

Project No.
7584.100.101

June 2, 2008

Mr. Robert Strong
500 Bollinger Canyon Way, Suite A4
San Ramon, CA 94583

Subject: 224 Rickenbacker Circle
Livermore, California

RECEIVED

2:35 pm, Jun 03, 2008

Alameda County
Environmental Health

WORK PLAN FOR ADDITIONAL SOIL GAS SAMPLING

Dear Mr. Strong:

ENGEO Incorporated (ENGEO) is pleased to present this work plan for additional soil gas sampling at 224 Rickenbacker Circle in Livermore, California (Figure 1). This work plan was developed in response to the Alameda County Health Services Agency letter dated May 12, 2008. The purpose of the proposed activities is to address the discrepancies in the reported soil gas concentrations from the samples analyzed by a mobile laboratory and those analyzed at the fixed-base laboratory.

Brief Site History

The site was formerly operated as a dry cleaning facility that previously utilized a PCE-based machine. According to the property owner, approximately 10 years ago, the PCE-based machine was replaced by an Exxon DF2000 clean solvent machine and subsequently a silicon based machine. All equipment was removed from the building in October 2005. In 2005, impacted soil was first discovered during property transaction due diligence activities. Site characterization and delineation of soil, soil gas, and groundwater impacts have been ongoing since 2005 as described below.

Current Site Description

The site is currently occupied by a single structure utilized by a welding company and paved parking areas. A landscaped area is located north of the building, along Rickenbacker Circle. The Livermore Water Reclamation Plant is located approximately 750 feet to the west and the Livermore Municipal Airport is located approximately ½ mile west of the property. Residential development is located approximately 750 feet to the south and 1,500 feet to the east.

Based on subsurface conditions encountered during previous field work, the site is underlain by silty clay with interbedded layers of clayey silt/sand, and gravelly sand. First groundwater has been encountered across the site at depths ranging from 22 to 26 feet below the ground surface (bgs). Based on review of the lithology obtained during the advancement of a boring to approximately 100 feet below the ground surface in November 2007, deeper water bearing zones exist at approximately 70 feet bgs and 90 feet bgs.

Site Characterization

As part of due diligence activities, JMK Environmental Solutions, Inc. advanced three soil borings to a depth of approximately 35 feet below the ground surface and recovered soil samples from each boring in October 2005. Analytical results of the soil samples indicated the presence of PCE to the maximum depth explored (35 feet) in the two borings nearest the former dry cleaning machine location. Based on review of the laboratory results for the soil samples, several samples exhibited concentrations of PCE in excess of the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for vapor intrusion. Groundwater was not encountered during the investigation, and therefore, no groundwater samples were collected.

A copy of the report prepared by JMK Environmental Solutions, Inc. was submitted to the ACEH along with a request for Site/Case Closure. ACEH issued a letter dated July 6, 2006, in response to the request for case closure, requesting a work plan to delineate the extents of contamination at the Property.

In October 2006, P&D Environmental conducted indoor air sampling. Two samples and one duplicate sample were recovered from inside the current structure. The analytical results from Air Toxics, Ltd. were compared OSHA Permissible Exposure Levels (PELs) and found not to exceed the established screening values for indoor air. A detailed report was not provided summarizing the indoor air quality assessment.

In December 2006, ENGEO prepared a work plan to conduct soil gas sampling, and recover soil and groundwater samples across the Property. Soil gas samples were recovered utilizing a mobile laboratory in January 2007 and an Interim Site Characterization Report was prepared and submitted to ACEH in February 2007. The report summarized the field activities and the analytical results. Results from the soil gas assessment indicated elevated concentrations of volatile organic compounds (VOCs). All eight soil gas samples, recovered from beneath the building and the associated parking areas had concentrations of VOCs exceeding their respective ESLs.

In March 2007, ENGEO advanced five borings to depths ranging between 25 and 35 feet below the ground surface for recovery of soil and groundwater samples. Analytical results indicated the presence of chlorinated VOCs and total petroleum hydrocarbons as diesel in the soils at the Property. The constituents were reported at concentrations below the ESLs established by the SFRWQCB for commercial soil to indoor air and for commercial land use where groundwater is a current or potential drinking water resource. Soil impacts were generally limited to the area near the former dry cleaning machine and to a depth of approximately 10 feet. Several VOCs were detected in the groundwater beneath the Property exceeding the Maximum Contaminant Level of 5 micrograms per liter (ug/L) as established by the California Department of Health Services.

ENGEO prepared a work plan for additional site characterization activities including soil gas, soil and groundwater sampling. A deep boring was advanced in November 2007, and soil and groundwater samples were recovered to assess the vertical extent of contamination. Soil gas samples were recovered utilizing summa canisters and a fixed-based laboratory in December 2007. In addition, three monitoring wells were installed on the Property. Results from the additional site characterization work found several VOCs and total petroleum hydrocarbon in the soil at the Property at concentrations below the environmental screening levels established by the SFRWQCB for commercial soil to indoor air (Table E-1) and for commercial land use where groundwater is a current or potential drinking water resource (Table F-1a). Based on the analytical results, it appears that soil impacts are generally limited to the area in the vicinity of the former dry cleaning machine and to a depth of approximately 20 feet below the ground surface.

Several VOCs were detected in the groundwater beneath the Property. Reported concentrations of PCE exceed the Maximum Contaminant Level of 5 ug/L as established by the California Department of Health Services for grab groundwater samples collected in March 2007; however, groundwater samples recovered from the monitoring wells in January 2008 did not report concentrations of PCE exceeding the established MCLs. Based on the depth to groundwater measurements recorded in January 2008, the direction of groundwater flow is to the northwest at a gradient of approximately 0.006 ft/ft. Analytical results from the sample location located northwest of the former dry cleaning machine (S-2) reported PCE concentrations in the groundwater less than the established MCL. In addition, the sample collected from the downgradient well MW-3 found no detectable PCE or VOCs, suggesting a plume of limited extent.

Initial screening level soil gas sampling conducted in January 2007 found significant levels of VOCs in soil gas; however, subsequent soil gas recovery in December 2007, found no significant soil gas impacts. The proposed scope of work for this work plan is to address the discrepancy in the soil gas data.

SCOPE OF WORK

Additional Soil Gas Sampling

Soil gas samples will be recovered from six additional locations at the Property as depicted on Figure 2. The locations are adjacent to previous sampling points which exhibited elevated VOC concentrations. The soil gas samples will be recovered from approximately 5 feet below the ground surface using direct-push technology. Small-diameter non-reusable sampling tubes will be utilized at each sampling location. Hydrated bentonite will be used to seal around the drive rod, and the inner soil gas pathway from probe tip to the surface will be continuously sealed. Leak detection compounds will be utilized at all system connections and seals prior to sampling.

Soil gas samples will be recovered using a syringe and transferred directly to an on-site mobile laboratory and analyzed immediately. There will be minimal lag time between sample collection

and analysis, ensuring that the integrity of the sample is maintained. During sampling, a leak check gas will be used to confirm that the sample train and probe rod is tight and leak free. Samples will be analyzed on a gas chromatograph equipped with capillary columns and a combination of mass spectrometer (GC/MS), TCD, and FID detectors as needed. Samples will be analyzed for VOCs using EPA Method 8260.

In addition to the soil gas samples collected using a syringe, 1-liter summa canister confirmation samples will be recovered at each location using protocols and procedures consistent with "Advisory – Active Soil Gas Investigations" dated January 13, 2003 (Los Angeles Regional Water Quality Control Board and DTSC). The summa canister soil gas samples will be submitted to a fixed-based laboratory and analyzed for VOCs (EPA TO-15). The results of the soil gas analysis will be compared with each other as well as to the applicable ESLs¹.

REPORTING

The results of above proposed activities will be summarized in a formal report for submittal to Alameda County Environmental Health. The report will document all of the procedures, techniques, and rationale of the completed activities and include recommendations for potential further investigation or corrective action.

If you have any questions or comments regarding this workplan, please call and we will be glad to discuss them with you.

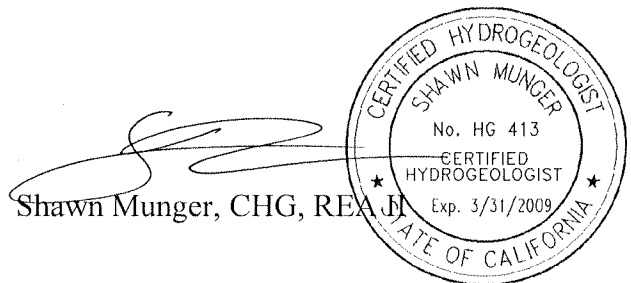
Very truly yours,

ENGEO Incorporated



Kelly Krohn
kk/smc

Attachments: References
Figure 1 – Vicinity Map
Figure 2 – Site Plan



Shawn Munger, CHG, REA, J

¹ SFRWQCB ESLs, 2003: Table E-2 Shallow Soil Gas Screening Levels for Evaluation of Potential Indoor Air Impacts.

SELECTED REFERENCES

ENGEO Incorporated, Interim Site Characterization Report, 224 Rickenbacker Circle, Livermore, California; February 8, 2007.

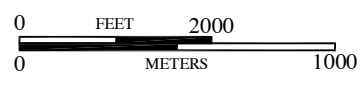
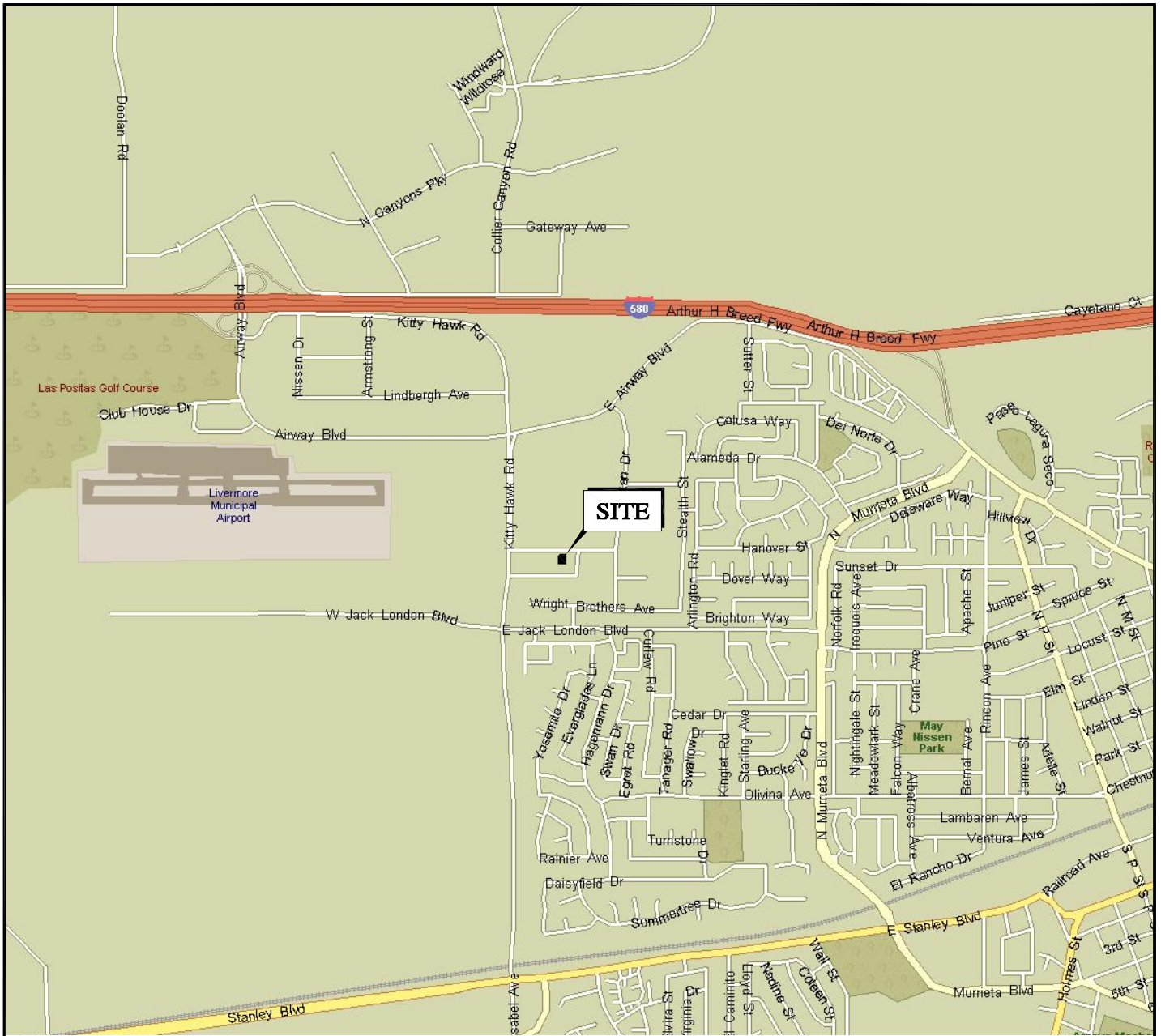
ENGEO Incorporated, Soil and Groundwater Sampling Results, 224 Rickenbacker Circle, Livermore, California; March 15, 2007.

ENGEO Incorporated, Additional Site Characterization Results, 224 Rickenbacker Circle, Livermore, California; April 8, 2008.

Norfleet Consultants, Preliminary Stratigraphic Evaluation, West Side of the Main Basin, Livermore-Amador Groundwater Basin; January 29, 2004.

Zone 7 Water Agency, Annual Report for the Groundwater Management Program, 2006 Water Year; June 14, 2007.

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BASE MAP SOURCE: MS STREETS AND TRIPS

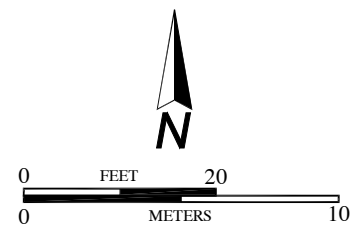
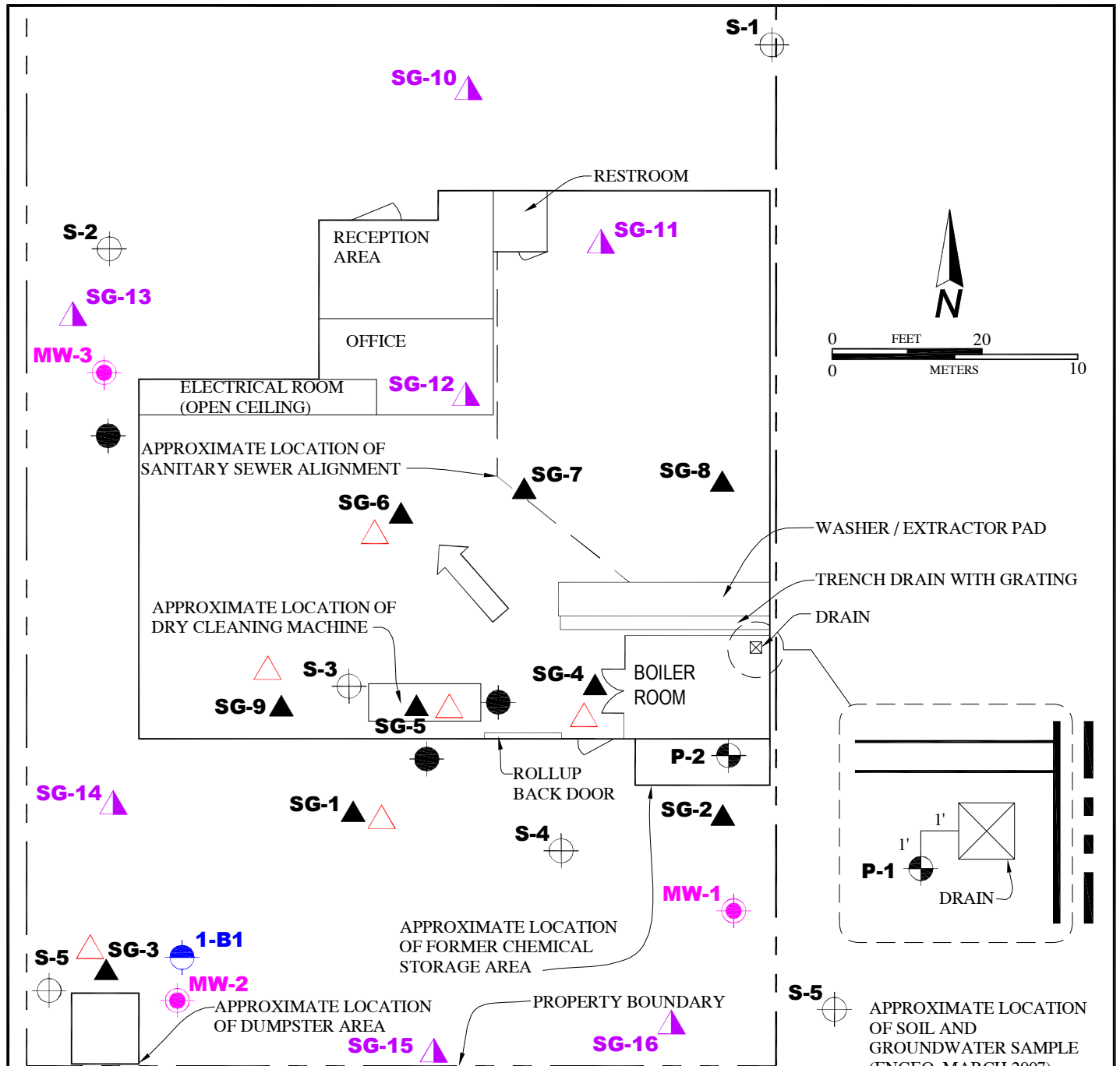


VICINITY MAP
 224 RICKENBACKER CIRCLE
 LIVERMORE, CALIFORNIA

PROJECT NO.:	7584.100.101
DATE:	JUNE 2008
DRAWN BY:	RJS
CHECKED BY:	SM

FIGURE NO.
1

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EXPLANATION

- △ APPROXIMATE LOCATION OF PROPOSED SOIL GAS SAMPLE (MOBILE LABORATORY AND SUMMA CANISTER)
- SG-9** ▲ APPROXIMATE LOCATION OF SOIL GAS SAMPLE (MOBILE LABORATORY)
- APPROXIMATE LOCATION OF BORING (BY JMK ENVIRONMENTAL, OCTOBER 2005)
- 1-B1** ● APPROXIMATE LOCATION OF DEEP BORING
- ⊙ APPROXIMATE LOCATION OF SOIL AND GROUNDWATER SAMPLE (ENGEO, MARCH 2007)
- P-2** ⊙ APPROXIMATE LOCATION OF SHALLOW SOIL SAMPLE (ENGEO, JANUARY 2007)
- MW-3** ● APPROXIMATE LOCATION OF MONITORING WELL
- SG-16** ▲ APPROXIMATE LOCATION OF SOIL GAS SAMPLE (SUMMA CANISTER)
- ➔ APPROXIMATE DIRECTION OF GROUNDWATER FLOW

BASE MAP SOURCE: CITY OF LIVERMORE BUILDING DEPARTMENT

	<p>SITE PLAN</p> <p>224 RICKENBACKER CIRCLE</p> <p>LIVERMORE, CALIFORNIA</p>		<p>PROJECT NO.: 7584.100.101</p>	<p>FIGURE NO.</p> <p style="font-size: 2em;">2</p>
			<p>DATE: JUNE 2008</p>	
			<p>DRAWN BY: RJS</p>	<p>CHECKED BY: SM</p>