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Alameda County
Environmental Health

October 27, 2011

Mr. Jerry Wickham, PG
Alameda County Health Care Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Site Assessment Work Plan
West Coast Vending & Food Service, Inc.
2124 Livingston Street, Oakland, CA
94606, Global ID #: T0600102157
ACHCSA Case # RO0000088

Dear Mr. Wickham:

Ami Adini & Associates, Inc. has prepared the following Site Assessment Workplan dated October 15, 2011. I declare under penalty of perjury that the information contained in this work plan is true and correct to the best of my knowledge.

If you have any questions, please contact me at (510) 261-5954, Ext. 116.

Sincerely,

Bruce Bauer pres.

Bruce Bauer
West Coast Vending & Food Service, Inc.
2124 Livingston Street
Oakland, CA 94606

Ami Adini & Associates, Inc.

October 15, 2011
Project No.
WestCoastVending.p01
Via GeoTracker

Mr. Jerry Wickham, PG
Alameda County Health Care Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Site Assessment Work Plan, West Coast Vending & Food Service, Inc., 2124 Livingston Street, Oakland, CA 94606, Global ID #: T0600102157, ACHCSA Case # RO0000088

Dear Mr. Wickham:

A site investigation work plan was prepared in April of 2000 by North State Environmental (NSE) of San Francisco, California; however, the proposed work appears to not have been completed and no reports have been submitted to the Alameda County Health Care Services Agency (ACHCSA). Therefore, the ACHCSA, in their directive of May 9, 2011 and their Notice to Comply of August 22, 2011, required a revised work plan to address the elevated hydrocarbon concentrations detected during the underground storage tank (UST) removal in 1998. Ami Adini & Associates, Inc. (AA&A), presents this work plan for additional site assessment at the above-referenced site with an attached figure showing the proposed boring locations and table displaying the historical soil sampling data.

This work plan is designed to attempt delineation of the petroleum hydrocarbon plume at the site and determine if groundwater has been impacted by advancing five borings and collecting grab groundwater samples. Groundwater was not encountered during the UST removal excavation in 1998 to a depth of at least 10 feet below ground surface (bgs); however, based on information from a site located approximately 750 feet south southeast of the site where groundwater was measured between 4.4 and 5.5 feet bgs during the third quarter 2010, groundwater at the site may be between 5 and 15 feet bgs (PSC, *Second Semi-Annual Groundwater Monitoring Report September 2010, 955 Kennedy Street, Oakland, California,* September 24, 2010).

The work will be performed under the supervision of a PG licensed in California in compliance with the requirements of the Geologist and Geophysicists Act, Business and Professions Code sections 7800–7887.

PREVIOUS ASSESSMENTS

The following information was obtained from the NSE *Work Plan for Site Characterization Activities* dated April 25, 2000.

On April 16, 1998, SEMCO Environmental Contractors (SEMCO) of Modesto, California removed one 2,000-gallon gasoline UST from the site (Figure 1) under the direct supervision of Mr. Robert Weston of the ACHCSA and Mr. Steve Crawford of the Oakland Fire Department.

Soil samples collected beneath the northeast and southwest ends of the UST (Tl-9 and T2-1O) at approximately 9 and 10 feet bgs, respectively, contained up to 3,100 mg/kg total petroleum hydrocarbons as gasoline (TPHg), 0.03

mg/kg benzene, 0.012 mg/kg methyl tertiary butyl ether (MTBE), and 13 mg/kg total threshold limit concentration (TTLC) lead.

One soil sample collected beneath the former fuel dispenser (P1) contained 120 mg/kg TTLC lead, a soluble threshold limit concentration (STLC; Cal. Title 22 Waste Extraction Test) of 6 mg/l, and a synthetic precipitation leaching procedure (SPLP; EPA Method 1312) concentration of < 0.1 mg/l. The SPLP method evaluates the mobility of the analytes in a non-landfill environment. The TPHg, benzene, toluene, ethylbenzene, total xylenes (BTEX), and MTBE concentrations measured in this sample were below the laboratory reporting limit (0.5 mg/kg for TPHg and 0.010 mg/kg for BTEX and MTBE). The composite stockpile soil sample contained 4 mg/kg TPHg, 0.04 mg/kg total xylenes, and 7 mg/kg TTLC lead. Soil beneath the UST consisted predominantly of olive gray (5Y 3/2) silty clay.

Groundwater was not observed in the excavation. The UST was transported to the Erickson, Inc. disposal facility in Richmond, California under Uniform Hazardous Waste Manifest #96835708. Following sample collection, SEMCO backfilled the excavation with the stockpile soil (5 to 10 bgs) and imported pea gravel and silty, gravelly sand (0 to 5 bgs). UST removal soil sample analytical results are included in Table 1. Additional details are provided in the *Tank Removal Report* prepared by SEMCO dated July 9, 1998. AA&A could not obtain a copy of this report and was not able to review it.

Based on the review of the analytical results of the soil samples collected during the UST removal activities, the ACHCSA, in letters dated between July 1998 and November 1999, requested West Coast Vending & Food Service, Inc. (West Coast Vending) to either prepare a work plan for groundwater investigation or provide a rationale for a "low risk" soil or groundwater case at the site. On March 1, 2000, West Coast Vending contracted NSE to prepare a work plan evaluating the extent of hydrocarbon-affected soil and potential impact to groundwater in the vicinity of the former UST. NSE, in a letter dated March 20, 2000, requested the ACHCSA to extend the deadline for submittal of the work plan. The work plan extension request was approved by the ACHCSA in their letter dated March 23, 2000. A work plan was submitted on April 25, 2000.

According to the NSE work plan, the following information is based on a site reconnaissance by NSE and information provided by a West Coast Vending representative. Subcontracted representatives of Baker Art Foundry (adjacent property to the north at 2040 Livingston Street) reportedly drilled more than two soil borings using direct-push technology around the perimeter of the on-site (West Coast Vending) UST. Borings were also drilled between the on-site (West Coast Vending) UST and the former UST located on the adjacent property at 2040 Livingston Street. During the NSE site reconnaissance at West Coast Vending, two of the reported soil boring locations were observed adjacent to the northwest and southwest sides of the limit of the UST excavation (the borings were backfilled with Portland cement to grade surface). These soil boring locations are shown in Figure 1. The reported boring locations situated between the two USTs were not observed. The borings were apparently drilled between 1994 and 1998, and under the directive of a lending institution. NSE was unaware of any information that existed regarding the boring depths, sample locations, and/or other boring locations in the vicinity of both USTs. No records or reports of such activities exist with the City of Oakland.

SITE ASSESSMENT ACTIVITIES

Health and Safety Plan

AA&A prepared a site-specific HSP, which will be implemented according to the Occupational Safety and Health Administration (OSHA) requirements (29 Code of Federal Regulations [CFR] 1910.120) to address the proposed scope of work. Requirements and guidelines for worker safety and hazard identification during all phases of the drilling activities will be included in the HSP. The on-site health and safety officer will be responsible for

implementation of the HSP. A health and safety meeting will be conducted at the beginning of the each day during field activities.

Pre-sampling Inspection and Access

Prior to fieldwork, AA&A will conduct a site reconnaissance and mark all proposed boring locations with white paint. Boring locations will be inspected for site accessibility, underground utilities, and to identify additional potential issues that may be encountered during fieldwork.

Permitting and Agency Notification

Before initiating fieldwork, AA&A will obtain a drilling permit from the Water Resources Section of the Alameda County Public Works Agency (ACPWA). The ACPWA and ACHCSA will be notified at least 48 hours before drilling activities commence so that representatives from these agencies can be present during the fieldwork to inspect boring locations and observe drilling activities.

Underground Locating

Underground Service Alert (USA) will be notified at least 48 hours in advance of the intent to conduct subsurface investigations prior to initiation of intrusive field tasks. All proposed soil boring locations will be clearly marked with white paint as required by USA. USA will contact all utility owners of record within the vicinity and notify them of the intention to conduct subsurface investigations in proximity to buried utilities. All utility owners of record, or their designated agents, will be expected to clearly mark the position of their utilities on the ground surface throughout the area designated for investigation so that they can be avoided during drilling.

As additional due diligence, AA&A will instruct the drilling company to air-knife or hand-auger all boring locations to approximately 5 feet bgs before drilling commences.

Soil Borings and Sampling

Soil Boring Locations

The objective of this investigation is to attempt delineation of the petroleum hydrocarbon and lead in soil and determine if groundwater has been impacted with TPHg, BTEX or fuel oxygenates and lead.

The proposed soil boring locations are shown on Figure 1 and indicate general areas where the borings will be located based on access, field conditions and clearance in those areas.

- B1 on the northeast area of the former UST excavation with sampling starting below the excavation bottom;
- B2 north of the former UST excavation;
- B3 northwest of the former UST excavation;
- B4 southwest of the former UST excavation;
- B5 southeast of the former UST excavation and inside the on-site structure; and
- B6 approximately 290 feet southeast from the former UST excavation at the edge of the property.

Direct Push Drilling Method

Each of the borings will be advanced to a total depth of 20 feet bgs using a direct-push rig. This is assuming groundwater is below 10 feet bgs. The actual depth of the borings will be determined based on the depth to groundwater and be completed approximately 5 to 7 feet below groundwater depth.

The first 5 feet of each boring will be advanced using a hand auger or air knife to clear for subsurface obstructions. Direct-push rigs use hydraulic cylinders and a hydraulic hammer in advancing a hollow core sampler into the soil. The borings will be advanced using a string of rods to connect the probe or sampler to the rig.

Soil Sampling

Soil samples will be collected at 5-foot intervals, at any change in lithology or evidence of contamination for chemical and lithologic analysis. Soil samples will be collected in 4-foot long acetate liners inside the samplers attached to the rods. The soil sample to be tested for background lead concentration will be collected from approximately 1 foot bgs. The table below summarizes the boring numbers, the total boring depths, and soil sampling depths from the borings.

Soil Borings and Sampling Depths

Boring Number	Total Depth of Each Boring (below ground surface)	Soil Sampling Depths (below ground surface)
B1	20 feet	At 15 feet and 20 feet bgs
B2 through B5	20 feet	At 5 feet and every 5 feet thereafter to total boring depth
B6 (background lead)	1 foot	At total boring depth

Upon collection, the tube will be sealed with Teflon® film and plastic caps. The sample will be labeled, placed on ice, and transported to a state-certified analytical laboratory.

The field geologist, under the supervision of a PG, will describe the soil in accordance with the Unified Soil Classification System (USCS). In addition, the soil samples will be observed for color, texture, moisture content, plasticity, visible evidence of soil contamination (i.e., odor, staining), and any other notable characteristics.

A portion of the soil sample collected will be screened for volatile organic compounds (VOCs) by headspace analysis, using a photo ionization detector (PID) calibrated to 50 parts per million (ppm) hexane. For each sampling interval, approximately 200 grams of soil will be placed in a plastic bag and sealed to allow organic vapors to volatize for several minutes prior to each measurement. After the soil and the atmosphere in the sealed plastic bag will be allowed to equilibrate, the probe tip of the PID will be inserted into the plastic bag, and VOCs (in ppm) will be recorded.

The boring number, sample depth, lithologic description, discolorations, and PID readings will be documented on the boring logs.

Chemical Analytical Program for Soil

The soil samples will be submitted to a state-certified laboratory for analysis. All laboratory analyses will be completed on a standard turnaround schedule. The soil laboratory analytical reports and chain-of-custody records will be included in the report. The table below summarizes the laboratory analytical program based on five borings to 20 feet bgs and one boring to 1 foot bgs.

Sampling Schedule for Laboratory Analysis of Soil			
Boring No.	**Contaminants of Concern**	**Analytical Methods**	**Number of Analyses**
B1	TPHg BTEX and fuel oxygenates	EPA Method 8015M EPA Method 8260B	2 per boring
	TTLC Lead	EPA Method 7420	2 per boring
B2 through B5	TPHg BTEX and fuel oxygenates	EPA Method 8015M EPA Method 8260B	4 per boring
	TTLC Lead	EPA Method 7420	2 per boring
B6 (background lead)	TTLC Lead	EPA Method 7420	1 per boring

Following collection and labeling, each sample will be recorded on a chain-of-custody form identifying the sampler, sample name, type of sample containers, couriers, responsible laboratory personnel, and requested analyses. The samples will then be placed on ice, and transported to a state-certified analytical laboratory.

Sample collection, management, and analysis will be conducted in accordance with the procedures specified in the following:

- CCR Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.20(c); and
- US Environmental Protection Agency, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846,* Office of Solid Waste and Emergency Response, Washington, DC, Third Edition, Final Update IV 2008.

All data will be submitted in electronic delivery format (EDF) to the State Water Resources Control Board (SWRCB) GeoTracker database according to electronic data submittal requirements.

Decontamination

The drilling rods will be decontaminated before drilling with a steam-cleaning unit. All reusable sampling equipment will be decontaminated before and after each use to assure the quality of samples collected. Decontamination will be performed using the following procedure:

- Washing in non-phosphate detergent and tap water wash, using a brush as necessary;
- Rinsing in clean tap water; and
- Final rinse in deionized/distilled water.

Disposable equipment intended for one-time use will not be decontaminated but will be packaged for appropriate disposal. Cleaned small equipment will be stored in plastic bags.

Groundwater Grab Sampling

Groundwater Sample Collection Procedures

The borehole will be advanced to approximately 2 feet above the depth from which a discrete water sample will be desired. A HydroPunch™ sampling device will be lowered to the bottom of the borehole and driven to the proper sampling depth into undisturbed materials below the borehole bottom. The rod will be then retracted to expose the screen of the sampling device.

After waiting a sufficient time to allow the sampler to fill with water, a pump and a riser tubing will be used to collect a groundwater samples into three laboratory provided 40-milliliter volatile organic ampoules (VOAs). The VOAs will be sealed with Teflon®-lined caps, labeled appropriately, placed on ice, and transported to a state-

certified laboratory for analysis. Each sample will be recorded on a chain-of-custody form identifying the sampler, sample name, type of sample containers, couriers, responsible laboratory personnel, and requested analyses.

Groundwater Analytical Program

The groundwater samples will be submitted to a state-certified laboratory for analysis. All laboratory analyses will be completed on a standard turnaround. The table below summarizes the laboratory analytical program.

Sampling Schedule for Laboratory Analysis of Groundwater

Contaminants of Concern	Analytical Methods	Number of Analyses
TPHg	LUFT GC/MS	5
BTEX and fuel oxygenates	EPA Method 8260B	5
Lead		
Total dissolved solids	EPA Method 160.1	1

The laboratory analytical reports and chain-of-custody records will be included in the report. According to electronic data submittal requirements, all data will be submitted in EDF to the SWRCB GeoTracker database.

Borehole Abandonment

At the conclusion of sampling, all the rods will be removed from the boreholes. All borings will be backfilled with hydrated granular bentonite and patched with cold asphalt or concrete, as required, to match the existing ground surface.

Disposal of Investigation-Derived Wastes

Soil cuttings are not expected by using a direct-push drilling rig. Groundwater and decontamination water generated during the drilling of soil borings will be placed in Department of Transportation-approved 55-gallon drums and stored at the site pending transport to an appropriate disposal facility. The drums will be identified with labels including the name of waste generator, type of waste (soil or water), and accumulation date.

Quality Assurance/Quality Control

An integral part of sampling and analysis is quality assurance/quality control (QA/QC) procedures to ensure the reliability and compatibility of all data generated during the investigation. The chemical data to be collected for this effort will be used to determine that the extent of contamination is properly evaluated. As such, it is critical that the chemical data be the highest confidence and quality. Consequently, strict QA/QC procedures will be adhered to, as follows:

- Adherence to strict protocols for field sampling and decontamination procedures; and
- Laboratory analysis of matrix spike and matrix spike duplicate samples to evaluate analytical precision and accuracy.

Field Variances

As conditions in the field vary, it may become necessary to implement minor modifications to drilling locations as presented in this work plan, such as relocating borings due to unforeseen difficulties. These changes will be made at AA&A's discretion and without notification to the client. When appropriate, and in the event of major modifications such as sudden interruption to the work requiring demobilization and additional costs, a property

owner refusing access, inclement weather, etc., the client will be notified and a verbal approval will be obtained before the changes are implemented. Major modification to the sampling and analysis program will be documented in the report.

Report Preparation

Following completion of the drilling of borings, well installation and laboratory analysis, AA&A will prepare a report organized in general accordance with the format recommended in the *Preliminary Endangerment Assessment Guidance Manual* (Cal/EPA, 1999). The report will be reviewed by a senior-level PG. The report will include the following:

- Site identification information;
- Site description and background;
- Environmental setting including topography, local and regional geology and hydrology;
- Identification of local aquifers and distances to nearest water production wells;
- Description of field procedures;
- Discussion of soil type encountered;
- Discussion of sampling results;
- Boring logs;
- Field variances;
- Tabulated summary of laboratory analytical results an comparison with regulatory screening levels;
- Site plans with borings locations and isoconcentration contours of detected target compounds;
- Discussion of impacts in areas of concern;
- Summary of findings and conclusions; and
- Recommendations for further action as warranted.

SCHEDULE

The following schedule is anticipated to complete the proposed scope of work after authorization to proceed has been received and after the ACPWA approval (time to complete each task):

Preparation of contract and task order approval	2–4 weeks
Property access, permitting, and utility clearance	6–10 weeks
Drilling of borings and grab groundwater sampling	1 week
Laboratory analysis of soil and groundwater samples	1–2 weeks
Soil and groundwater assessment report	4–6 weeks

AA&A estimates that the entire project can be completed, including submittal of the report, in 14 to 22 weeks. This schedule is based on the assumption that no significant modifications to this work plan are necessary and permits to drill are readily available.

I declare under penalty of perjury that the information and/or recommendations contained in this work plan is true and correct to the best of my knowledge.

If you have any questions, please contact the undersigned at (818) 824-8102.

Sincerely,
Ami Adini & Associates, Inc.

Gabriele Baader, PG
Director of Environmental Engineering Consultant
Professional Geologist No. 7015, Expiration Date 4/30/12
Registered Environmental Assessor No. REA I-06248

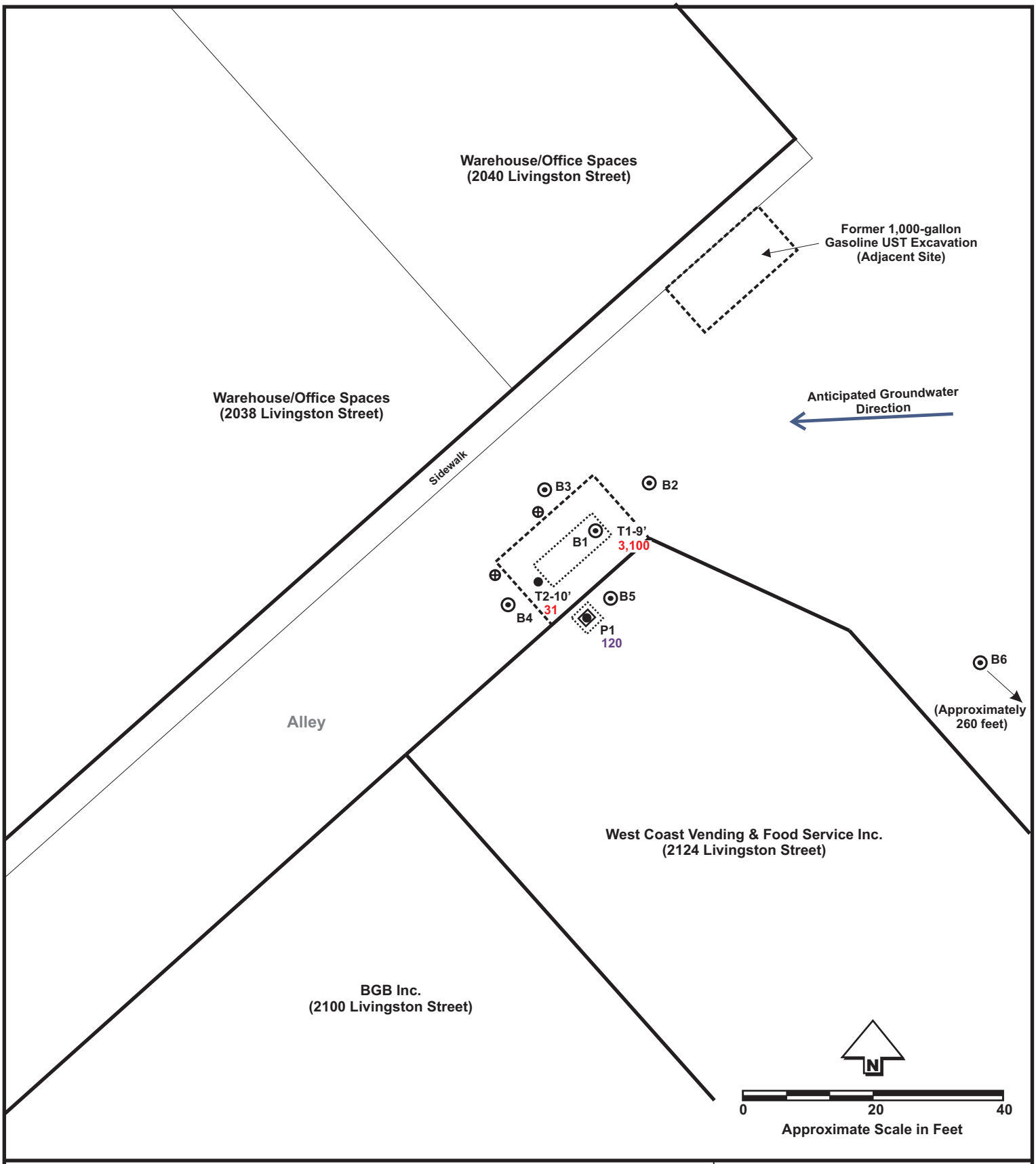
Ami Adini
President, Principal Environmental

Registered Environmental Assessor No. REA II-20244
NREP Registered Environmental Professional No. 2614
General Engineering/Hazardous Waste Contractor No. 587540
B. Sc. Mech. Eng.

GB:et

cc: Mr. Bruce Bauer, West Coast Vending & Food Service, Inc.

Attachments:
Figure 1 – Site Plan showing Boring Locations
Table 1 – Historical Soil Sampling Analytical Results
Site Health and Safety Plan



LEGEND

- B5 ⊙ Proposed Soil Boring
- T2-10 ● UST Removal Soil Sample (SEMCO 1998)
- ⊕ Existing Soil Boring (No Report)
- 3,100 TPHg in Milligrams per Kilogram
- 120 Lead in Milligrams per Kilogram
- Former 2,000-Gallon Gasoline UST Location
- Former Dispenser Location
- Former UST Excavation
- Property Line

Figure 1: Site Map Showing Proposed Boring Locations
West Coast Vending & Food Service
2124 Livingston Street
Oakland, CA 94606

DRAWN BY:	DATE:	PROJECT:
ET	October 2011	WestCoastV.p01

Ami Adini & Associates, Inc.

Table 1
Historical Soil Sampling Analytical Results
West Coast Vending Food Service, Inc.
2124 Livingston Street, Oakland, California

Sample ID	Depth (ft bgs)	Date	Consultant	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	Lead TTLC (mg/kg)
ESLs (Shallow Soil, Commercial, Drinking Water)				83	0.044	2.9	3.3	2.3	0.023	750
T1-9'	9	4/16/98	SEMCO	**3,100**	ND <0.5	2	**24**	**190**	ND <0.5	4
T2-10'	10	4/16/98	SEMCO	31	**0.3**	0.07	0.57	0.12	0.012*	13
P1	NA	4/16/98	SEMCO	ND	ND	ND	ND	ND	ND	120**
Stockpile	NA	4/16/98	SEMCO	4	ND	ND	ND	0.04	ND	7
Laboratory Reporting Limit				<1	0.005	0.005	0.005	0.005	<0.01	<2

Notes:

T1-9', T2-10', etc. are soil sample designations.
ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
TPHg = Total petroleum hydrocarbons as gasoline (EPA 8015 Modified)
MTBE = Methyl tert butyl ether (EPA Method 8260B)
TTLC = Total Threshold Limit Concentration (EPA Method 7420)
ND = Not detected above laboratory detection limits
NA = Not applicable
SEMCO = SEMCO Environmental Contractors of Modesto, California

ESLs = Environmental Screening Levels. Table A-2 Shallow Soils (<3m bgs), groundwater is current or potential source of drinking water, and commercial property (SFBRWQCB May 2008)
Bold indicated concentrations above ESL.
* = Concentration confirmed by EPA Method 8260B
** = The Soluble Threshold Limit Concentration (STLC) and Synthetic Precipation Leaching Procedure (SPLC) concentration for this sample were 6 mg/kg and <0.1 mg/l (ND), respectively.

Ami Adini & Associates, Inc.

SITE HEALTH AND SAFETY PLAN

West Coast Vending & Food Service Inc.
2124 Livingston Street
Oakland, California 94606

Prepared for

West Coast Vending & Food Service, Inc.
2124 Livingston Street
Oakland, California 94606

October 12, 2011

Project No. WestCoastVending.p01

Submitted to

Jerry Wickham, PG
Alameda County Health Care Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

4130 Cahuenga Blvd., Ste. 113, Los Angeles, California 91602
Phone 818.824.8102 • Fax 818.824.8112
www.amiadini.com • mail@amiadini.com

Site Health and Safety Plan – Field Activities
2124 Livingston Street, Oakland, California 94606

Project Number	Project No. WestCoastVending.p01	Telephone
AA&A President	Ami Adini	(323) 889-5001
Project Manager	Gabriele Baader	(626) 712-0589
Site Contact	Bruce Bauer	(510) 774-6805
Site Health and Safety Supervisor	Slavenko Todorovich	(323) 873-4255
Plan Preparer	Ester Trivino	(213) 924-6722
Health and Safety Manager	Gabriele Baader	(626) 712-0589
Plan Preparation Date	October 12, 2011	
Plan Review	October 13, 2011	

Approvals

10/14/2011

Ester Trivino (Professional Geologist, Plan Preparer) **Date**

10/14/2011

Gabriele Baader (Health and Safety Manager) **Date**

10/14/2011

Ami Adini (AA&A Principal Environmental Consultant) **Date**

This Site Health and Safety Plan is valid only for this specific project as described in Section 2. It is not to be used for other projects or subsequent phases of this project without the written approval of the Health and Safety Manager. The plan was prepared under the direct supervision of a certified industrial hygienist. A copy of this plan is to be maintained at the site at all times.

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Appendices

1. SUMMARY INFORMATION

1.1 Administration Information

Site Name:	West Coast Vending & Food Service Inc.
Site Location:	2124 Livingston Street, Oakland, California 94606
Site Contact Name/Phone:	Bruce Bauer, (510) 774-6805
Project Manager:	Gabriele Baader, (626) 712-0589
Site Health and Safety Supervisor:	Slavenko Todorovich, (323) 873-4255

1.2 Emergency Information

Ambulance:	911
Fire:	911
Police:	911
Hospital:	Alameda County Medical Center, (510) 437-4800
AA&A President:	Ami Adini, (323) 889-5001
Health and Safety Manager:	Gabriele Baader, (626) 712-0589

1.3 Hospital Directions

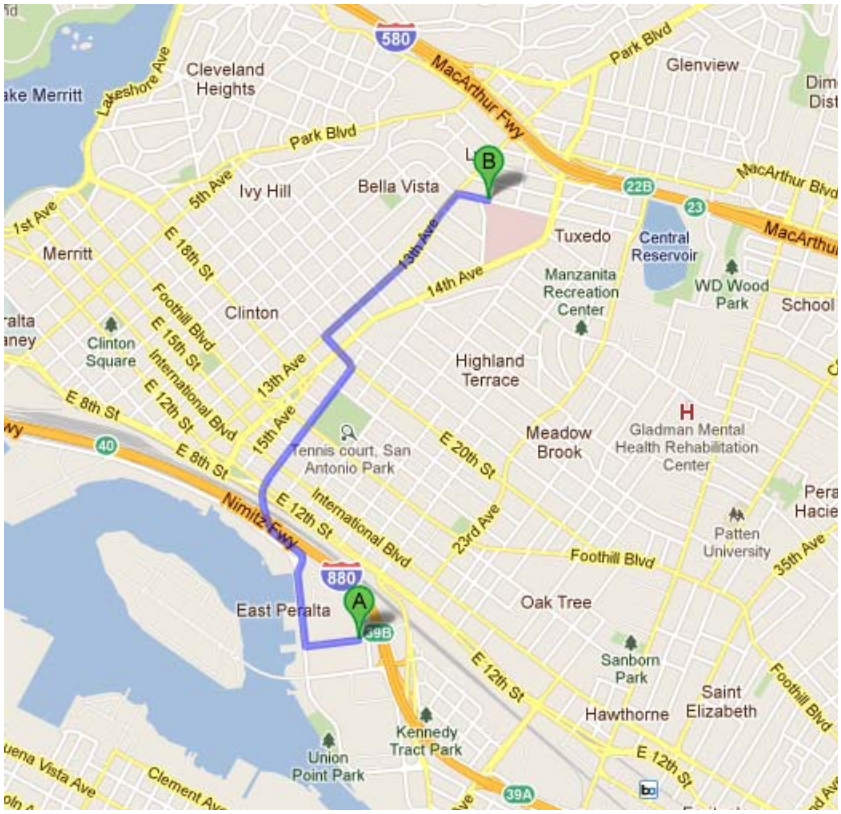
Alameda County Medical Center is located at 1411 East 31st Street, Oakland, California (510) 437-4800

To reach the hospital from the site:

The route map to Alameda County Medical Center is provided on the following page.

Note: Additional information concerning emergency procedures is provided in Section 11. A copy of the hospital route map must be readily available in each site vehicle that may be used to transport accident victims to the hospital.

Figure 1 – Vicinity Map/Route to Hospital



Google 2011

A 2124 Livingston St, Oakland, CA 94606

1.	Head **west** on **Livingston St** toward **22nd Ave**	go 0.2 mi total 0.2 mi
2.	Turn right onto **Embarcadero**	go 0.2 mi total 0.4 mi
3.	Slight right onto **16th Ave** About 4 mins	go 0.7 mi total 1.1 mi
4.	Turn left onto **E 20th St** About 1 min	go 0.1 mi total 1.2 mi
5.	Take the 2nd right onto **13th Ave** About 2 mins	go 0.6 mi total 1.8 mi
6.	Turn right onto **E 31st St** Destination will be on the right	go 486 ft total 1.9 mi

B **Alameda County Medical Center**
1411 E 31st St, Oakland, CA 94602

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2011 Google

1.4 Constituents of Potential Concern

- Total petroleum hydrocarbons as gasoline (TPHg)
- Benzene, toluene, ethylbenzene, total xylenes (BTEX)
- Fuel oxygenates
- Lead

Additional information regarding site history, constituents of concern, and scope of work activities is located in Sections 3 and 4.

1.5 Safety Equipment Required

- Hardhat
- Eye protection (safety glasses)
- Ear plugs, disposable
- Long-sleeved shirt or coveralls
- First aid kit
- Gloves, vinyl
- Fire extinguisher (ABC type)
- Safety boots/shoes
- Photo-ionization detector (PID)

1.6 Personal Protective Equipment Required

Task	Level of Protection (PPE)	
	Initial	Upgrade
Task 1 Mobilization	Level D	Level C
Task 2 Utility Clearance	Level D	Level C
Task 3 Air Monitoring	Level D	Level C
Task 4 Drilling and Sampling	Level D	Level C

2. INTRODUCTION

This *Site Health and Safety Plan* (SHSP) prepared by Ami Adini & Associates (AA&A) establishes requirements and provides guidelines for worker safety and hazard identification during the drilling and, soil and groundwater sampling activities to be conducted at the West Coast Vending & Food Service Inc. located at 2124 Livingston Street in Oakland, California 94606. This SHSP is intended to be in compliance with applicable Occupational Safety and Health Administration (OSHA) regulations found in the California Code of Regulations (CCR) Title 8 section 5192.

This SHSP is a site-specific document that will be on-site and addresses the safety and health hazards of specific phases of site operations designated and identified in this SHSP. This SHSP also includes the requirements and procedures for employee protection. The information provided presents the minimum health and safety requirements for establishing and maintaining a safe working environment during the site operations designated in this SHSP. In the event of conflicting safety requirements, the procedures or practices that provide the highest degree of workplace safety will be implemented. AA&A will make the appropriate revisions to this SHSP if specifications of the *Site Assessment Work Plan* change, or if site conditions and/or health and safety hazards encountered during the designated site operations are found to differ substantially from the initial site information relied upon to prepare this SHSP.

This SHSP was prepared for exclusive use by AA&A for personnel and site operations under the direction and control of AA&A. If expressly stated, this SHSP may also cover other specific designated tasks performed by subcontractors or other third parties at the site that otherwise are not under the direction and or control of AA&A. Under these circumstances, AA&A assumes neither additional site safety responsibility nor direction nor control for the aforementioned subcontractors or third parties, except for the specific and limited designated site operations and related tasks expressly covered in this SHSP. Furthermore, when expressly authorized by AA&A in writing, this SHSP may apply to the site operations performed by subcontractors retained by AA&A, but only if this SHSP appropriately addresses their activity and potential safety and health hazards. However, under those circumstances, it is the responsibility of the subcontractor to determine if this SHSP appropriately addresses their activities and hazards. Otherwise, all subcontractors are responsible for preparing, maintaining, and implementing their individual SHSPs and health and safety programs, and for providing their own site safety supervision. All site visitors (i.e., client, agency personnel) are expected to observe the safety rules and regulations established by their respective organizations in addition to the requirements of this SHSP.

3. SITE BACKGROUND

3.1 Site History

On April 16, 1998, SEMCO Environmental Contractors (SEMCO) of Modesto, California removed one 2,000-gallon gasoline UST from the site. Soil samples indicated impact with TPHg, BTEX, and MTBE in the northeast area of the UST excavation.

3.2 Site Location and Description

The site is approximately located in a light industrial area. The improvements include a warehouse building. The former UST was located on the alley northwest of the on-site structure.

4. PLANNED WORK ACTIVITIES

This SHSP covers the designated site operations that will be performed by AA&A, as detailed below.

4.1 Mobilization/Demobilization

- The subcontractor will perform mobilization and demobilization of the drill rig.
- AA&A will mobilize sampling materials.

4.2 Air Monitoring

- AA&A will conduct air monitoring near the sampling areas using a PID.

4.3 Soil and Groundwater Sampling

- Soil will be collected according to the sampling and analysis plan.
- Grab groundwater will be collected at the end of each soil boring.
- Samples will be labeled, placed on ice and transported to a state-certified analytical laboratory. Soil and groundwater samples will be analyzed for TPHg, BTEX, fuel oxygenates, and lead.

4.4 Waste Disposal

- Soil cuttings are not expected to be generated during direct-push operations.
- Decontamination water generated during the drilling operations will be placed in a Department of Transportation-approved 55-gallon drum, labeled, and stored on-site pending review of analytical results.
- The drum will be identified with labels including the name of waste generator, type of waste (soil or water), and accumulation date.
- The contents of the 55-gallon drum will be disposed of appropriately.

5. SITE HAZARD ANALYSIS

Site operations designated in this SHSP may result in exposure to the following general types of chemical, biological, or physical hazards.

5.1 Site Hazard Overview

A hazard analysis of the work activities that involves potential exposure to chemical contaminants or physical hazards is provided in the table below. The hazard analysis provides a general ranking of high, moderate or low based on anticipated site conditions.

Potential Hazard	Task 1: Site Mobilization	Task 2: Utility Clearance	Task 3: Air Monitoring	Task 4: Soil and Groundwater Sampling
Inhalation of vapors	Low	Low	Moderate	Moderate
Skin & eye contact	Low	Low	Moderate	Moderate
Ingestion	Low	Low	Low	Low
Inhalation of dust	Low	Low	Moderate	Moderate
Heat stress	Low	Low	Low	Low

Potential Hazard	Task 1: Site Mobilization	Task 2: Utility Clearance	Task 3: Air Monitoring	Task 4: Soil and Groundwater Sampling
Heavy equipment	Moderate	Low	Low	Moderate
Traffic	Moderate	Moderate	Moderate	Moderate
Noise	Moderate	Low	Low	Moderate
Trips/falls	Low	Low	Low	Moderate
Utilities	Low	Low	Low	Low
Electrical	Low	Low	Low	Low
Illumination	Low	Low	Low	Low
Flammable hazards	Low	Low	Low	Low
Biological hazards	Low	Low	Low	Low
Other	Low	Low	Low	Low

Exposure to elevated levels of hydrocarbon vapors presents potential health risks that must be properly understood and controlled. These vapors constitute a health hazard when inhaled, and they present a fire or explosion risk when they accumulate in an explosive mixture with oxygen. Where elevated exposures risks are determined to exist, respiratory protection will be the primary control method to protect personnel from inhalation of hydrocarbon vapors.

5.2 Chemical Hazards

Chemical hazards of concern (COCs) associated with the site operations that are covered by this SHSP include hydrocarbons, BTEX, fuel oxygenates, and lead. Exposure to the aforementioned COCs can occur via inhalation of chemical vapors and gases, inhalation of contaminated dust and soil particles, and dermal contact with contaminated soil. The COCs at the site include the following:

- TPHg
- Benzene
- Lead
- Fuel oxygenates

In California, permissible exposure limits (PELs) for COCs are found in CCR Title 8, Section 5155. PELs refer to the maximum allowable airborne concentrations of hazardous substances and represent concentrations at which it is believed that nearly all the workers may be repeatedly exposed, eight hours per day, for a 40-hour workweek, without adverse effect. However, due to the wide variation in individual susceptibility, a small number of workers may experience discomfort to some or all of these chemical substances at concentrations equal to or below the PEL. A still smaller percentage of persons may be affected more seriously from exposures at or below the PEL due to aggravation of a pre-existing condition or development of an occupational illness. The majority of PELs are expressed as a time-weighted average based on an eight-hour workday, five days a week or 40-hour workweek. The PEL is an average exposure concentration spread over a 480-minute exposure period. CAL/OSHA also has established short-term exposure limits (STEL) for certain substances that typically have strong irritant properties. STELs are based on a 15-minute average exposure limit. In addition, some substances have ceiling exposure limits that establish exposure limits that cannot be exceeded at any time. In many cases, a specific chemical hazard will have an eight-hour PEL, a 15-minute STEL, and a ceiling limit. Certain substances, which can readily enter the body via skin contact, are denoted by CAL/OSHA with “S” notation, referring to skin absorption. The same notations and standards are used in this SHSP.

The following table lists the COCs associated with the site operations covered by this SHSP and includes routes of exposure, symptoms, PELs, immediately dangerous to life and health (IDLH) concentrations, and lower explosive limits (LELs).

Chemical Name	Route of Exposure	Symptoms	Target Organs
Total petroleum hydrocarbons (TPH)	Inhalation/ingestion/ skin absorption/skin or eye contact	Dizziness, drowsiness, headache, nausea; irritation of the eyes, nose, throat; dry cracked skin	Skin, eyes, respiratory system, central nervous system
Benzene	Inhalation/skin absorption/ingestion/ skin or eye contact	Giddiness, headache, nausea, staggered gait, fatigue, anorexia, lassitude, dermatitis, bone marrow depression (carcinogen)	Blood, central nervous system, skin, bone marrow, eyes, respiratory system
Toluene	Inhalation/ingestion/ skin absorption/skin or eye contact	Fatigue, weakness; confusion, euphoria, dizziness, headache; dilated pupils, lacrimation; nervousness, muscle fatigue; insomnia; paresthesia; dermatitis	Central nervous system, liver, kidneys, skin
Ethylbenzene	Inhalation/ingestion	Irritation of the eyes, mucous membrane, headache; dermatitis; irritation of the eyes,	Eyes, upper respiratory system, skin, central nervous system
Xylenes	Inhalation/ingestion/ skin absorption/skin or eye contact	Dizziness, excitement drowsiness, incoordination, staggering gait; irritation of the eyes, nose, throat; corneal vacuolization; anorexia, nausea, vomit, abdominal pain; dermatitis	Central nervous system, eyes, GI tract, blood, liver, kidneys, skin
Methyl tertiary butyl ether (MTBE)	Inhalation/ingestion/ skin absorption	Irritation of eyes, skin, nose, throat; exposure can cause difficulty concentrating and thinking. Higher levels can cause headache, nausea, dizziness, weakness, lightheadedness. Cancer, reproductive organ hazard	Skin, lungs, liver, kidney, central nervous system
Lead	Inhalation, ingestion, contact	Weakness; facial pallor, pale eyes, low weight; abdominal pain, colic; irritation of eyes	Eyes, skin, respiratory system, liver, kidney, central nervous system, reproductive system

5.3 Exposure Limits

Chemical Name	TWA/STEL/Ceiling	IDLH/LEL
Benzene	1 ppm/5 ppm/NE	500 ppm (carcinogen)
Toluene	50 ppm/150 ppm/300 ppm	500 ppm
Ethylbenzene	100 ppm/125 ppm/NE	800 ppm/10%
Xylenes	100 ppm/150 ppm/NE	900 ppm/10%
Lead	0.05 mg/m3/NE/NE	100 mg/m3
TPHg	300 ppm/500 ppm/NE	ND/1.4%

Chemical Name	TWA/STEL/Ceiling	IDLH/LEL

TWA = Time-weighted average (concentration should not be exceeded during an 8-hour workday during a 40-hour workweek)
STEL = Short-term exposure limit (15-minute TWA exposure that should not be exceeded at any time during a workday)
IDLH = Immediately dangerous to life or health concentrations
LEL = Lower exposure limit
NE = None established
ppm = Parts per million

5.4 Explosive Limits

Chemical Name	LEL	UEL
TPHg	1.4%	7.6%
Benzene	1.2%	7.8%
Toluene	1.1%	7.1%
Ethylbenzene	0.8%	6.7%
Xylenes	0.9%	6.7%
MTBE	1.6%	8.4%
Lead	NA	NA

LEL = Lower exposure limit
UEL = Upper exposure limit
NE = None established

5.5 Physical Hazards

The following potential health and safety hazards may be encountered during scheduled activities at the site:

- Noise
- Heavy equipment
- Electrical sources
- Fire/explosion
- Slips, trips, and falls
- Illumination
- Cold stress
- Heat stress
- Underground and overhead utilities
- Materials and equipment handling
- Housekeeping and sanitation
- Traffic
- Safety equipment failure
- Drilling

5.5.1 Noise

Hearing protection should be worn at the site if noise levels exceed 85 decibels. Hearing protection with a noise reduction rating of at least 25 decibels should be worn (i.e., earplugs or earmuffs). The SHSS will inform site personnel when and if hearing protection is required. High noise levels are usually associated with the operation of drill rigs, compressors, generators, pumps, motors, and portable hand tools including drills and jackhammers. If

loud noise is apparent, or if normal conversation becomes difficult, hearing protection should be worn. Follow manufacturer's instructions on how to insert, wear, and fit-test hearing protectors.

5.5.2 Heavy Equipment

Equipment, including earth-moving equipment, drill rigs, or other heavy machinery, will be operated in accordance with the manufacturer's operating manual and with all applicable safety regulations and standard operating procedures. The operator is responsible for maintaining his/her equipment in good working condition and for inspecting the equipment daily to verify that it is functioning properly and safely. The operator will ensure that a copy of the equipment-operating manual is kept with the equipment at all times. Prior to startup, the operator will inform the SHSS of any unique equipment hazards or safety concerns associated with the equipment. Unless otherwise specified, AA&A will not assume any direction or control over heavy equipment used at the site.

Operation of equipment at the site for the activities outlined above poses potential physical hazards. The following precautions should be observed whenever heavy equipment is in use:

- Personal protective equipment (PPE), including steel-toed boots, safety glasses, and hardhats, must be worn.
- Personnel must be aware of the location and operation of heavy equipment and take precautions to avoid getting in the way of its operation. Workers must never assume that the equipment operator sees them; eye contact and hand signals should be used to inform the operator of the location of site personnel working in the vicinity.
- Traffic safety vests are required for personnel working near mobile heavy equipment or near high traffic areas.
- Personnel should not walk directly behind, or to the side of, heavy equipment without the operator's knowledge or visual contact.

In addition, nonessential personnel will be kept out of any work area in which heavy equipment is operating.

5.5.3 Electrical Hazards

Electrocution may result from contact with overhead power lines, downed electrical wires, buried cables, lightning, use of electrical equipment in wet areas, and/or failure of electrical equipment. Location of all overhead and underground utility lines will be determined and mapped before commencing work. In case of a breach of a utility line, electricity supply to the site will be shut off. If adverse weather conditions develop, accompanied by lightning, work will stop promptly. Electrical repair/maintenance work must be done only by qualified personnel.

Electrical equipment to be used during field activities will be suitably grounded and insulated. Ground fault circuit interrupters, or equivalent, will be used with electrical equipment to reduce the potential for electrical shock.

Lockout/tag-out procedures will be conducted in accordance with 8 CCR 3314 before activities begin on or near energized or mechanical equipment that may pose a hazard to site personnel. Workers conducting the operation will positively isolate the piece of equipment, lock/tag the energy source, and verify effectiveness of the isolation. Only employees who perform the lockout/tag-out procedure may remove their own tags/locks. Workers will be thoroughly trained prior to initiating this procedure.

5.5.4 Explosion and Fire

The presence of flammable gases or vapors may cause a fire or explosion. Potential causes of explosion and fire include:

- Chemical reactions;
- Ignition of explosive or flammable chemicals; and,
- Sudden release of materials under pressure.

Any site activities that may involve the presence of flammable gases or vapors will require continuous air monitoring using a four-gas direct-reading instrument. All potential ignition sources will be kept away from an explosive or flammable environment, and only non-sparking, explosion-proof equipment will be used. In addition, safe practices will be followed when performing any task that might result in the agitation or release of chemicals. Open flame or tobacco smoking will be strictly prohibited at the sites. All flammable liquids will be stored in approved containers and the quantities will be limited to one-day use.

If the four-gas instrument exceeds 10% of the LEL, all site activities will cease, equipment will be shut down, and site personnel will be evacuated. In the event of a fire, work will cease, the area will be evacuated, and the local fire response team will be notified immediately. Only trained, experienced firefighters will be allowed to extinguish substantial fires at the sites. Site personnel will not attempt to fight fires, unless properly trained and equipped to do so. At least one fully charged ABC dry chemical fire extinguisher will be readily available for use during all scheduled activities at the sites.

5.5.5 Slips, Trips, and Falls

These types of hazard result from unlevel or slippery surfaces, high-risk positioning, and the presence of hard-to-see objects (e.g., rope, cords, cables, aboveground piping, hills etc.) in areas where workers walk. Appropriate warning signs will be posted wherever this danger has been identified. Workers will take extra caution while working on steep slopes and in high-risk positions.

5.5.6 Illumination

If work activities occur before sunrise or after sunset, adequate lighting will be provided in each work area to meet the requirements of Title 8 CCR section 5192 (m).

5.5.7 Cold Stress

Workers performing activities during winter and spring months may encounter conditions such as extremely cold temperatures, snow and ice, which can make field activities difficult. Adequate cold weather gear, especially head and footwear, will be required under these conditions. Workers should be aware of signs and symptoms of hypothermia and frostbite, as well as first aid for these conditions. These signs and symptoms are summarized in the table below.

Condition	Signs	Symptoms	Response
Hypothermia	Confusion, slurred speech, slow movement	Sleepiness, confusion, warm feeling	Remove subject to warm area, such as truck cab; give warm fluids; warm body core as rapidly as possible; remove outer clothing and wrap torso in blankets with hot water bottle or other heat source. Get medical attention immediately.

Condition	Signs	Symptoms	Response
Frostbite	Reddish area on skin, frozen skin	Numbness or lack of feeling on exposed skin	Place affected extremity in warm, not hot, water or wrap in warm towels. Get medical attention.

5.5.8 Heat Stress

Heat stress and associated complications can be the most prevalent health hazard at many sites, especially when PPE is used. Workers in PPE may experience varying degrees of heat stress if precautions are not taken. It is important to remember that individuals react to heat in different ways. Workers should be aware of signs and symptoms of heat-related illnesses, as well as first aid for these conditions. These signs and symptoms are summarized in the table.

Condition	Signs	Symptoms	Response
Heat rash or prickly heat	Red rash on skin	Intense itching and inflammation	Increase fluid intake and observe affected worker.
Heat cramps	Heavy sweating, lack of muscle coordination	Muscle spasms, and pain in hands, feet, or abdomen	Increase fluid uptake and rest periods. Closely observe affected worker for more serious symptoms.
Heat exhaustion	Heavy sweating; pale, cool, moist skin; lack of coordination, fainting	Weakness, headache, dizziness, nausea	Remove worker to a cool, shady area. Administer fluids and allow worker to rest in cool area until fully recovered. Increase rest periods and closely observe worker for additional signs of heat exhaustion. If symptoms of heat exhaustion recur, treat as above and release worker from the day's activities after he/she has fully recovered.
Heat stroke	Red, hot, dry skin; disorientation; unconsciousness	Sweating stops; nausea, dizziness and confusion; strong, rapid pulse	Immediately contact emergency medical services by dialing 911. Only certified first aid personnel should administer care. Remove the victim to a cool, shady location and observe for signs of shock. Attempt to comfort and cool the victim.

The following procedures will be used to reduce the potential that workers will experience symptoms of heat stress:

- Use administrative controls. Tasks will be scheduled to avoid heavy physical activity during the hottest period of the day, and work will be performed in the shade whenever possible. Additional workers will be used during hot periods and the pace of work reduced whenever possible.
- Acclimatize the body. Workers will be allowed a period of adjustment to make heat exposure endurable.
- Drink liquids to replace body water lost during sweating. Workers will be encouraged to drink at least 1 cup of fluid every 20 minutes. To promote such consumption, fluids (i.e., water) will be located at or near where the work is being performed.
- Implement a work/rest regimen. This regimen will be increased (i.e., the frequency and duration of rest breaks) as needed to reduce overall heat exposure.

- Wear appropriate clothing. Worker clothing should be light in weight and in color, loose-fitting where possible, and made of cotton or a synthetic fabric that allows perspiration to be wicked away from the skin to evaporate. Apply sunscreen to exposed skin as needed.

5.5.9 Underground and Overhead Utilities

The location of underground pipes, electrical conductors, and water and sewer lines must be determined before intrusive soil work is performed. Lines must be de-energized, blocked out, or blinded where feasible. Work is not permitted within 15 feet of any high-voltage overhead power line. Equipment with articulated upright booms or masts will not be permitted to pass within 20 feet of an overhead utility line while the boom is in the upright position.

5.5.10 Materials and Equipment Handling

The movement and handling of equipment and materials on the site can pose a risk to workers in the form of muscle strains and minor injuries. These injuries can be avoided by using safe handling practices, proper lifting techniques, and proper personal safety equipment such as steel-toed boots and sturdy work gloves. Where practical, mechanical devices will be used to assist in the movement of equipment and materials, workers will not attempt to move heavy objects by themselves without using appropriate mechanical aids such as drum dollies or hydraulic lift gates.

5.5.11 Housekeeping and Sanitation

In order to promote safe and efficient work conditions, all work areas will be kept clean and free of debris. All hand tools will be kept out of the immediate work area until they are needed for use. Potable water will be made available for first aid, drinking, and personal hygiene purposes.

5.5.12 Traffic Safety

Vehicle traffic that is unrelated to site activities may be present, particularly when work occurs on streets and highways. When work occurs in an area open to vehicular traffic, the work area will be clearly delineated by use of cones, signs and other appropriate warning devices to restrict vehicular access. Personnel exposed to vehicular traffic will use high-visibility clothing (e.g., bright orange vest) in accordance with the requirements of 8 CCR 1598(c). If necessary, the SHSS will require the use of a flagger or other appropriate traffic control measures.

5.5.13 Safety Equipment Failure

If monitoring instruments or any safety equipment fails, work will be suspended until repairs or replacements for that equipment can be found. In case of working equipment failure, field safety personnel will ensure that hazardous conditions have been abated before authorizing further work.

5.5.14 Drilling

Operation of drilling and sampling equipment during site activities presents potential physical hazards to personnel. During all site activities, PPE such as steel-toed shoes, safety glasses or goggles, and hardhats should be worn whenever such equipment is present. Personnel should be aware of the location and operation of drilling and sampling equipment at all times and take precautions to avoid obstructing operation of the equipment.

During setup of the drilling rig, overhead power lines pose a danger of shock or electrocution if the power line is contacted or severed during site operations. Before work is conducted in areas where overhead lines could be encountered, the appropriate utility company will be notified, and information will be obtained regarding the

minimum separation distance required for work in this area. A minimum separation distance of 10 feet will be maintained at all times. Use of a spotter is required, at a minimum, to maintain proper clearance.

Water exposure to construction activities is a potential hazard. Heavy machinery, moving traffic and foot traffic must be watched out for. Workers on-site must wear hardhats and steel-toed boots. Barricades and caution tape will surround the construction. Adequate areas will be marked for traffic.

5.6 Biological Hazards

Biological hazards that may be encountered at the site include possible exposure to the following:

Fur-bearing animals: Such animals (rats, skunks, raccoons) may potentially carry the rabies virus or ticks that may transmit Lyme disease to humans. Personnel should avoid contact and should not attempt to feed or touch such animals.

Poisonous reptiles: Snakes (e.g., rattlesnakes) are the most common poisonous reptiles. Personnel should avoid contact and areas that may harbor snake populations, including high grass, shrubs, and crevices. If snakebite occurs, seek immediate medical attention.

Poisonous insects: Common examples include bees and wasps. Personnel should avoid contact with insects and their hives. Most bites and stings can be handled by first aid treatments. However, stings from insects such as bees and wasps can be fatal if a severe allergic reaction such as anaphylactic shock occurs. If the victim has medication to reverse the effects of the sting, it should be taken immediately. If the victim has a history of allergic reaction, they should be taken to the nearest medical facility. If the victim experiences a severe reaction, a constricting band should be placed between the sting and the heart. The bitten area should be kept below the heart if possible.

Spiders: The black widow and brown recluse spiders are the most venomous. Personnel should avoid contact with spiders and areas where they may hide. A bite by a black widow or brown recluse spider will require immediate medical attention.

Poisonous plants: Common examples include poison ivy and poison oak. Personnel should avoid contact. Long-sleeved shirts and pants will allow some protection against inadvertent contact. If contact occurs with a poisonous plant, all contaminated clothing should be removed and the exposed areas washed thoroughly with soap and water, followed by rubbing alcohol. Calamine lotion can be applied if the rash is mild. Medical advice should be sought if a severe reaction occurs or there is a known history of previous sensitivity.

If any biological hazards are identified at the site, workers in the area should immediately notify the Site Health and Safety Supervisor (SHSS) and other site personnel. Workers who know they are sensitive to any specific biological hazard should not perform any task that would increase their risk of contact or an allergic reaction. Additionally, the SHSS should be informed of any heightened worker sensitivity to biological hazards.

6. AIR MONITORING PROTOCOLS

6.1 Monitoring during Site Operations

Air monitoring at the site will be conducted by the SHSS or other designated person according to the requirements of this SHSP and during designated site operations. Air monitoring will be performed where there may be a question of employee exposure to hazardous concentrations of hazardous substances. In general, air monitoring will be performed inside the work zone for employees likely to have the highest exposures to hazardous substances and health hazards likely to be present above PELs when soil and other materials/containers

contaminated with the COCs are moved or disturbed. The aforementioned air monitoring will cover AA&A-related site operations and personnel (i.e., site operations and personnel under the direction and control of AA&A). If expressly required by this SHSP, the SHSS may also perform air monitoring for other specific designated tasks performed by subcontractors or other third parties at the site that otherwise are not under the direction and or control of AA&A. Under these circumstances, AA&A assumes neither additional site safety responsibility nor direction nor control for the aforementioned subcontractors or third parties, except for the specific and limited assignment of performing air monitoring during the specific site operations expressly covered in this SHSP.

The air monitoring conducted by the SHSS or designee will be used to identify and quantify airborne levels of hazardous substances in order to determine the appropriate level of employee protection needed on-site, and if possible to delineate work zones. Site-specific action level criteria must be established for all the instruments that may be used in making field health and safety determinations. Other data, such as the visible presence of contamination and/or odors, or employee complaints, may also be used in making field health and safety decisions. As a result, the SHSS may establish exclusion zones and/or require a person to wear a respirator even though atmospheric air contaminant concentrations are below established SHSP action levels.

For sites containing petroleum hydrocarbons such as gasoline and related compounds, and/or certain chlorinated hydrocarbons such as tetrachloroethylene and/or trichloroethylene, monitoring can be accomplished using a PID with a 10.6-electron-volt lamp or equivalent calibrated to isobutylene. Monitoring for the aforementioned gases and vapors should be done at the source of emission as well as in the breathing zone of site personnel believed to represent the highest risk of exposure. The PID will be checked with a calibration gas standard (hexane or isobutylene) prior to each day's activities and at any other time when the instrument response is questionable. The instrument check procedure will be recorded in a logbook and initialed by the person performing the procedure. Other methods of air sampling using colorimetric detector tubes, and/or sampling pumps with charcoal tubes may also be used at the direction of the SHSS, or if required by this SHSP. If benzene levels could exceed 1 part per million (ppm) for extended periods of time, colorimetric detector tubes specific for benzene will be required. For certain chlorinated compounds (e.g., methyl chloroform), an 11.7-electron-volt lamp should be used in the PID. Consult the NIOSH pocket guide to chemical hazards for information on ionization potentials before selecting the appropriate electron-volt lamp.

For sites containing flammable or explosive gases and/or vapors (i.e. methane gas), and/or hydrogen sulfide and/or carbon monoxide, and/or oxygen deficiency atmospheres, monitoring will be accomplished using a four-gas direct reading instrument calibrated for methane, hydrogen sulfide, carbon monoxide and oxygen. Monitoring for the aforementioned gases and atmospheres should be done at the source as well as in the breathing zone of site personnel believed to represent the highest risk of exposure. The four-gas meter will be checked with a calibration gas standard prior to each day's activities and at any other time when the instrument response is questionable. The aforementioned instrument check procedure will be recorded in a logbook and initialed by the person performing the procedure.

For sites containing elevated concentrations of airborne dust that could exceed the applicable PEL, a real-time aerosol monitor will be used. Monitoring for the aforementioned dusts and atmospheres should be done in the breathing zone of site personnel believed to represent the highest risk of exposure. The instrument will be checked prior to each day's activities according to the manufacturers recommendations and procedures and at any other time when the instrument response is questionable. The aforementioned instrument check procedure will be recorded in a logbook and initialed by the person performing the procedure.

All monitoring instruments will be operated and maintained pursuant to the manufacturer's written procedures. Instruments that exhibit an inappropriate field response or provide questionable results will not be used and sent out for servicing.

6.2 Exposure Monitoring Plan

Before any field activities commence, a wind direction indicator may be used to ensure the direction that personnel will move when instructed to do so or in an emergency. This wind measurement will be followed by the sampling of the general background levels of gasoline, VOCs, dust etc.

For areas where chemical hazards are suspected, the first person entering the work zone will carry the appropriate instrument and monitor concentration levels in the work area before anyone else is allowed into the work zone. Thereafter, periodic and ongoing air monitoring will be conducted during the following site operations in the work zone and for personnel likely to have the highest exposures to the COCs: drilling and sampling.

The table below summarizes the various gasoline-related hydrocarbon vapor criteria and appropriate responses to potential vapor hazards. Certain components, such as benzene vapors, present significant hazards and must be properly controlled. Criteria for the use of respiratory protection are based on preventing potential exposures to benzene.

Hydrocarbon Vapor Criteria and Response	
Total Hydrocarbon Concentrations above Background Levels (parts per million by volume [ppmv] as measured by PID)	**Response**
<30 ppmv total hydrocarbon concentration (THC), verify that benzene concentration is below 1 ppm	Limited hazard, no special action.
30–100 ppmv THC for more than two minutes in general work area	Stop work, move upwind, monitor perimeter or don level C (half-face organic vapor respirator with P-100 filter) and continue work or wait until levels decrease.
100–900 ppmv THC in general work area	Wear full-face organic vapor respirators with P-100 filter in work area.
>900 ppmv THC in general work area	Stop work; procedures must be implemented to subdue excessive vapor levels.

7. PROJECT SAFETY PERSONNEL

7.1 Project Manager

The PM is an AA&A employee who has the responsibility and authority to direct all site operations covered under this SHSP. The PM has the authority to discipline personnel under his/her direction/ control and the authority to shut down or stop any site operation under his/her direction/control. In general, the PM is responsible for the following:

- To ensure that a comprehensive SAP Addendum has been prepared which addresses the tasks and objectives of the site operations and the logistics and resources required to reach those tasks and objectives;
- To document all work progress;
- To execute the site work plan and SHSP;
- To ensure that a SHSP has been prepared for all appropriate site operations;
- To ensure that the SHSS has been designated and is on site during all site operations covered by this SHSP;

- To take appropriate action in consultation with the SHSS, upon becoming aware of any deficiency in the implementation of SHSP;
- To become the incident commander during any site emergency until relieved by the appropriate chain in command.

In the event that the PM becomes aware of a deficiency in the implementation of the SHSP, he/she will take appropriate action by consulting with the SHSS.

7.2 Site Health and Safety Supervisor

The SHSS is the individual located at the site who is responsible to AA&A and has the authority and knowledge necessary to implement this SHSP and verify compliance with applicable safety and health requirements. In general, the SHSS is responsible for personnel at the site who are under the direction and control of AA&A. In addition, the SHSS is responsible for the following:

- To observe personnel under the direction and control of AA&A as well as authorized visitors for indications of impaired health due to contaminant exposure, heat stress, or other hazards;
- To evaluate whether site conditions present hazards not previously predicted or expected;
- To inspect PPE and verify its use;
- To assist the PM with on-site implementation of this SHSP, including performing air monitoring, maintaining safety equipment supplies and setting up site control and decontamination stations;
- To make daily assessments of health and safety practices at the site and administer the health and safety program outlined in this SHSP;
- To conduct the required tailgate safety meetings for all designated personnel permitted to enter the contaminated area (i.e., the exclusion zone) regarding potential hazards, personal hygiene principles, PPE and emergency response procedures;
- To investigate all accidents, health and safety complaints, and violations/infractions of safety rules and/or the requirements of this SHSP and report findings to PM;
- To inform the PM of all safety and health hazards at the site that pose a serious and/or imminent threat; and
- To coordinate emergency response procedures and site evacuations.

The SHSS will have authority to suspend work or modify work practices under the direction and control of AA&A for safety reasons and to dismiss individuals under the direction and control of AA&A whose conduct on-site endangers the health and safety of others. The SHSS will report directly to the PM.

8. PERSONAL PROTECTIVE EQUIPMENT

The purpose of PPE is to isolate or protect personnel from the chemical and physical hazards that may be encountered at during site activities. The amount and type of PPE required will be based on the nature of the hazard encountered or anticipated.

Personnel under the direction and control of AA&A will be provided with appropriate personal safety equipment and protective clothing as determined by the SHSS. In general, depending on the level of protection required by the SHSS for site operations, the following required PPE will be worn by all site personnel under the control and direction of the SHSS.

8.1 Level D Protection

- Work shirt and long pants (short pants may be worn with the approval of the PM);
- ANSI-approved steel-toed boots or safety shoes;
- ANSI-approved safety glasses; and,
- ANSI-approved hardhat.

Modified level D may be required by the SHSS and can consist of some and/or all of the following equipment:

- Outer nitrile gloves and inner nitrile surgical gloves when direct contact with chemically affected soils or groundwater is anticipated (e.g., nitrile surgical gloves may be used for collecting or classifying samples as long as they are removed and disposed of immediately after each sampling event);
- Chemical-resistant clothing (e.g., Tyvek® or poly-coated Tyvek® coveralls) when contact with chemically affected soils or groundwater is anticipated. Paper coveralls are permissible when working in a dry dust environment;
- Safety shoes/boots with protective over-boots or knee-high PVC poly-blend boots when direct contact with chemically affected soils is anticipated;
- Hearing protection; and/or
- Sturdy work gloves.

8.2 Level C Protection

If air monitoring or other site conditions indicates that the site-specific action levels defined above are exceeded, all workers under the direction and control of AA&A who are impacted by the elevated air monitoring readings will upgrade their PPE to level C. In addition to the protective equipment specified for level D, level C includes the use of the following equipment:

- NIOSH-approved, half-face air-purifying respirator (APR) or full-face APR equipped with a P100 filter in combination with organic vapor cartridge; the use of any respirators must also be in compliance with the requirements of a written respiratory protection plan pursuant to Title 8 CCR section 5144.
- Chemical-resistant clothing (e.g., Tyvek®, poly-coated Tyvek®, or Saranex coveralls) when contact with chemically affected soils or groundwater is anticipated. Paper coveralls are permissible when working in a dry dust environment.
- Outer nitrile gloves and inner nitrile surgical gloves when direct contact with chemically affected soils or groundwater is anticipated (e.g., nitrile surgical gloves may be used for collecting or classifying samples as long as they are removed and disposed of immediately after each sampling event).
- Safety shoes/boots with protective over-boots or knee-high PVC poly-blend boots when direct contact with chemically affected soils is anticipated.

8.3 Respiratory Protection

The standard respirator assigned to AA&A employees for level C work involving gasoline and/or chlorinated solvents consists of a half-face APR. The standard-issue cartridge consists of the organic vapor cartridge in combination with a P100 filter.

All personnel under the direction and control of AA&A who have been assigned a respirator will comply with the requirements of AA&A's written respiratory protection program. It is the responsibility of the SHSS to ensure compliance with AA&A's respiratory protection program. This written program, which meets the minimum requirements of Title 8 CCR section 5144, includes but is not limited to the following:

- Individuals required to wear respiratory protection are responsible for inspecting and maintaining their own respirator.
- Procedures for cleaning, inspecting, maintenance, and storage of respirators.
- Individuals required to wear respiratory protection must have medical clearance from a physician or other licensed health care professional.
- Individuals required and approved to wear respiratory protection must be fit-tested at least annually.
- Individuals required to wear respiratory protection must be trained and must conduct a positive and negative pressure check each time they don the respirator.

9. INJURY AND ILLNESS PREVENTION PROGRAM

AA&A maintains a written *Injury and Illness Prevention Program* (IIPP) in addition to this site-specific SHSP. The IIPP addresses procedures for identifying, preventing and correcting workplace hazards. Although the IIPP is not site-specific, appropriate information that is applicable to this SHSP should be referred to and used as supplemental information. Some of the information found in the IIPP that may apply to this SHSP includes, but is not limited to, the following:

- General safe work practices;
- Safety inspections;
- Tailgate safety meetings; and
- Methods for communicating safety concerns and complaints.

9.1 Medical Clearance and Monitoring

Access inside the specified work area will be limited to authorized personnel. Only personnel under the direction and control of AA&A, and other subcontractors and individuals designated and authorized by the client, will be admitted to the work site. Only those workers possessing evidence of physician's authorization to conduct hazardous waste activities will be permitted in the work area designated as the exclusion zone. All project personnel who may be required to wear respirators must provide evidence that they have been cleared by a physician to wear respirators. Other medical surveillance procedures that may be required pursuant to Title 8 CCR section 5192 (f) will implemented and followed.

9.2 Safety Training and Communication

Individuals under the direction and control of AA&A will not participate in field activities until they have been trained to the level required by their job function and responsibility. The specific types of training required include the following:

- 24- or 40-hour initial OSHA HAZWOPER training and annual eight-hour refresher training;
- Site-specific hazard training;
- Proof of these required trainings must be kept on-site for each worker participating in field and supervisory activities; and

- Other health and safety trainings may also be conducted on pertinent topics depending on the job task, such as fire safety and use of fire extinguishers, lockout/tag-out and electrical safety, heat/cold stress, hand/power tools, back safety, slips, trips and falls, traffic safety, driving safety, etc. These training subjects may be included in the daily tailgate safety training.

9.3 Project Orientation

A copy of this SHSP must be made available to each individual under the direction and control of AA&A and all such personnel who will work on the site are required to read and become familiar with the pertinent and applicable sections this SHSP. Prior to commencing work, individuals must read, understand, and accept the requirements set forth in the SHSP.

To ensure personnel are informed of the potential hazards associated with the project, all personnel under the direction and control of AA&A as well as subcontractors retained by AA&A must attend a project initiation meeting prior to commencing fieldwork. The meeting will be scheduled and conducted by the PM, or designated project safety personnel. The project initiation meeting will include information on the site emergency response procedures, and any potential fire, explosion, health, safety or other hazards that have been identified by AA&A. An attendance sheet describing the contents of the project orientation will be signed and dated by each participant.

9.4 Daily Tailgate Meeting

All personnel under the direction and control of AA&A will attend a daily tailgate safety meeting prior to commencing a new day of work. The tailgate training will be provided by AA&A PM or designee. Topics for discussion may include, but not be limited to:

- Discussion of current work activities and associated safety and health hazards;
- Available air monitoring or site characterization data that relates to worker exposure;
- The type and frequency of environmental and personal monitoring (if any) to be performed;
- Task-specific levels of protection and anticipated potential for upgrading; and
- Review of emergency procedures.

Subcontractors retained by AA&A who are not otherwise under the direction and control of AA&A are required to hold their own tailgate safety meetings, but they are encouraged to also attend and participate in the aforementioned AA&A tailgate safety meetings.

9.5 Safety Inspections

The SHSS will conduct a safety inspection of the work site before each day's activities to verify compliance with the requirements of the SHSP. All issues of noncompliance must be addressed and immediately corrected, if possible.

9.6 Posting Requirements

The following information will be posted if applicable or will be readily available on-site:

- OSHA poster;
- Proposition 65 Notification;
- Emergency phone numbers; and

- Directions to the nearest hospital.

9.7 Required Site Safety Equipment

Safety equipment items required on site include the following:

- A multi-class fire extinguisher. If the travel distance to the extinguisher from any point in the site where work is in progress is greater than 50 feet (15.3 m), then additional fire extinguishers will be furnished and strategically located so that the travel distance does not exceed 50 feet. Subcontractor employees will be provided appropriate training regarding the use of fire extinguishers and the hazards involved with incipient-stage firefighting.
- A portable emergency eyewash station if eye hazards are present.
- First-aid kit.
- Bottle of wash water.
- Construction tape, barriers, portable fencing etc. to delineate work zone.
- Spill containment equipment.
- Decontamination equipment.
- A vehicle will be kept on-site when personnel are working for the transport of slightly injured personnel to the hospital. Severely injured personnel must be transported by paramedics only.

9.8 Hazard Communication Program

All AA&A employees who may be exposed to hazardous chemicals in the workplace must be provided training and education regarding these hazards. The hazardous communication program provides information about hazardous substances and their control in the workplace. A list identifying the current hazardous chemicals present in the workplace will be kept on-site along with the corresponding material safety data sheet for each chemical.

10. SITE CONTROL AND DECONTAMINATION PROCEDURES

In order to control activities and movements of personnel and equipment at the site, a site control program will be set up and implemented by the SHSS. The basic components of a site control program include the establishment of work zones and site security. Decontamination procedures will be implemented to protect personnel and the surrounding community from the hazardous substances encountered during site activities.

10.1 Site Work Zones

The following established work zones will be established:

- Exclusion Zone: the area where the contaminated soil, groundwater, or other materials are disturbed, moved and/or handled;
- Contamination Reduction Zone; and
- Support Zone.

The aforementioned work zones will be established based on the extent of anticipated contamination, projected work activities, and the presence or absence of non-project personnel. The physical dimensions and applicability of work zones will be determined by the SHSS for each site operation based geography, available space, nature of job activity and hazards present. Decontamination and support zone will be set up upwind of exclusion zone

where possible. Within these zones, prescribed operations will occur using appropriate PPE. Movement between zones will be controlled at checkpoints.

Considerable judgment is needed to maintain a safe working area for each zone, balanced against practical work considerations. Physical and topographical barriers may constrain ideal locations. Field measurements combined with climatic conditions may, in part, determine the control zone distances. Even when work is performed in an area that does not require the use of chemical-resistant clothing, work zone procedures may still be necessary to limit the movement of personnel and retain adequate site control.

10.2 Site Security

Personnel and vehicle entry into the aforementioned work zones will be restricted by the SHSS or his/her designee. The SHSS or his/her designee will be responsible for site security while the designated site operations are being conducted. Site security at all other times will depend on site conditions and will be determined by the PM and/or client. Site security procedures include, but are not limited to, restricting site access to authorized personnel only.

The SHSS will ensure that visitors entering work zones under the direction and control of AA&A have the appropriate training, and have read this SHSP. The SHSS will keep a daily security log including entry/exits log, vehicle log, results of security checks, and details of any security problems.

10.3 Decontamination Procedures

Decontamination procedures will be implemented as necessary by the SHSS to protect personnel from hazardous substances that may contaminate and/or eventually permeate protective clothing, respiratory protection equipment, tools, vehicles, and other equipment used on-site; to minimize the transfer of harmful materials into clean areas; to prevent mixing of incompatible chemicals; and to protect the community by preventing uncontrolled transportation of contaminants from the site.

10.3.1 Personnel Decontamination

Personnel may encounter potentially hazardous compounds while performing work tasks. If so, decontamination must take place using an Alconox wash, followed by a rinse with clean water. Standard decontamination procedures for levels C and D are as follows and take place inside the Contamination Reduction Zone, unless otherwise noted:

- Equipment and tool drop inside the Exclusion Zone;
- Boot cover and outer glove wash and rinse inside the Exclusion Zone;
- Boot cover and outer glove removal;
- Suit wash and rinse followed by suit removal;
- Inner glove wash and rinse;
- Respirator removal;
- Inner glove removal; and
- Field wash of hands and face inside Support Zone.

Workers should employ only those steps that are applicable with level of PPE worn and extent of contamination present, and the SHSS will provide site-specific guidance on the required decontamination procedures. The SHSS will maintain adequate quantities of clean water to be used for personal decontamination (such as field washing of hands and face), secondary containment (e.g., plastic tarps) and wash and rinse containers (e.g., buckets, wading

pools, etc.). PPE and wash and rinse solutions that are contaminated with site hazards will disposed of as hazardous waste in appropriate containers. Non-disposable items may have to be sanitized before reuse. Each site worker is responsible for the maintenance, decontamination, and sanitizing of his/her own PPE.

10.3.2 Equipment Decontamination

In certain circumstances, field equipment and vehicles may require decontamination as follows:

- An equipment decontamination pad or area shall be designated for cleaning large equipment;
- All sampling devices will be decontaminated by scrubbing or wiping a decontamination solution such as Alconox and water on the device. A clean water rinse must be applied;
- Tools that are difficult to decontaminate will be kept in the Exclusion Zone and handled only by workers using the appropriate PPE;
- Following decontamination of equipment using steam-cleaning, a final steam/water rinse must be applied;
- The spent solutions, wash materials, brushes, and the like must, until shown otherwise, be considered contaminated and so treated; and
- All porous equipment that is believed to be contaminated must be disposed of as hazardous waste.

Each worker must follow the above procedures to prevent the transport of chemically affected materials off-site.

11. EMERGENCY RESPONSE PROCEDURES

Emergency situations can include a fire or explosion, an environmental release, damage of an underground conduit during excavation or drilling, or accident or injury to one of the field personnel. In the event of an emergency, site personnel will signal distress with three blasts of a horn (a vehicle horn will be sufficient). At the sound of three horn blasts, other personnel on-site must immediately come to the assistance of the person honking. For incidents such as a fire or explosion or major release of hazardous gas, evacuation of the work area will be completed. The SHSS/PM and/or their designee will be notified immediately in the event of an evacuation.

11.1 Incident Reporting Procedure

The quick and accurate transfer of information to all appropriate personnel is critical in the event of an emergency. The SHSS will coordinate all initial emergency response activities until relieved by the appropriate chain of command (i.e., PM, fire department, hazmat, police, client etc.).

To simplify the response procedure, an emergency can be reported by simply dialing 911. This approach can also be used for incidents requiring police or fire department assistance, or for medical emergencies.

When making such a 911 call, be sure to give the following information to the dispatcher:

- Your name, e.g., “John Smith.”
- The nature of the incident, e.g., “Fire.”
- The location of the incident, i.e., “Street location and nearest intersection.” The more specific you can make the address, the better.
- What you need, e.g., “Fire Department and First Aid.”
- If you are able, where you will meet emergency responders, e.g., “At the front gate weigh station.”

- If applicable, a call-back number or your pager number, e.g., "I'll be at the scene; my pager number is 123-4567."
- Is the situation stabilized? e.g., "I have the fire under control."
- Is anyone injured or in need of emergency assistance? e.g., "A mechanic working on a pump was burned."

11.2 Site Emergency Coordinator

The Site Emergency Coordinator is:

Slavenko Todorovich, cell phone: (323) 873-4255

Alternate:

Gabriele Baader, cell phone: (626) 712-0589

11.3 Fire or Explosion

In the event of fire or explosion, personnel should contact the local fire department immediately by dialing 911. When representatives of the fire department arrive, the SHSS, or designated representative, will advise the commanding fire officer of the location, nature, and identification of any hazardous materials on-site. Only trained, experienced firefighters should attempt to extinguish substantial fires at the site. Site personnel should not attempt to fight fires unless properly trained and equipped to do so.

11.4 Underground Utilities

In the event that an underground conduit is damaged during excavation or drilling, mechanized equipment will immediately be shut off until the nature of the piping that was damaged can be determined. Depending on the nature of the broken conduit (e.g., natural gas, water, or electricity), the appropriate local utility must be contacted.

11.5 Evacuation

The SHSS will designate evacuation routes and refuge areas to be used in the event of an emergency. Site personnel will stay upwind from vapors or smoke and up-gradient from spills. If workers are in an exclusion or contamination reduction zone at the start of an emergency, they should exit through the established decontamination areas whenever possible. If evacuation cannot be done through an established decontamination area, site personnel will go to the nearest safe location and remove contaminated clothing there or, if possible, leave it near the exclusion zone. Personnel will assemble at the predetermined refuge following evacuation and decontamination. The SHSS, or designated representative, will count and identify site personnel to verify that all have been evacuated safely.

11.6 Hazardous Material Spill

If a hazardous material spill occurs, site personnel should locate the source of the spill and determine the hazard it poses to the health and safety of site workers and the public. An attempt to stop or reduce the flow can be made, if it can be done without risk to personnel. Otherwise, the spill area should be isolated and entry by unauthorized personnel not allowed. All sources of ignition that are located within 100 feet of the spill, including vehicle engines, should be de-energized. If the spill is of such nature or extent that it cannot be safely contained, or poses an imminent threat to human health or the environment, an emergency cleanup contractor should be called as soon as possible. Additional spill containment measures are listed below:

- Containers may be stood upright or rotated to stop the flow of liquids. This step should be accomplished as soon as the spill or leak occurs, providing it is safe to do so.
- Sorbent pads, booms, or adjacent soil may be used to dike or berm the spill, or to solidify liquids.
- Sorbent pads, soil, or booms, if used, should be placed in appropriate containers after use, pending disposal.
- Contaminated tools and equipment should also be collected for subsequent cleaning or disposal.

11.7 Communication Procedures

Emergency procedures listed in this plan are designed to give the field team instructions in handling medical emergencies, fires and explosions, and excessive emissions during the operational activities. These emergency procedures will be carefully reviewed with the field team during the health and safety training session.

Personnel in the Exclusion Zone should remain within sight of the SHSS.

Repeated horn blasts will be the emergency signal to indicate that all personnel should leave the Exclusion Zone.

The following standard hand signals will be used when vocal communication is not possible:

Hands gripping throat	**Out of air, can't breathe**
Grip partner's wrist or both hands around waist	**Leave area immediately**
Hands on top of head	**Need assistance**
Thumbs up	**OK, I am all right, I understand**
Thumbs down	**No, negative**

11.8 Emergency Safety Equipment

The following emergency and first aid equipment will be made available at the project work zone and/or the Contaminant Reduction Zone, as appropriate:

- Fire extinguishers with multipurpose dry chemical (rating of 20-A:120-B:C);
- Cell phone with extra battery;
- Industrial first aid kit; and
- Portable eye wash solution.

11.9 Directions to Hospital

Directions to the hospital and a route map are provided in Section 1.3 of this SHSP.

12. SAFE WORK PRACTICES

To maintain strong safety awareness and enforce safe procedures, the following personnel requirements and prohibitions have been established for the site:

- The work area will be restricted to authorized visitors and personnel. Daily tailgate safety meetings will be held at the beginning of each shift to discuss site conditions, field tasks being performed, planned modifications, and work concerns.
- All personnel entering the site will be required to identify themselves to the SHSS. Personnel who have not attended a tailgate safety meeting on that day will be required to do so with the SHSS or other authorized representative. Personnel unfamiliar with the site will be informed of site hazards and instructed to avoid contact with contaminated surfaces, soils, sample materials, or related equipment, and will be instructed to remain a minimum of 50 feet (15.3 meters) upwind of all active work areas.
- All personnel will adhere to the decontamination procedures outlined in this SHSP.
- Removal of materials from protective clothing or equipment by blowing, shaking, or any other means that may disperse contaminated materials into the air is prohibited.
- Legible precautionary labels will be affixed to containers of raw materials, intermediate products, mixtures, waste debris, and contaminated PPE.
- Contaminated PPE will not be removed from the site until it has been cleaned or properly packaged and labeled.
- Hands will be thoroughly washed upon departure from contaminated or suspected contaminated areas before eating, drinking, or other such activity.
- All hazardous wastes, soil samples, and other contaminated materials that are removed from the site will be accompanied by appropriate shipping papers.
- No running or horseplay.
- Medicine and alcohol can worsen the effects from exposure to toxic chemicals. Prescribed drugs will not be taken by personnel on operations where the potential for absorption, inhalation, or ingestion of toxic substances exists, unless specifically approved by a qualified physician. Alcoholic beverage intake will not be allowed during breaks.
- Safety devices on equipment must be left intact and used as designed.
- Equipment and tools will be kept clean and in good repair, and used only for their intended purpose.
- Respiratory devices may not be worn with beards or long sideburns, or under other conditions that prevent a proper seal.
- Accidents and/or injuries associated with work at the site will be immediately reported to the SHSS. If necessary, an incident report will be initiated by the SHSS.
- The “buddy system” will be used whenever appropriate.
- To prevent head injury, ANSI-approved hardhats will be worn at all times while workers are in areas where overhead obstructions or falling objects may be encountered.
- To prevent eye injuries, workers must wear ANSI-approved safety glasses during field activities.

APPENDIX A

Forms

Approval/Distribution of Site Health and Safety Plan

Acknowledgment of Potential Chemical Hazards

Site Safety Checklist

Tailgate Safety Meeting Form

Near-Miss Report

Employee's Report of Injury

Accident Witness Report

Supervisor's Accident Investigation

APPROVAL / DISTRIBUTION OF SITE HEALTH AND SAFETY PLAN

Position	**Name**	**Signature**
Project Manager:	Gabriele Baader	
Tel:	(626) 712-0589	
Site Health and Safety Supervisor:	Slavenko Todorovich	
Tel:	(323) 873-4255	

The following have read this plan and understand its provisions:

Company	**Name**	**Signature**	**Date**

ACKNOWLEDGMENT OF POTENTIAL CHEMICAL HAZARDS

The companies identified below shall be responsible for the implementation of their own health and safety plans. Each member of the companies shall be 40-hour trained per 29 CFR 1910.120, including annual refreshers.

AA&A used a general knowledge of site history or specific data from prior site investigations to identify potential chemical hazards, which may be present at the site. Specific chemical criteria used by AA&A and provided to the company are shown below.

Chemical Criteria	Range in Concentration
TPHg	3,100 mg/kg
Benzene	0.3 mg/kg
Toluene	2 mg/kg
Ethylbenzene	24 mg/kg
Xylenes	190 mg/kg
MTBE	0.012 mg/kg
Lead	120 mg/kg

AA&A's health and safety monitoring and communication to the subcontractors will be limited to the following information:

- ➔ vapor concentrations in breathing space
- ➔ dermal protection

Company	Name (print)	Signature	Date

By signing above, the subcontractors acknowledge that they have their own SHSPs in effect on this project. The subcontractors' SHSPs cover their own procedures, over which AA&A has no control. However, AA&A will advise subcontractors of any environmental conditions (such as vapor concentrations) which are monitored by AA&A.

SITE SAFETY CHECKLIST

				Comments
Written Site Health and Safety Plan (SHSP) on-site	Y ☐	N ☐	N/A ☐	
SHSP read and signed by all site personnel, including visitors	Y ☐	N ☐	N/A ☐	
Daily tailgate safety meetings held and documented	Y ☐	N ☐	N/A ☐	
Site personnel have appropriate training and medical clearance	Y ☐	N ☐	N/A ☐	
Site zones set up and observed where appropriate	Y ☐	N ☐	N/A ☐	
Access to work area limited to authorized personnel	Y ☐	N ☐	N/A ☐	
Decontamination procedures followed and match SHSP requirements	Y ☐	N ☐	N/A ☐	
Decontamination stations (including hand/face wash) set up and used	Y ☐	N ☐	N/A ☐	
PPE used matches SHSP requirements	Y ☐	N ☐	N/A ☐	
Hearing protection used where appropriate	Y ☐	N ☐	N/A ☐	
Respirators properly cleaned and stored	Y ☐	N ☐	N/A ☐	
Emergency and first-aid equipment on-site as described in SHSP	Y ☐	N ☐	N/A ☐	
Drinking water readily available	Y ☐	N ☐	N/A ☐	
Phone readily accessible for emergency use	Y ☐	N ☐	N/A ☐	
Proper drum and material-handling techniques used	Y ☐	N ☐	N/A ☐	
Drums and waste containers labeled appropriately	Y ☐	N ☐	N/A ☐	
Extension cords grounded and protected from water and vehicle	Y ☐	N ☐	N/A ☐	
Ground-fault circuit interrupters used with electrical equipment	Y ☐	N ☐	N/A ☐	
Tools and equipment in good working order	Y ☐	N ☐	N/A ☐	
Lighting is adequate	Y ☐	N ☐	N/A ☐	

TAILGATE SAFETY MEETING FORM

Instructions: To be completed by supervisor prior to start of new job, when changes in work procedures occur, or when additional hazards are present.

Project no. & name: Project No. WestCoastVending.p01 **Task no.** _____

Project address: 2124 Livingston Street, Oakland, California 94606 **Date:** _____

Work activity: _____ **Time:** _____

Safety topics/hazards discussed:

Informal training conducted (name, topics):

Attendee names and signatures:

Supervisor's signature and date: _____

NEAR-MISS REPORT

Project no. & name: _____ Task no. _____

Project address: _____

Date/time of near-miss: _____

Name of Preparer: _____ Date: _____

The following is an account of what happened:

I believe this could have resulted in injury and/or damage to (check all that apply):

☐ Personnel ☐ Property ☐ Equipment

If these circumstances occurred:

I recommend the following actions to prevent this from occurring in the future:

REVIEWED BY:

Project Manager: _____ Date: _____

Site Health and Safety Supervisor: _____ Date: _____

EMPLOYEE'S REPORT OF INJURY

(To be completed by employee only)

Employee name: _____ Male _____ Female _____
Last First Middle

Date of birth: _____ Home phone: ( ) _____

Home address: _____

City: _____ State: _____ Zip code: _____

Present title: _____ AA&A employee since: _____

Social Security no.: _____ – _____ – _____ Weekly salary: _____

Accident location: _____
Address Area (loading dock, bathroom, etc.)

Date of accident: _____ Time of accident: _____

Describe fully how accident occurred (including events that occurred immediately before accident):

_____

_____

Describe bodily injury sustained (be specific about body part[s] affected):

_____

_____

Recommendation on how to prevent this accident from recurring: _____

_____

Name of supervisor: _____ Phone: _____
Last First

Name(s) of witness(es): _____ Phone: _____
(Attach report[s] of witness[es])

When did you report the accident to your supervisor? _____

To whom did you report the injury? _____

Do you require medical attention? Yes _____ No _____ Maybe _____

Name of your treating physician: _____ Phone: _____

Employee signature: _____ Date: _____

ACCIDENT WITNESS STATEMENT

(To be completed by accident witness)

Name of injured employee: _____
Last First Middle

Name of witness: _____ Phone: _____
Last First Middle

Job title: _____ AA&A employee (Y/N) since: _____

Home address of witness: _____

City: _____ State: _____ Zip code _____

Accident location: _____
Address Area (loading dock, bathroom, etc.)

Date of accident: _____ Time of accident: _____

Describe fully how accident occurred (including events that occurred immediately before accident):

_____

_____

_____

_____

_____

Describe bodily injury sustained (be specific about body part[s] affected): _____

_____

_____

_____

Recommendation on how to prevent this accident from recurring: _____

_____

Name of witness's supervisor: _____ Phone: _____
Last First

Witness signature: _____ Date: _____

SUPERVISOR'S ACCIDENT INVESTIGATION

(To be completed by employee's supervisor or other responsible administrative official)

Location where accident occurred		Employer's premises: Y ☐ N ☐ Jobsite: Y ☐ N ☐	Date of accident or illness
Who was injured?		☐ Employee ☐ Non-employee	Time of accident AM ☐ PM ☐
Length of time with firm	Job title or occupation	Dept. normally assigned to	How long has employee worked at job where injury or illness occurred?
What property/equipment was damaged?			Property/equipment owned by:
What was employee doing when injury/illness occurred? What machine or tool was being used? What type of operation?			
How did injury/illness occur? List all objects and substances involved.			
Part(s) of body affected/injured?		Any prior physical conditions? If so, what? Y ☐ N ☐	
Nature and extent of injury/illness and property damaged (be specific)			

Supervisor's corrective action to ensure this type of accident does not recur: _____

_____

_____

_____

Was employee trained in appropriate use of personal protective equipment/proper safety procedures?..... Y ☐ N ☐
Was employee cautioned for failure to use personal protective equipment/proper safety procedures?..... Y ☐ N ☐
Did employee promptly report the injury/illness? ..... Y ☐ N ☐
Is there modified duty available?..... Y ☐ N ☐