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May 11, 2009

Mr. Steven Plunkett
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

RECEIVED

12:54 pm, May 12, 2009

Alameda County Environmental Health

SUBJECT:

SUBSURFACE INVESTIGATION WORK PLAN CERTIFICATION

Fuel Leak Case RO 337

California Linen Supply Company 989 41st Street, Oakland, CA 94608

Dear Mr. Plunkett:

You will find enclosed one copy of the following document prepared by RGA Environmental, Inc.

• Subsurface Investigation Work Plan (Soil Gas Samples SG23-SG40, Groundwater B89-B92) dated May 11, 2009 (document 0304.W7).

I declare, under penalty of perjury, that the information and/or recommendations contained in the above-mentioned report for the subject site is true and correct to the best of my knowledge.

Please direct all future correspondence to:

California Linen Supply Co., Inc. c/o Donald J. Miller, President 2104 Magnolia Way Walnut Creek, CA 94595

Should you have any questions, please do not hesitate to call me at (925) 938-2491.

Cordially,

California Linen Supply Co.

Donald J. Miller

President

cc:

LeRoy Griffin, Oakland Fire Department, Office of Emergency Services, 250 Frank Ogawa

Plaza, Suite 3341, Oakland, CA 94612

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May 11, 2009 Work Plan 0304.W7

Mr. Steven Plunkett Alameda County Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

SUBJECT: SUBSURFACE INVESTIGATION WORK PLAN

(SOIL GAS SG23-SG40, GROUNDWATER B89-B92)

County File # RO 337

California Linen Rental Company

989 41st Street Oakland, CA

Dear Mr. Plunkett:

RGA Environmental, Inc. (RGA) is pleased to present this subsurface investigation work plan for implementation of recommendations set forth in RGA's Subsurface Investigation Report dated May 8, 2009 (document 0304.R16). The proposed scope of work includes the collection of 18 soil gas samples and four groundwater grab samples in an effort to complete the delineation of petroleum hydrocarbons in soil gas and shallow groundwater at and adjacent to the subject site. The objective of the investigation is to define subsurface petroleum hydrocarbons so that any necessary actions can be defined to obtain a No Further Action letter from the Alameda County Department of Environmental Health for unrestricted land use at the subject site. A site location map is attached as Figure 1, and Site Plan Details showing the proposed borehole locations are attached as Figures 2 and 3.

All work will be performed under the direct supervision of an appropriately registered professional. This investigation will be performed in accordance with guidelines set forth in the document "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites" dated August 10, 1990 and "Appendix A - Workplan for Initial Subsurface Investigation" dated August 20, 1991 and California Code of Regulations Title 23 Sections 2720-2728. Additionally, the soil gas samples will be collected in accordance with general procedures set forth in the Department of Toxic Substances Control (DTSC) January 13, 2003 Advisory - Active Soil Gas Investigations.

BACKGROUND

Detailed discussions of the site history, historic subsurface investigations, and remedial activities are provided in previous reports and work plans.

SCOPE OF WORK

To define the extent of residual petroleum hydrocarbon vapors in soil gas at and near the subject site, RGA proposes to perform the following activities.

- Obtain permits.
- Obtain offsite access.
- Prepare a health and safety plan and mark drilling locations for Underground Service Alert.
- Oversee soil gas sample collection at 18 locations (SG23 through SG40).
- Oversee groundwater sample collection.
- Arrange for sample analysis.
- Prepare a report.

Each of these is discussed below.

Obtain Permits

A permit will be obtained from the Alameda County Public Works Agency for borehole drilling. All necessary permit-related notifications will be made prior to drilling. Notification will also be provided to the ACDEH at least 72 hours prior to drilling.

Obtain Offsite Access

Access will be requested from offsite property owners for proposed offsite sample collection locations. In the event that offsite access is not provided, a request will be provided to the ACDEH for assistance in obtaining offsite access.

Health and Safety Plan

A health and safety plan will be prepared for the scope of work identified in this work plan. In addition, the drilling locations will be identified with white paint, and Underground Service Alert will be notified for underground utility location for the proposed drilling locations.

Soil Gas Sample Collection

All of the proposed soil gas samples will be collected at a depth of five feet below the ground surface, except for SG23 and SG25 through 27 which are located inside the building where the top of the concrete floor slab is approximately 3 to 4 feet above the ground surface outside the building. The soil gas samples at these locations will be collected at a depth of seven feet below the top of the concrete floor slab.

All of the soil gas samples will be collected using temporary soil gas sampling wells. The temporary wells will be constructed by driving a hollow 1-inch diameter Geoprobe rod with an expendable tip to a depth of 5 or 7 feet, dislodging the expendable tip, and then inserting a 0.250-inch outside diameter (0.187-inch inside diameter) Teflon tube to the bottom of the hollow rod.

A 7-foot length of Teflon tubing will be used for locations where the Geoprobe rod is driven to a depth of 5 feet, and a 9-foot length of Teflon tubing will be used for locations where the Geoprobe rod is driven to a depth of 7 feet. Prior to inserting the Teflon tubing the lowermost 6 inches of the Teflon tube will be perforated at several locations by notching the sides of the tube with a clean razor blade. A #2/16 Lonestar sack sand will be added to the annular space between the hollow rod and the Teflon tube as the hollow rod is withdrawn from the ground until the lowermost 8 inches of the hole is filled with sand. Granular bentonite (with grains the size of kitty litter) will be placed in the annular space above the sand to the ground surface. The bentonite will be hydrated and the 6-liter Suma purge canister and 1-liter Suma sample canister will then be connected to the Teflon tubing using the configuration shown in Figure 4. At the time that the sampling manifold is assembled, the vacuum for the sample canister will be checked with a vacuum gauge and recorded. The temporary well will then be undisturbed for a minimum of 30 minutes prior to purging for sample collection to allow soil gas equilibration.

Following the equilibration period and prior to purging the soil gas from the temporary soil gas sampling well, a 10 minute leak check of the sampling manifold will be performed by closing the valve located between the filter and the pressure gauge, opening the purge canister valve, and recording the manifold system vacuum (see Figure 4). Following successful verification of the manifold leak check, the purge volume will be calculated. No purge testing for purge volume determination will be done because no mobile laboratory will be at the site. A default of three purge volumes will be extracted prior to sample collection. The purge time will be calculated using a nominal flow rate provided by the flow controller of 200 milliliters per minute. Purge volume calculations are provided in Appendix A of this work plan.

Following completion of purging three purge volumes, the valve to the purge canister will be closed, a tracer gas (2-Propanol) will be placed in a dish adjacent to the purge canister, and a clear Rubbermaid bin will be placed over the top of the temporary well, the sampling manifold, and the 1-liter sample canister. The vapor concentration of the 2-Propanol will be monitored with a PID until 2-Propanol vapor concentrations appear to have equilibrated. The Rubbermaid bin will then be temporarily and partially lifted long enough to open the sample canister valve and the bin ill then be replaced over the sampling equipment and the 2-Propanol vapor concentrations then monitored again with the PID. Once the vacuum for the sample canister valve has decreased to 5 inches of mercury, the Rubbermaid lid will be removed and the sample canister valve closed.

A total of two duplicate soil gas samples will be collected into one-liter Summa canisters using procedures described above immediately after the collection of the corresponding original sample. The void space and tubing will not be purged of three purge volumes prior to collection of the duplicate samples. Following soil gas sample collection, a PID will be connected to the Teflon tubing to obtain a preliminary field value for the sample collection location. The soil gas samples will then be stored in a box and promptly shipped to the laboratory for extraction and analysis. Soil gas sampling will not be performed during or following a precipitation event. Measurements of vacuums, purging

and equilibration time intervals, and PID readings will be recorded on Soil Gas Sampling Data Sheets that will be provided with the final report.

All drilling rods and associated drilling fittings will be cleaned with an Alconox solution wash followed by a clean water rinse. New Teflon tubing will be used at each sample collection location. Clean, unused vacuum gages and stainless steel sampling manifolds will be used at each sample collection location. Following soil gas sample collection the Teflon tubing will be pulled from each temporary soil gas sampling well and a 1-inch diameter solid steel rod will be driven through the bentonite and sand to the total depth of the temporary soil gas sampling well. The solid steel rod will then be removed, and the borehole will be filled with neat cement.

Groundwater Sample Collection

Boreholes will be hand augered at locations B89 through B92 as shown on Figures 2 and 3 using a 3.5-inch outside diameter stainless steel hand auger. The depth to groundwater is anticipated to be approximately 8 feet below the ground surface, if groundwater is encountered in the boreholes. If groundwater is not encountered, the boreholes will be hand augered to a total depth of 11.0 feet.

The soil from the borings will be logged in the field in accordance with standard geologic field techniques and the Unified Soil Classification System. All soil from the boreholes will be evaluated with a Photoionization Detector (PID) equipped with a 10.6 eV bulb and calibrated using a 100 ppm isobutylene standard. No soil samples will be retained from the boreholes for laboratory analysis.

First encountered groundwater samples will be collected from the boreholes by placing temporary 1-inch diameter slotted PVC pipe into the boreholes and using disposable polypropylene tubing with a stainless steel footvalve to retrieve the sample from the borehole. Groundwater samples will be transferred from the tubing to 40-millileter VOAs and 1-liter glass amber bottles, all of which will be supplied by the laboratory and contain hydrochloric acid preservative. The sample bottles will be labeled and placed in a cooler with ice pending delivery to the laboratory. Chain of custody procedures will be observed for all sample handling.

The groundwater levels in the boreholes will be measured after sample collection, and the boreholes will then be filled with neat cement grout. All hand augering and sample collection equipment will be cleaned with an Alconox solution followed by a clean water rinse or will consist of new materials prior to use in each borehole. Soil and water generated during subsurface investigation will be stored in drums at the site pending characterization and disposal.

May 11, 2009 Work Plan 0304.W7

Sample Analysis

All of the soil gas samples will be analyzed at Air Toxics Limited of Folsom California for TPH-G using EPA Method TO-3 and for MBTEX, naphthalene, and 2-Propanol (the tracer gas) using EPA Method TO-15.

All of the groundwater samples will be analyzed at McCampbell Analytical, Inc. (McCampbell) in Pittsburg, California for TPH-G by EPA Method 5030 in conjunction with modified EPA Method 8015, and for MBTEX using EPA Method 8021B. McCampbell is a State-accredited hazardous waste testing laboratory. Chain of custody documentation will accompany the samples to the laboratory.

Subsurface Investigation Report Preparation

Upon receipt of the laboratory analytical results, a report will be prepared. The report will document soil gas and groundwater sample collection procedures and sample results. The report will include a site vicinity map showing the drilling locations, tables summarizing the sample results, recommendations based on the results, and the stamp of an appropriately registered professional.

In accordance with the California Code of Regulations Sections 2729 and 2729.1, RGA will submit analytical data, survey coordinates of permanent monitoring points, and an electronic copy of the summary report in PDF format to the State Water Resources Control Board GeoTracker system.

May 11, 2009 Work Plan 0304.W7

Should you have any questions, please do not hesitate to contact us at (510) 547-7771.

PAUL H. KING No. 5901

E OF CALIFO

Sincerely,

RGA Environmental, Inc.



Professional Geologist #5901

and M. King

Expires: 12/31/09

Karin Schroeter Project Manager

Cc: Donald Miller, California Linen Rental Company

Attachments:

Figure 1 - Site Location Map

Figure 2 - Site Plan Detail Showing Proposed Sample Locations in the Eastern Portion of the Site

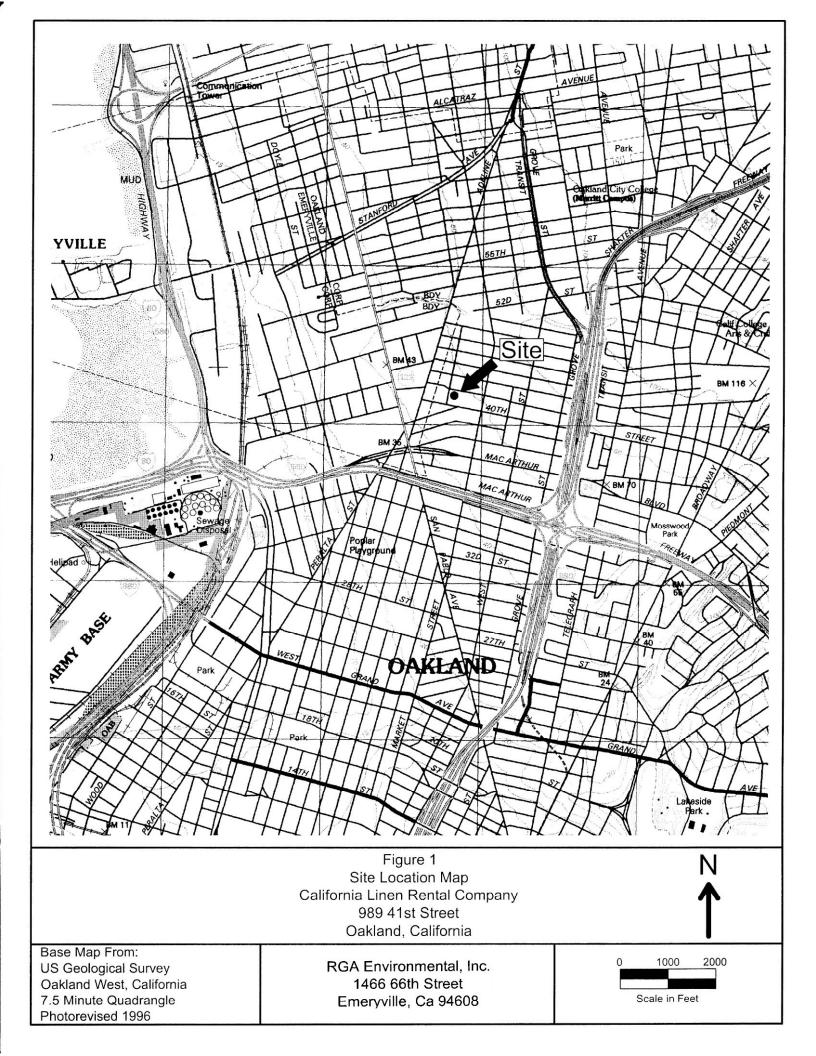
Figure 3 - Site Plan Detail Showing Proposed Sample Locations in the Western Portion of the Site

Figure 4 - Typical Soil Gas Sample Collection Manifold

Appendix A - Soil Gas Purge Volume Calculations

PHK 0304.W7

FIGURES



- WATER MAIN (ASSUMED) -- 8 in. VCP (ASSUMED) -**41st STREET SIDEWALK** - - - - GAS - - - - - - -- <u>- - - - - - GAS (ASSUMED) - </u> Pit 7 Pit 6 PARKING LOT SG29_× SG6 (42,000)SG28_× ×SG30 MAIN **EAST WAREHOUSE** BUILDING Pit 4 Pit 5 B87 B88 B86 ×SG31 **LEGEND** GROUNDWATER MONITORING WELL BOREHOLE HAND AUGERED HORIZONTALLY INTO PIT WALL AT 3.5 FOOT DEPTH PROPOSED SOIL GAS SAMPLE COLLECTION LOCATION ×SG33 SOIL GAS SAMPLE COLLECTION LOCATION PROPOSED GROUNDWATER **¥**B89 SAMPLE COLLECTION LOCATION (42,000) TPH-G CONCENTRATION IN SOIL GAS (ug/m³) SOIL EXCAVATION Figure 2
Site Plan Detail Showing Proposed Borehole Locations in the Eastern Portion of the Site

California Linen Rental Company 989 41st Street Oakland, California



Base Map From: California Utility Survey Utility Sketch Plan Feb. 14, 2005

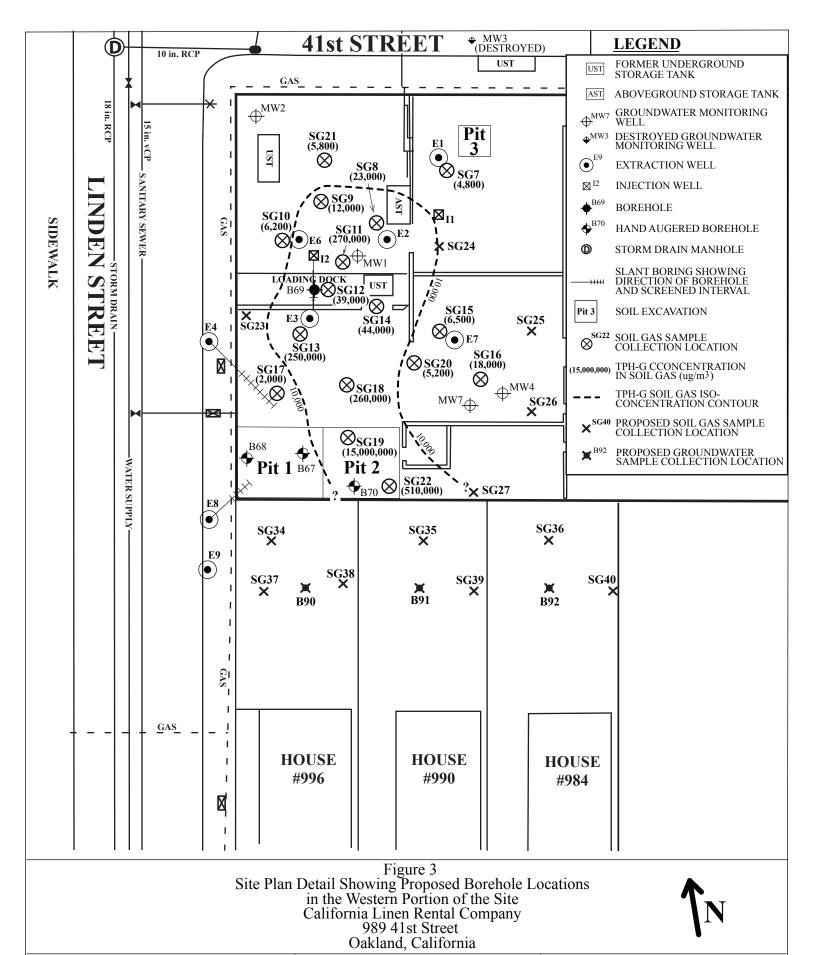
⊕^{MW6}

⊕B88

Pit 7

RGA Environmental, Inc. 1466 66th Street Emeryville, CA 94608





Base Map From: California Utility Survey Utility Sketch Plan Feb. 14, 2005

RGA Environmental, Inc. 1466 66th Street Emeryville, CA 94608





Figure 4
Typical Soil Gas Sample Collection Manifold
California Linen Rental Company
989 41st Street
Oakland, California

RGA Environmental, Inc. 1466 66th Street Emeryville, CA 94608

APPENDIX A Soil Gas Purge Volume Calculations

Work Plan 0304.W7 Appendix A 7 feet tubing, 8 inch sand interval

Soil Gas Purge Volume Calculations

One purge volume is calculated as the volume of the tubing interior plus the volume of the sand interval of the borehole.

The tubing interior volume is calculated as follows.

V tubing = pi X (r X r) X h, where pi = 3.14, r = 0.187 in./2, and h = 7 ft.

V tubing = $3.14 \times (0.0935 \times 0.0935) \times (7 \text{ ft. } \times 12 \text{ in./ft.}) = 2.31 \text{ cubic inches.}$

The sand interval volume is calculated as follows.

V sand interval = pi X (r X r) X h X porosity, where pi = 3.14, r = 1.0 in./2, h = 8 in., and porosity = 0.35.

V sand interval = $3.14 \times (0.5 \times 0.5) \times 8$ in. $\times 0.35 = 2.20$ cubic inches.

The total volume for one purge volume is V tubing + V sand interval, where

V total = 2.31 cubic inches + 2.20 cubic inches = 4.51 cubic inches.

To convert to cubic centimeters,

V total = 4.51 cubic inches X 16.39 cubic centimeters/cubic inches = 73.9 cubic centimeters.

The total volume to be purged is 3 purge volumes.

V purge total = 73.9 cubic centimeters X 3 = 222 cubic centimeters.

The flow controller has a nominal flow rate of 200 cubic centimeters per minute.

The purge time is calculated as follows.

T purge = 222 cubic centimeters/200 cubic centimeters per minute = 1.11 minutes.

Converting the purge time to seconds, 1.11 minutes X 60 seconds/minute = 67 seconds.

Work Plan 0304.W7 Appendix A 9 feet tubing, 8 inch sand interval

Soil Gas Purge Volume Calculations

One purge volume is calculated as the volume of the tubing interior plus the volume of the sand interval of the borehole.

The tubing interior volume is calculated as follows.

V tubing = pi X (r X r) X h, where pi = 3.14, r = 0.187 in./2, and h = 9 ft.

V tubing = $3.14 \times (0.0935 \times 0.0935) \times (9 \text{ ft.} \times 12 \text{ in./ft.}) = 2.96 \text{ cubic inches.}$

The sand interval volume is calculated as follows.

V sand interval = pi X (r X r) X h X porosity, where pi = 3.14, r = 1.0 in./2, h = 8 in., and porosity = 0.35.

V sand interval = $3.14 \times (0.5 \times 0.5) \times 8$ in. $\times 0.35 = 2.20$ cubic inches.

The total volume for one purge volume is V tubing + V sand interval, where

V total = 2.96 cubic inches + 2.20 cubic inches = 5.16 cubic inches.

To convert to cubic centimeters,

V total = 5.16 cubic inches X 16.39 cubic centimeters/cubic inches = 84.57 cubic centimeters.

The total volume to be purged is 3 purge volumes.

V purge total = 84.57 cubic centimeters X 3 = 254 cubic centimeters.

The flow controller has a nominal flow rate of 200 cubic centimeters per minute.

The purge time is calculated as follows.

T purge = 254 cubic centimeters/200 cubic centimeters per minute = 1.27 minutes.

Converting the purge time to seconds, 1.27 minutes X 60 seconds/minute = 76 seconds.