

Interim Remediation Action Plan Livermore Gas and Mini-mart USTCF Claim No. 14294 Fuel Leak Case No. RO0000324, 160 Holmes Street, Livermore, California

Date: August 10, 2005

Prepared For: Manwel and Samira Shuwayhat 54 Wolfe Canyon Road Kentfield, CA 94904

Allterra Environmental, Inc. 849 Almar Avenue, Suite C, No. 281 Santa Cruz, California 95060

> Phone: (831) 425-2608 Fax: (831) 425-2609 http://www.allterraenv.com

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ALLTERRA ENV INC

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Allterra Environmental, Inc. 849 Almar Avenue, Suite C No. 281 Santa Cruz, California 95060 Alonnedo County

Environnentol Health

California

Client:

Manwel and Samira Shuwayhat

Project Location:

160 Holmes Street, Livermore, California

Subject:

Interim Remedial Action Plan

Report Date:

August 10, 2005

To Whom It May Concern:

I have reviewed the report referenced above and approve its distribution to the necessary regulatory agencies. Should any of the regulatory agencies require it, I am prepared to declare, under penalty of perjury that, "to the best of my knowledge the information contained in the subject report is true and correct."

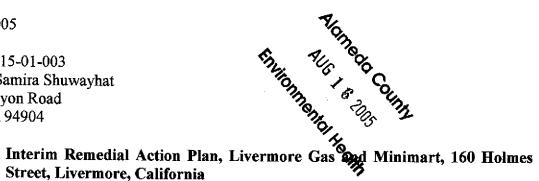
Sincerely,

Manwel and/or Samira Shuwayhat



August 12, 2005

Project No.: 015-01-003 Manwel and Samira Shuwayhat 54 Wolfe Canyon Road Kentfield, CA 94904



Subject:

Street, Livermore, California

Dear Mr. Shuwayhat:

On your behalf, Allterra Environmental, Inc. (Allterra) has prepared this plan for interim remedial action for the property located at 160 Holmes Street in Livermore, California (site). The purpose of this work is to: 1) reduce and control a rate of methyl tertiary butyl ether (MTBE) migration; 2) collect empirical data to evaluate long term remedial alternatives; and 3) comply with the workplan request directive from the Alameda County Health Care Services Agency, Environmental Health Services (ACEH), dated March 29, 2005.

Additionally, the scope of work described in this action plan is intended to comply with the State of California Water Resources Control Board's Leaking Underground Fuel Tank (LUFT) Manual, the Regional Water Quality Control Board (RWQCB) Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites, and Livermore Fire Department (LFD) guidelines.

Proposed Scope of Work

- Redevelop existing well MW-1 with a drilling rig equipped with a surge block. Fluids produced during redevelopment will be temporarily stored onsite in a 6500 gallon polyethylene tank until remedial equipment is installed later.
- Using portable, high vacuum, dual phase extraction (DPE) equipment, perform a DPE pilot test for approximately 8 hours to establish groundwater and vapor flow rates.
- Contain extracted groundwater in a 6500 gallon polyethylene tank.
- Monitor groundwater levels and vadose pressures within MW-1 before, during, and after the pilot test.
- Collect groundwater and vapor samples before, during and after pilot testing.
- Analyze groundwater samples for total petroleum hydrocarbons as gasoline (TPHg) and diesel (TPHd) by EPA Method 8015Cm, benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021b, fuel oxygenates MTBE, ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary amyl methyl ether (TAME), and tertiary butyl alcohol (TBA) by EPA Method 8260b and fuel additives ethylene dibromide (EDB) and 1,2-dichloroethane (1,2-DCA).EPA Method 8260.

- Analyze vapor samples for TPHg by EPA Method 8015Cm and BTEX and MTBE by EPA Method 8021b.
- Using the pilot test information, design and install an interim remediation system.
- Complete and submit an Interim Remediation Startup Report to ACEH.

Site Location and Description

The subject property is located at the northeast intersection of Holmes Street and Second Street, in Livermore, California (Figure 1). A Vallero fuel station currently occupies the site and the surrounding area is primarily residential with some retail businesses along 1st and 2nd Streets. The approximate surface elevation of the site is 470 feet above mean sea level (MSL) and slopes to the northwest. Pertinent site features, including the locations of the former underground storage tanks (USTs) and existing monitoring wells, are presented in Figure 2.

Previous Pilot Testing Activities

On June 27, 2002, Geo Environmental Technologies (GET) performed a groundwater pumping test from EX-1. The information collected during the 30-minute test indicated to GET that a sustainable yield of 1 gallon per minute (GPM) and an estimated radius of influence of 80 feet. The full analysis of this pump test is detailed in the GET report titled "Pump Test" dated December 30, 2002.

On April 24, 2003 GET performed a vapor extraction (VE) test using a regenerative blower capable of generating an applied vacuum of 60 inches of water. The test was performed on MW-1 for approximately 6.5 hours. The information collected during the test indicated an estimated radius of influence of 40 feet. The full analysis of this VE test is detailed in the GET report titled "Soil Vapor Extraction Feasibility Study" dated July 14, 2003.

Site Geology and Hydrogeology

Site geology, as described by previous consultants, consists primarily of clayey sand and silty clay fill material from surface grade to approximately 8 feet below surface grade (bgs). Underlying the fill material, silty clay occurs to approximately 11 feet bgs and is in turn underlain by sandy silt and silty sand to approximately 28 feet bgs. Beneath the silts and sands, silty clay occurs to the total depth investigated (approximately 31.5 feet bgs). Groundwater typically occurs at depths between approximately 11 and 13 feet bgs and is inferred to flow toward San Francisco Bay to the north.



Interim Remediation

Allterra proposes to perform a limited 1-day, remedial pilot test in order to evaluate the feasibility of using DPE and treatment as an interim remedial technology at the site. The pilot test equipment will consist of a mobile DPE system which comprises a water knock-out, liquid ring blower and catalytic oxidizer. Pilot testing will be performed at well MW-1 and will consist of using the DPE system for groundwater extraction concurrent with high vacuum vapor extraction (up to 17" mercury) as depicted in Figure 3. The application of a high vacuum has shown in many cases, to improve the yield of low flow wells.

Well MW-1 was chosen as the pilot test well because MW-1 is screened through the uppermost water bearing zone, which has been impacted with comparatively high levels of petroleum-related compounds. By contrast, well EX-1 appears to be screened through a lower water-bearing zone that locally has relatively low concentrations of petroleum-related compounds. Pilot testing of well EX-1 could create a low pressure zone that might result in cross-contamination of the two aquifers.

Data collected during the pilot test will be evaluated to determine blower size, granulated carbon vessel (GAC) bed depths, and sewer discharge quantities for the interim remediation system. In addition, the data should indicate if DPE from MW-1 can remove a significant amount of petroleum hydrocarbons from the source over time, and limit or eliminate the off-site migration of fuel related hydrocarbons, specifically MTBE. If pilot test data indicates continuous DPE from MW-1 is inadequate, then Allterra proposes to proceed with the initial phase of the Soil and Groundwater Investigation as outlined in our workplan dated June 30, 2005, and may include installation of an extraction well(s) properly screened and developed.

While conducting the DPE pilot test, Allterra personnel will collect and record routine measurements from MW-1 and EX-1. At a minimum, measurements from MW-1 will include observed vacuum and groundwater elevation. Allterra personnel will collect and record routine depth to water (DTW) measurements from observation wells MW-2 and MW-3 during DPE pilot test activities.

Vapor and groundwater samples collected during pilot testing activities will be submitted under chain-of-custody protocol to McCampbell Analytical, Inc. (DHS Certification #1644) of Pacheco, California.

Following start-up Allterra will prepare and submit an Interim Remediation Startup Report to Alameda County Environmental Health for review. The report will provide a summary of the limited pilot test, interim remediation system installation including as-built Process and Instrumentation Diagram (P&ID) and details of the start-up. The report will also include an operation and maintenance and sample collection schedule specific to the interim remediation system.



Health and Safety

During field activities, field personnel will wear modified Level D health and safety gear, consisting of hardhats, gloves, safety glasses, and steel-toed boots for protection from overhead drilling equipment. On-site health and safety issues will be the responsibility of the Project Manager and Site Health and Safety Officer and are summarized in Allterra's Site Specific Health and Safety Plan (Appendix A). The Site Health and Safety Officer is responsible to inform all field personnel of current health and safety issues and will conduct daily health and safety tailgate meetings.

References

ACEH directive letter - Fuel Leak Case No. RO0000324, Livermore Gas and Mini-Mart, 160 Holmes St., Livermore, California - Work Plan Request dated March 29, 2005

GET – Pump Test 12/30/02 GET – Vapor Extraction Feasibility Study 7/14/03

Limitations

The data, information, and recommendations contained in this work plan are presented solely as preliminary to the existing environmental conditions at 160 Holmes Street. Site conditions can change over time; therefore, data, information, interpretation, and recommendations presented in this work plan are only applicable to the timeframe of this study. Allterra assumes no liability for data, conclusions, and/or recommendations presented by others. The conclusions and professional opinions presented herein were developed by Allterra in accordance with environmental principles and practices generally accepted at this time and location. No warranties are expressed or implied.



If you have any questions, please contact Allterra at (831) 425-2608.

Sincerely,

Allterra Environmental, Inc.

Greg L. Nolen Project Manager Michael Killoran R.G. 6670 MICHAEL J. G. KILLORAN

KILLORAN

No. 6670

OF CALIFORNIE

Senior Geologist

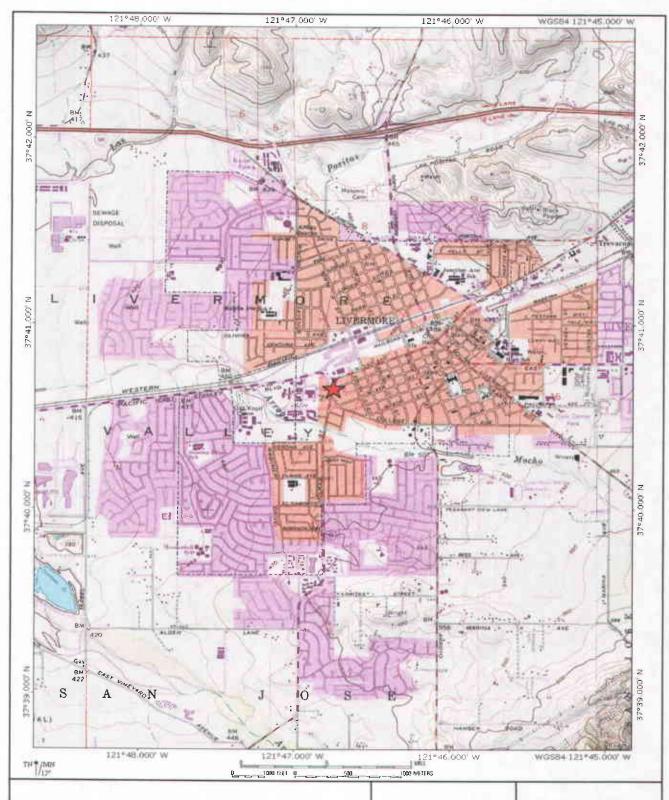
Attachments:

Figure 1, Vicinity Map

Figure 2, Site Map

Figure 3, Interim Remediation System Process and Instrumentation Diagram

APPENDIX A: Allterra Environmental, Inc.'s Site Specific Health and Safety Plan



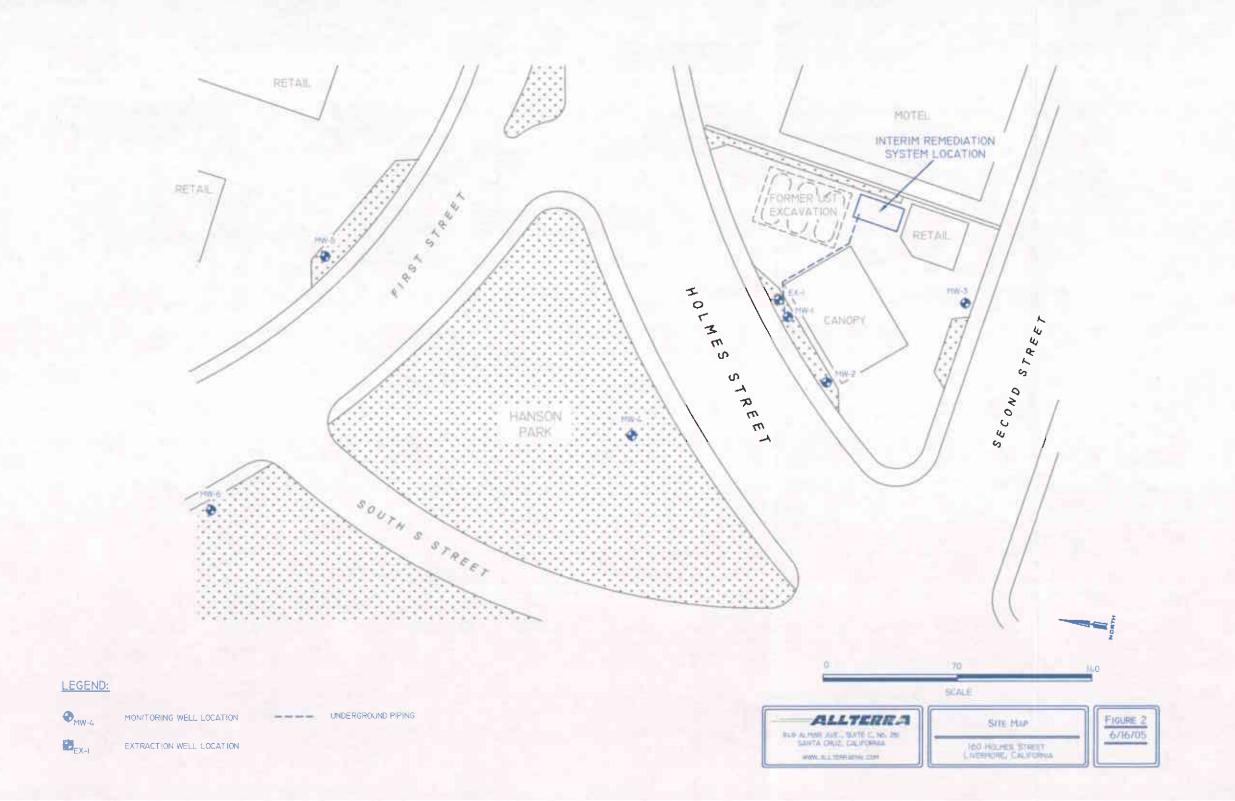
Vicinity Map

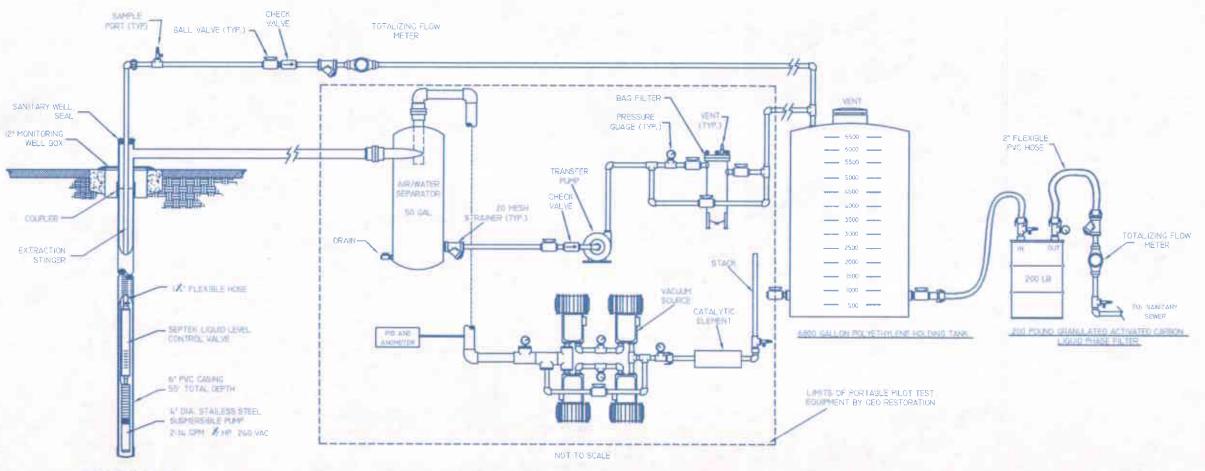
Livermore Gas and Minimart 160 Holmes Street Livermore, California Figure 1

6/28/2005



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PROCESS AND INSTRUMENTATION DIAGRAM

160 HOLMES STREET LIVERMORE, CALIFORNIA FIGURE 3 7/22/05



Site Specific Health and Safety Plan 160 Holmes Street, Livermore, California

Date: August 10, 2005 Project No.: 015-01-001

Prepared For:
Manwell and Samira Shuwayhat
54 Wolfe Canyon Road
Kentfield, California 94904

Allterra Environmental, Inc. 849 Almar Avenue, Suite C, No. 281 Santa Cruz, California 95060

> Phone: (831) 425-2608 Fax: (831) 425-2609 http://www.allterraenv.com

Introduction

The purpose of this Health and Safety Plan (HASP) is to ensure that all individuals engaged in site activities do so in a safe manner and in compliance with EPA, state and local regulations. The primary regulatory documents with which site personnel need to comply are OSHA 29 CFR, Part 1910, and the California Administrative Code, Title 8. In addition, all site work will comply with Allterra Environmental, Inc.'s (Allterra) Health and Safety Program and all supporting Standard Operating Procedures. This HASP may be modified during actual field activities, if necessary, as more information and site-specific data are obtained.

Prior to beginning any work on-site, an approved copy of this HASP shall be provided to all employees and subcontractors by the Project Manager. Each subcontractor will be responsible for providing his own HASP. Allterra retains the right to review and approve each subcontractor's Health and Safety Plan prior to the beginning of fieldwork.

Purpose and Objectives

The purpose of this site-specific Health and Safety Plan is to provide guidelines and procedures to ensure the health and physical safety of those persons working at the site. While it may be impossible to eliminate all risks associated with site work, the goal is to provide state-of-the-art precautionary and responsive measures for the protection of on-site personnel, the general public and the environment. The HASP objectives are as follows:

- a. Ensure the safety of all site personnel;
- b. Protect the public and the environment; and
- c. Adhere to Allterra health and safety policies and procedures.

Implementation

This site-specific Health and Safety Plan, and any additional HASP, will be reviewed by all site personnel prior to their scheduled field work. Whenever the site-specific HASP is revised or amended, personnel will be instructed of changes and new procedures.

The site-specific Health and Safety Plan will be implemented in the field by Allterra's Health and Safety Coordinator and/or designated Site Safety Officer (SSO).

Background and Site Description

The subject site is located on the southwest corner of Holmes Street and Second Street at 160 Holmes Street in Livermore, California. The site currently operates as a service station and convenience store.

Proposed Work

Allterra has proposed to advance 5 Geoprobe® multi-point soil borings, 9 Geoprobe® continuous core soil borings to various depths, and install 6 multiple well point groundwater monitoring wells.



Job Hazard Assessment Chemical Health Hazards

Chemical	PEL/Ceiling/ IDLH	Known Concentrations in Soil, Water, Air, Etc.	Signs/Symptoms
Benzene	1 ppm	Soil = NA Water = 7,700 ppb	Irritation of eyes, nose, and respiratory systems. Headache, giddiness, fatigue, anorexia, staggered gait, and dermatitis
Toluene	100 ppm	Soil = NA Water = 11,000 ppb	Irritation of eyes and mucous membrane, headache, dermatitis, narcosis, and coma.
Xylene	100 ppm	Soil = NA Water = 13,000 ppb	Irritation of eyes, nose, and throat, excitement, drowsiness, headache, dizziness, nausea ,vomiting, anorexia, staggered gait, and dermatitis.
Ethyl Benzene	300 ppm	Soil = NA Water = 13,000 ppb	Irritation of eyes and mucous membrane, headache, dermatitis, narcosis, and coma.
Gasoline	300 ppm	Soil = 6,500 ppm Water = 180,000 ppb	Skin irritant, disturbance of eyes. Deep burning in the throat and respiratory track and bronchopneumonia. Repeated chronic dermal contact may result in drying of skin, lesions and other dermatological conditions.
Diesel	100 mg/m ³	Soil = 1,300 ppm Water = 57,000 ppb	Irritation to skin. Prolonged breathing at high vapor concentrations can cause central nervous system effects
Lead	100 mg/m ³	NA	Prolonged exposure may result in anorexia, low weight, malnutrition, constipation, abdominal pain, colic, or anemia
Tetraethyl- lead	40 mg/m ³	NA	Irritating to the eyes. Prolonged exposure may result in insomnia, anxiety, tremors, hypotension, nausea, low-weight, convulsions, and coma.
Tetramethyl- lead	40 mg/m ³	NA	Prolonged exposure may result in insomnia, anxiety, tremors, hypotension, nausea, low-weight, convulsions, and coma.
Tetra- chloro- ethylene	500 ppm	NA	Inhalation exposure is associated with eye, nose and throat irritation. Ingestion is associated with nausea, flush face and neck.

Physical Hazards

Hazard	Mitigation Measure
Drilling Equipment Hazard	Heavy equipment will be in good working order and operated in accordance with recognized industry standards. Strive to keep a safe distance from heavy machinery so that you would not be in the path of a moving part if it were to swing suddenly. Always be aware of the movement of machinery around you. Approach vehicles from the driver's side. Make sure you are seen by the vehicle operator. Make eye contact.
Trip/Fall Hazard	Good housekeeping and shoes with traction will be worn.

Fire and Explosion Hazards

List Flammable or combustible materials kept on-site. Keep ignition sources away from the following materials.

Flammable (Flash Point < 100 °F)	Combustible (Flash Point < 200 °F)
Gasoline (43 °F)	Diesel (130 °F)

Gasonne (43	f) Diesei (130 °F)
Flammability v	will be monitored by LEL meter.
List all oxidize	ers kept on-site: Unknown
Type and locatin the truck or	tion of Fire Extinguisher: ABC fire extinguisher will be located in the support zone outside.
Other Hazards	
X Noise:	
Activities likel during these ac	y to generate noise exceeding 85 Db: <u>drilling</u> Use hearing protection ctivities.
X Heat S	Stress
	Heat Cramps: Muscular pains and spasms. Heat Exhaustion: Cool, pale, moist skin; dilated pupils, headache, sweating, nausea, dizziness, vomiting, near normal body temperature. Heat Stroke: Hot, red skin; small pupils; high body temperature; reduced sweating

Mitigation:

Cool place for breaks (in the shade or in trucks)

Whenever ambient temperatures exceed 80 °F, or whenever semipermeable or impermeable protective clothing is worn and ambient temperatures exceed 70 °F, monitoring the worker may include:

Calculate the workers heart rate at the beginning of the rest period. If the heart rate exceeds 110 beats/min shorten the next work cycle. If the heart

rate still exceeds 110 beats/min during the next rest period, shorten the work cycle by 1/2 and continue monitoring.

Take frequent breaks in shaded areas. Remove PPE during breaks and provide plenty of drinking water. Record the time and duration of all breaks. Heat stroke victims must receive emergency medical care.

__Hypothermia/Frostbite

Symptoms:

Hypothermia: Shivering, apathy, loss of consciousness, decreasing pulse and

breathing rate.

Frostbite: White, then greyish yellow processing to greyish blue skin. Cold numb

body parts.

Mitigation:

Wear multi-layer cold weather clothing. Take frequent breaks in a warm sheltered area. Provide warm drinks. For frostbite victims, warm the injured part gradually, do not rub the affected area. Warm hypothermia victims and transport to

emergency medical care.

Exposure Monitoring

All samples will be recorded in the exposure log. Copies of the exposure log are filed in the job file. All sampling instruments will be calibrated per the manufacturer's instructions on a daily basis.

Monitoring Equipment	Hazard Monitored	Sample Location	Sample Frequency	Action Level	Action
PID	Volatile organic vapors	To be determined	hourly	1,000 ppm	Use of a respirator while working
				·	
		-			

Personal Protective Equipment

As a minimum, Level D protection is required on all Allterra worksites. Level D includes: steel-toe boots, safety glasses, and a hard hat. For each task on this project, identify additional protective garments as requires, include the conditions (exposure levels, etc.) under which the level of PPE would be modified for each task.

Task(s)	Condition	Garment(s)
All	At all times	steel-toe boots, safety
		glasses, and hard hat

Site Specific Health and Safety Plan. Page 6 of 8	, 160 Holmes Street, Livermore, CA
Site Control and Commun The site will be secured as	nication follows: Traffic safety equipment and caution tape.
equipment. Exclusion Zon allowed into an Exclusion	d as follows: Marked with florescent or caution tape and traffic safety e is within 15 feet of machinery. Only essential personnel will be Zone. When practical, 25 to 75 feet of space surrounding Exclusion Contamination Reduction Zones. Support Zone is all other area.
On-site communication:	Radio Verbal X Hand Signals X Other
Off-site communication:	Radio Telephone X Other
The specific signal for an extra transfer to the specific signal for an extra transfer to the specific signal for an extra transfer to the specific signal for an exacuation assembly point event of an evacuation.	
decontaminated prior to exi needed in accordance with	ination ent (trucks, field equipment, heavy machinery, etc.) shall be ting the work zone. Personnel decontamination shall be conducted as the health and safety section of this plan. All waste soils removed ll be placed into drums and will remain on site pending disposal.
Personal decontamination p	procedure: Hands and face must be clean prior to eating, drinking, or smoking.
Location of Wash Water: Location of toilet: Location of drinking water:	Support Zone, or to designated prior to work start. Support Zone, or to designated prior to work start.
Equipment Decontaminatio	n Procedures: Steam cleaned or washed with Alconox. as Hazardous Waste: Personal Protective Equipment.

This hazard assessment is based on available information concerning chemical hazards suspected to be present at the site. The work to be performed will be conducted in accordance with EPA and CAL-OSHA regulations and Monterey County requirements.

Emergency Services

If an emergency should occur on-site, the Emergency System (911) should be activated. Two-way communication between the site and the emergency trauma center will be maintained via a portable cellular telephone. Emergency telephone numbers shall be posted on-site and a portable telephone unit made immediately available at all times. These numbers shall include the following:

Emergency

Ambulance	911
Police	911
Poison Control	(800) 662-9886
Pleasanton Urgent Care Medical Center	(925) 462-9300

Non Emergency

Alameda County Fire Department #8	(925) 551-6868
Livermore Police Department	(925) 371-4900
National Response Center	(800) 424-8802

Emergency/Contingency Plans and Procedures

Start at 160 Holmes Street going towards and turn onto 1st Street. Continue on 1st Street for approximately 0.2 miles and turn onto P Street. Continue on P Street and turn onto Portola Avenue. Continue on Portola Avenue and take the I-580 west towards Oakland. Continue on I-580 west for approximately 5 miles and take the Santa Rita Road/Tassajara Road Exit (Exit #47). Coninue for approximately 0.3 miles and turn onto Santa Rita Road. Continue on Santa Rita Road for approximately 1.0 mile and arrive at 3128 Santa Rita Road in Pleasanton, California.

Key Safety Personnel and Responsibilities

Project Manager

The Allterra Project Manager is the SSO. The SSO will ensure that site personnel have proper protective equipment available, that specific site hazards are noted, and that personnel have knowledge of the nearest hospital location. The site safety officer can stop work at the site upon determination that an eminent health or safety hazard exists. If a stop-work order is issued, Allterra will take appropriate steps to remedy the situation and resume site activities. Allterra's Project Manager is responsible for directing all project operations. The Project Manager is also responsible for ensuring that the safety personnel are given free access to all relevant site information that could impact health and safety. The project manager will remain in view of all field activities, and he will inform site personnel of a change in activities.

Employees

All Allterra employees working at the site are responsible for reading and understanding the HASP. Other subcontractors at the site are responsible for providing their own HASPs, which must incorporate, at a minimum, Allterra's HASP. As described above, Allterra's SSO has the

Site Specific Health and Safety Plan, 160 Holmes Street, Livermore, CA Page 8 of 8

authority to ensure that subcontractor employees are following the Allterra Health and Safety Plan provisions.

Site Safety Briefing Procedures (Tailgate Meeting):

All field personnel from Allterra and the subcontractors must attend a safety orientation meeting prior to commencing field activities. The meeting will be scheduled and conducted by the SSO and is to include an overview of the site history, the potentially hazardous compounds, their potential mode of ingress into the body, protective equipment requirements, and emergency response equipment. All individuals who do not have respirators and who may be required to wear them, will not be allowed on the site until they are provided with and fit tested for respirators by their respective employers.

A tailgate meeting will be held every morning before the start of work and is to be attended by all personnel on-site. The purpose of the meeting is to discuss the days work, potential hazards, and specific health and safety procedures to be utilized during the day.

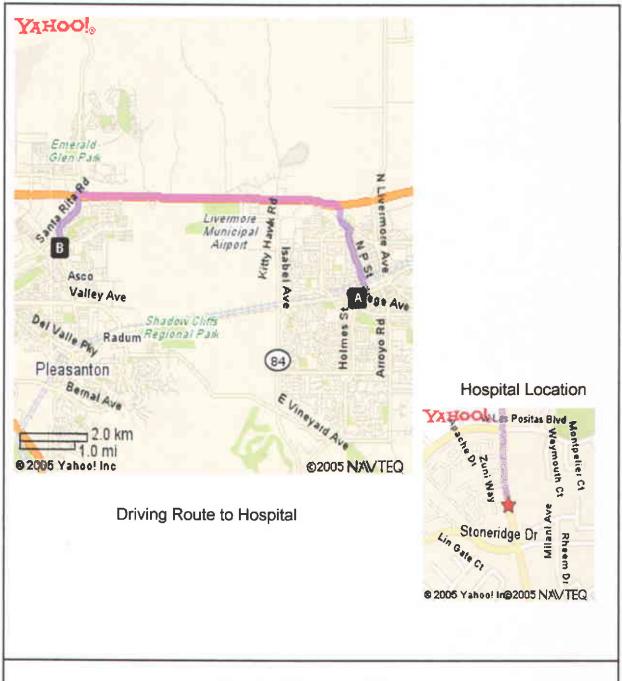
Sign-Off

I have read the HASP and fully understand the hazards associated with the following job: 160 Holmes Street, Livermore, California

I will comply with the minimum safety requirements set forth in the HASP. I agree to notify the responsible employee of Allterra should any unsafe acts be witnessed by me while I am on-site.

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Hospital Location Map

160 Holmes Street, Livermore, California