Newlandex Corporation, dba
REMEDIATION SERVICE, INT'L.

SOIL & GROUNDWATER INVESTIGATION WORKPLAN

for

2008 First Street
Livermore, California

Prepared for:
DESERT PETROLEUM, INC.
P.O. Box 1601
Oxnard, California 93032

Prepared by:
RSI - REMEDIATION SERVICE, INT'L.
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Revised
June 19, 1995

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Off-Site Soil & Groundwater
Investigation Workplan
June 19, 1995

2008 First Street
Livermore, California

1.0 INTRODUCTION

This report presents a proposal for further soil and groundwater investigation for the real property located at 2008 First Street, Livermore, Alameda County, California (Figure 1). Remediation Service, Int'l. (RSI) is under contract to Desert Petroleum, Inc. to provide Phase II Assessment of the subject property.

The site is currently occupied by a retail gasoline station operating under the British Petroleum trade name. A site assessment conducted in February 1988 indicated that both soil and groundwater contained elevated concentrations of petroleum hydrocarbons. Results of a recent site assessment in February 1995 indicated that soil and groundwater beneath the site, north, and west of the property beneath South "L" and 1'st. Street has been impacted by hydrocarbons near the capillary fringe.

In a meeting on June 15, 1995 with RSI Personnel and Dick Groth, the owner of the property directly west of the impacted soil and groundwater it was indicated that Groth would be unwilling to grant access to his property for the purpose of plume delineation. Because of this the only locations for further assessment that will spatially delimit (based upon declining analytical values) known hydrocarbon impacted soil and groundwater that appear to have originated from a release at 2008 First Street are in the Public Right of Way. Figure 2 shows the initial hydropunch locations.

2.0 SITE DESCRIPTION

The site is an operating retail gasoline service station located within a commercial/residential area at the corner of First Street and South "L" Street in Livermore (Figures 2 and 3). The station is currently owned and operated by Mr. B. J. Angle. A storage/garage building, three underground storage tanks, two pump islands and four groundwater monitoring wells are present on-site. The three underground storage tanks have holding capacities of 10,000 gallons (Tanks 1 & 2) and 8,000 gallons (Tank 3) and are used for the storage of various grades of unleaded gasoline (Figure 4). The site is flat, level and paved with asphalt.

A former bulk fuel facility is located west of the site and an abandoned gasoline service station is located to the south (Figure 2). Between the subject property and the bulk fuel oil facility is an auto sales and repair facility. All of these sites have known hydrocarbon impacted soil and/or groundwater.

3.0 BACKGROUND

The following is a summary of the previous work conducted at the site. The analytical results of soil and groundwater samples collected at the site are reported in Tables 1 and 2, respectively.

The following is a summary of the previous work conducted at the site. The analytical results of soil and groundwater samples collected at the site are reported in Tables 1 and 2 and soil sample locations are shown on Figure 4.

On February 23, 1988, Geonomics Inc., installed four vapor monitoring probes around the tank area. On-site field screening with a Gastechtor organic vapor meter indicated elevated TPH concentrations as vapor in wells DPL-1 and DPL-2. Analysis of a soil sample collected from DPL-1 at 14.5 feet below ground surface (bgs) reported a TPH as gasoline concentration of 400 mg/Kg. Hydrocarbons were not detected in soil samples from DPL-3 and DPL-4 (Geonomics Inc. Vapor Monitoring Probe Report, March 10, 1988).

On September 22, 1988, On-Site Technologies Inc. conducted further subsurface investigation with two soil borings and the completion of one monitoring well (GX-136, later renamed MW-1, Figure 4). Depth to groundwater was measured at 55.8 feet bgs. Analytical results of soil collected from the three borings reported no detectable TPH concentrations above 26 feet bgs and concentrations ranging from 0.8 mg/Kg (DPL-5 at 41 feet) to 1,600 mg/Kg (DPL-6 at 36 feet) below 26 feet bgs (Table 1). Groundwater was analyzed for TPH as gasoline and BTEX; no hydrocarbon compounds were detected in the groundwater at that time (Table 2, On-Site Technologies, Inc. Report of Hydrogeologic Site Investigation, October 26, 1988).

On August 2, 1990, groundwater in monitoring well GX-136 was sampled for TPH as gasoline and BTEX. Analytical results reported a TPH concentration of 24 mg/L (parts per million) and a benzene concentration of 1,300 μg/L (parts per billion, Table 2).

On June 16-18, 1994, RSI conducted a Soil and Groundwater Investigation with the installation of groundwater monitoring wells MW-2, MW-3 & MW-4. Analytical results of soil collected from the three well installations reported hydrocarbons predominantly in well MW-3 with a TPH concentration of 390 mg/Kg (MW-3 @ 10' and 15'). Hydrocarbons were

also detected in well MW-2 with a TPH concentration of 77 mg/Kg (MW-2 @ 40'). TPH was not detected in the sample from MW-4; benzene however was detected at a low concentration of 0.009 mg/Kg (Table 1). Analysis of T groundwater samples from the three wells reported TPH concentrations ranging between 0.81 mg/L (MW-4) and 290 mg/L (MW-2). Benzene was detected in all three wells at concentrations between 12 μg/L (MW-4) and 18,000 μg/L (MW-2, Table 2).

On August 26, 1994 a 0.66 foot immiscible layer of degraded gasoline was measured in well MW-2. This layer was bailed immediately and a free product bailing schedule for free product removal and measurement of all other wells on-site was initiated. Since August, 1994, approximately 225 gallons of groundwater and free product have been bailed from well MW-2. Free product has not been detected in any other well. Free product monitoring/removal logs will be included in the final report and any quarterly monitoring reports submitted

On March 8, 1995, an investigation was conducted to delimit soil and groundwater conditions off-site. The investigation was initiated by drilling and sampling five soil bore holes and collecting hydropunch groundwater samples where the suspected limits exist. Mr. Bob Genoy of the City of Livermore was on-site during the investigation to direct drilling and borehole placement. During the drilling process, groundwater samples were collected from the borehole H-4 and H-5. Because the boundaries of the contamination plume had clearly not been reached to the west of the site, the collection of hydropunch samples in boreholes H-1, H-2 and H-3 was not considered to be cost effective in this area. As reported on Table 1, TPH concentrations were predominately detected in soil samples from 30 feet bgs with the highest concentration of hydrocarbons (TPH, 6,100 mg/Kg) in soil samples from boring H-2, which is located on the west side of South "L" street.

Onsite groundwater has been monitored on a regular basis since 1990. Tables 2 and 4 summarize historic groundwater analytical results and elevation at the site.

4.0 GEOLOGY AND HYDROGEOLOGY

The site is located on the floor of the Livermore Valley at an elevation of approximately 480 feet above mean sea level (MSL) with a slight regional gradient toward the west. The subject property lies approximately one mile south of the Arroyo Las Positas Creek and one-half mile north of the Arroyo Mocho Creek.

The soils beneath the site consist of predominantly silty sand, sandy gravel and gravel with sand to depths of approximately 15 to 20 feet bgs, and intermittent layers of sandy clay, silty sand and gravelly sand from 20 feet bgs to total boring depths (60 feet bgs). (Boring Logs MW-2, MW-3 and MW-4, RSI Groundwater Investigation Report, July 22, 1994). The groundwater elevation on March 13, 1995 ranged between 455.19 and 457.04 feet above MSL (Table 4). The groundwater gradient was calculated to be approximately 0.013 ft/ft with groundwater flow in a northwesterly direction (Figure 5).

5.0 PROPOSED WORK DESCRIPTION

The proposed work will further characterize soil and groundwater conditions off-site. This will be accomplished by the drilling and sampling of soil bore holes and collection of hydropunch groundwater samples starting closest to the previous hydropunch locations on L Street. Samples of soil and groundwater will be analyzed by a State Certified mobile laboratory on site. If the limits of the impacted soil and groundwarter have been reached to the north on L St. and west on first street, further stepout locations will not be drilled.

Based upon encroachment permitting the soil borings will be advanced at the approximate locations shown on Figure 2. During the encroachment permitting process further step-out locations on Railroad Avenue and First Street will be obtained so that a timely and complete delineation of the plume can be established.

1 Soil Boring Installation and Sampling

The soil borings will be drilled using a hollow-stem auger drilling rig supplied and operated by a State of California licensed drilling contractor. During drilling operations, soil samples will be collected at five foot intervals from the surface to the top of the water table, at changes in soil lithology and at depths of field screen detected contamination. Samples will be collected by driving a split spoon sampler containing standard brass tubes into undisturbed soil beneath the augers. All sampling equipment will be decontaminated between sample collection and bore holes by steam cleaning and/or standard three bucket wash method with TSP. The soil samples will be sealed, labeled and placed on ice for transportation to a state certified laboratory using standard chain of custody procedures. All samples collected from each boring will be analyzed for total lead, TPH as gasoline and for BTEXM using approved EPA or CDHS methods.

Drilling and soil sampling will be performed under the supervision of Michael Mulhern, a California Registered Engineering Geologist (No. 1507). A log of each boring will be prepared and soil will be classified based on the USCS classification system. Soil samples will be screened with a photo ionization detector for hydrocarbons. All soil cuttings and decontamination water will be stored onsite in DOT approved (17H) 55-gallon drums labeled as pending laboratory analysis. The soil will be disposed of in an appropriate manner based on analytical results.

The boring will be abandoned by grouting to the surface with cement/bentonite or bentonite. The abandoned boring will be sealed to the surface according to permit requirements.
Prior to initiation of drilling operations, all appropriate permits will be obtained. Underground Service Alert will be notified a minimum of two working days before drilling in order to avoid damaging underground utilities.

5.2 Groundwater Sampling Protocol

Groundwater will be sampled during drilling process by driving a hydropunch sampling probe below the static water level or to a depth where hydrostatic pressure is sufficient for sampling. The hydropunch tool will then be withdrawn approximately 18" to allow the sampling chamber to fill. After the chamber is full, the hydropunch will be withdrawn. The water collected will be transferred into appropriate containers in a manner that minimizes aeration. The samples will then be sealed with no head space, labeled and placed on ice for transportation under standard chain of custody procedures to a state certified laboratory for analysis. Groundwater samples will be tested for the same constituents listed in the soil sampling protocol.

All produced decontamination water and soil cuttings will be stored onsite in DOT approved 55 gallon drums which will be labeled as pending lab analysis. Decontamination water will be disposed of in an appropriate manner based on laboratory analytical results.

6.0 HEALTH AND SAFETY PLAN

See Appendix A for the health and safety plan.

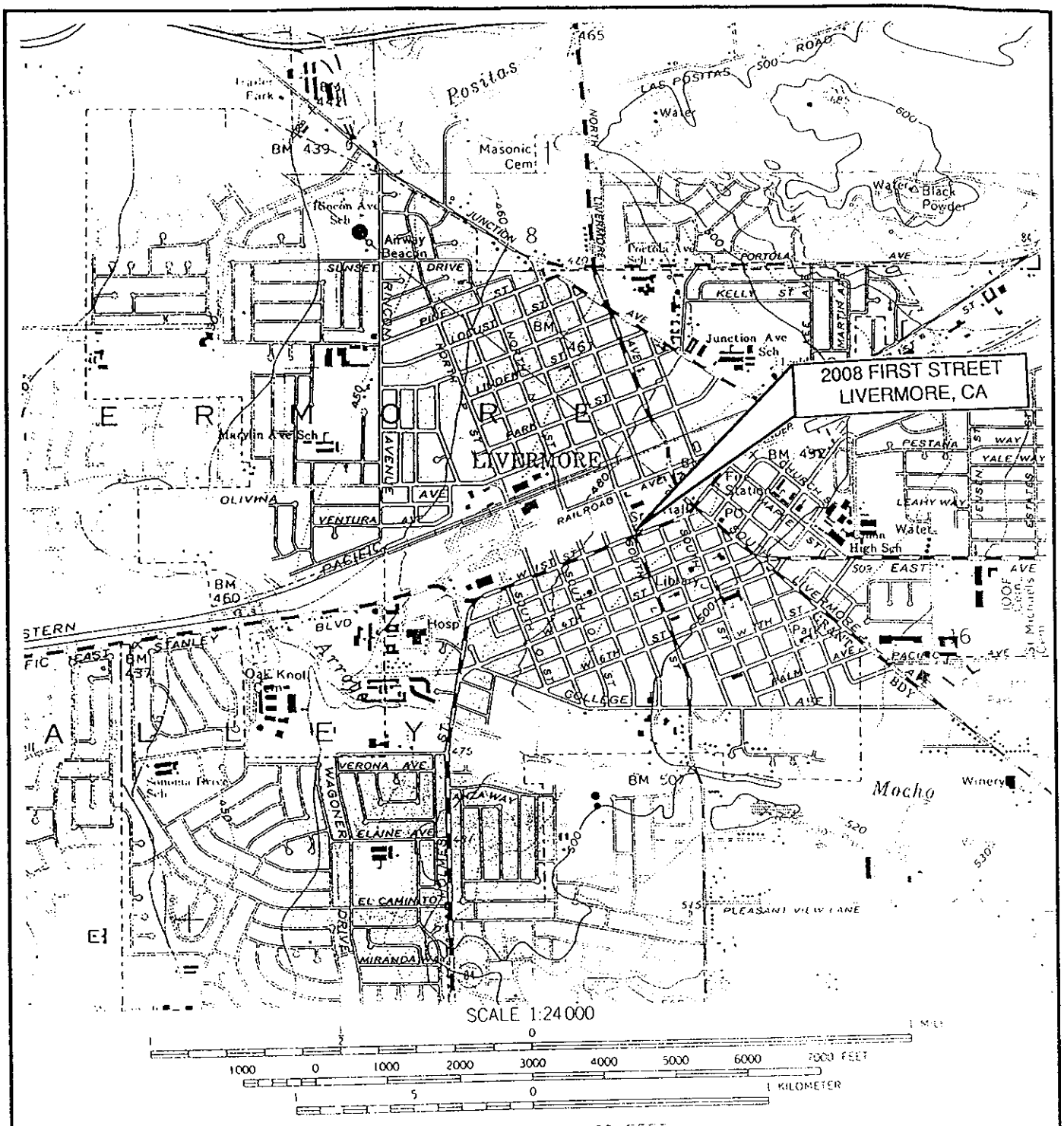
6.0 TIME SCHEDULE

Site assessment work will begin within 15 days after permits are issued.
The ACEMD will be notified 48 hours prior to beginning work at the site.

Respectfully Submitted,

Richard W. Pilat
Senior Engineer
Program Director
Remediation Service, Int'l.

FIGURES

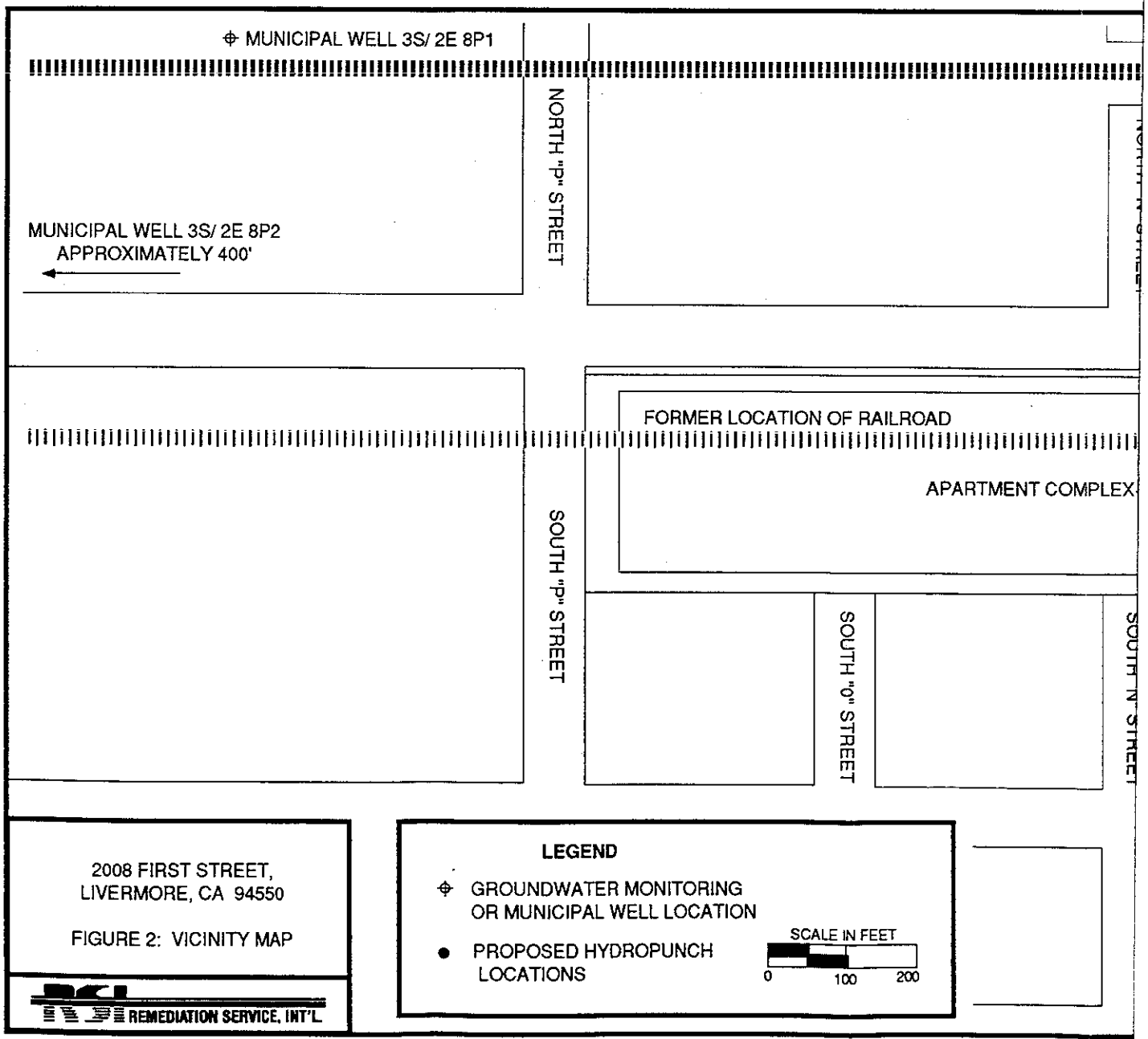


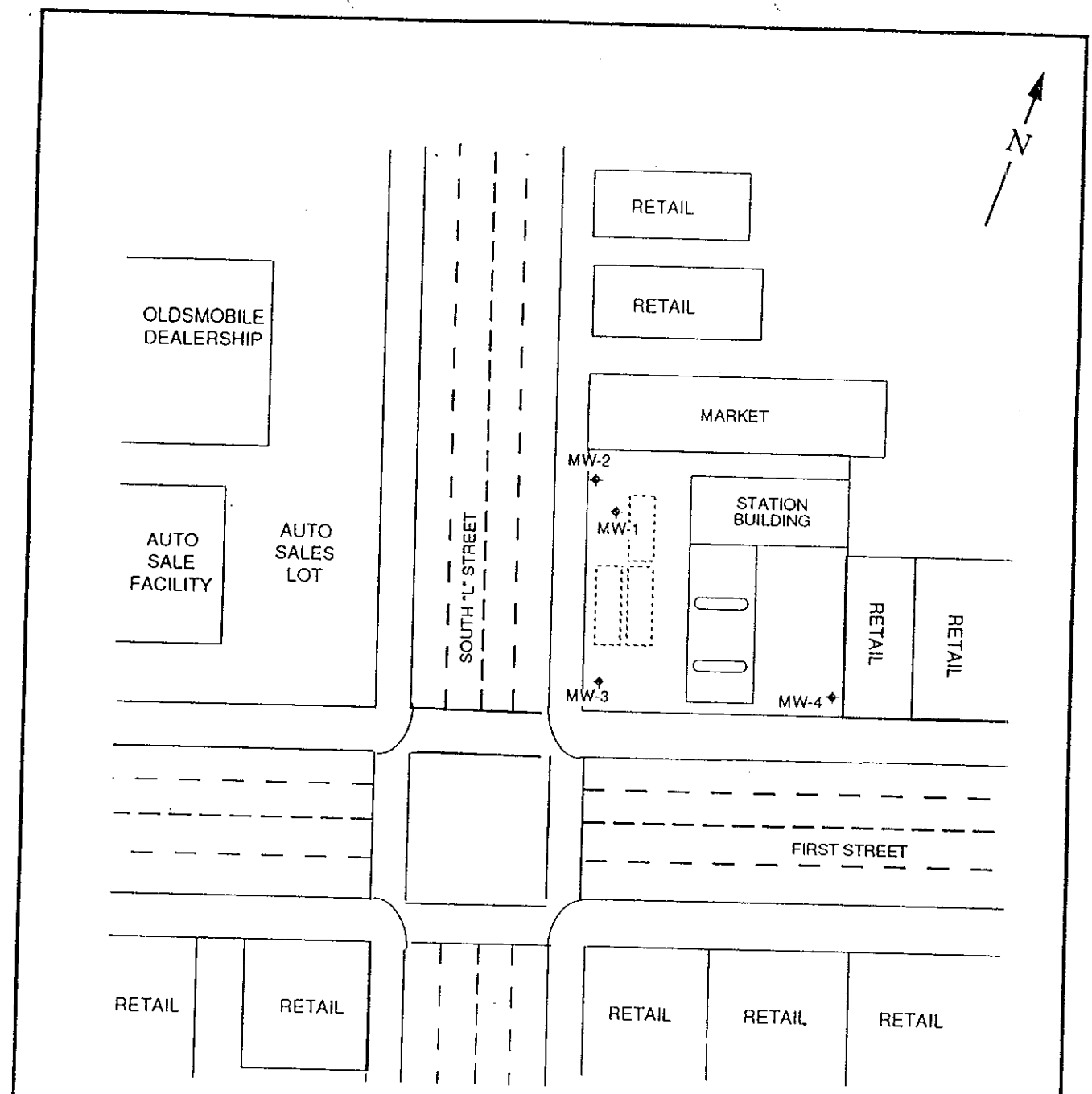
FROM U.S.G.S. 7.5' TOPOGRAPHIC QUADRANGLE "LIVERMORE, CALIFORNIA," 1961, PHOTOREVISED 1980

2008 FIRST STREET,
LIVERMORE, CA

FIGURE 1: LOCATION MAP

RSI - REMEDIATION SERVICE, INT'L


MUNICIPAL WELL 3S/ 2E 8P1
NORTH "P" STREET
MUNICIPAL WELL 3S/ 2E 8P2
APPROXIMATELY 400'
FORMER LOCATION OF RAILROAD
APARTMENT COMPLEX
SOUTH "P" STREET
SOUTH "O" STREET
2008 FIRST STREET,
LIVERMORE, CA 94550
FIGURE 2: VICINITY MAP
REMEDIATION SERVICE, INT'L
LEGEND
GROUNDWATER MONITORING
OR MUNICIPAL WELL LOCATION
PROPOSED HYDROPUNCH
LOCATIONS
SCALE IN FEET
0
100
200



MAP NOT TO SCALE.
SURVEYED DISTANCE BETWEEN WELLS, 1" ≈ 50'.

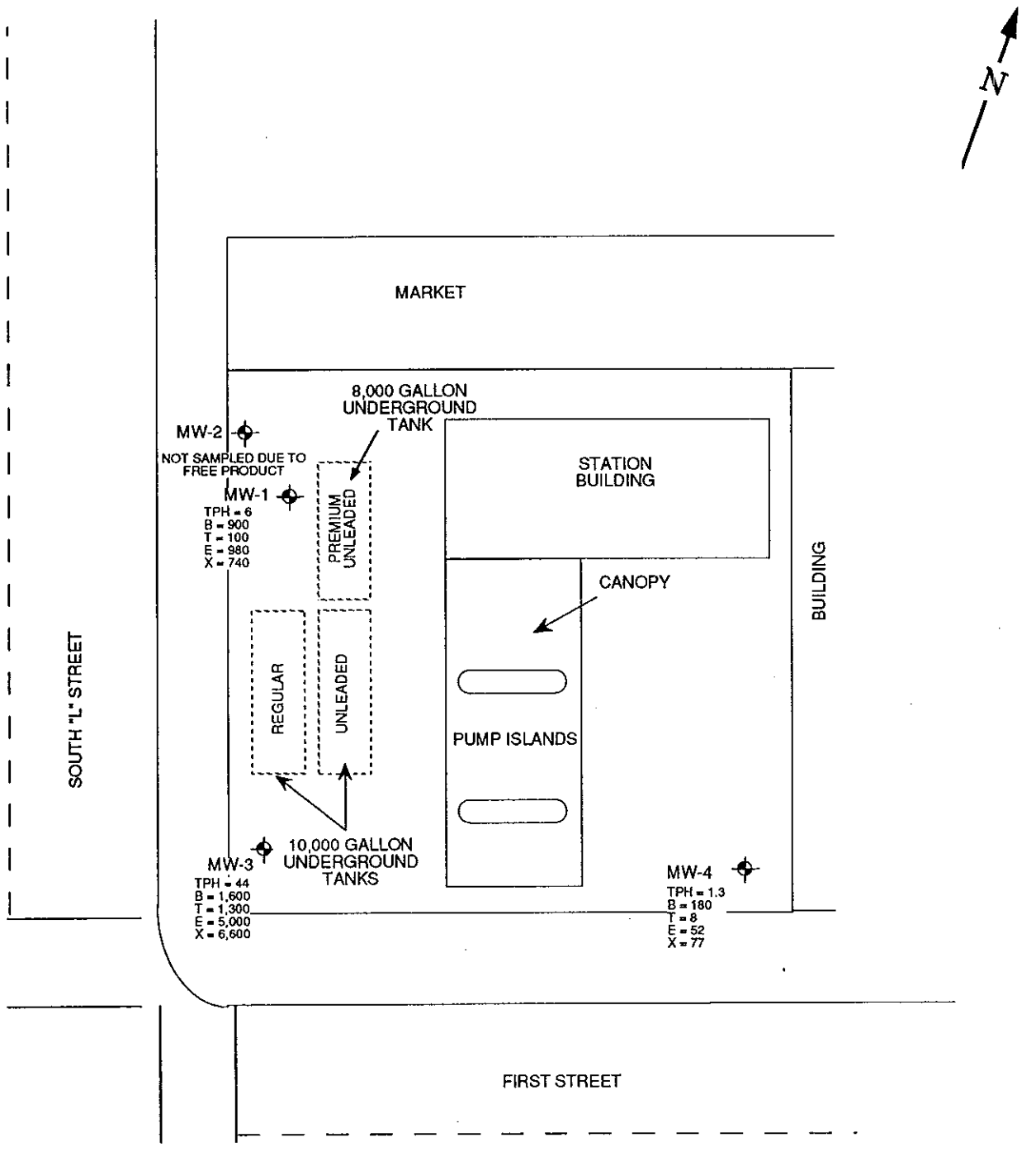
LEGEND

⌖ GROUNDWATER MONITORING WELL LOCATION

2008 FIRST STREET,
LIVERMORE, CA 94550

FIGURE 2: VICINITY MAP

REMEDIATION SERVICE, INT'L



MAP NOT TO SCALE.
SURVEYED DISTANCE BETWEEN WELLS, 1" = 25'.

LEGEND

⌖ GROUNDWATER MONITORING WELL LOCATION WITH TPH CONCENTRATIONS IN mg/L and BTEX CONCENTRATIONS IN µg/L

2008 FIRST STREET,
LIVERMORE, CA 94550

FIGURE 4: PLOT PLAN WITH
GROUNDWATER ANALYTICAL RESULTS
MARCH 13, 1995

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TABLES

TABLE 1
SUMMARY OF ANALYTICAL RESULTS FROM SOIL SAMPLES
COLLECTED DURING WELL SOIL BORING

2008 FIRST STREET
LIVERMORE, CA

Results are in mg/Kg

SAMPLE DATE	SAMPLE DESCRIPTION	TPH	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	TOTAL LEAD
6/16/94	MW-4 @ 40'	ND	0.009	17	0.006	0.02	12
6/17/94	MW-3 @ 10'	390	0.4	2.2	2.2	11	150
6/17/94	MW-3 @ 15'	390	0.3	1.9	2.2	11	190
6/17/94	MW-3 @ 20'	ND	0.17	0.012	0.006	0.081	12
6/17/94	MW-3 @ 30'	300	ND	1.6	1.7	8.3	14
6/17/94	MW-3 @ 35'	130	1.1	3.6	1.1	4.9	12
6/17/94	MW-3 @ 45'	230	0.62	3.8	2.5	10	28
6/17/94	MW-3 @ 50'	100	0.35	0.82	0.56	2	7
6/17/94	MW-3 @ 55'	270	0.47	3	1.9	6.7	24
6/17/94	MW-2 @ 40'	77	0.36	2.5	1.1	7	10
6/18/94	MW-2 @ 45'	28	0.3	0.16	0.4	0.97	8
6/18/94	MW-2 @ 50'	6	0.04	0.08	0.07	0.3	9
6/18/94	MW-2 @ 60'	2	0.045	0.18	0.041	0.23	14

TPH = Total petroleum hydrocarbons as gasoline
TPH & BTEX analyzed by EPA methods 8015M & 8020, respectively.
Total Lead analyzed by EPA method 7420.

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TABLE 2
SUMMARY OF LABORATORY ANALYSIS OF GROUNDWATER

2008 FIRST STREET
LIVERMORE, CA

TPH & BTEX Concentrations are in µg/L (parts per billion)
Total Lead Concentrations are in mg/L (parts per million)

WELL #	DATE SAMPLED	TPH	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	TOTAL LEAD	SOLUBLE LEAD
MW-1	8/2/90	24,000	1,300	1,300	400	2,700	NA	NA
	10/10/91	2,200	430	170	100	290	NA	NA
	1/8/92	1,200	200	120	30	150	NA	NA
	5/11/93	960	66	8	41	90	NA	NA
	9/21/93	1,900	311	118	33.8	112	NA	NA
	5/22/94	10,000	690	1100	340	1200	NA	NA
	8/26/94	13,000	290	690	120	670	NA	ND
MW-2	6/19/94	290,000	18,000	36,000	4,600	26,000	0.016	0.016
	8/26/94	NS*	NS*	NS*	NS*	NS*	NA	NS*
MW-3	6/19/94	11,000	640	580	270	790	ND	ND
	8/26/94	41,000	1,600	2,300	330	1,800	NA	ND
MW-4	6/19/94	810	12	25	ND	22	0.007	0.007
	8/26/94	850	37	51	9.5	35	NA	ND
Title 22 CCR MCL		—	1	—	680	1,750	—	—

TPH = Total petroleum hydrocarbons (gasoline)
NA = Not analyzed for this constituent.
ND = Not detected at or above minimum detection limit.
NS* = Not sampled due to the presence of free product.

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TABLE 3
GROUNDWATER ELEVATION DATA

2008 FIRST STREET
LIVERMORE, CA

Measurements are in feet.

Well	Date Measured	Depth to Free Product	Depth to Water*	Free Product Thickness	Corrected Depth to Water Table **	Well Head Elevation*	Water Table Elevation*	Change in Elevation
MW-1	9/22/88	—	60.50	—	—	487.00	426.50	
	8/2/90	—	43.10	—	—		443.90	17.40
	10/10/91	—	66.39	—	—		420.61	-23.29
	1/8/92	—	68.72	—	—		418.28	-2.33
	5/11/93	—	34.76	—	—		452.24	33.96
	9/21/93	—	38.70	—	—		448.30	-3.94
	5/22/94	—	33.57	—	—		453.43	5.13
	6/19/94	—	37.51	—	—	484.07	446.56	—
	8/25/94	—	43.27	—	—		440.80	-5.76
MW-2	6/19/94	—	38.15	—	—	483.86	445.71	—
	8/25/94	43.47	44.13	0.66	43.63		440.23	-5.48
MW-3	6/19/94	—	37.15	—	—	484.24	447.09	—
	8/25/94	—	42.31	—	—		441.93	-5.16
MW-4	6/19/94	—	37.49	—	—	485.04	447.55	—
	8/25/94	—	42.25	—	—		442.79	-4.76

*Elevations are in feet above mean sea level.
Well Head Elevations to top of casing surveyed 6/94 to City of Livermore Bench Mark: street monument located at the intersection of 1st. street and S. L street.
Bench Mark elevation = 483.82', based on USGS Sea Level Datum 1929.
**Corrected depth = Depth to water - (Free product thickness x Specific gravity of product).

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APPENDICES

APPENDIX A

HEALTH & SAFETY PLAN

INTRODUCTION

The following Health and Safety Plan has been developed to protect persons in contact with the equipment and to ensure a safe operation during drilling and sample collection.

1. Facility Background:

The subject property an operating gasoline service station located at 2008 First Street, Livermore, California. A garage/office building and two pump islands are located on the site and asphalt/concrete covers the rest of the property. Potential hydrocarbon contamination is being assessed. Contamination could exist in both the liquid and/or gaseous states as a result of inadvertent releases during handling and storage of gasoline.

Soils Samples collected during soil boring in June, 1994 revealed TPH concentrations ranging from ND to 390 mg/Kg (parts per million). The highest BTEX concentrations in the soil were 1.1 mg/Kg benzene, 17 mg/Kg toluene, 2.5 mg/Kg ethyl benzene and 11 mg/Kg total xylenes. Lead was also reported at a concentration of 190 mg/Kg (MW-3 @ 15).

Analytical results of groundwater samples collected in August, 1994 reported a TPH concentration of 41,000 µg/L (ppb) and a benzene concentration of 1,600 µg/L. Free product was found in well MW-2.

2. Key Personnel and Responsibilities:

Richard W. Pilat is the Project Manager.
Michael I. Orman is the Company Safety Officer
Remediation Service, Int'l. (RSI) Telephone no. (805) 644-5892
8:00 AM to 5:00 PM, Monday - Friday.

The designated Safety Officer will be the Project Manager. The Safety Officer has full authority to correct any problems or shut down the operation, if required, to maintain safety.

Supervising Geologist: Mr. Michael Mulhern,
Registered Engineering Geologist #1507,
State of California
Telephone no. (805) 644-5892

3. **Proposed Work:**

The proposed work will characterize soil and groundwater conditions at this site. This will be accomplished by the installation and sampling of six soil borings. A hydropunch sample will also be collected from each boring. The borings will be drilled at the approximate locations shown on Figure 3.

4. **Hazardous Materials and Other Job Hazards:**

A. Hydrocarbons from waste oil are the greatest potential known chemical hazard.

These hydrocarbons are usually identified as:

a. Total Petroleum Hydrocarbons (TPH)
b. Benzene
c. Ethyl-benzene
d. Toluene
e. Xylenes

Chemical concentrations may very from zero to free product. ACGIH Gasoline TLV 300 ppm, STEL 500 ppm.

B. Benzene has been designated as a human carcinogen by the International Agency for Research on Cancer and presents the greatest health hazard. Benzene is highly toxic when it is inhaled or ingested. Exposure to high levels of benzene can result in damage to a person's liver, kidney's, central nervous system, and/or blood cells. The concentration of benzene in most commercial grades of gasoline is two percent by volume. ACGIH TLV 1 ppm, STEL 5 ppm

C. Toluene can cause damage to a person's liver, kidneys and/or central nervous system if inhaled or ingested. ACGIH TLV 100 ppm, STEL 150 ppm

D. Xylenes can cause damage to a human's liver, kidneys, central nervous system and/or blood cells when it is inhaled or ingested. ACGIH TLV 100 ppm, STEL 150 ppm

E. Drilling operations will be conducted within a designated "restricted entry" area. Only persons directly involved with the drilling will be authorized to enter this area. The standard machinery safety practices will be followed. Underground Service Alert will be notified at least two working days before

starting work. The drill rig mast will be spaced at least 10 feet from all overhead power lines or a safe distance as indicated by the drillers.

F. All work will stop if an unknown substance is encountered onsite. If possible, a sample will be collected. A laboratory analytical scan will be done to identify the unknown substance and safety measures will be taken as necessary.

G. Heat stress is not expected to be a problem for personnel. Temperatures could range from approximately 60 degrees to 80 degrees Fahrenheit for the duration of the project. However, the following precautions will be taken:

a. All employees are trained in recognition of the health hazards and symptoms of heat stress.

b. Employees will take frequent breaks in a shady area with protective clothing removed. Decontamination procedures will be followed before leaving the work area.

c. Employees should drink liquids at each break.

H. Miscellaneous Health and Safety Risks: Five of the borings are located in the second lanes of South "L" Street and First Street. The drilling area will be marked off with cones, safety tape and barricades as prescribed in Manual of Traffic Control; a complete traffic control program will be implemented to caution and direct traffic around the immediate work area. Please refer to attached figures for cone locations and requirements for typical lane closure. A flag man will be utilized to stop traffic when anyone enters active roadway, during rig set up and traffic control set up, and during demobilization. Personnel will wear orange vests and will take extra precaution within traffic areas.

5. **Risk Assessment Summary:**

The potential risk of exposure to gasoline range hydrocarbons at this site is considered low. The site is completely paved with no open areas for potential volatilization of hydrocarbons.

The greatest risks are physical hazards due to the location of five of the boreholes on the second lanes of South "L" Street and First Street. Please refer to section 4H.

6. **Exposure Monitoring Plan:**

Onsite monitoring will be conducted with a HNU photoionization meter. The designated Safety Officer onsite will take regular ambient air readings within the breathing zone.

A wind direction indicator will also be present on site.

7. **Personal Protection Equipment:**

The most probable chemical exposure pathways are dermal contact and/or inhalation; ingestion is considered extremely unlikely.

The following protection equipment is to be utilized during drilling, sampling, or emergencies.

A. Personnel will wear safety glasses during sampling.

B. Nitrile gloves will be worn when there is a potential for contact with hazardous chemicals. Nitrile is the best material to use for dermal protection when dealing with a gasoline and water mixture.

C. Gasoline has an ACGIH TLV of 300 ppm and STEL 500 ppm. The potential to exceed these levels is possible. The odor threshold of gasoline is 10 ppm, which provides a safety margin to warn personnel before any TLV has been exceeded. Half-mask respirators with organic vapor cartridges (MSHA-NIOSH TC-23C-40 or equivalent) will be available and should be used if the odor becomes more noticeable.

If vapor concentrations exceed PID readings of 300 ppm over a 5 minute period, field activity will be terminated and the boring will be abandoned.

D. Tyveks (or equivalent) and PVC/nitrile boots are available if dermal exposure to air borne vapors/particulate or saturated soils increases. PID readings of 300 ppm for over 5 minutes and the presence of visible air borne dust will merit termination of field activity.

E. Hard hats will be worn when working around operating heavy machinery such as a drill rig.

F. Hearing protection will be available when heavy machinery is being operated.

8. **Work Zones and Security Measures:**

The area immediately surrounding the sample processing location and the drilling rig will be off limits to all unauthorized personnel. Traffic cones or plastic flagging tape will be used to delineate the restricted area as necessary.

9. **Decontamination Procedures:**

In the case of a small spill, the spilled product will be absorbed with clay absorbent or any other available and appropriate material. Upon completion of cleanup this material will be placed in a sealed labeled container compatible with the waste. The appropriate disposal method will be followed depending on the concentration of the contaminant. The Fire Department will be notified in event of a large spill.

All reusable equipment (gloves, boots, respirators) will be decontaminated by washing in a soapy solution. The drill augers will be decontaminated within an area set up to contain all effluent. The rinse waters will be disposed of in a method compatible with the contaminant concentrations. Disposable clothing and equipment, such as Tyveks and disposable gloves, will be placed in appropriate containers.

10. **Work Practices:**
A brief summary of safety precautions:

A. All employees will be trained in health and safety as per 29 CFR 1910.120

B. No eating, drinking, smoking or gum chewing in the work area.

C. All personnel have been instructed to wash hands and face, even if no direct contact occurs, before eating, drinking, smoking and leaving work.

11. **Standard Operating Procedures:**

A. **Instrument Calibration**
Prior to beginning work each day, the HNU photoionization detector will be calibrated with the cylinder of calibration gas supplied by the manufacturer. The detector will be calibrated according to the manufacturers' instructions.

B. **Fit Testing**
Each person working in a potentially contaminated zone should have his/her respirator fit-tested to assure that vapors cannot infiltrate past the edges of the respirator. A simple and readily available field test is to have the worker, wearing the respirator, inhale while cigarette smoke is blown toward the respirator; the worker should not be able to detect the odor of the smoke.

C. **"Buddy" System**
In situations where there is possible exposure to elevated levels of hydrocarbons, each team member will be instructed to be alert to behavior of other members which may indicate accidental overexposure.

12. **Emergency Procedures:**

A. If dermal contact occurs, the affected area should be flushed with tap water; distilled water should be used for flushing the eyes.

B. If vapors or fumes are inhaled, the affected person will be removed from the work area. If the person continues to feel dizzy or ill, she/he will be driven to the local hospital.

Emergency Responders:

A. **Local Hospital:** Valley Memorial Hospital
1111 E. Stanley Blvd.
Livermore, CA
(415) 447-7000
West on 1st Street approximately 1/2 mile, rt. on Stanley Blvd. (at Hansen Park), Hospital on left.

B. **Fire Department:** 911

C. **Local Environmental Health, Haz. Waste:**
Alameda County Health Care Services
Ms. Eva Chu, Haz. Mat. Specialist
(510) 271-4530

13. **Training Requirements:**

Our employees have received the 40 hour safety training as required under 29 CFR 1910.120 regulations.

14. **Record keeping:**

A. Training - A record will be maintained on each employee's training and respirator fit testing.
B. Employee Exposure - Potential exposures will be recorded and will include the location, time, potential contaminants and the concentrations.
C. Medical Records - These include field injuries and illness.
D. RSI periodically reviews the Health and Safety Plan for adequacy, and changes are made as necessary.

Mr. Richard W. Pilat
Program Director
Remediation Service, Int'l.

SIGNATURE PAGE

A morning safety meeting will be conducted for all personnel to discuss safety procedures and the day's planned operations. All employees on site will sign a master sheet indicating they have read the site safety plan.

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