April 14, 2011

Ms. Donna Drogos
Alameda County Environmental Health
1131 Harbor Parkway, Suite 250
Oakland, CA 94502-6577

Subject: Site Assessment and Pilot Test Workplan Addendum
Shore Acres Gas
403 East 12th Street, Oakland, Alameda County, California
RO #0002931
ECG # GHA.19009

Dear Ms. Drogos:

Enclosed please find a copy of the April 14, 2011 Site Assessment and Pilot Test Workplan Addendum for the above referenced site prepared by our consultant Environmental Compliance Group, LLC.

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

Respectfully,

R. S.

Rashid Ghafoor

Environmental Compliance Group, LLC

270 Vintage Drive
Turlock, CA 95382
P: 209.664.1035
F: 209.664.1040

April 14, 2011

Barbara J. Jakub, P.G.
Alameda County Health Care Services Agency
Environmental Health Department
Environmental Protections
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Subject: Workplan Addendum to the *Site Assessment and Soil Vapor Extraction Pilot Test Workplan* dated February 9, 2011 for Fuel leak Case No. RO0002931, Shore Acres Gas, 403 12th Street, Oakland, California

Dear Ms. Jakub:

Environmental Compliance Group, LLC (ECG) has been authorized by Mr. Rashid Ghafoor to prepare this workplan addendum letter for Fuel leak Case No. RO0002931, Shore Acres Gas, 403 12th Street, Oakland, California (site). This letter was prepared as directed by Alameda County Health Care Services Agency, Environmental Health Department (ACEH), dated March 22, 2011 and is included in Attachment A. This letter addresses the Technical Comments submitted by ACEH regarding the *Site Assessment and Soil Vapor Extraction Pilot Test Workplan* (workplan) dated February 9, 2011 prepared by ECG. This letter report serves as an addendum to the workplan report.

The following technical comments were presented by ACEH and addressed by ECG:

1. **Regional Geologic and Hydrogeologic Setting** – Groundwater at a nearby site (RO2853) located at 506 International Blvd., ranges from 7 feet below ground surface (bgs) to 12 feet bgs, while the depths to water at nearby sites that you identified were even shallower. Based on these depths the screened intervals for the proposed wells appear to be too deep. In addition, the screen length is too long. We agree that you should advance the boring and leave it open to see what water level enters the boring but since we recommend shallower screen intervals at a maximum of 10 foot length that straddle the water table, we recommend advancing one boring to 10 feet and another to 15 feet and waiting for water to enter the borings. Please modify the screened intervals in the workplan addendum requested below.

ECG will install two borings the first day of drilling, with one boring to 10 feet and another boring to 15 feet bgs and wait overnight for groundwater levels, if encountered, to equilibrate. These groundwater elevation measurements will be used to construct groundwater monitoring wells with 10-foot long screened intervals that straddle current groundwater elevations. A revised proposed monitoring well construction diagram is shown on Figure 6 with actual field construction specifications could be adjusted based on field conditions. Vapor extraction wells will be installed as potential dual phase wells with several feet of well screen below the water table.

2. **Soil and Groundwater Characterization** – In our December 16, 2010 directive letter, ACEH requested an off-site investigation that evaluates contamination that may be moving onto the school property from your site. Further, MTBE contamination appearing to originate from your site has been, has been detected at the school across the street. Please include in your proposed boring locations in the work plan addendum requested below.

   Soil samples selected for analysis should be analyzed not only from the areas with most contamination observed but from a minimum of five foot intervals and at lithologic changes to define the vertical extent of contamination.

See Item 3.

3. **Preferential Pathway Study** – Please include the depths of the utilities on your preferential pathway study map. Also, please place these conduits on an expanded site plan showing areas off site as well. The proposed offsite borings should be placed on this extended site plan which should be included in the work plan addendum requested below.

A revised preferential pathway with utility depths is included as Figure 3 and a downgradient preferential pathway and proposed soil boring location map is included as Figure 8. The underground utilities listed in the Workplan were extended to include the utility drawings listed in the *Phase I Environmental Site Assessment* for the Downtown Educational Complex prepared by Ninyo and Moore Geotechnical and Environmental Sciences Consultants located down gradient of the site.

All subsurface utilities found were very shallow, less than 5-feet bgs, and are unlikely groundwater conduits based on their depths. However, on the Figure 8, the downgradient preferential pathway map, a proposed soil boring (SB-10) has been included to address the potential for offsite migration along potential conduits along the south side of 4th Avenue. Soil samples and a grab groundwater sample will be analyzed for the constituents outlined in ECG's Workplan Report.

4. **Pilot Test** – The work plan proposes performing a pilot test and provides cleanup criteria that are substantiated using ESLs for non drinking water areas. The basin plan has designated the waters beneath your site as potential municipal use. In addition, no soil vapor study has been performed at the site to evaluate current levels at the site and or at adjacent residences. Therefore, the cleanup criteria are unjustified. However, at this time, no corrective action plan is being requested, which is the correct place to evaluate those goals.

   The proposed soil vapor extraction well screen intervals may intercept groundwater based on recent depths of groundwater in the vicinity. No discussion of how water will be treated is included in the pilot test workplan. No observation wells for the soil vapor pilot test were proposed to determine the radius of influence for the test. Please adjust your plan to provide details of the test including well screen intervals, observation wells, procedures for handling groundwater, standard operating procedures, etc.

ECG proposes to conduct a SVE pilot test at the site for five days. A portable SVE unit will be rented from Mako Industries Inc. in Anaheim, California and will be operated to discharge vapors to the atmosphere under their blanket air board permit. Water will be stored on-site and properly disposed of after receipt of analysis by InStrat of Rio Vista, California under their discharge permit. The SVE unit will be a Model 300 TCAT, thermal oxidizer capable of extracting and abating soil vapors at a rate of 300 standard cubic feet per minute (SCFM). System specifications are presented in Attachment B.

The two new extraction wells (VW-1 and VW-2) will be used as extraction points during the test. The new extraction wells will be individually tested. The well locations are shown on Figure 5. It is anticipated that DPE tests will be conducted on wells VW-1 and VW-2, if water is present.

Tests will be initially conducted on individual wells. The SVE unit will be connected to an individual well using 1.5-inch diameter above ground flexible tubing. The wells containing groundwater will have a "stinger" tube lowered into the wells to use the vacuum to extract groundwater. All remaining wells (monitoring wells MW-1 through MW-4 and the unused extraction well) will be used to monitor vacuum and groundwater influence during the tests as screened intervals will straddle the water table and a portion of the well screens in the monitoring and SVE wells will be above groundwater communicating with the vadose zone..

To assess the potential areas of impact, each of the two wells will be extracted on for a duration of 24-hours. Field influent concentrations monitored with a PID hourly during daylight hours. In addition to readings for influent concentrations, flow rates, system vacuum, and vacuum influence will be monitored hourly with field instruments. This data will be converted into a contaminant recovery rate in pounds per day. A vapor sample collected for laboratory analysis will be collected three hours into each test and submitted to the analytical laboratory for analysis.

Immediately following the initial testing outlined above, wells showing significant hydrocarbon recovery rates will be retested for a longer duration. The exact duration will be dependent on the number of wells being retested. Additional vapor samples will be collected for laboratory analysis at individual wells daily and at the conclusion of each test. Water samples will be collected from any well where DPE is being implemented.

Vapor samples will be collected into one-liter Tedlar bags filled no more than 90 percent to capacity and shipped overnight to Kiff Analytical in Davis, California, a State certified analytical laboratory for analysis listed in the workplan for soil and groundwater. All work will be done in accordance to ECG standard operating procedures (SOPs) included in the workplan.

If groundwater concentrations warrant, the SVE system will be operated in DPE mode. A one inch stinger will be placed in each extraction well to remove water as well as soil vapors. Water will be separated from the soil vapors in an air water separator. Water discharge will be stored in a 6,000 gallon tank on site until it is properly disposed of by InStrat.

Respectfully,

Michael S. Sgourakis, Principal

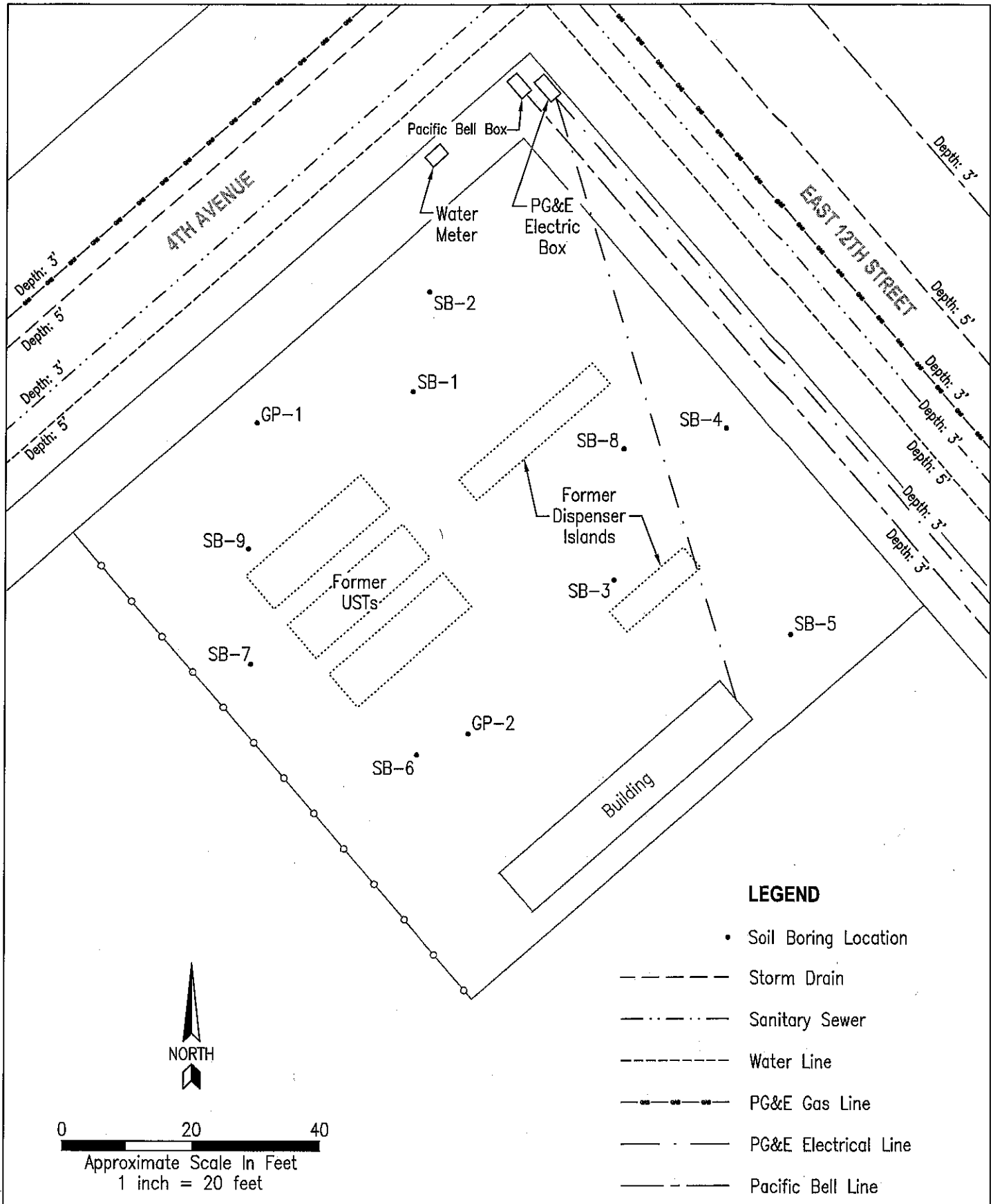
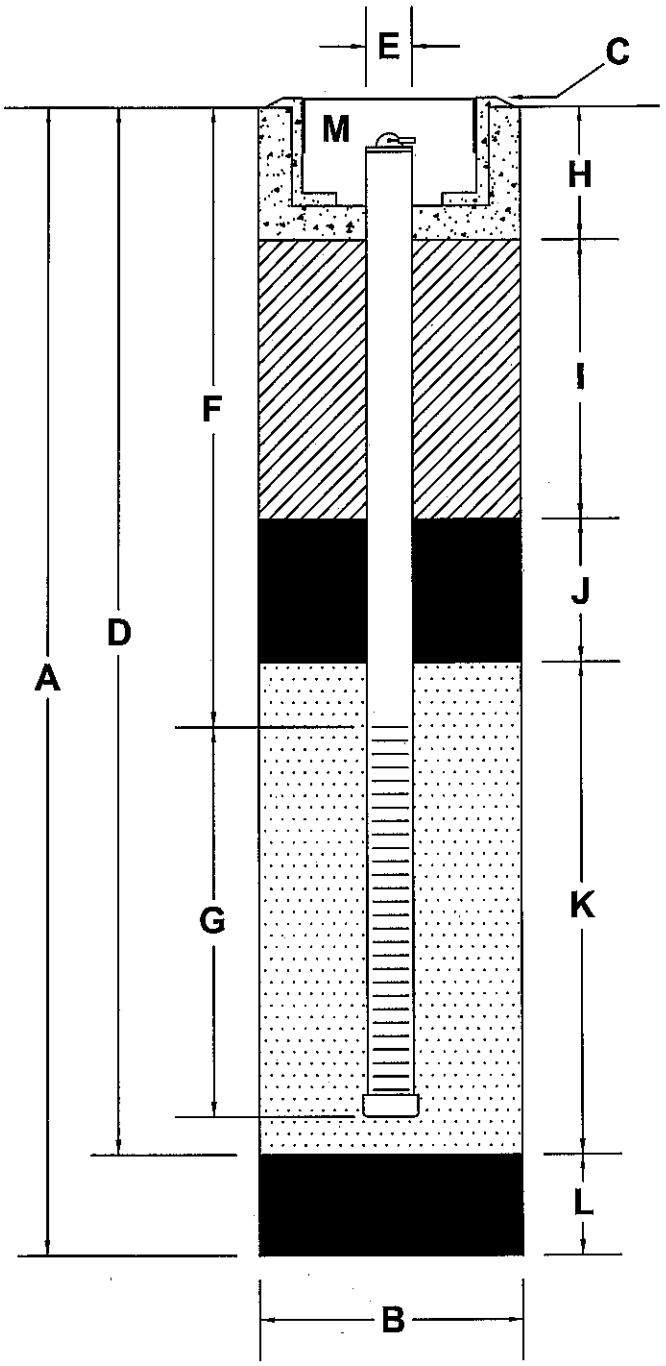


FIGURE 3 **Project Number:** GHA.19009 **Date:** April 14, 2011	**PREFERENTIAL PATHWAY MAP** Shore Acre Gas 403 East 12th Street Oakland, California	**Environmental Compliance Group, LLC** 270 Vintage Drive, Turlock, CA 95382 Phone: (209) 664-1035

PROPOSED WELL CONSTRUCTION DETAIL



A Total Depth Of Boring 15 ft.

B Diameter Of Boring 8 in.
Drilling Method Hollow Stem Auger

C Top Of Box Elevation _____ ft.
☒ Referenced To Mean Sea Level
☐ Referenced To Project Datum

D Casing Length 15 ft.
Material Sch 40 PVC

E Casing Diameter 2 in.

F Depth To Top Perforations 5 ft.

G Perforated Length 10 ft.
Perforated Interval From 5 to 15 ft.
Perforation Type Machine Slotted
Perforation Size 0.010 in.

H Surface Seal From 0 to 0.5 ft.
Seal Material Concrete

I Sanitary Seal From 0.5 to 2 ft.
Seal Material Grout – Neat Cement

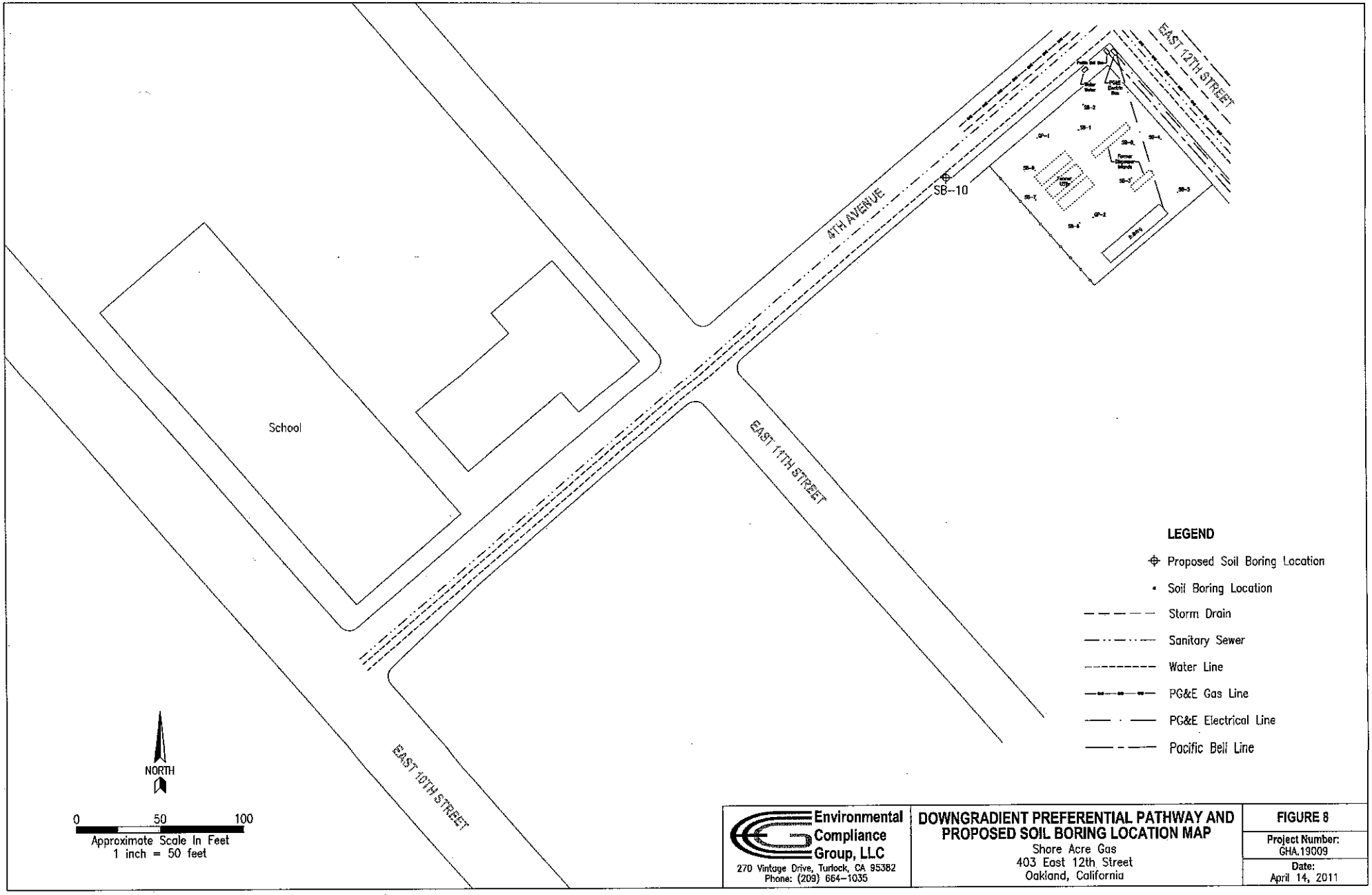
J Seal From 2 to 4 ft.
Seal Material Bentonite

K Filter Pack From 4 to 15 ft.
Pack Material No. 2–/16 Sand

L Bottom Seal N/A ft.
Seal Material N/A

M 8–inch Diameter Traffic Rated Christy Box

FIGURE 6 **Project Number:** GHA.19009 **Date:** April 14, 2011	**PROPOSED MONITORING WELL CONSTRUCTION DETAIL** Shore Acre Gas 403 East 12th Street Oakland, California	**Environmental Compliance Group, LLC** 270 Vintage Drive, Turlock, CA 95382 Phone: (209) 664–1035



Environmental Compliance Group, LLC
270 Vintage Drive, Turlock, CA 95382
Phone: (209) 664-1035

DOWNGRADIENT PREFERENTIAL PATHWAY AND PROPOSED SOIL BORING LOCATION MAP
Shore Acre Gas
403 East 12th Street
Oakland, California

FIGURE 8
Project Number: GHA.19009
Date: April 14, 2011

ATTACHMENT A

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

ENVIRONMENTAL HEALTH DEPARTMENT
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

March 22, 2011

Rashid Ghafoor and Waseem Iqbal
226 Havenwood Circle
Pittsburg, CA 94567

Subject: Work Plan Denial for Fuel Leak Case No. RO0002931 and GeoTracker Global ID T0600174667, Shore Acres Gas, 403 E 12th St., Oakland, CA 94606

Dear Messrs. Ghafoor and Iqbal:

Thank you for the recently submitted document entitled, *Site Assessment and Soil Vapor Extraction Pilot Test Workplan* dated February 9, 2011, which was prepared by Environmental Compliance Group, LLC for the subject site. Alameda County Environmental Health (ACEH) staff has reviewed the case file including the above-mentioned work plan for the above-referenced site. The work plan does not address our request to determine the off-site extent of contamination.

The scope of work presented in the work plan has not been adequately justified and cannot be approved at this time. ACEH requests that you address the following technical comments and send us a work plan addendum as requested below.

TECHNICAL COMMENTS

1. **Regional Geologic and Hydrogeologic Setting** – Groundwater at a nearby site (RO2853) located at 506 International Blvd., ranges from 7 feet below ground surface (bgs) to 12 feet bgs. While the depths to water at nearby sites that you identified were even shallower. Based on these depths the screened intervals for the proposed wells appear to be too deep. In addition, the screen length is too long. We agree that you should advance the boring and leave it open to see what level water enters the boring but since we recommend shallower screen intervals of a maximum of 10 foot length that straddle the water table, we recommend advancing one boring to 10 feet and another to 15 feet and waiting for water to enter the boring. Please modify your proposed screen intervals in the work plan addendum requested below.

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TECHNICAL REPORT REQUEST

Please submit technical reports to ACEH (Attention: Barbara Jakub), according to the following schedule:

- **May 23, 2011** – Work Plan Addendum

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Sincerely,

Digitally signed by Barbara J. Jakub
DN: cn=Barbara J. Jakub, o, ou, email=barbara.jakub@acgov.org, c=US
Date: 2011.03.23 09:16:27 -07'00'

Barbara J. Jakub, P.G.
Hazardous Materials Specialist

Enclosure: Responsible Party(ies) Legal Requirements/Obligations
ACEH Electronic Report Upload (ftp) Instructions

cc: Michael S. Sgourakis, Environmental Compliance Group, LLC; 270 Vintage Drive, Turlock, CA 95382
Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (*Sent via E-mail to: lgriffin@oaklandnet.com*)
Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Barbara Jakub, ACEH (*Sent via E-mail to: barbara.jakub@acgov.org*)
GeoTracker, e-file

ATTACHMENT B

1280 N Red Gum Street Anaheim, CA 92806 • 714-632-1400

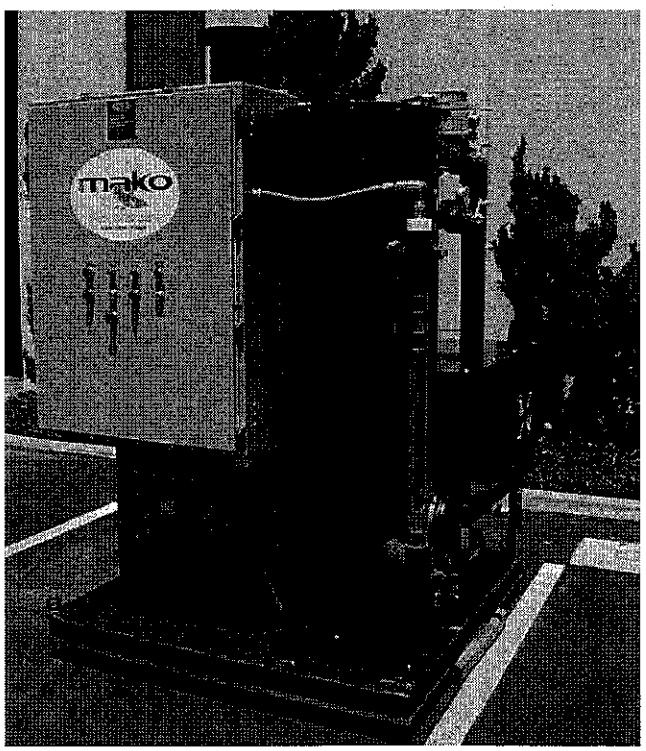
300 CFM Makocat (HV)

Electric Catalytic Oxidizer / High Vacuum System

Get a QUOTE >>

Standard Features:

- Small Footprint Skid Mounting
- Entrained Liquid Separator
- Dilution / Process Valves
- Stainless Steel Transfer Pump
- Oil Sealed Liquid Ring Blower
- Oil Cooler Assembly
- 20 Horsepower TEFC Motor
- Sound Enclosure
- Oxidizer Chamber
- Platinum Coated Catalyst Cell
- Nickel Chrome Heating Element
- Stainless Steel Heat Exchanger
- Flame Arrestor
- Digital Temperature Controller
- Digital Dilution Controller
- Pitot Tube / Pressure Transmitter
- Digital Chart Recorder

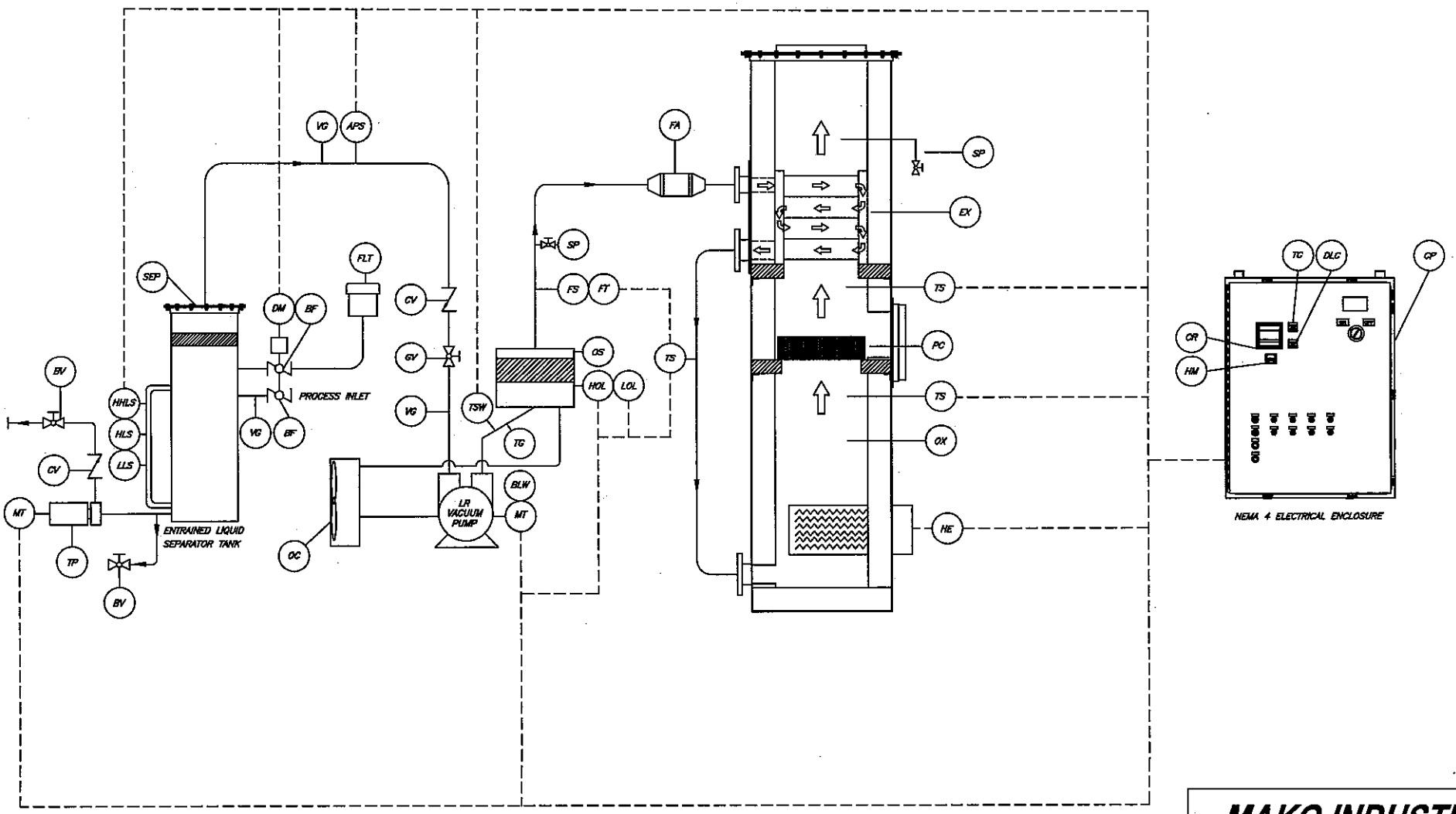


Standard Options:

Trailer Mounted System • Remote Telemetry
Totally Enclosed System • Single Phase System

Standard Performance Specifications:

Skid Dimensions = 6' Width x 7' Length x 13' Height
3/16" Heavy Duty Steel Construction Throughout
Electrical Requirement = 208/240 Volt/3 Phase/200 Amp
Electrical Requirement = 208/240 Volt/1 Phase/250 Amp
Process Flow = 300 CFM and up to 28" Hg. Vacuum
VOC Loading = 3,500 PPMV Maximum
Destruction Efficiency = 98%+



MAKO INDUSTRIES

ELECTRIC CATALYTIC OXIDIZER

PROCESS INSTRUMENTATION DRAWING

DATE:	FILE:
9/15/08	300 Makocat.PID

300 CFM Makocat (HV)