of a known contaminant is greater than the permissible exposure limit (PEL).
- Airborne combustible dust exceeds its LEL (approximated when dust obscures vision at a distance of 5 feet or less).

If conditions warrant, air monitoring may be required to verify the presence or absence of a hazardous atmosphere. Air monitoring is to be conducted whenever a situation or condition arises that could reasonably result in a hazardous atmosphere.

9.1 Air-Purifying Particulate Respirators

Employees involved in construction and earthmoving operations that result in nuisance dust and particulates may use air-purifying respirators. These are commonly referred to as "dust masks" and do not require fit testing. Particulate respirators can to be used in situations where dust and particulates are the only contaminants posing an inhalation hazard. Particulate respirators are not to be used in oxygen deficient atmosphere or if hazardous levels of gas/vapor contaminants are also present.

A high efficiency particulate air (HEPA), P100 respirator should be used in place of commercially available "dust masks".

9.2 Air-Purifying Gas/Vapor Respirators

TRC employees and Contractors are required to wear half-face, air-purifying respirators with the appropriate chemical cartridge under the following circumstances:

- When concentration of a known contaminant continuously exceeds permissible exposure limit (PEL) time-weighted average or the threshold limit value(TLV) time-weighted average.
- When volatile organic compound (VOC) vapors in the work area continuously exceed the threshold limit value- time-weighted average (TLV-TWA) for gasoline (300 parts per million [ppm]).
- When, at any time, VOC vapors in the work area exceed the threshold limit value - short-term exposure limit (TLV-STEL) for gasoline (500 ppm).

See **ATTACHMENT B** for additional information and regulatory exposure limits for chemicals of concern at this site.

Air purifying respirators (APRs) with chemical cartridges can be used under the following conditions:

- If the oxygen concentration is between 19.5% and 23.5%.
- If chemical contaminants have been identified.

- The toxic concentrations are known and the respirator cartridges are effective in removing the contaminants.
- The respirator and cartridges are NIOSH/MSHA approved.
- The contaminants have noticeable warning qualities such as odor and visibility characteristics including color.

In the event workers are required to wear air purifying respirators (APRs) with chemical cartridges, the following requirements must be met:

- The TRC or Contractor SSO must verify that workers are:
  - Medically approved (within one year) to use respiratory protection.
  - Fit-tested for the specific respirator to be used.
  - Trained in the proper use and limitations of the respirator to be used.
- Contractors must provide proof of the above to the TRC SSO, upon request.
- If an employee or contractor has not cleared by the SSO to use a respirator, they will not be assigned tasks that may potentially expose them to contaminants.
- Personnel with interfering facial hair are not permitted to wear respirators and shall not be permitted in areas where respiratory protection is required.

9.3 Air-Supplied Respirators

Air-supplied respirators, such as SCBA or airline, full-face respiratory protection, are not anticipated to be required at the site. This level of respiratory protection is utilized in oxygen deficient atmospheres or atmospheres considered to be at or above immediately dangerous to life and health (IDLH) levels. These conditions will only occur in rare, if any, circumstances such as confined space entry or emergency situations. The use of air-supplied respiratory protection is not permitted without approval and guidance from the Project Manager.

10.0 AIR MONITORING

Air monitoring is required to verify the presence or absence of a hazardous gas/vapor atmosphere whenever a situation or condition arises that could reasonably result in a hazardous atmosphere.

Based on OSHA's definition of a hazardous atmosphere, there are 4 different hazards that require monitoring. The table below describes the type of hazard, what air monitoring equipment to use and what levels constitute a hazard. The information provided in the table does not take into consideration all the possible variations of hazardous atmosphere, however it will provide guidance when determining the presence of a hazardous atmosphere. Any questions or concerns should be directed to the SSO before work begins.

Table 3: Air Monitoring Guidance

Hazard	Appropriate Air Monitoring Equipment	Hazardous Levels	Comments
Flammability	Combustible gas indicators (CGI) are direct-reading instruments; measures % LEL and oxygen.	>25% of the LEL during cold work >10% of the LEL during hot work	Since many flammable vapors are heavier than air, be sure to take readings at ground level. Work be suspended if CGI readings exceed 10% of LEL.
Oxygen deficiency or abundance	Same as above or an Oxygen Meter	<19.5% and >23.5%	Concentrations >23.5% may present an increased flammability hazard.
Exceeding the permissible exposure limit (PEL)	Photoionization detector (PID) can detect organic and inorganic vapors/gases	Varies depending on chemical. See **Attachment B** for hazardous levels of common chemicals	It is impossible to differentiate the different chemicals using a PID meter. However, the PID will indicate whether chemicals are present and at what levels. Measurements taken within worker's breathing zone will be used to determine respiratory protection requirements.

Airborne combustible dust is not anticipated at the work site.

When conducting, air monitoring the following actions should be considered:

- Be familiar with the proper use and limitations of the air monitoring equipment to be used.
- Ensure air-monitoring equipment (TRC's or otherwise) is in working order and has been properly calibrated. The TRC SSO is to document verification of calibration (i.e. in a field log book).
- Clearly document the results of air monitoring, including:
  - Equipment name / type and calibration data
  - Date, time and site location of air monitoring (use a site map to clarify the locations of readings.
  - Indication of what is being measured (LEL, oxygen, or ppm)
  - Results of the air monitoring
- Measurements for volatile organics should be taken at low point where vapors could accumulate.
- Measurements taken to determine the need for respiratory protection should be take within the worker's "breathing zone", keeping in mind the worker's closest proximity to the hazard source.
- An individual should never enter a confined area or excavation in order to conduct initial air monitoring. Instead, actions should be taken to lower the air monitoring equipment into the area to indicate the presence (or absence) of a hazardous atmosphere. Most air monitoring equipment has audible alarms.

- ☐ In the event that CGI readings on the site exceed 10 percent of the LEL, work will be suspended until the source can be eliminated or controlled.

11.0 SITE CONTROL

The primary objective of site control is to minimize the exposure to potentially hazardous substances and/or situations. Supervision and controlling access to the work site is necessary to protect site personnel, visitors and the public.

For this site, the following areas will be designated as hot, warm and cold zones:

Hot Zone: Within 10 feet of CPT/drill rig
Warm Zone: ☒ NA

Cold Zone: Outside 10 feet of CPT/drill rig

For the purposes of this HSP, site control will be discussed under two circumstances: (1) work involving Physical Hazards and (2) work involving Chemical Hazards.

In either case, site control areas are to be clearly identified and communicated by the SSO. The hot zone must be clearly identified and should be isolated with cones, barricades, or high visibility caution tape. In addition, sufficient area also must be available to conduct operations while providing a protective buffer for persons and property outside the controlled areas.

☒ Work involving Physical Hazards

Work does *not* involve direct contact with hazardous substances. However, if the scope of work primarily involves physical hazards (i.e. vehicular traffic, heavy equipment operation, etc.), the establishment of a warm zone may is not necessary. Instead, a hot zone must be established to surround all the physical hazards. The hot zone area shall provide enough room and buffer to protect both workers and the public. A cold zone is established outside the hot zone to allow "support" activities to be conducted in a safe location.

☒ Work involving Chemical Hazards

The concept of site control and the establishment of hot/warm/cold work zones are intended for work involving the exposure (or potential exposure) to hazardous chemical concentrations. Under these circumstances, the purpose of work zones is two-fold: 1) minimize the exposure to potentially hazardous substances and 2) minimize the spread of hazardous substances outside the immediate work area through decontamination procedures.

A brief overview of site control work zones is provided below:

Hot Zone

- Where personnel may be subject to chemical or physical hazards.
- Where known or suspected contamination exists and may also be where equipment operation and/or environmental sampling will take place.
- To be clearly identified and should be isolated with cones, barricades, or high visibility caution tape.
- Large enough to provide sufficient room and buffer to protect both workers and the public.

Cold Zone

- Located outside the hot zone where administrative and other support functions are located.
- Where adverse exposure to contaminants and physical hazards are unlikely.

11.1 Decontamination

The purpose of decontamination is to: (1) remove chemical containments from personnel and/or equipment and (2) significantly reduce the spread of chemical contaminants beyond the hot/warm zone.

Decontamination is intended to occur within the warm zone. Depending on the project, there may be a need to decontaminate both personnel and equipment. The decontamination process should be appropriate to the chemical hazards present. For example refined petroleum contaminated soil on work boots/shoes may only require physical removal of the soil with a sturdy brush. However, decontamination of equipment (i.e. drilling augers) may require additional steps to ensure contaminants are not spread beyond the hot/warm zones. Heavy equipment (i.e. excavators, trucks used for waste transportation, etc.) may require a combination of steps, including the placement of gravel at the entrance/exit of the site.

11.1.1 Personnel Decontamination Procedures ☐ NA

Remove contaminated items (i.e. gloves) in an "inside out" manner within designated decontamination area located within the hot zone. Labels in compliance with the hazard communication standard will be affixed to containers of contaminated debris.

11.1.2 Equipment Decontamination Procedures ☐ NA

Instruments and equipment used during all phases of work will be decontaminated prior to and between locations to prevent cross-contamination. A triple rinse procedure will be used consisting of:

(1) Water and soap wash
(2) Potable water rinse
(3) Deionized water final rinse

For drilling equipment too large for triple rinse decontamination process, a pressure washer will be used to clean the equipment. A decontamination area will be set up to containerize the fluids and soils washed off equipment during the decontamination process.

Contaminated materials and liquids will be sampled and profiled for disposal at a certified waster treatment/disposal facility. Following profile acceptance, the contaminated materials and liquids will be transported and disposed of in accordance with state guidelines. Clean materials and liquids will be disposed of on site.

11.2 Site Security

Appropriate security measures will be established in coordination with the site owner/operator and communicated to site personnel. The objective of these measures is to (1) protect the public from potential exposure to physical/chemical hazards; (2) avoid public interference with personnel and safe work practices; and (3) prevent theft or vandalism of equipment at the site.

Site specific security measures include: ☒ NA

12.0 PERSONNEL TRAINING

TRC and Contractor personnel are required to acknowledge their understanding and willingness to comply with this HSP before admission to the site by signing the "Safety Compliance Agreement" (See **Attachment F**).

Site specific training requirements are indicated below:

☒ Personnel shall meet the training requirements specified in the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard [29 CFR 1910.120(e) and CCR Title 8 Section 5192(e)].

☐ Kinder Morgan Contractor Safety Video.

☒ ConocoPhillips

☐ ExxonMobil

☐ Refinery Training

☐ Railroad Training:

- ☐ UPRR Contractor Orientation
- ☐ BNSF Contractor Orientation
- ☐ Cal Train Contractor Orientation
- ☐ "FRA Roadway Worker"Training (works within 25' of track)

13.0 MEDICAL PROGRAM

TRC has established a medical surveillance program to assess, monitor, and help protect the health of employees, in particular, employees who may be exposed to potentially hazardous substances during site work. Personnel undergo medical examinations as follows:

- **Initial:** Pre-employment / prior to any assignment involving work in a hazardous or potentially hazardous environment. The initial examination is used to establish a baseline picture of health against which future changes can be measured, and to identify any underlying illnesses or conditions that might be aggravated by chemical exposures or job activities. This exam also certifies whether an employee is medically fit to wear a respirator.
- **Periodic:** At least once every 12 to 24 months (depending on the employees involvement in field activities) to measure changes in health status. This exam certifies whether an employee is still medically fit to wear a respirator.
- **Upon notification:** As soon as possible upon notification by an employee that they have developed signs or symptoms indicating possible overexposure to hazardous substances, or in response to an injury or exposure during an emergency situation.
- **Exit**: At termination of employment.

14.0 EMERGENCY RESPONSE PLAN

The TRC SSO (depending on which is present) will have controlling authority during an emergency. In the SSO's absence, the Alternate SSO will be in charge.

14.1 Evacuation Protocol

Evacuation protocol, routes and assembly areas from the site will be established by the SSO, and communicated to Field Personnel during the Tailgate Safety Meeting(s) prior to initiating work. In the event of an evacuation, personnel will meet at a pre-established assembly areas and the TRC SSO conduct a "head count" to see that everyone is accounted for. Contractor SSO is responsible for being able to provide an accurate head-count of contractor personnel.

14.2 First Aid & CPR

TRC employees and Contractors with current First Aid and CPR certification and who are willing to provide First Aid and CPR will be asked to identify themselves at Tailgate Safety Meetings. Their names will be documented on the Tailgate Meeting Checklist (**Attachment F**).

14.3 Emergency Medical Assistance

A list of emergency medical assistance sources has been established as part of this HSP. **ATTACHMENT C** lists the names, locations, and telephone numbers of emergency response organizations in the vicinity of the project site, and a map to the nearest hospital(s) with an *emergency room*.

A vehicle shall be available onsite during work activities to transport injured personnel to the identified emergency medical facilities, if necessary. Company vehicles are to be equipped with a fire extinguisher and first aid kit.

14.4 Emergency Procedures

In the event of an accident, injury, or other emergency, remember to:

- ❑ **Stop work and REMAIN CALM.**
- ❑ **Move personnel to a safe location (evacuation plan).**
- ❑ **Call 911 or notify other emergency facilities, as necessary.**
- ❑ **Address medical emergencies and apply first aid, if necessary.**
  - Move injured or exposed person(s) from immediate area only if it is safe to do so.
  - If serious injury or life-threatening condition exists, call 911. Clearly describe the location, injury and conditions to the dispatcher. Designate a person to direct emergency equipment to the injured person.
- ❑ **Contain physical hazards.**
  - Act only if hazard is minimal and you are trained to deal with the situation. Otherwise evacuate and wait for emergency services to arrive.
- ❑ **Notify SSO and initiate incident reporting procedures.**
  - See page 2 of this HSP for contact information. In the event the SSO is not available, the order of notification should be 1) Assistant SSO, 2) TRC Project Manager and 3) HR Manager (if incident involves injury) or EHS Supervisor (if incident does not involves injury).
  - TRC SSO is to notify TRC Project Manager/Supervisor as soon as reasonably possible.
- ❑ Do not resume work until the SSO has determined it is safe to do so.

15.0 INCIDENT REPORTING

In case of an accident, TRC personnel are to immediately report the incident to their Project Manager/Supervisor and follow the TRC incident reporting procedures detailed in the TRC IIPP. TRC's incident reporting forms are available through the Project Manager/Supervisor and include:

- TRC Incident Report
- Driver's Report of Accident
- TRC Potential / Near Miss Reporting Form
- TRC Employees Report of Incident
- TRC Witness Report of Incident
- Corrective Action Form

All incidents and near misses are investigated in accordance with TRC's IIPP. The TRC Incident Report Form is to be completed and submitted to the TRC EHS Supervisor within 24 hours following any incident.

Contractor personnel are to report incidents to their SSO who is then required to report the incident to the TRC SSO, TRC Alternate SSO or TRC Project Manager immediately.

Some important information to include when reporting an incident are:

1. A description of the event (including date and time)
2. Details regarding personal injury and property damage, if any.
3. Whether emergency services were notified (i.e., medical facilities, fire department, police department) and the basis for that decision. Including time and names of persons/agencies notified, and their response.
4. Clarify the need for and type of TRC support.
5. Immediate corrective action(s) taken.

16.0 HEALTH AND SAFETY PLAN (HSP) SIGNATURE PAGE

Job Safety Analysis Author	Date:	HSP Author	Date:

Review/Approvals:

Site Safety Officer Facility/Field Supervisor	Date:	Project Manager/Supervisor*	Date:
Local Safety Coordinator* ☐ **NA**	**Date**	**EHS Supervisor/Safety Professional (CIH, CSP, other)***	**Date**

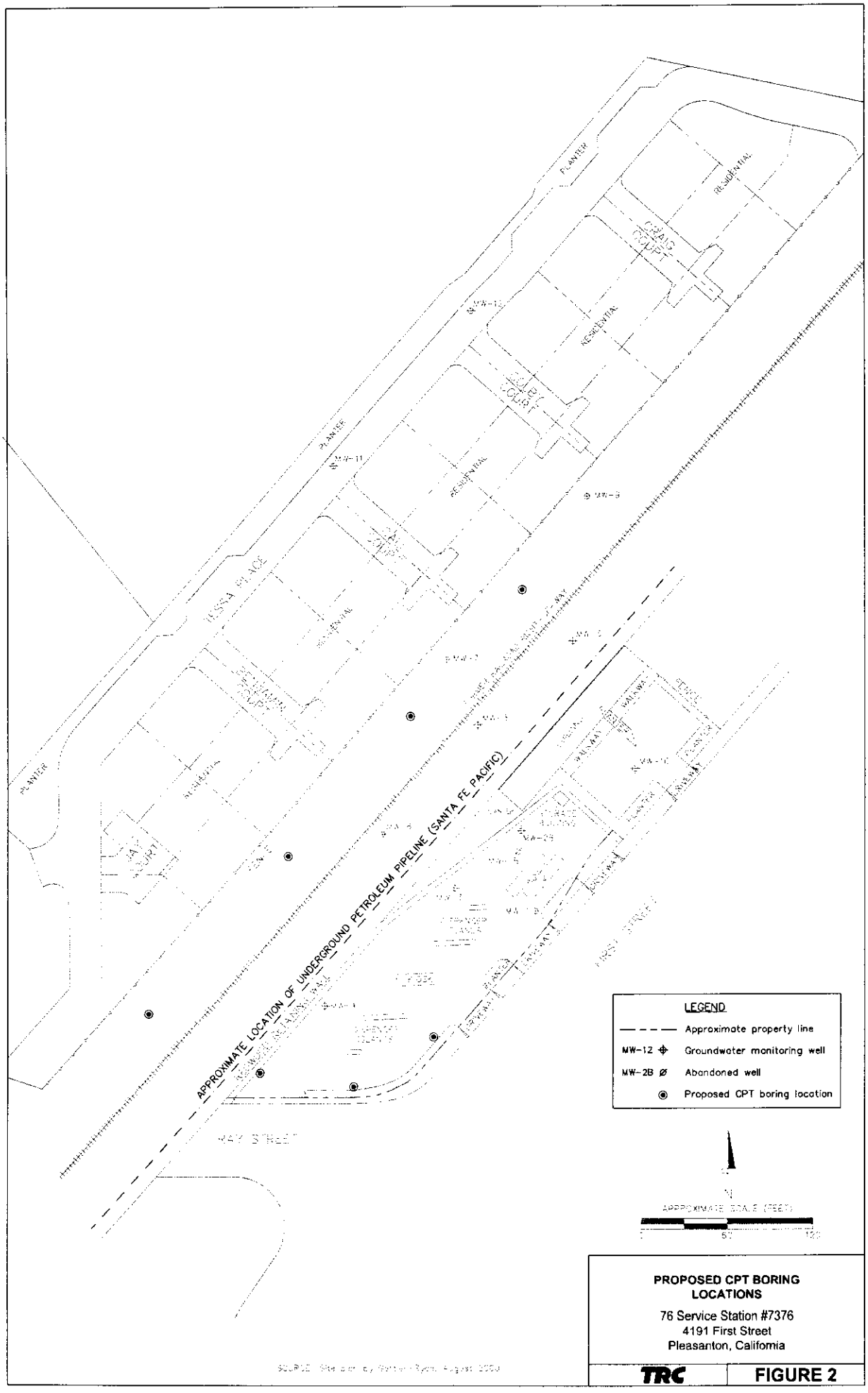
Additional Information or Instructions:

* Note: **For most projects, the Project Manager/Supervisor will review, approve and sign the HSP.** In the event the operations are beyond the normal scope of work, additional review is available upon the request from the PM/Supervisor. The Local Safety Coordinator is the first recourse for reviewing HSPs **not** involving high-risk operations. It is recommended that for HSPs involving high-risk operations (i.e. hazardous exposures to chemicals, large scale or deep excavations, confined space entry, etc.), the EHS Supervisor and/or a Safety Professional [Certified Industrial Hygienist (CIH), Certified Safety Professional (CSP) or other professionally qualified person] be consulted for review of the HSP to ensure proper protective measures are being implemented.

Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

ATTACHMENT A

SITE PLAN


PLANTER
RESIDENTIAL
CRAIG COURT
MESSA PLACE
APPROXIMATE LOCATION OF UNDERGROUND PETROLEUM PIPELINE (SANTA FE PACIFIC)
MAY STREET
LEGEND
Approximate property line
MW-12 Groundwater monitoring well
MW-2B Abandoned well
Proposed CPT boring location
APPROXIMATE SCALE (FEET)
PROPOSED CPT BORING LOCATIONS
76 Service Station #7376
4191 First Street
Pleasanton, California
TRC
FIGURE 2

Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

ATTACHMENT B

OCCUPATIONAL HEALTH GUIDELINES AND TOXICOLOGICAL INFORMATION

OCCUPATIONAL HEALTH GUIDELINES AND TOXICOLOGICAL INFORMATION

Gasoline Constituents

Contaminant	ACGIH TLV-TWA (ppm)	NIOSH REL (ppm)	OSHA PEL (ppm)	STEL (ppm)	IDLH (ppm)	Routes of Exposure	Known or Suspected Carcinogen	Symptoms
Diesel (as Stoddard solvent)	for Diesel fuel/ Kerosene 14.4 (skin only)	Approx. 60-98	500	250-500 (NIOSH ceiling)	Approx. 3000-5600	Inhalation, Ingestion, Contact	No	Irritation to eyes, skin, mucous membrane; dermatitis, headache, fatigue, blurred vision, dizziness, slurred speech, confusion, convulsions, aspiration, weakness, restlessness, incoordination
Gasoline	300	n/a	n/a	500 (ACGIH)	n/a	Inhalation, Absorption, Ingestion, Contact	Yes	Irritation to eyes, skin, mucous membrane; dermatitis, headache, fatigue, blurred vision, dizziness, slurred speech, confusion, convulsions, aspiration
Benzene	0.5	0.1	1	1 (NIOSH)	500	Inhalation, Absorption, Ingestion, Contact	Yes	Irritation to eyes, skin, nose, resp system, giddiness, headache, nausea, staggered gait, fatigue, anorexia, weakness/exhaustion, dermatitis
Toluene	50	100	200	150 (NIOSH)	500	Inhalation, Absorption, Ingestion, Contact	No	Irritation to eyes, nose; fatigue, weakness, confusion, euphoria, dizziness, headache, dilated pupils, tears, nervousness, muscle fatigue, insomnia, dermatitis
Ethylbenzene	100	100	100	125 (NIOSH& ACGIH)	800	Inhalation, Ingestion, Contact	No	Irritation to eyes, skin, mucous membranes; headache, dermatitis, narcosis, coma
Xylenes (o,m,p,)	100	100	100	150 (NIOSH & ACGIH)	900	Inhalation, Absorption, Ingestion, Contact	No	Irritation to eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination,staggering gait, nausea, vomiting, abdominal pain, dermatitis
Methyl tert butyl ether (MTBE)	40	n/a	n/a	n/a	n/a	n/a	n/a	n/a

DEFINITIONS

ACGIH TLV-TWA	American Conference of Governmental Industrial Hygienists, Threshold Limit Value-Time Weighted Average
NIOSH REL	National Institute of Occupational Safety & Health, Recommended Exposure Limit
STEL	Short Term Exposure Limit (Gasoline STEL is by ACGIH; BTEX STELs are by NIOSH)
OSHA PEL	Occupational Safety and Health Administration, Permissible Exposure Limit
IDLH	Immediately Dangerous to Life and Health
ppm	parts per million
CNS	Central Nervous System
n/a	not available (i.e., no value has been established)

Threshold Limit Value: Threshold limit values (TLVs) refer to airborne concentrations of substances and represent conditions under which it is believed nearly all workers may be repeatedly exposed, day after day, without adverse health effects.

Threshold Limit Value - Time Weighted Average: The time weighted average (TWA) is a concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect. TLV-TWAs are established by the ACGIH.

Recommended Exposure Limit: Unless otherwise noted, the recommended exposure limit (REL) is a TWA concentration for up to a 10-hour workday during a 40-hour workweek. RELs are established by NIOSH to reduce or eliminate adverse occupational health effects.

Short Term Exposure Limit: A short term exposure limit (STEL) is defined as a 15-minute TWA exposure that should not be exceeded at any time during a workday. When compared to the REL (or TLV-TWA for ACGIH standards), the STEL allows the worker to be exposed to a higher concentration, BUT for a shorter period of time. Exposures above the REL up to the STEL should not be longer than 15 minutes and should not occur more than four times per day.

Permissible Exposure Limit: Permissible exposure limits (PELs) are TWA concentrations that must not be exceeded during any 8-hour work shift of a 40-hour workweek. PELs are established by OSHA (29 CFR 1910.1000).

Immediately Dangerous to Life and Health: Immediately dangerous to life and health (IDLH) values are established as concentrations from which a worker can escape within 30 minutes without suffering loss of life, irreversible health effects, or other deleterious effects that could prevent him/her from escaping the hazardous environment. The purpose of establishing an IDLH exposure concentration is to ensure that workers can escape from a given contaminated environment in the event of failure of respiratory protection equipment.

Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

ATTACHMENT C

EMERGENCY SERVICES
PHONE NUMBERS, DIRECTIONS, AND LOCAL AREA MAP

Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

EMERGENCY SERVICES

FACILITY / LOCATION	TELEPHONE
Emergency Situation	**911**
TRC 24 HOUR Notification Number	**1-800-274-9072**

Hospital Name, Address, Phone
Valley Care Medical Center
5555 W. Los Positas Blvd
Pleasanton, California
(925) 847-3000

Directions
1. Start at **4191 1ST ST, PLEASANTON** - go < **0.1** mi
2. Turn R on **RAY ST** - go **0.2** mi
3. Turn R on **MAIN ST** - go **0.2** mi
4. **MAIN ST** becomes **SANTA RITA RD** - go **1.8** mi
5. Turn L on **W LAS POSITAS BLVD** - go **0.1** mi
6. Turn L on **APACHE DR** - go < **0.1** mi
7. Turn L on **W LAS POSITAS BLVD** - go < **0.1** mi
8. Arrive at **VALLEYCARE MEDICAL CENTER**

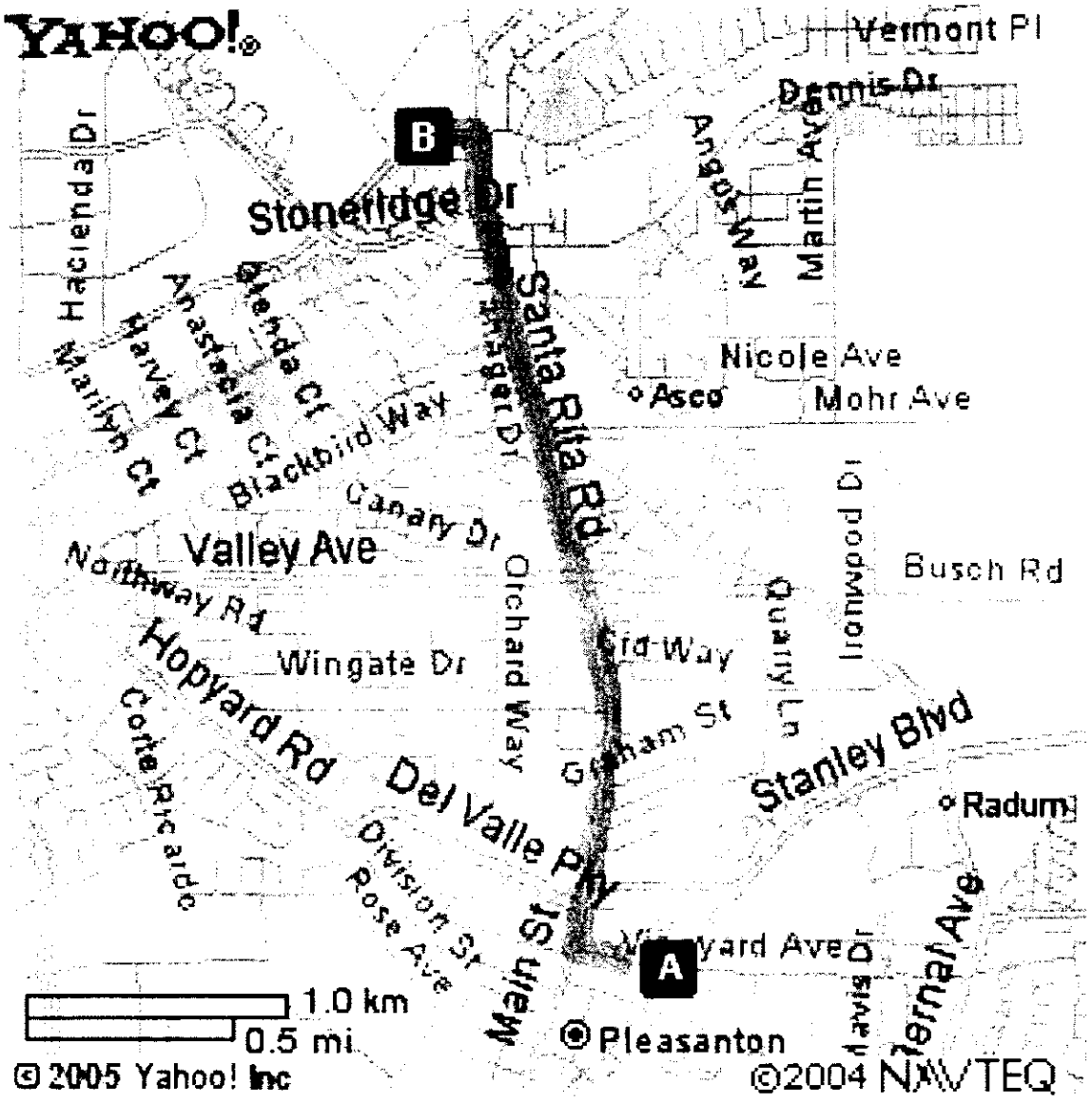
Poison Control Center California Poison Control System - San Diego Division University of San Diego Medical Center 200 W. Arbor Drive San Diego, California 92103-8925	(800) 876-4766
Office of Emergency Services	(800) 852-7550
USA Dig Alert of Southern California	(800) 422-4133

Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

ATTACHMENT D

LOCAL AREA MAP
with routes to hospital

LOCAL AREA MAP
with route to hospital



Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

ATTACHMENT E

JOB SAFETY ANALYSIS

TRC JOB SAFETY ANALYSIS
(Revised November 2005)

COMPANY/ PROJECT NAME or ID/ LOCATION (City, State)	DATE		
TRC / 76 Service Station #7376, Pleasanton, California	November 16, 2005	☒ NEW ☐ REVISED	

WORK ACTIVITY (Description):
Hollow stem auger and CPT Drilling

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Steve Kemnitz	Project Scientist	Mohammad Bazargani	Project Director
Keith Woodburne	Senior Project Geologist		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (SEE CRITICAL ACTIONS FOR TASK-SPECIFIC REQUIREMENTS)

☒ REFLECTIVE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER
☐ LIFELINE / HARNESS	☒ HEARING PROTECTION	☐ PPE CLOTHING	
☒ SAFETY GLASSES	☒ SAFETY SHOES		

- **THROUGHOUT THE DAY - MENTALLY FOCUS UPON EACH NEW TASK, DIFFERENT PROCEDURES, AND SKILL SETS TO BE USED.**

[1]JOB STEPS	[2]POTENTIAL HAZARDS	[3]CRITICAL ACTIONS TO MITIGATE HAZARDS
1. Set-up	a. Lack of concentration or focus	a. Review all plans (HASP, Work, Utility Plans, etc.) and logs in field notebook prior to starting a new task. Identify daily tasks and required personnel actions.
	b. Fire and explosion	b. No smoking or open flame. Periodically monitor ambient air concentrations with PID/LEL Meter. Shut down job and move personnel and equipment upwind if hydrocarbon concentrations are > 300 ppm or >10% of LEL. b. Place 2-20lb ABC Fire extinguishers in accordance site safety officer's direction.
	c. Electric Shock / Electrocution	c. Have a qualified electrician from power company cut all power connections to the site and remove main breaker from power panel. c. De-Energize all circuits/power sources and follow TRC's Lock-Out, Tag-Out (LOTO) procedures.
	d. Malfunctioning Heavy Equipment Safety Devices	d. Inspect drill rig to determine if in good condition. Perform all equipment and safety checks prior to event startup (per operating manual).
	e. Being struck by moving vehicles or equipment onsite.	e. Always wear safety vest, establish eye contact with operators utilizing flag men wear appropriate. e. Vehicles shall use reverse beepers or flagmen.
	f. Bad organization creating confusion and hazard	f. Identify staging area with good access lateral and vertical for loading and unloading of trucks.
	g. Unauthorized Personnel in exclusion zone	g. Create an exclusion zone within 25-feet of the centerline of the railroad tracks. Use visitor check-in log and allow no-one in exclusion area with out proper PPE (as defined on this JSA)and training documentation (HAZWOPER, BNSF Contractor Orientation, UPRR Contractor Orientation, and FRA Roadway Worker). and training.
2. Drilling.	a. Contact with subsurface water, gas, electrical, and/or fiber optic lines in the vicinity of drilling locations.	a. Following the hole clearance and drilling procedures outlined in TRC's Subsurface Disturbance Safety Checklist a. If unknown lines or obstructions are encountered, Stop drilling and notify Contact PM. Do not undermine any utilities.
	b. Walking Drill Auger	b. Place conductor casing in open boring prior to start of drilling operations.
	c. Broken wire cable or detached drill stem	c. Do not stand directly in front of the drill rig while machinery is operating. Stand off to the side by driller's platform or opposite side of drill rig.
	d. Distracted Driller	d. Always communicate with the driller before approaching the operating drill stem.
	e. Slips, trips, and falls	e. Spread absorbent to soak up any pools of water prior to start of drilling.

TRC JOB SAFETY ANALYSIS

(Revised November 2005)

		e. Maintain a clean, unobstructed work area by good house keeping and placing unused equipment away from work area.
		e. Clean-up work area as you go.
	f. Soil Cross-contamination	f. Place drip pans under hydraulic jacks and pumps on drill rig.
	g. Cut/Pinched fingers or toes; and strained muscles.	g. Wear proper work and protective clothing (long pants, sleeved-shirt, steel-toed boots, safety vest, safety glasses, and safety helmet) at all times while on jobsite.
		g. Use proper lifting techniques and 2-man rule as outlined in TRC's Employee IIPP Handbook and "Back Injury Prevention Training" handbook, when moving heavy objects (>70 lbs).
	h. Noise	h. All personnel will use hearing protection within work area while heavy machinery is operating.
	i. Flying particles, dust and hazardous substances from clearance activities	i. Safety glasses or splash goggles will be worn at all times.
	j. Exposure to hydrocarbon impacted soil.	j. Wear latex or nitrile gloves during handling of soil or groundwater.
	k. Toxic or explosive atmosphere	k. Periodically monitor ambient atmosphere with PID or LEL meter. Shut down job and move personnel and equipment upwind if hydrocarbon concentrations are > 300 ppm or >10% of LEL.
4.Site Clean-up	a. Bad Organization	a. Identify and delineate soil stockpile area or storage area if soil cuttings/purge water are to be be drummed.
	b. Muscle strains, cuts and pinches	a. Blot up puddles of standing water and the work area will be swept.
		b. Get assistance for moving heavy objects and mixing grout/concrete. Use mechanical aids to move objects or mix grout/concrete.
		c. Wear leather gloves during the opening and closing of drums to protect fingers.
		c. Use only drum dolly to move drums with soil, hydrated bentonite grout, or concrete.
		d. Place all removed auger piping, well casing and well screen to side, so as not to become a trip hazard
		d. Do not overload cart or drum dolly being used to move augers.
		e. Safety glasses, splash goggles, or face shield will be worn at all times when spraying/decontaminating augers.
		e. Do not overspray while cleaning augers. Create a "clean zone" with plastic liner for placement of decontaminated augers.

[1] Each Job or Operation consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the associated hazards in Column 2

[2] A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress / ergonomics / lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught"

[3] Aligning with the first two columns, describe what actions or procedures are necessary to eliminate or minimize the hazards. Be clear, concise and specific. Use objective, observable and quantified terms. Avoid subjective general statements such as, "be careful" or "use as appropriate".

LIMITATION: As part of TRC's EHS Policy, a JSA is provided by TRC for its employees. The purpose of a JSA is NOT to identify all hazards associated with a task, but to identify some potential hazards to get TRC and other onsite personnel thinking about other potential safety hazards and mitigating actions for unsafe conditions and behavior during various works. TRC recognizes that JSA's may not cover every conceivable step or hazard that emerges during a job, so we've provided a "Field Change" section below to amend a JSA if required. The JSA does not supersede or replace any local, state or federal permit, regulation, statute or other entities policies and procedures but is simply a tool for enhancing the execution of safe work at a jobsite under TRC's supervision. Similarly, all subcontractors are required to provide their own JSA(s) for their specialty prior to performing any work for TRC or its customers in accordance with TRC's EHS Policy; however, any unsafe condition or hazard not covered in any JSA is ultimately the direct responsibility of the person or entity performing the work

TRC JOB SAFETY ANALYSIS
(Revised November 2005)

Field Changes:

TRC JOB SAFETY ANALYSIS
(Revised November 2005)

COMPANY/ PROJECT NAME or ID/ LOCATION (City, State)	DATE	☐ NEW ☒ REVISED	
TRC / 76 Service Station #7376, Pleasanton, California	November 16, 2005		

WORK ACTIVITY (Description):
Groundwater monitoring and sampling

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Steve Kemnitz	Project Scientist	Mohammad Bazargani	Project Director
Keith Woodburne	Senior Project Geologist		

MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (SEE CRITICAL ACTIONS FOR TASK-SPECIFIC REQUIREMENTS)

☒ REFLECTIVE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER
☐ LIFELINE / HARNESS	☒ HEARING PROTECTION	☐ PPE CLOTHING	
☒ SAFETY GLASSES	☒ SAFETY SHOES		

- **THROUGHOUT THE DAY - MENTALLY FOCUS UPON EACH NEW TASK, DIFFERENT PROCEDURES, AND SKILL SETS TO BE USED.**

[1]JOB STEPS	[2]POTENTIAL HAZARDS	[3]CRITICAL ACTIONS TO MITIGATE HAZARDS
1. Task Change Safety Analysis.	a. Not mentally focused upon new task / different procedures and skill set to be used	a. Place first aid kit and fire extinguishers in highly visible, nearby location. a. Evaluate site conditions. a. Identify location(s) of all emergency shut-off devices. a. Perform all necessary equipment and safety checks prior to event startup (per operating manual). a. Check sounding and measurement equipment for shorts, frayed wires, or loose connections.
2. Groundwater and LPH Measurements	a. Physical Injury or equipment damage from lack of concentration b. Physical Injury from being struck by moving vehicles.	a. Review all plans and logs in field notebook prior to starting a new task. a. Leave cell phones and pagers in vehicle when working. b. Always face traffic or moving equipment when working (establish eye contact with drivers). b. Use cones/delineators and caution tape/signs to alert pedestrian and traffic. Place work vehicle (drill rig, vac truck, sampling truck, etc.) between oncoming traffic and work area to provide additional traffic barrier. b. Use "buddy system" when unable to observe traffic of moving equipment.
	c. Pinched fingers or toes; and strained muscles.	c. Wear leather gloves when opening barrels & well lids, lifting sharp or heavy equipment. c. Lift heavy objects utilizing leg muscles rather than depending entirely on your back. Get assistance when equipment exceeds 50-lbs.
	d. Lost equipment and damage to well from foreign objects.	d. Fasten equipment raising and lowering ropes or cables to object larger than well diameter. Carry no loose pens or tools in pockets, place well lid fasteners away from well opening.
	e. Hazards: • Fire/Explosions • Electrocution • Contamination • Slip/trip/falls • Noise	e. No Smoking or Open Flames while on site. Request anyone smoking to please extinguish cigarettes. e. Perform all necessary equipment and safety checks prior to event startup (per operating manual). e. Wear nitrile or latex gloves with handling water or soil. Wear Safety glasses with splash guards when handling groundwater. e. Maintain good house keeping - place unused equipment out walkways and work areas. Clean-up all spills. e. Use hearing protection when working with operating equipment.
	f. Physical injury to visitors/spectators	f. Control entry in work area using exclusions zones and check-in log in field notebook.

TRC JOB SAFETY ANALYSIS

(Revised November 2005)

3. Groundwater Purging	a. Physical injury from being struck by moving vehicles.	a. Always face traffic when working. a. Place work vehicle (drill rig, vac truck, sampling truck, etc.) between oncoming traffic and work area to provide additional traffic barrier.
	b. Possible splash hazard.	b. Wear safety glasses b. Wear nitrile gloves when handling of groundwater.
	c. Pinched fingers during the opening /closing of purge water storage drums.	c. Wear work gloves when any potential for hand injury exists. c. Use proper tools for opening and closing purge water storage barrels.
	d. Overfill and spills.	d. Observe transfer of purge water and fasten barrel lids properly when purging activities are completed.
	e. Slips, trips, and falls hazard.	e. Use portable steps to mount and dismount sampling vehicle. Place equipment and tools down on truck bed before mounting and dismounting sampling vehicle. e. Maintain good housekeeping and keep area clear of loose equipment and measurement devices.
	f. Muscle strains, cuts and pinches.	f. Use proper equipment for lowering and raising depth to measurement devices and hand bailer. f. Use proper physical/pulling techniques for turning on the generator pull start cord. f. Use Proper lifting techniques for pulling the hand bailer.
4.Site Clean-up	a. Bad Organization	a. Clean-up area as you work. Prevent puddles of standing water.
	b. Muscle strains, cuts and pinches	b. Get assistance for moving heavy objects. b. Wear leather gloves to protect hands.

[1] Each Job or Operation consists of a set of steps. Be sure to list all the steps in the sequence that they are performed. Specify the equipment or other details to set the basis for the associated hazards in Column 2

[2] A hazard is a potential danger. What can go wrong? How can someone get hurt? Consider, but do not limit, the analysis to: **Contact** - victim is struck by or strikes an object; **Caught** - victim is caught on, caught in or caught between objects; **Fall** - victim falls to ground or lower level (includes slips and trips); **Exertion** - excessive strain or stress / ergonomics / lifting techniques; **Exposure** - inhalation/skin hazards. Specify the hazards and do not limit the description to a single word such as "Caught"

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LIMITATION: As part of TRC's EHS Policy, a JSA is provided by TRC for its employees. The purpose of a JSA is NOT to identify all hazards associated with a task, but to identify some potential hazards to get TRC and other onsite personnel thinking about other potential safety hazards and mitigating actions for unsafe conditions and behavior during various works. TRC recognizes that JSA's may not cover every conceivable step or hazard that emerges during a job, so we've provided a "Field Change" section below to amend a JSA if required. The JSA does not supersede or replace any local, state or federal permit, regulation, statute or other entities policies and procedures but is simply a tool for enhancing the execution of safe work at a jobsite under TRC's supervision. Similarly, all subcontractors are required to provide their own JSA(s) for their specialty prior to performing any work for TRC or its customers in accordance with TRC's EHS Policy; however, any unsafe condition or hazard not covered in any JSA is ultimately the direct responsibility of the person or entity performing the work

Field Changes:

TRC JOB SAFETY ANALYSIS

(Revised November 2005)

Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

ATTACHMENT F

TAILGATE SAFETY MEETING CHECKLIST

AND

HSP COMPLIANCE AGREEMENT

Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

TAILGATE SAFETY MEETING CHECKLIST

Date / Time of Tailgate Meeting: _____

☐ **Vehicle Inspection:** Driver will perform Driver's Daily Vehicle Inspection Checklist before leaving the yard or if changing drivers during the day.

☐ **Personnel training/qualifications:** Check cards for OSHA HAZWOPER 40-hour certification/8-hour-refresher training (or any other specialized training to perform the task if appropriate). TRC personnel have been trained on the Company's Drug and Alcohol Policy and will inform all site personnel.

☐ **Supplies:** Indicate location of first aid kit, fire extinguisher, clean water supply (drinking, eye wash), and Site Health and Safety Plan (HSP).

☐ **Emergency services:** Discuss location of nearest telephone and directions to hospital. Map, directions, phone numbers are provided in the HSP (Attachment C).
The TRC Emergency Twenty-four Hour Number is 1-800-274-0972.

- **First-Aid/CPR volunteers:** _____

_____

☐ **Site background:** Discuss types, locations, and concentrations of chemicals found onsite, presence of free product, depth to groundwater, etc.

☐ **Offsite Permits/Access Permits:** Discuss any permitting requirements for the site.

Work activities: Discuss scope of work for the day and activities to be performed.

☐ **Potential hazards: Review JSAs.** Discuss physical, chemical and biological hazards Discuss the prohibiting of any eating, drinking, and/or smoking in the work zone

☐ **Personal protective equipment (PPE):** Discuss required level of protection; review additional PPE requirements in JSAs, as needed.

☐ Hard Hat ☐ Safety Shoes/Boots ☐ Safety Vest ☐ Eye Protection - ☐ glasses ☐ goggles

☐ face shield ☐ Hand Protection - ☐ leather ☐ nitrile ☐ other _____ ☐ Hearing Protection

☐ Respiratory Protection - ☐ APR Particulate ☐ APR Chemical cartridge ☐ other _____
☐ Protective Clothing - ☐ Tyvex ☐ Nomex ☐ Coveralls ☐ other _____

☐ **Utilities:** Utilities have been cleared/marked by appropriate divisions.

☐ **Traffic control** (vehicular and pedestrian): Work area is properly delineated and cordoned off from traffic. Technician will put a traffic cone at all four corners of his parked vehicle. Upon completion of work, walk around vehicle to pick up cones and check all four sides and underneath vehicle for obstacles prior to moving truck.

☐ **Dispenser Emergency Shut-off Switch:** Location has been identified/communicated with field personnel.

☐ **Dealer Notification:** Notify dealer/owner of site work activities to be performed.

Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

HSP COMPLIANCE AGREEMENT

By signing below, I have completed the Tailgate Safety Meeting Checklist, reviewed this Site Health and Safety Plan and the Job Safety Analysis (JSA) and understand their contents. I hereby agree to comply with all safety requirements outlined herein:

TRC

Signature: _____, **Site Safety Officer (SSO)**

Print Name: _____ **Date:** _____

Signature: _____, **Asst. Site Safety Officer** (Asst. SSO)

Print Name: _____ **Date:** _____

Contractor:

Signature: _____, **Site Safety Officer (SSO)**

Print Name: _____ **Date:** _____

Signature: _____, **Asst. Site Safety Officer** (Asst. SSO)

Print Name: _____ **Date:** _____

Contractor:

Signature: _____, **Site Safety Officer (SSO)**

Print Name: _____ **Date:** _____

Signature: _____, **Asst. Site Safety Officer** (Asst. SSO)

Print Name: _____ **Date:** _____

TRC Employees / Contractor Personnel / Visitors

Signature: _____ Date: _____

Print Name: _____ Company: _____

Signature: _____ Date: _____

Print Name: _____ Company: _____

Site Specific Health & Safety Plan (HSP)
Project Name/Site Number: 76 Service Station #7376
Date of HSP Initial Preparation: 11/16/05

HSP COMPLIANCE AGREEMENT (cont.)

By signing below, I have completed the Tailgate Safety Meeting Checklist, reviewed this Site Health and Safety Plan and the Job Safety Analysis (JSA) and understand their contents. I hereby agree to comply with all safety requirements outlined herein:

TRC Employees / Contractor Personnel / Visitors (cont.)

Signature: _____ Date: _____

Print Name: _____ Company: _____

Signature: _____ Date: _____

Print Name: _____ Company: _____

Signature: _____ Date: _____

Print Name: _____ Company: _____

Signature: _____ Date: _____

Print Name: _____ Company: _____

Signature: _____ Date: _____

Print Name: _____ Company: _____

Signature: _____ Date: _____

Print Name: _____ Company: _____

Signature: _____ Date: _____

Print Name: _____ Company: _____

Signature: _____ Date: _____

Print Name: _____ Company: _____

Signature: _____ Date: _____

Print Name: _____ Company: _____

APPENDIX B

GENERAL FIELD PROCEDURES

GENERAL FIELD PROCEDURES

A description of the general field procedures used during site investigation and monitoring activities is presented below. For an overview of protocol, refer to the appropriate section(s).

DIRECT PUSH SOIL SAMPLING

Soil sampling points are driven into the soil using hydraulically-actuated "direct-push" and percussion equipment. The soil sampling points consist of 1.5-inch-diameter hollow steel rods fitted with a reverse-threaded or sliding hardened drive point. Borings will be grouted to ground surface with a cement/bentonite slurry

Soil samples are obtained for soil description, field hydrocarbon vapor screening, and possible laboratory analysis. Soil samples are retrieved from the borings using a 3-foot-long, 2-inch diameter continuous-core split-barrel sampler lined with six 1.5-inch-diameter stainless steel/brass sample tubes or a 3-foot-long acetate liner.

During drilling activities, soil adjacent to the laboratory sample is screened for combustible vapors using a combustible gas indicator (CGI) or equivalent field instrument. For each hydrocarbon vapor screening event, a stainless steel tube is filled approximately 1/3 full with the soil sample, capped at both ends, and shaken. The probe is then inserted through a small opening in the cap, and a reading is taken after approximately 15ÿseconds and recorded on the boring log. The remaining soil recovered is removed from the sample insert or sampler, and described in accordance with the Unified Soil Classification System. For each sampling interval, field estimates of soil type, density/consistency, moisture, color, and grading are recorded on the boring logs.

HYDROPUNCH GROUNDWATER SAMPLING

Temporary groundwater sampling points are driven approximately one to three feet into groundwater using hydraulically-actuated "direct-push" and percussion equipment. The groundwater sampling points consist of 1.5-inch-diameter hollow steel rods fitted with a reverse-threaded or sliding hardened drive point. At the selected depth, the rods are retracted slightly exposing a steel inner well screen to open formation groundwater.

MONITORING WELL DRILLING AND SOIL SAMPLING

Soil borings are drilled using continuous-flight, hollow-stem augers. Borings that are not completed as monitoring wells are grouted to within 5 feet of the ground surface with a cement/bentonite slurry. The remaining 5 feet is filled with concrete.

Soil samples are obtained for soil description, field hydrocarbon vapor screening, and possible laboratory analysis. Soil samples are retrieved from the borings by one of two methods: 1) continuously, using a 5-foot-long, continuous-core barrel sampler advanced into the soil with the lead auger; sample tubes are driven into the core with a mallet, or 2) at 2.5- or 5-foot intervals, using a standard split-spoon sampler lined with four 1.5-inch-diameter stainless steel or brass sample inserts.

The split-spoon sampler is driven approximately 18 inches beyond the lead auger with a 140-pound hammer dropped from a height of 30 inches.

For hand auger borings and hand-held, power-driven auger borings, soil samples are retrieved using a hand-driven slide hammer lined with a 1.5-inch-diameter stainless steel sample tube.

During drilling activities, soil adjacent to the laboratory sample is screened for combustible vapors using a combustible gas indicator (CGI) or equivalent field instrument. For each hydrocarbon vapor-screening event, a 6-inch-long by 2.5-inch-diameter sample insert is filled approximately 1/3 full with the soil sample, capped at both ends, and shaken. The probe is then inserted through a small opening in the cap, and a reading is taken after approximately 15 seconds and recorded on the boring log. The remaining soil recovered is removed from the sample insert or sampler, and described in accordance with the Unified Soil Classification System. For each sampling interval, field estimates of soil type, density/consistency, moisture, color, and grading are recorded on the boring logs.

SOIL SAMPLE HANDLING

Upon retrieval, soil samples are immediately removed from the sampler, sealed with Teflon sheeting and polyurethane caps, and wrapped with tape. Each sample is labeled with the project number, boring/well number, sample depth, geologist's initials, and date of collection. After the samples have been labeled and documented in the chain of custody record, they are placed in a cooler with ice at approximately 4 degrees Celsius (°C) prior to and during transport to a state-certified laboratory for analysis. Samples not selected for immediate analysis may be transported in a cooler with ice and archived in a frostless refrigerator at approximately 4°C for possible future testing.

MONITORING WELL INSTALLATION

Monitoring wells are constructed of 2-inch-diameter, flush-threaded Schedule 40 PVC blank and screened (0.020-inch slot size) casing. Where possible, the screened interval will extend at least 10 feet above, and 10 to 20 feet below, the top of the groundwater table. The annular space surrounding the screened casing is backfilled with No. 3 Monterey sand (filter pack) to approximately 2 feet above the top of the screened section.

During well construction, the filter pack is completed by surging with a rig-mounted surge block. A 3-foot-thick bentonite annular seal is placed above the filter pack. The remaining annular space is grouted with Portland cement and/or bentonite grout to the surface. Utility access boxes are installed slightly above grade. Locking, watertight caps are installed to prevent unauthorized access to the well, and limit infiltration of surface fluids.

FLUID LEVEL MONITORING

Fluid levels are monitored in the wells using an electronic interface probe with conductance sensors. The presence of liquid-phase hydrocarbons is verified using a hydrocarbon-reactive paste. The depth to liquid-phase hydrocarbons and water is measured relative to the well box top or top of casing. Well boxes or casing elevations are surveyed to within 0.02 foot relative to a county or city benchmark.

GROUNDWATER PURGING AND SAMPLING

Groundwater monitoring wells are purged and sampled in accordance with standard regulatory protocol. Typically, monitoring wells that contain no liquid-phase hydrocarbons are purged of groundwater prior to sampling so that fluids sampled are representative of fluids within the formation. Temperature, pH, and specific conductance are typically measured after each well casing volume has been removed. Purging is considered complete when these parameters vary less than 10% from the previous readings, or when four casing volumes of fluid have been removed. Samples are collected without further purging if the well does not recharge within 2 hours to 80% of its volume before purging.

The purged water is either pumped directly into a licensed vacuum truck or temporarily stored in labeled drums prior to transport to an appropriate treatment or recycling facility. If an automatic recovery system (ARS) is operating at the site, purged water may be pumped into the ARS for treatment.

Groundwater samples are collected by lowering a 1.5-inch-diameter, bottom-fill, disposable polyethylene bailer just below the static water level in the well. The samples are carefully transferred from the check-valve-equipped bailer to 1-liter and 40-milliliter glass containers. The sample containers are filled to zero headspace and fitted with Teflon-sealed caps. Each sample is labeled with the project number, well number, sample date, and sampler's initials. Samples remain chilled at approximately 4°C prior to analysis by a state-certified laboratory.

CHAIN OF CUSTODY PROTOCOL

Chain of custody protocol is followed for all soil and groundwater samples selected for laboratory analysis. The chain of custody form(s) accompanies the samples from the sampling locality to the laboratory, providing a continuous record of possession prior to analysis.

DECONTAMINATION

Drilling and Soil Sampling

Drilling equipment is decontaminated by steam cleaning before being brought onsite. The augers are also steam cleaned before each new boring is commenced. Prior to use, the sampler and sampling tubes are brush-scrubbed in a Liquinox and potable water solution and rinsed twice in clean potable water. Sampling equipment and tubes are also decontaminated before each sample is collected to avoid cross-contamination between borings.

Groundwater Sampling

Purging and sampling equipment that could contact well fluids is either dedicated to a particular well or cleaned prior to each use in a Liquinox solution followed by two tap water rinses, prior to analysis.