

Date: 9/19/11

Subject: 1000 N. Vasco Road, Livermore California
Fuel Leak Case No. RO0003073

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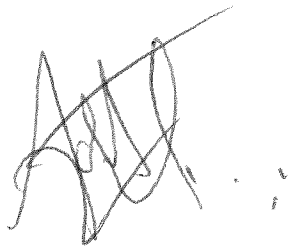
8:56 am, Sep 20, 2011

Alameda County
Environmental Health

PERJURY STATEMENT

“I declare that to the best of my knowledge at the present time, the information and/or recommendations contained in the attached report are true and correct.”

Submitted by Responsible Party:



Scott Menard
Arbor Development Group
3650 Mt. Diablo Blvd. Suite 200
Lafayette, CA 94549

On behalf of:
Eugene and Shirley Macedo Trust
c/o Matt Macedo
2995 Taylor Way
Byron, CA 94514

Project No.
7380.000.003

September 16, 2011

Mr. Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6540Subject: 1000 North Vasco Road
Livermore, California
ACEH Case No. RO0003073**ADDITIONAL REMOVAL ACTION WORKPLAN**

Dear Mr. Wickham:

We have prepared this Additional Removal Action Workplan for remediation of soil impacts associated with the former leaking underground storage tanks at 1000 North Vasco Road in Livermore, California (Site). This workplan supplements a previous workplan that was prepared following the completion of site characterization activities completed in the spring of 2011, as well as under the direction and comments provided in your directive letters dated July 7, 2011 and September 9, 2011, respectively.

BACKGROUND**Site Description**

The Site is located between North Vasco Road and Central Avenue and south of a flood control channel in Livermore, California. According to a published USGS topographic map, the 5.8-acre Site slopes gently westward at an elevation of approximately 525 feet above mean sea level (msl). The eastern two-thirds of the Site is currently occupied by a former gasoline station and car wash complex, a restaurant, two metal buildings, and a paved parking lot. The western one-third of the Site is undeveloped. The Site is currently an active Leaking Underground Storage Tank case (LUST) under the oversight of Alameda County Environmental Health (ACEH) (Case No. RO0003073).

Nature and Source of Contamination

Petroleum hydrocarbons (TPH-d and TPH-g) have been identified as the constituents of concern (COC) in soil and groundwater at the Site. The soil and groundwater impacts are associated with three of the four former UST locations and two of the three former dispenser locations; all located within the northeast portion of the Site.

Previous Activity and Extent of Impact

The first phase of soil excavation activities were performed in July and August 2011. The following is a summary of excavation and confirmation sampling work performed in two areas of concern.

- Area #2 – Upon advancing the excavation in this area, we noted that the backfill appeared to mostly consist of aggregate base material, which was confirmed to be recycled Class II aggregate base material. When screened with the PID, the backfill material exhibited relatively low concentrations of VOCs; approximately 5 ppm or less. The backfill material appeared homogenous and we observed no visual signs of staining. Following the initial excavation activity in this area, the four sidewalls and the base of the completed excavation were observed to consist of aggregate base material. This first phase of the excavation resulted in the removal of approximately 15 cubic yards of backfill material from this location.

We collected confirmation samples from the base of the excavation at a depth of 6 feet below the ground surface and from the sidewalls of the excavation at a depth of 4 feet below the ground surface at the following locations: #2 NORTH, #2 SOUTH, #2 EAST, #2 WEST, and #2 BASE. All of the samples consisted of import backfill material.

The confirmation samples collected from the south and west sidewalls exhibited concentrations of TPH-d exceeding the approved cleanup goal. On August 12, 2011, we returned to the Site to observe the additional excavation of impacted backfill. This second phase of excavation work focused on extending the west and south sidewalls of the excavation. After advancing the west and south sidewalls an additional 3 feet, we noted that sidewalls still consisted of the aggregate base material. When screened with the PID, the sidewalls again exhibited relatively low concentrations of VOCs; approximately 5 ppm or less. The backfill material in the sidewalls appeared homogenous, and we observed no visual signs of staining.

We collected confirmation samples 2W-R and 2S-R from the west and south sidewalls. This second stage of the excavation resulted in the removal of an approximately 20 cubic yards of backfill material from this location. The analytical results for confirmation samples 2W-R and 2S-R exhibited concentrations of TPH-d exceeding the approved cleanup goal. The analysis also included testing for the presence of TPH-mo; elevated concentrations of TPH-mo were also detected. The samples were inadvertently analyzed without silica gel cleanup; another analysis was performed with silica gel cleanup, resulting in lower detected TPH concentrations.

We confirmed that the backfill consisted of recycled aggregate base material. This material contains some asphalt material, which very likely resulted in elevated concentrations of TPH-d and TPH-mo. Subsequent testing was performed to determine the soluble fraction of the detected TPH constituents. Waste Extraction Testing was performed on one sample

(2S-R) using de-ionized water as an extractant. The non-detectable result of the analysis indicates that this material is not soluble and is not expected to pose a threat to groundwater at the Site.

Additional laboratory testing performed to determine the presence of polycyclic aromatic hydrocarbons (PAHs) on sample 2W-R indicated the presence of some PAH analytes below appropriate screening levels. The presence of PAHs provides strong evidence of the presence of asphalt material, supporting our opinion that these materials are resulting in the elevated detected TPH concentrations.

- Area #5 – Upon advancing the excavation in this area, we noted that the backfill appeared to mostly consist of aggregate base material, which was confirmed to be recycled Class II aggregate base material. When screened with the PID, the backfill material exhibited relatively low concentrations of VOCs; approximately 5 ppm or less. The backfill material appeared homogenous and we observed no visual signs of staining. Following the initial excavation activity in this area, the four sidewalls and the base of the completed excavation were observed to consist of aggregate base material. This first phase of the excavation resulted in the removal of approximately 15 cubic yards of backfill material from this location.

We collected confirmation samples from the base of the excavation at a depth of 7 feet below the ground surface and from the sidewalls of the excavation at a depth of 4 feet below the ground surface at the following locations: #5 NORTH, #5 SOUTH, #5 EAST, #5 WEST, and #5 BASE. All of the samples consisted of import backfill material.

The confirmation samples collected from the base of the excavation and all four sidewalls exhibited concentrations of TPH-d exceeding the approved cleanup goal. On August 12, 2011, we returned to the Site to observe the additional excavation of impacted backfill. This second phase of excavation work focused on extending the base and all four sidewalls of the excavation. The excavation base was deepened by approximately 1 foot and the sidewalls were extended by an additional 3 feet. Following the additional excavation, the sidewalls were observed to consist of aggregate base material. Additionally, a portion of the south sidewall and the base consisted of pea gravel. When screened with the PID, the sidewalls and base exhibited relatively low concentrations of VOCs (5 ppm or less). The backfill material in the sidewalls appeared homogenous and we observed no visual signs of staining. We collected confirmation samples 5N-R (misabeled as 5R-R), 5W-R, 5S-R, 5E-R, and 5BASE-R from the sidewalls and base following completion of the second phase of excavation. This second phase of excavation resulted in the removal of approximately 30 cubic yards of backfill material from this location.

The analytical results for confirmation samples 5N-R, 5W-R, 5S-R, and 5E-R exhibited concentrations of TPH-d exceeding the approved cleanup goal. The analysis also included testing for the presence of TPH-mo; elevated concentrations of TPH-mo were also detected.

The samples were inadvertently analyzed without silica gel cleanup; another analysis was performed with silica gel cleanup, resulting in lower detected TPH concentrations.

As with Area #2, we confirmed that the backfill consisted of recycled aggregate base material. This material contains some asphalt material, which very likely resulted in elevated concentrations of TPH-d and TPH-mo. Subsequent testing was performed to determine the soluble fraction of the detected TPH constituents. Waste Extraction Testing was performed on one sample (5S-R) using de-ionized water as an extractant. The non-detectable result of the analysis indicates that this material is not soluble and is not expected to pose a threat to groundwater at the Site.

Additional laboratory testing performed to determine the presence of PAHs on select samples (5N-R, 5E-R, and 5W-R) indicated the presence of some PAH analytes below appropriate screening levels. As in the case of Area #2, the presence of PAHs provides strong evidence of the presence of asphalt material, supporting our opinion that these materials are resulting in the elevated detected TPH concentrations.

Because of the presence of elevated TPH concentrations within the recycled aggregate base material, additional excavation will be performed to remove these materials. A description of the proposed excavation operations is presented in a later section of this report.

CLEANUP GOALS

The development plans for the Site involve construction of single-family residences and a park. The impacted recycled aggregate base material is limited to the area of the future park. As in the case of excavation remedial activities performed to date, we propose to use numeric cleanup goals as established by the San Francisco Bay Regional Water Quality Control Board. Specifically, we will use ESLs for soil assuming a residential land use scenario where groundwater is considered a potential drinking water source¹. The proposed cleanup goals are provided in the table below:

TABLE 1
Proposed Cleanup Goals

Analyte	Soil (mg/kg)
TPH-g	83
TPH-d	83
TPH-mo	370
Benzene	0.044
Toluene	2.9

¹ SFRWQCB ESLs, 2008: Table A-1 – Shallow Soil Screening Levels for Residential Land Use where Groundwater is a Potential Drinking Water Source.

Analyte	Soil (mg/kg)
Ethylbenzene	2.3
Xylene(s)	2.3
MTBE	0.023

PROPOSED REMEDIAL ACTION

Excavation is considered the most expeditious and effective method for remediating soil impacts at the Site. The process involves directly removing impacted soil from the subsurface using an excavator, backhoe, or auger. The recycled aggregate base material will be removed from Areas #2 and #5 until other soil materials are encountered (e.g. soil fill, native soil, pea gravel). The estimated volume of the recycled aggregate base material is unknown at this time. The excavated material will then be loaded into a truck for transport to the materials facility from which it originated.

Upon completion of excavation activities, confirmation samples will be collected from the excavation to verify that the soil cleanup goals have been achieved. At least one confirmation sample will be collected from each excavation sidewall in locations that have not already been tested and demonstrated to meet cleanup goals (Area #2 – southern and western sidewalls, Area #5 – all sidewalls). One sample will be collected for every 15 feet of excavation sidewall. Sidewall samples will be collected from the $\frac{2}{3}$ depth point of each sidewall (e.g. for an excavation 6 feet in depth, a sample will be collected from a depth of 4 feet below the ground surface). Previous testing has been performed on base materials during the 2011 UST removal as well as previous excavation activities. These samples did not exhibit detectable COC concentrations, or the samples exhibited COC concentrations below the cleanup goals. Therefore, base confirmation samples will not be collected at this time.

Representative soil samples from the sidewalls of the excavation will be collected in the excavator bucket and transferred to stainless steel sample tubes, which will be fitted with Teflon®, plastic caps, and labeled with a sample ID. The soil samples will be submitted to a State certified laboratory for analysis of TPH-d by EPA Test Method 8015; and TPH-g and VOCs by EPA Test Method 8260B.

We estimate the soil excavation activities will be completed within 2 days. Since the disturbed area will be less than 1 acre, and the excavation area is not located within the construction area for the residential development, we do not anticipate preparing a Stormwater Pollution Prevention Plan (SWPPP).

ADDITIONAL CHARACTERIZATION – SOIL STOCKPILE AND BASE

Approximately 600 cubic yards of stockpiled soil are located at the western portion of the Site. Either before or after removal of the stockpiled soils, the underlying base soils will be sampled to

determine if these underlying soils had been impacted during the residence of the soil stockpiles. If sampling occurs before stockpile removal, a hand auger or shovel will be used to remove overlying stockpiled soils and expose the underlying base soil in each sample location. Eight soil samples will be recovered from the stockpile footprints using 2-inch-diameter by 6-inch-long stainless steel liners from randomly selected locations of the stockpile. The samples will be sealed with Teflon, plastic end caps and duct tape, and preserved in an ice-cooled chest before being transported under documented chain of custody to a state-accredited fixed-base analytical laboratory. The samples will be analyzed for the following:

- Total petroleum hydrocarbons as gasoline (TPH-g), methyl-tert butyl ether (MTBE), benzene, toluene, ethylbenzene, and xylene(s) (BTEX) and fuel oxygenates (EPA 8260B)
- Total petroleum hydrocarbons as diesel and motor oil using silica gel cleanup (EPA 8015B)
- CAM-17 metals (EPA Methods 6010B and 7471)

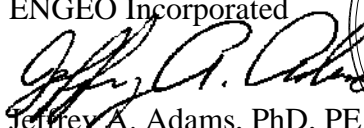
The results of all soil analyses will be compared to the applicable ESLs².

These stockpiled soils are planned for use as backfill for the excavations at the Site. These materials have been tested on several occasions, most recently in May 2011 as described in our Site Characterization Report dated June 17, 2011. As presented in our June 17, 2011 report, these soils did not exhibit COC concentrations above ESLs considering a residential land use scenario. We will provide full-time observation of backfilling operations in which the stockpiled soil is used for fill. During transport and placement of this material, field screening will be performed and will include visual observations and use of a photo ionization detector (PID) for evidence of impact.

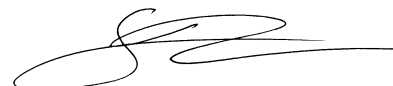
We look forward to working with you on this project. If you have any questions regarding the scope of this workplan, please do not hesitate to contact us.

Sincerely,

ENGEO Incorporated


Jeffrey A. Adams, PhD, PE
jaa/sm/rc




Shawn Munger, CHG, REAII

Attachments: List of Selected References

cc: 1 - Mr. Scott Menard, Arbor Development Group (e-mail only)

² SFRWQCB ESLs, 2008: Table A-1 – Shallow Soil Screening Levels for Residential Land Use where Groundwater is a Potential Drinking Water Source.

SELECTED REFERENCES

- Alameda County Environmental Health Services; Conditional Work Plan Approval for Fuel Leak Case No. RO0003073 and GeoTracker Global ID T10000002919, Geno Country Store, 1000 North Vasco Road, Livermore, CA 94551, April 4, 2011.
- Alameda County Environmental Health Services; Review of Site Characterization Report for Fuel Leak Case No. RO0003073 and GeoTracker Global ID T10000002919, Geno Country Store, 1000 North Vasco Road, Livermore, CA 94551, July 7, 2011.
- Alameda County Environmental Health Services; Conditional Approval of Interim Removal Action Work Plan for Fuel Leak Case No. RO0003073 and GeoTracker Global ID T10000002919, Geno Country Store, 1000 North Vasco Road, Livermore, CA 94551, August 2, 2011.
- Alameda County Environmental Health Services; Review of Case File for Fuel Leak Case No. RO0003073 and GeoTracker Global ID T10000002919, Geno Country Store, 1000 North Vasco Road, Livermore, CA 94551, September 9, 2011.
- ENGEO; Modified Phase One Environmental Site Assessment, 1000 North Vasco Road, Livermore, California; October 27, 2006, Project No. 7380.1.001.02.
- ENGEO; Supplemental Environmental Services, Shell Gas Station, 1000 North Vasco Road, Livermore, California; June 20, 2007, Project No. 7380.1.002.04.
- ENGEO; Geotechnical Exploration, Macedo Property, 1000 North Vasco Road, Livermore, California; October 21, 2011, Project No. 7380.000.000.
- ENGEO; Phase I Environmental Site Assessment Update, Macedo Property, 1000 North Vasco Road, Livermore, California; March 18, 2011, Project No. 7380.000.002.
- ENGEO; Workplan for Site Characterization, 1000 North Vasco Road, Livermore, California; April 1, 2011, Project No. 7380.000.003.
- ENGEO; Site Characterization Report, 1000 North Vasco Road, Livermore, California; June 17, 2011, Project No. 7380.000.003.
- ENGEO; Interim Removal Action Workplan, 1000 North Vasco Road, Livermore, California; July 12, 2011, Project No. 7380.000.003.
- ENGEO; Interim Removal Action Report, 1000 North Vasco Road, Livermore, California; August 29, 2011, Project No. 7380.000.003.
- Environmental Service, Tank Removal Closure Report, 1000 N. Vasco Road, Livermore, California, August 25, 2011, Project No. 2010-35.

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Helley, E. J and Graymer, R.W., 1997, Quaternary Geology of Alameda County and Parts of Contra Costa, Santa Clara, San Mateo, San Francisco, Stanislaus, and San Joaquin Counties, California; USGS, Open File Report OF-97-97.

Krazan and Associates, Phase I Environmental Site Assessment, BOTW No. 09-510-02, Geno's Country Store, 1000 North Vasco Road, Livermore, California; April 3, 2009; Project No. 013-09074.

Krazan and Associates, Phase II Environmental Site Assessment, BOTW No. 09-510-02, Geno's Country Store, 1000 North Vasco Road, Livermore, California; September 28, 2009; Project No. 013-09074.