20-350

September 4, 2003

Ms. Eva Chu
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **TPE Event Work Plan**
Former Chevron Service Station No. 9-5607
5269 Crow Canyon Road
Castro Valley, California

Dear Ms. Chu:

On behalf of Chevron Products Company (Chevron), Cambria Environmental Technology, Inc. (Cambria) is submitting this work plan to perform a two-phase extraction (TPE) event at the site referenced above (Figure 1). TPE is a technology that simultaneously extracts groundwater and soil vapor in the same process stream. A large liquid-ring blower is used to apply vacuum to selected extraction wells to extract groundwater and soil vapor. The process stream is then routed to a vapor/liquid separator, where groundwater and soil vapor are routed to separate abatement/treatment devices. This TPE event was originally proposed in the September 23, 2002 report prepared by Delta Environmental titled *Source Area Assessment and Proposed Work.* Details of the proposed TPE event are presented below.

PROPOSED SCOPE OF WORK

TPE pilot test equipment will be mobilized and set up on site. We will conduct a five-day extraction event simultaneously on wells C-3 and C-6. A 25-horsepower liquid-ring blower will be used to apply vacuum to the extraction wells. Technical specifications for the blower/oxidizer package are attached. A down well vacuum hose attached to the extraction equipment will be used to lower the water levels in the wells to expose and extract the residual SPH from the saturated zone. Extracted groundwater will be separated in a vapor/liquid separator. Once the separator becomes full, water will be pumped into a 6,500 gallon Baker tank, then through two 200 lb. activated carbon vessels connected in series and discharged to the sanitary sewer under a temporary discharge permit issued by the East Bay Municipal Utility District (EBMUD).

The soil vapor process stream will be run through the vapor/liquid separator, where water vapor will be separated out of the process stream prior to abatement by a thermal oxidizer. The oxidizer will be supplementally fueled by propane, stored on-site in an above-ground tank. Once treated, extracted soil vapor will be discharged to the atmosphere. During the event, influent vapor concentrations will be

monitored using a flame-ionizing detector (FID). Additionally, ground water levels in selected site monitoring wells will be measured to assess water level drawdown across the site during the extraction event. We will contact the Bay Area Air Quality Management District prior to testing to notify them of the five-day extraction event.

SCHEDULE

Once we receive approval from your office for the proposed scope of work, we will immediately begin obtaining the necessary permits for the TPE event. Once the TPE event is completed, Cambria will submit a report describing test procedures and results. We will submit our pilot test report approximately four to six weeks after the test is performed.

gbentley@cambraenv.com

We appreciate this opportunity to work with you on this site. Please call Greg Bentley at (510) 420-3346 if you have any questions or comments about the proposed pilot test activities.

Sincerely,
Cambria Environmental Technology, Inc.

Greg Bentley
Senior Staff Scientist

Robert Foss

Robert Foss, R.G.
Senior Project Geologist

cc: Ms. Karen Streich, Chevron Products Company, P.O. Box 6004, San Ramon, CA 94583

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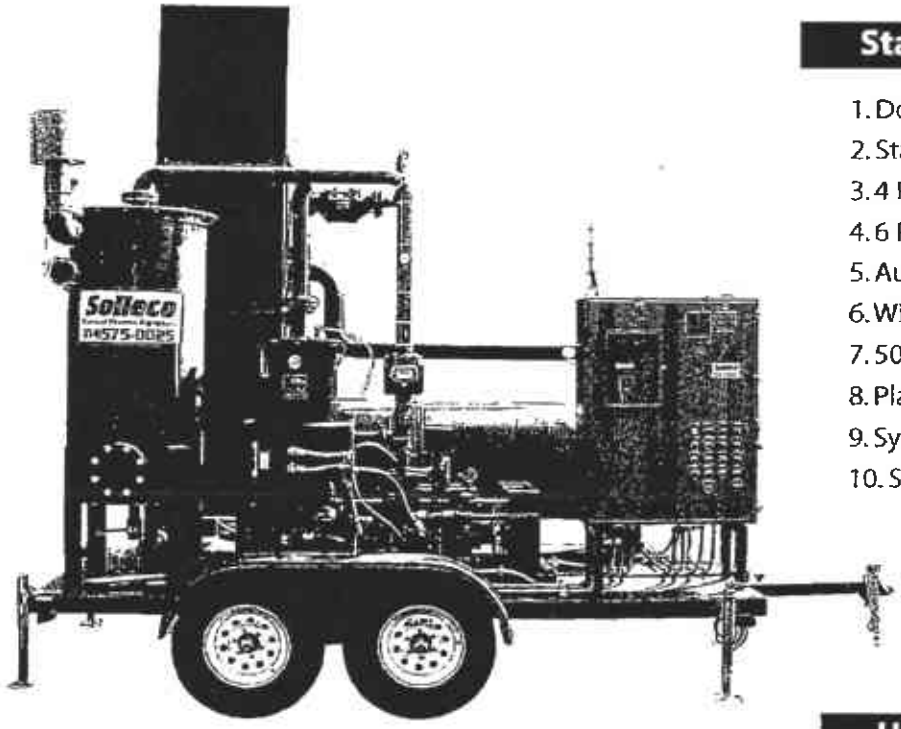
Solleco 400LR THERMAL CATALYTIC OXIDIZER

Standard Features

- Skid mounted system (84" x 120")
- 200 gallon entrained liquid separator
- Oil sealed liquid ring blower
- 400 CFM and up to 28" Hg.
- Oil cooler system with level switches
- 25 HP TEFC motor – 3 Phase
- A-36 steel oxidizer body with ceramic lining
- Excess air burner package
- NEMA 4 – NFPA Fuel train
- NEMA 4 electrical enclosure
- Digital temperature controller
- Digital dilution controller
- Digital high limit controller
- 2 Pen chart recorder
- DP Transmitter with pitot tube
- Analog hour meter



Standard Options

1. Double axle trailer with jack stands
2. Stainless steel auto drain pump
3. 4 Point chart recorder
4. 6 Point chart recorder
5. Auto dialer telemetry system
6. Wireless telemetry capability
7. 50% efficient heat exchanger
8. Platinum coated monolithic catalyst cell
9. System CSA certification
10. SCAQMD certified permit

Utility Requirements

208/230 Volt – 3 Phase – 100 Amps

500 scfh - 5 psi – LPG or Natural Gas

SOLLECO INC.
1270 NORTH RED GUM
ANAHEIM, CA 92806
(714) 575-0025 • FAX (714) 575-0026 • www.solleco.com

Spec On Back Side

400 TCAT (LR) THERMAL / CATALYTIC OXIDIZER TECHNICAL SPECIFICATIONS

Oxidizer Specifications:	
Chamber Length	10 feet
Chamber Retention Time	1 second
Stack Exit Velocity	10 feet / second
Throat Velocity	40 feet / second
Stack Discharge Height	13 feet
Skid Dimensions	7 feet wide / 12 feet long
Trailer Dimensions	9 feet wide / 12 feet long
Chamber Dimensions	40" round outside - 30" round inside
Chamber Internal Lining	Ceramic Fiber
Chamber Mixing Throat Diameter	15" Round
Burner Size	500,000 btu/hr. (Maximum)
Destruction Efficiency	98% +
Maximum VOC Influent (Thermal)	20,000 ppmv (BTEX / MTBE)
Operating Temperature (Thermal)	1400° F to 1650° F
Maximum VOC Influent (Catalytic)	3,500 ppmv (BTEX / MTBE)
Operating Temperature (Catalytic)	600° F to 1200° F
Normal VOC Effluent	< 50 ppmv

Blower Specifications:	
Blower Type	Travaini TRO400S
Volumetric Flow	450 CFM maximum
Vacuum Level	Up to 28" Mercury
Motor Type	25 HP TEFC

Catalyst Specifications:	
Catalyst Type	Platinum Coated Metal Monolithic
Catalyst Size	23" O.D. x 3.5" Height
Catalyst Volume	.75 ft^3
Destruction Efficiency	98% +
Maximum VOC Influent	3500 ppmv (BTEX / MTBE)
Normal VOC Effluent	<50 ppmv

Utility Specifications:	
Supplemental Fuel	Natural Gas or Propane
Fuel Pressure	2 to 5 psi (Maximum)
Fuel Volume	500 scfh (Maximum)
Electrical Requirements	208/230 Volt – 3 Phase - 100 Amps