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8:03 am, May 22, 2012

Alameda County
Environmental Health

Dr. Joginder Sikand
1300 Ptarmigan Drive, #1
Walnut Creek, CA 94595

Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

SUBJECT: RO0000262
Albany Hill Mini Mart
800 San Pablo Avenue
Albany, California

Dear Mr. Detterman:

Attached please find a copy of the most recent groundwater sampling report for the above referenced site. I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Sincerely,



Dr. Joginder Sikand



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

May 10, 2012

WORKPLAN
for
SOIL, GROUNDWATER AND SOIL VAPOR ASSESSMENT
at
Albany Hill Mini Mart
800 San Pablo Avenue
Albany, CA 94706

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
55 Oak Court, Suite 220
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(925) 820-9391



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1.0 INTRODUCTION

This submittal presents Aqua Science Engineer's, Inc. (ASE) workplan for an additional soil, groundwater and soil vapor assessment at the Albany Hill Mini Mart located at 800 San Pablo Avenue in Albany, California (Figures 1 and 2). The proposed site assessment activities were initiated by Dr. Joginder Sikand, owner of the property, as requested by the Alameda County Health Care Services Agency (ACHCSA) in their directive letter dated April 5, 2012.

2.0 BACKGROUND

Please see ASE's "Updated Site Conceptual Model" document dated August 4, 2011 for detailed description of the site history and environmental condition of the site.

3.0 PROPOSED SCOPE OF WORK

The purpose of this assessment is to close data gaps identified in ASE's August 4, 2011 "Updated Site Conceptual Model" and to obtain current data to determine whether current concentrations of contaminants in soil, groundwater and soil vapor in the site vicinity present a risk to human health and the environment. The specific proposed scope of work is as follows:

- 1) Obtain a drilling permit from the Alameda County Public Works Agency, an encroachment permit from the City of Albany, and an access agreement from the owner of 1020 Washington Avenue to allow for drilling on their property.
- 2) Notify Underground Service Alert (USA) of the drilling and have drilling locations cleared of subsurface utility lines by a private subsurface utility line locating company.
- 3) Drill three soil borings in locations west and north of the site using a Geoprobe and collect groundwater samples for analysis.
- 4) Analyze one soil and one groundwater sample from each boring at a CAL-EPA certified analytical laboratory for total petroleum hydrocarbons as diesel (TPH-D) by modified Method 8015 and total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethyl benzene, and total xylenes (collectively known as BTEX), and fuel oxygenates by EPA Method 8260B.
- 5) Collect soil vapor samples from four locations west and north of the site.
- 6) Collect soil vapor samples from the two existing vapor monitoring points inside the Albany Hill Mini Mart building and inside the United Transmission building immediately south of the site.
- 7) Analyze the soil vapor sample from each boring at a CAL-EPA certified analytical laboratory for TPH-G and BTEX by EPA Method TO-15, and carbon dioxide, oxygen, nitrogen, methane and helium by ASTM D1946.



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- 8) Backfill each boring with neat cement.
- 9) Prepare a report presenting the methods and findings of this assessment.

Details of the assessment are presented below.

TASK 1 OBTAIN NECESSARY PERMITS AND ACCESS AGREEMENTS

Prior to drilling, ASE will obtain a drilling permit from the Alameda County Public Works Agency. ASE will also obtain an encroachment permit from the City of Albany to allow for drilling within their right-of-way and an access agreement from the owner of 1020 Washington Avenue to allow for drilling on that property.

TASK 2 NOTIFY USA TO CLEAR DRILLING LOCATIONS OF UNDERGROUND UTILITY LINES

ASE will mark the proposed boring locations with white paint and will notify Underground Service Alert (USA) to have underground utility lines marked in the site vicinity at least 48-hours prior to drilling. ASE will also contract with a private underground utility locating company to clear each drilling locations of underground lines prior to drilling.

TASK 3 DRILL THREE SOIL BORINGS IN OFF-SITE LOCATIONS AND COLLECT SOIL AND GROUNDWATER SAMPLES FOR ANALYSIS

ASE will drill three soil borings at the locations shown on Figure 2 to evaluate post remediation conditions in locations adjacent to the site. The borings will be drilled using a Geoprobe direct-push drilling rig. A qualified ASE geologist will direct the drilling.

Undisturbed soil samples will be collected continuously for subsurface hydrogeologic description and possible chemical analysis. The soil will be described by the ASE geologist according to the Unified Soil Classification System (USCS). The samples will be collected in acetate tubes using a drive sampler advanced as the boring progresses. One soil sample from the capillary zone in each boring will be prepared for analysis. Additional samples will be collected if there is any indication of contamination based on visual inspection, odors or other evidence. Samples prepared for analysis will be immediately removed from the sampler, cut at the appropriate sample interval, trimmed, and sealed with Teflon tape and plastic caps. The samples will then be labeled with the site location, sample designation, date and time the sample was collected, and the initials of the person collecting the sample. The samples will be placed into an ice chest containing wet ice for delivery under chain of custody to a CAL-EPA certified analytical laboratory.

Soil from the remaining tubes not sealed for analysis will be removed for hydrogeologic description and will be screened for volatile compounds with a photoionization detector (PID). The soil will be screened by emptying soil into a plastic bag. The bag will be sealed and placed in the sun for approximately 10 minutes. After the hydrocarbons have been allowed to volatilize, the PID will measure the vapor through a small hole, punched in the bag. These PID readings



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will be used as a screening tool only since these procedures are not as rigorous as those used in an analytical laboratory.

Once groundwater is encountered, a temporary PVC casing will be placed into the boring to allow for groundwater sampling. The PVC casing will be slotted for at least the entire saturated interval. Water samples will then be collected using a bailer. Water will be decanted from the bailer into 40-ml volatile organic analysis (VOA) vials pre-preserved with hydrochloric acid, sealed without headspace, labeled, and placed into an ice chest with wet ice for transport to the analytical laboratory under chain of custody.

All sampling equipment will be cleaned in buckets with brushes and an Alconox solution, and then rinsed twice with tap water. Rinsates will be contained on-site in 55-gallon steel drums for future disposal.

TASK 4 ANALYZE SOIL AND GROUNDWATER SAMPLES

At least one soil sample from each boring, as well as each groundwater sample, will be analyzed at a CAL-EPA certified analytical laboratory for TPH-D by modified Method 8015 and TPH-G, BTEX, and fuel oxygenates by EPA Method 8260B. Soil samples analyzed will include a sample collected from the capillary zone, as well as additional samples if there is any indication of contamination based on odors, staining or PID readings.

TASK 5 COLLECT SOIL VAPOR SAMPLES FROM THREE LOCATIONS ON ADJACENT PROPERTIES

Prior to conducting the project, ASE will verify that there has been no significant rainfall (no more than 1/2-inch) for 5 days prior to the soil vapor sampling. Nearby on-site irrigation systems will also be shut off for 5 days prior to the sampling. ASE will also turn off the existing ozone sparging remediation system two weeks prior to the drilling.

ASE will push three vapor points to 5-foot bgs using drilling rods driven with a Geoprobe. The bottom of each rod will contain an expendable point. Once at depth, 1/4" Teflon tubing with a 1-inch screen will be inserted inside the drive rod. The drive rod will be retracted approximately 6-inches separating the expendable point and the rods and creating the desired void for the sample collection Membrane. Sand will be added to fill the void to 6-inches above the sample point. Above the sand, 6-inches of dry granulated bentonite will be added followed by hydrated bentonite to the surface to prevent ambient air intrusion into the borehole.

The borehole will then be allowed to equilibrate 20 minutes prior to purging and sampling. A "vacuum shut in test" will then be conducted to verify there are no leaks in the sample train system. A minimum vacuum of 100-inches of water column will be applied to the sampling manifold and valves system between the Summa canister and the probe for at least 5 minutes with all valves closed. If a vacuum of 100-inches of water is not maintained, then the tubing and valves will be adjusted or changed until the vacuum holds for the length of the test.



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For the sampling, the sampling probe and Summa canister will be placed in a shroud consisting of a plastic shroud with glove entry. Helium will then be added to the shroud as a tracer gas at a minimum concentration of 10% by volume. The tubing will then be purged of at least three volumes to insure that all ambient air is removed from the tubing using the Geoprobe vacuum/volume system. Once the required volume is purged, but prior to sample collection using the Summa canister, the helium concentration in soil gas from the probe will be measured to verify that the system does not contain leaks. A soil vapor sample will be collected in a Tedlar bag using a “lung box” and the helium concentration will be analyzed using a helium detector. If the helium concentration in the Tedlar bag is less than 10% of the minimum helium concentration in the shroud, then the sample will be considered leak free and the sample will be collected using a 1-liter Summa canister.

The sample will be collected in a 1-liter Summa canister with a rate between 100 to 200-ml per minute and at a vacuum of less than 100-inches of water. The samples will be labeled with the site location, sample designation, date and time the samples are collected, and the initials of the person collecting the sample. The samples will then be delivered under chain of custody to a CAL-EPA certified analytical laboratory for analysis.

All disposable equipment and supplies will be discarded and non-disposable equipment will be cleaned with an Alconox solution and triple rinsed between sampling locations.

TASK 6 COLLECT SOIL VAPOR SAMPLES FROM TWO EXISTING VAPOR MONITORING POINTS

ASE will collect soil vapor samples from the two existing vapor monitoring points inside the Albany Hill Mini Mart building and inside the United Transmission building immediately south of the site. Prior to conducting the project, ASE will verify that there has been no significant rainfall (no more than 1/2-inch) for 5 days prior to the soil vapor sampling. There are no irrigation systems near either of these points. ASE will also turn off the existing ozone sparging remediation system two weeks prior to the drilling.

Each point will be fitted with a cap connected to ¼” Teflon tubing. The sample point will then be allowed to equilibrate 20 minutes prior to purging and sampling. A “vacuum shut in test” will then be conducted to verify there are no leaks in the sample train system. A minimum vacuum of 100-inches of water column will be applied to the sampling manifold and valves system between the Summa canister and the probe for at least 5 minutes with all valves closed. If a vacuum of 100-inches of water is not maintained, then the tubing and valves will be adjusted or changed until the vacuum holds for the length of the test.

For the sampling, the Summa canister will be placed in a shroud consisting of a plastic shroud with glove entry. Helium will then be added to the shroud as a tracer gas at a minimum concentration of 10% by volume. The tubing and sample point casing will then be purged of at least three volumes to insure that all ambient air is removed from the tubing using the Geoprobe vacuum/volume system. Once the required volume is purged, but prior to sample collection using the Summa canister, the helium concentration in soil gas from the probe will be measured to verify that the system does not contain leaks. A soil vapor sample will be collected in a Tedlar



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bag using a “lung box” and the helium concentration will be analyzed using a helium detector. If the helium concentration in the Tedlar bag is less than 10% of the minimum helium concentration in the shroud, then the sample will be considered leak free and the sample will be collected using a 1-liter Summa canister.

The sample will be collected in a 1-liter Summa canister with a rate between 100 to 200-ml per minute and at a vacuum of less than 100-inches of water. The samples will be labeled with the site location, sample designation, date and time the samples are collected, and the initials of the person collecting the sample. The samples will then be delivered under chain of custody to a CAL-EPA certified analytical laboratory for analysis.

TASK 7 ANALYZE THE SOIL VAPOR SAMPLES

Each vapor sample will be analyzed at a CAL-EPA certified analytical laboratory for TPH-G and BTEX by EPA Method TO-15, and carbon dioxide, oxygen, nitrogen, methane and helium by ASTM D1946.

TASK 8 BACKFILL THE BORINGS WITH NEAT CEMENT

Following collection of the samples, all boreholes will be backfilled with neat cement placed by tremie pipe.

TASK 9 PREPARE A SUBSURFACE ASSESSMENT REPORT

ASE will prepare a report presenting the methods and findings of this assessment. The report will be submitted under the seal of state registered civil engineer or geologist. This report will include a summary of all work completed during this assessment including tabulated analytical results, conclusions and recommendations. Copies of the analytical report and chain of custody will be included as appendices. The report, analytical data, and boring logs will also be uploaded to the state Geotracker database.



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4.0 SCHEDULE

ASE will schedule field activities upon approval of this workplan by the Alameda County Health Care Services Agency. Depending on how quickly the access agreement can be obtained, ASE could complete this project in approximately 90-days of the workplan approval.

Should you have any questions or comments, please call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

The image shows a handwritten signature in black ink that reads "Robert E. Kitay". To the right of the signature is a circular professional seal. The seal has a double-line border. The outer ring contains the text "PROFESSIONAL GEOLOGIST" at the top and "STATE OF CALIFORNIA" at the bottom, with two small stars on either side. The inner circle contains the name "ROBERT E. KITAY" and the number "No. 6586" below it.

Robert E. Kitay, P.G., R.E.A.
Senior Geologist



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FIGURES



NORTH

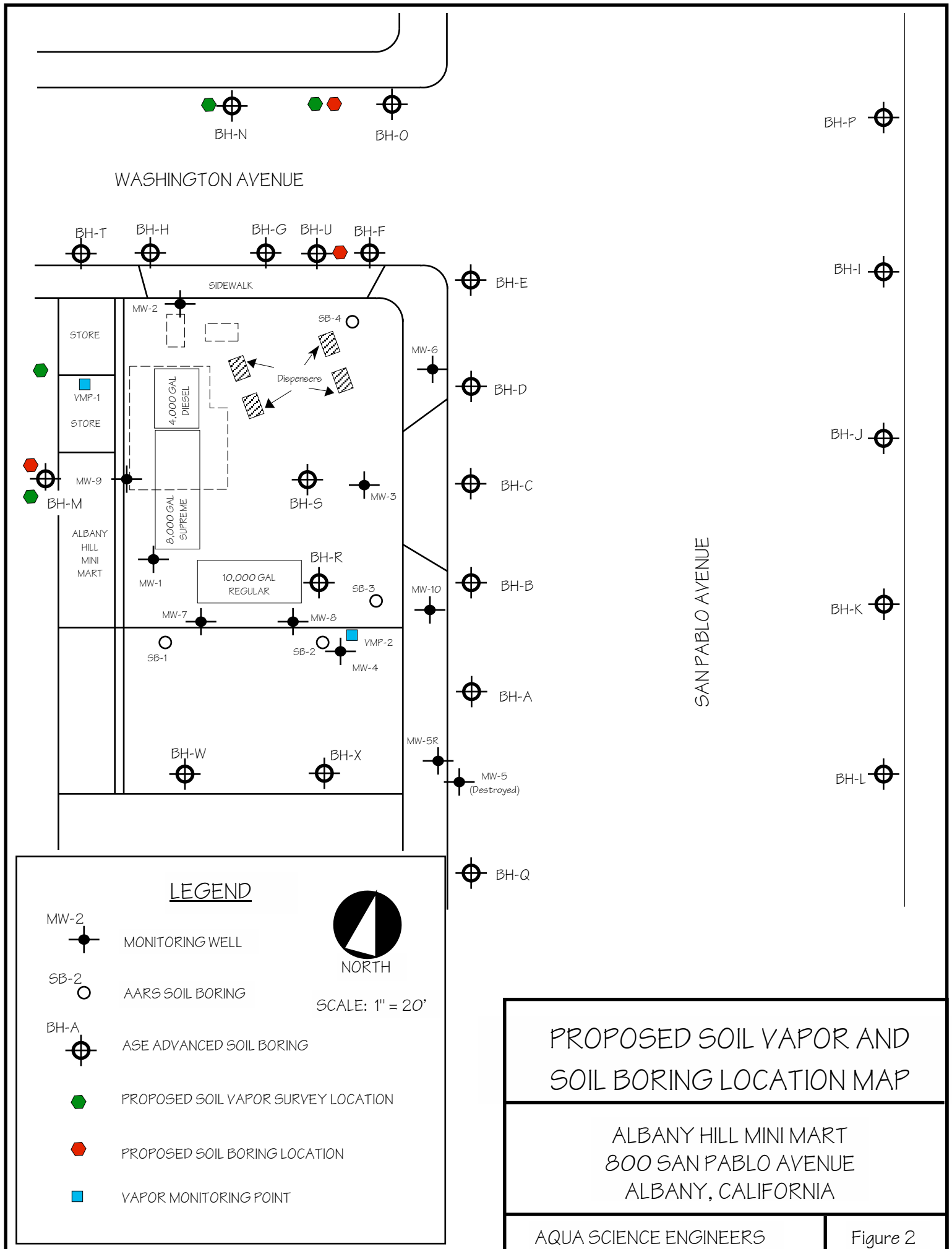


LOCATION MAP

ALBANY HILL MINI MART
800 SAN PABLO AVENUE
ALBANY, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC.







Figure 1



WASHINGTON AVENUE

SAN PABLO AVENUE

LEGEND

- MW-2  MONITORING WELL
- SB-2  AARS SOIL BORING
- BH-A  ASE ADVANCED SOIL BORING
-  PROPOSED SOIL VAPOR SURVEY LOCATION
-  PROPOSED SOIL BORING LOCATION
-  VAPOR MONITORING POINT



SCALE: 1" = 20'

PROPOSED SOIL VAPOR AND SOIL BORING LOCATION MAP

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ALBANY, CALIFORNIA