TE
TOM EDWARDS & ASSOCIATES
ENVIRONMENTAL ENGINEERS

April 13, 1990

Ms. Katherine Chesick
Senior Hazardous Materials Specialist
Alameda County Health Department
80 Swan Way, Room 200
Oakland, California 94621

Dear Ms. Chesick,

Enclosed please find the Preliminary Site Investigation Workplan for Cavanaugh Motors in Alameda California. I've also attached to this letter a brief statement of qualifications for TEA personnel involved in this project. I want to thank you for granting an extension for submitting the workplan, and will wait for your approval prior to start of work.

If you should have any questions, please do not hesitate to call.

Sincerely,

C.M. Nielson-Cerquone

Chris Nielson-Cerquone
Associate

cc:

Mr. Dave Cavanaugh, Cavanaugh Motors
Mr. Jack Wurts, Testing and Technology
Mr. Lester Feldman, Regional Water Quality Control Board

91 MAY 23 AM 11:33

P.O. Box 418 • Pinole, CA 94564 • (415) 724-7751

KEY PERSONNEL

TOM EDWARDS, Principal

A.A. Business Administration, Contra Costa College
Certified OSHA Safety/Training Manager

Mr. Edwards has over twelve years of environmental management experience. His years of work in the environmental field have brought him experience in almost every area of environmental consulting. Mr. Edwards has managed numerous projects involving surface hazardous liquid spills, leaky underground storage tanks, site characterizations, hydrogeologic investigations, soil and groundwater remediations, and site closures. He has participated in the research and development of underground tank monitoring systems, surface skimmers and groundwater recovery systems now being used by many industries across the nation.

MARK YOUNGKIN, Associate

California Registered Geologist, RG 3888
California Registered Engineering Geologist, EG 1380
General Engineering Contractor, A - 556439
Registered Environmental Assessor, REA-00995

Mr. Youngkin has over thirteen years of environmental consulting experience. He has worked as a manager for several Bay Area consulting firms providing expertise in hydrogeologic investigations, preparing closure reports, construction inspection, engineering design, fault and landslide investigations, and hazardous material management. Mr. Youngkin is responsible for managing all projects requiring registration approval. His duties also include managing tank removal and tank abandonment projects.

CHRISTOPHER NIELSON-CERQUONE, Associate

B.S., Biology, Cortland State University, New York
M.S., Environmental Science, University of Montana, Missoula

Mr. Nielson-Cerquone has a strong background in environmental consulting. He has years of environmental experience dealing with contaminated soils and groundwater. Currently, he provides critical environmental knowledge on the fate of pollutants in various environments. He is responsible for the design, implementation and technical management of bioremediation and groundwater and vapor extraction treatment systems. Mr. Nielson-Cerquone has participated in large-scale petroleum hydrocarbon projects from initial investigation through site characterization, remedial design and implementation.

MICHAEL PRINCEVALLE, Associate

B.S., Soil Science, California Polytechnic State University
California Registered Environmental Assessor REA - 01022

Mr. Princevalle has over twelve years of environmental consulting experience. His years of service have brought him expertise in many aspects of environmental management. Mr. Princevalle provides expert management experience on underground tank closures, environmental assessments, and hazardous materials management projects. He is well versed in the maze of environmental laws, including SARA, RCRA, and CERCLA. Mr. Princevalle has also had experience in training companies and individuals on the safe handling, storage, and disposal of hazardous materials.

PRELIMINARY SITE INVESTIGATION WORKPLAN

Cavanaugh Motors
1700 Park Street
Alameda, California 94501

TEA Project No. 109001
April 13, 1990

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PRELIMINARY SITE INVESTIGATION WORKPLAN

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TE TOM EDWARDS & ASSOCIATES
ENVIRONMENTAL ENGINEERS

1.0 INTRODUCTION

Mr. Dave Cavanaugh of Cavanaugh Motors, has authorized Tom Edwards & Associates (TEA) to perform a preliminary site investigation of soil and groundwater in vicinity of a former 550 gallon, underground gasoline storage tank located at 1700 Park Street in Alameda, California. A site location map is presented in Figure 1.

This workplan was prepared to outline the steps TEA will perform in the investigation of soil and groundwater gasoline contamination at the subject property, as requested by the Alameda County Health Care Services Department (County) on January 31, 1990. This workplan was prepared in accordance with the Regional Water Quality Control Board (RWQCB) recommendations for Initial Evaluation and Investigation of Underground Tanks, dated June 2, 1988, Appendix A. The Alameda County Health Care Services Department (County), represented by Ms. Katherine Chesick, is the lead regulatory agency on this project.

1.1 Background/Site History

The property was developed in 1948 by Mr. William S. Bean, who owned the building until 1981. In 1981, Mr. Bean sold the property to Dave and Lee Cavanaugh, the present owners. The property has always been operated as an Auto Dealership.

The underground gasoline storage tank was installed in 1948. The tank was constructed of steel, and had a capacity of 550 gallons. The tank was used from 1948 to August, 1989 for the storage of leaded and unleaded gasoline. Inventory records were kept daily. No product loss was ever discovered prior to August, 1989.

The tank was tested by a certified underground tank testing company on August, 1986, June, 1988, and August, 1989. The tank was taken out of service in August, 1989 as soon as a leak was discovered in the filler tube. At a maximum, the filler tube was leaking for a period of one year, as the tank tested tight in 1988. Tank testing records are presented in Appendix A.

2.0 SITE DESCRIPTION

2.1 Tank Removal

The tank, dispenser, and associated piping were removed on December 15, 1989, by Scott Corporation. TEA was not involved in the removal of the tank, and conclusions made in this workplan are based on records kept by Scott Corporation and Cavanaugh Motors.

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When the tank was removed, it was free of any holes, cracks, and was in good condition. Damage to the filler tube could not be assessed because the tube was mutilated at the time of removal. Evident contamination was discovered in soil below and around the tank. The tank was transported and disposed of by H & H Environmental Services. Permits required for the removal of the tank and an Unauthorized Release Report are presented in Appendix B. The hazardous materials manifest filed to remove the rinsate from the tank and the tank itself are presented in Appendix C.

Native soils around the tank were fairly uniform sands of fine to medium coarseness according to representatives at Scott Corporation. The back fill and native soil around the tank were heavily stained. A strong gasoline odor was present. It is unknown how much gasoline was released into the subsurface at this time. No groundwater was encountered.

Three soil samples were collected beneath the tank as shown in Figure 2. The soil samples were collected from a backhoe bucket and each sample was collected eight feet below grade and analyzed for total petroleum hydrocarbons (TPH) as gasoline and benzene, toluene, ethylbenzene, and total xylene, (BTEX). TPH concentrations ranged from 3700 milligrams per kilogram (mg/kg) to 7900 mg/kg. Analytical results and the chain-of-custody are presented in Appendix D.

The excavation is currently backfilled with pea gravel to just below grade. To minimize the mixing of clean pea gravel with contaminated soil left in the hole, a plastic liner was placed in the excavation prior to back filling. Approximately ten to fifteen cubic yards were removed during the unearthing of the tank and excavation of contaminated soil to eight feet below grade. The soil is currently stockpiled on site and covered with plastic. The Bay Area Air Quality Management Notification Form is presented in Appendix E.

2.2 Site Hydrogeology

The site is located roughly one half mile west of the Oakland estuary. The site is located geologically on the Alameda Bay Plain, which consists of alluvial fans, alluvial cones and Merritt Sand. The Merritt Sand Formation is the main geologic unit in the upper aquifer and characteristically consists of unconsolidated beach and near shore deposits. Groundwater in the Merritt Sand Formation is unconfined, brackish in quality and not suitable for domestic use. Groundwater is thought to be roughly ten to fifteen feet below grade at Cavanaugh Motors. According to Regional Water Quality Control Board fuel leak records, the

groundwater gradient at Regal Exxon directly across Park Street is thought to mimic the topography, flowing north to northeast in the direction of the Oakland estuary.

A site map is shown on plate 1. Wells shown are proposed and are currently not located on site. The dispenser, vent line and product line were all close to the tank and were removed when the tank was removed. Power and telephone are supplied to the dealership from overhead on the southwest end of the building. Natural gas is also supplied to the dealership at the southwest corner of the service and repair shop. A shallow electrical line runs from the building to an outlet near Buena Vista Avenue. A shallow storm drain which collects water from the roof lies along the western edge of the building. No sewer lines are located in the area of the tank excavation.

2.3 Potential Sources of Contamination Near This Site

There are four potential sites of contamination within a half-mile of Cavanaugh Motors. Because two of the four sites are directly adjacent to Cavanaugh Motors, there is a significant potential for adverse environmental impact from off site contamination. Below is a brief description of the environmental problems associated with each site.

Alameda Collision, 1911 Park Street

A gasoline tank was removed from this property in June, 1988. Soil and groundwater were impacted. The maximum groundwater TPH and BTEX concentrations were 1.7 ppm and 0.5 ppb, respectively. The site is thought to be downgradient of Cavanaugh Motors.

* Mobil, 1541 Park Street FC - Modification

In October, 1987, underground gasoline tanks were removed from the property. Soil and groundwater were impacted. The maximum soil TPH concentration was 3200 ppm when the tanks were removed. Subsequent groundwater sampling has shown a maximum TPH gasoline concentration of 2,000 ppb. This property is thought to be upgradient of Cavanaugh Motors.

* Good Chevrolet, 1630 Park Street Not in Depth.

Two tanks were removed from this site in October, 1986. The maximum soil TPH concentration as gasoline from the samples collected beneath the tank was 2,500 ppm. Groundwater has been shown to contain as much as 7,600 ppb TPH as gasoline. This site is less than a block west of Cavanaugh Motors and may be directly upgradient.

* Regal Exxon, 1725 Park Street ~ Dep Ref - unassigned

The tanks were removed and replaced in June, 1988. Heavy soil and groundwater contamination was discovered when the new tanks were installed. Subsequent groundwater sampling has shown TPH as gasoline concentrations as high as 110,000 ppb. However, no free product has been found. This site is located directly across the street from Cavanaugh Motors and may be adversely impacting the soil and groundwater below the auto dealership.

3.0 WORKPLAN

Soil and groundwater contamination will be investigated. A controlled excavation will be performed in an attempt to remove the remaining contaminated soil. Three monitoring wells will be installed to evaluate groundwater impact and to determine the hydraulic gradient. A Preliminary Investigation Report will be prepared providing the results of the work performed and recommendation for further investigation or remediation. All work will be performed under the direct supervision of a California Registered Engineering Geologist. The work to be performed is as follows:

3.1 Soils Investigation

1. Excavate contaminated soil. Most of the contaminated soil should be removable. Significant lateral migration of gasoline is not expected at this site because native soil has a high permeability and gasoline would move rapidly downward under the force of gravity. However, if extreme contamination or a shallow interbedded clay layer of lower permeability are present, lateral migration may be significant and the excavation of all the contaminated soil may not be feasible. In this case, soil excavation will stop and further soil investigation will be performed by exploratory borings. Soil will not be excavated below the water table.

   To minimize the number of soil samples collected while excavating, a bacharach 503 sniffer will be used to obtain head space TPH vapor samples. Significant vapor readings will positively identify areas where additional excavation is required. When the meter detects no TPH vapors, a soil sample will be collected and analyzed for TPH as gasoline, BTEX and total lead. Four sidewall samples and one bottom sample will be collected at a minimum. The soil vapor

readings will be kept on a field notebook and presented in the Preliminary Investigation Report. The soil will be temporarily stored on site for later disposal or remediation. Currently, the client is considering possible remedial techniques and may chose to obtain a permit for aeration or to dispose of the soil at a registered landfill.

3.2 Groundwater Investigation

1. Install three 4-inch monitoring wells at the locations shown in Plate 1. The location of the monitoring wells was chosen to effectively determine the hydraulic gradient, while at the same time best evaluating the groundwater impact and potential off site sources of contamination. The exact location of the well near the former tank may change slightly based on results of the soils excavation. However, the location of this well will remain downgradient and within 10 feet of the former gasoline tank.

2. Collect soil samples every five feet to the depth of groundwater during monitoring well installation. Soil samples will be analyzed for total petroleum hydrocarbons (TPH) as gasoline, benzene, toluene, ethylbenzene, and xylene (BTEX) and total lead following RWQCB guidelines. The samples will be analyzed by a California Certified Laboratory and transported under proper chain-of-custody to assure the authenticity of each sample. Standard turn-around-time is 10 working days for written results.

3. Collect a water sample from each monitoring well. Each well will be developed and purged prior to sampling. The groundwater samples will be analyzed for TPH as gasoline (extraction method 5030) BTEX (8020), and total lead.

4. Survey each well. This will be performed by a California certified surveyor.

5. Determine the hydraulic gradient on site.

A Preliminary Site Assessment report providing results of the soils excavation and groundwater investigation will be prepared following the work outlined herein. Recommendations will be made concerning additional soil and/or groundwater investigations, groundwater monitoring, or remediation at that time.

4.0 QUALITY ASSURANCE

4.1 Soils Investigation

4.1.1 Soil Sampling

Soil samples will be collected during the excavation of contaminated soil from the bucket of a backhoe. The collection procedure will involve taking a clean brass tube and inserting the tube into undisturbed soil in the bucket. The exact depth and location of each sample will be determined in the field by a TEA geologist. Each sample sent to the lab will be labelled, sealed, capped, and taped to minimize the loss of volatile hydrocarbon constituents. The samples will be placed on ice to maintain a temperature of 4 degrees centigrade or less during transport to the lab. All samples will be sent to a California Certified Analytical Laboratory under chain-of-custody to ensure accurate sample representation.

4.1.2 Field Screening of Soil Samples

Soil excavated with the backhoe will be periodically monitored with a bacharach 503 sniffer to minimize the number of soil samples collected for analyses and to prevent the removal of clean soil. A TPH reading will be taken with a Bacharach 503 sniffer by placing a quantity of soil in a zip-lock bag. The probe of the meter will be placed in the bag and a TPH vapor concentration will be obtained. If contamination is present, soil excavation will continue and no sample will be collected for analyses. However, if no hydrocarbon vapors are detected a soil sample will be collected and analyzed for TPH as gasoline, BTEX, and total lead. The soil vapor readings will be kept on a field notebook and presented in the Preliminary Investigation Report.

4.2 Groundwater Investigation

4.2.1 Soil Sampling

Soil samples will be collected every five feet to the depth of water during monitoring well installation. The bottom brass tube of the three encased in the sampler will be sent for analyses. The middle brass tube will be used for logging purposes and head space analysis. The top brass tube is intended to catch the soil falling back into the borehole. Each sample sent to the lab will be sealed, capped, and taped to minimize the loss of volatile hydrocarbon constituents. The samples will be placed on ice to maintain a temperature of 4 degrees centigrade or less during

transport to the lab. All samples will be sent to a California Certified Analytical Laboratory under chain-of-custody to ensure accurate sample representation.

4.2.2 Boring Methods

The monitoring wells will be drilled using at a minimum a 10-inch hollow-stem, continuous-flight auger in accordance with ASTM Method D 1452-80, Standard Practice for Soil Investigations and Sampling by Auger Borings. Soil samples will be collected at the appropriate depths below ground surface using a 2-inch California modified split-tube sampler. The lithology, soil classification and other pertinent data will be recorded on a field boring log in accordance with ASTM Method D-2488-84 for visual description and identification of soils. The auger and associated drilling equipment will be steamed cleaned prior to installation of each monitoring well. Cuttings and spoils from the borings will be stockpiled and covered on site for remediation. A sample may be collected for sieve analysis if a production well is required for groundwater remediation.

4.2.3 Field Screening of Soil Samples

In addition to collecting soil samples every five feet, a TPH reading will be taken with a Bacharch 503 sniffer at each sampling depth. This reading will be noted on the appropriate boring log form.

4.2.4 Well Installation

Each monitoring well will be installed immediately after the boring has been advanced to the appropriate depth. The PVC well screen and casing will be placed inside the auger. Filter pack will be poured between the outside of the well casing and the inside of the auger to a height of two feet above the well screen. A bentonite seal will be constructed over the filter pack using bentonite pellets. The bentonite pellets will be charged by soaking them with distilled water. A bentonite cement slurry will be used to seal each well to a height two feet below ground surface. A final sacrete cement slurry will be used to cement a locking well security box over each monitoring well. The security box will be finished to grade. A locking, water-tight cap will also be installed at the top of each monitoring well casing. The surface will be finished such that the ground slopes away from each well casing to prevent surface runoff into the well. Each well will be labeled and permitted with the Alameda County Flood Control District.

4.2.5 Well Development

The wells will be developed after the seals have been allowed to set for at least 48 hours. Well development will be accomplished by removing a minimum of 10 well volumes of water. All water brought to the surface will be placed in barrels until analytical results are known. Contaminated groundwater will be treated on site or properly disposed of under manifest.

4.2.6 Water Level Measurements and Groundwater Sampling

Prior to sampling the wells, a depth to groundwater measurement will be obtained and recorded. If free product is expected, the depth of the free product will be determined using a clean, transparent bailer. Each well will be purged by extracting a minimum of three well volumes. In a well with poor recharge, the well will be purged dry and sampled only after 80% of the groundwater has been recharged to the well. The field parameters pH, conductivity, and temperature will be monitored during the purging process to ensure actual aquifer groundwater is flowing to the well. The purging data will be recorded in a field notebook.

A groundwater sample will be obtained from each well using a clean bailer or appropriate pneumatic sampling device. The groundwater samples will be collected in appropriate containers supplied by the analyzing laboratory. Samples to be analyzed for volatile petroleum constituents will be collected in 40 ml voa's and filled completely. The samples will be sealed, labelled with a sample tag having a unique sample number, project number, date, time, and sample location. The samples will be placed on ice to maintain a temperature of 4 degrees centigrade or less during transport to the lab. All samples will be sent to a California Certified Analytical Laboratory under chain-of-custody to ensure accurate sample representation.

5.0 SITE SAFETY

A Site Safety Plan is presented in Appendix F. Site safety will be practiced throughout this project. All personnel working at this site will have a minimum 40 hours OSHA site safety training (29 Code of Federal Regulations, Section 1910.120). During soil sampling and drilling operations level C protection will be available, and hard hats and steel toed boots will be worn. Fire extinguishers will be on site during the excavation of soil in the event of a fire. An adequate distance between the boom of the drill rig and any overhead wiring or

obstructions will be maintained at all times. Air monitoring of the breathing zone will be maintained during the excavation of soil. All field work will be overseen by an assigned site safety officer having an additional 8 hours of supervisory site safety training above the minimum 40 hours.

6.0 SCHEDULE

Work outlined in this workplan will begin after Ms. Katherine Chesick of the Alameda County has given approval to proceed. The Preliminary Investigation Report will be prepared and submitted to the lead regulatory agency within 45 days of commencement of work.

7.0 REMARKS AND SIGNATURES

This workplan was prepared in accordance with current industry standards and practice. The work described herein will be performed under the supervision of a California Registered Engineering Geologist.

Prepared by:

C. M. Nielson-Cerquone

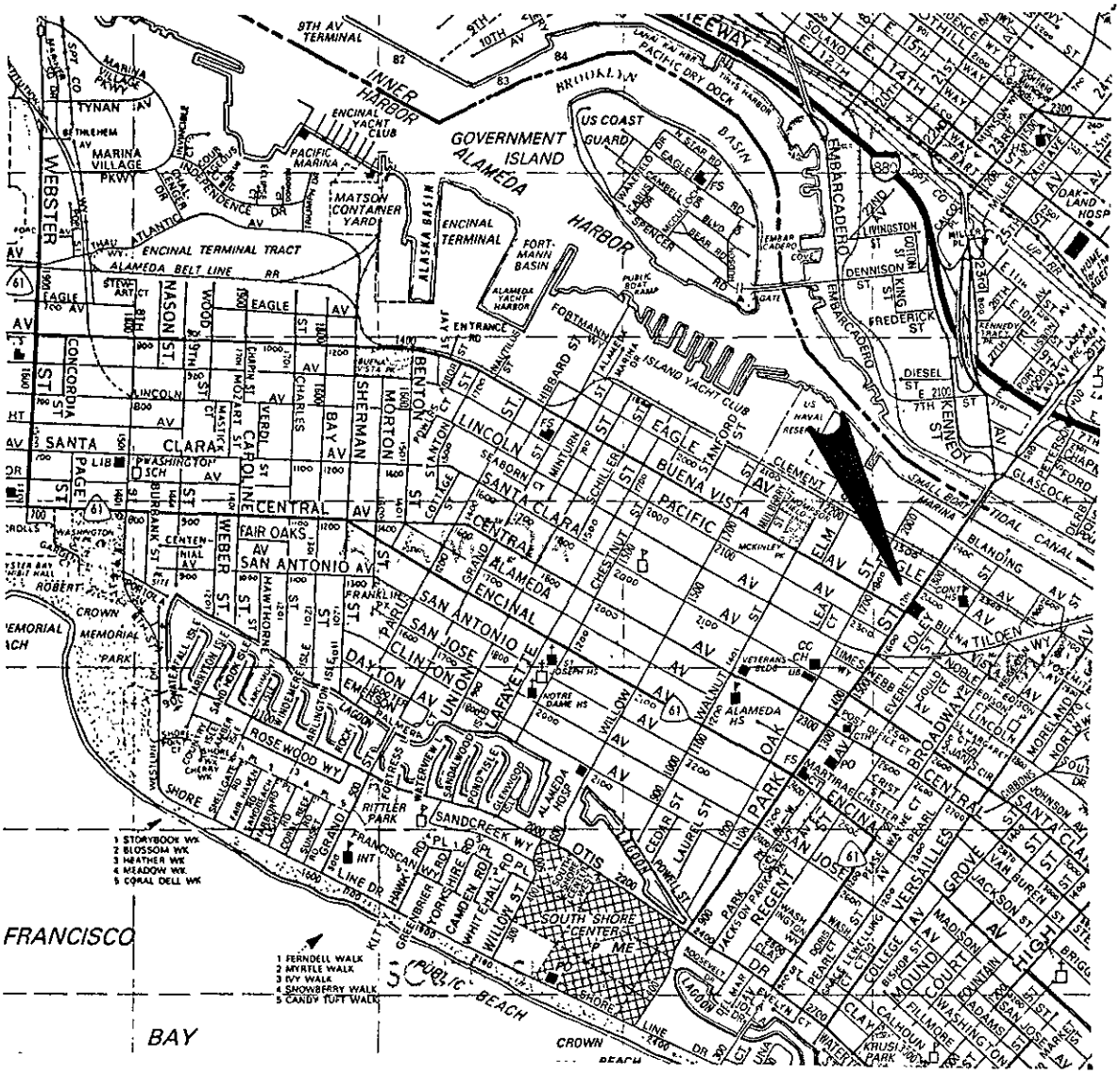
Chris Nielson-Cerquone
Associate

Approved by:

Mark Youngkin

Mark Youngkin
California Registered Engineering Geologist No. 1380

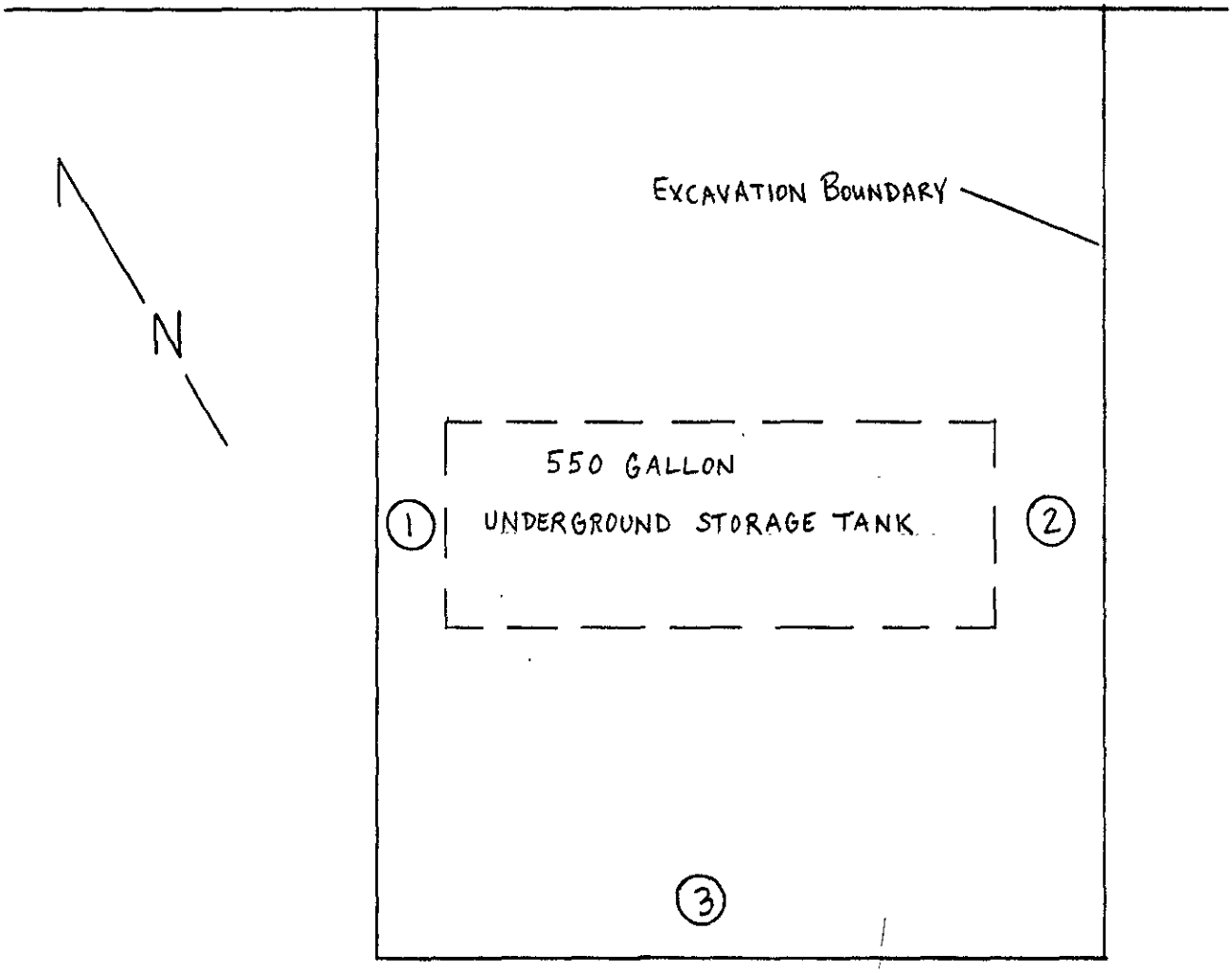
Figures



TOM EDWARDS & ASSOCIATES

TITLE: SITE LOCATION MAP					
PROJECT NAME/NUMBER: CAVANAUGH MOTORS, 109001					
SITE LOCATION: 1700 PARK STREET, ALAMEDA, CA.					
REV. #	DATE	DRAWN BY	CHECKED BY	APPROVED BY	SCALE
FIG. 1	4-6-90	CNC	CNL	CNC	NONE

SERVICE AND REPAIR SHOP



EXPLANATION

NOTE:

ALL SAMPLES COLLECTED 8.0' BELOW GRADE. (WORK PERFORMED BY SCOTT COMPANY)

(#) SOIL SAMPLE NUMBER AND LOCATION (see ANALYTICAL RESULTS - APPENDIX D).

TOM EDWARDS & ASSOCIATES

TITLE: SOIL SAMPLE LOCATION MAP					
PROJECT NAME/NUMBER: CAVANAUGH MOTORS, 109001					
SITE LOCATION: 1700 PARK ST., ALAMEDA, CA.					
REV. #	DATE	DRAWN BY	CHECKED BY	APPROVED BY	SCALE
FIG. 2	4-2-90	CNC	MY	MY	1" = 3.0'

Appendix A

TESTING AND TECHNOLOGY
25 L COMMERCIAL
NOVATO, CA 94949
(415) 883-5070

INVOICE # 2534 TEST DATE 8/4/89

COMPANY NAME CAVANAUGH MOTORS PHONE # 523-5246

MAIL ADDRESS 1700 PARK STREET ALAMEDA 94501

TANK ADDRESS SAME

CONTACT NAME DAVE CAVANAUGH PHONE #

TANK INFORMATION

TANK #	ONE	TWO
PRODUCT	WASTE OIL	UNLEADED
CAPACITY	300	550
CONSTRUCTION	STEEL	STEEL
DIAMETER	48"	45"
FILL PIPE	40"	44"
TANK BOTTOM DEPTH	88"	89"
PUMP TYPE	NONE	SUCTION
VAPOR RECOVERY	NONE	NONE
TANK WATER	0	3"

TEST INFORMATION

TEST EQUIPMENT	AINLAY	AINLAY
FULL SYST/TANK ONLY	FULL	FULL
DATE/TIME FILLED	8/3/89	8/3/89
GALLONS TO TOP OFF	120 +	-
GROUND WATER DEPTH	10' +/-	10' +/-
TANK BTM PRESSURE		

RESULTS

PASS - FAIL	PASS	FAIL
LOSS RATE	-.0277	-.1360

COMMENTS

TESTING AND TECHNOLOGY

TEST REPORT AINLAY TANK `TEGRITY TESTER

COMPANY CAVANAUGH MOTORS INVOICE # 2534 DATE 8/4/89

TANK # 1 PRODUCT WASTE OIL CAPACITY 300

FULL SYSTEM TEST HEIGHT +28" LOW LEVEL TEST HEIGHT

MEASURED API GRAVITY 32 TEMP 71 ADJUSTED API 31.2 COE .00044846

TEMP SHIFT FACTOR .1345 OTHER 1 GALLON ADDED AT 12:00 TO OVERFILL TANK

1) VOLUME CHANGE DUE TO TEMPERATURE VARIATION

	START	15 MIN	30 MIN	45 MIN	END	SHIFT (+/-)	(X)	AVG SHIFT (+/-)
TIME	12:45	13:00	13:15	13:30	13:45			
TOP TEMP	73.42	73.44	73.44	73.44	73.42	0	(.25)	0
MIDDLE T.	70.86	70.91	70.93	70.95	70.97	+.11	(.50)	+.0550
BOTTOM T.	69.38	69.38	69.36	69.35	69.33	-.05	(.25)	-.0125
						WEIGHTED AVERAGE TEMPERATURE SHIFT		+.0425

CALCULATIONS FOR VOLUME CHANGE DUE TO TEMPERATURE
TEMP SHIFT FACTOR .1345 (X) WEIGHTED SHIFT +.0425 = +.0057 GAL

2) VOLUME CHANGE DUE TO LEVEL VARIATIONS
EXACT AMOUNT OF LIQUID LOST & REPLACED (-) OR
GAINED & REMOVED (+) TO RESTORE ORIGINAL LEVEL = -.0380 GAL

3) NET VOLUME CHANGE
LEVEL CHANGE -.0220 (MINUS) TEMPERATURE CHANGE +.0057 = -.0277 GAL

4) RESULTS
CERTIFIED TIGHT YES AT TEST HEIGHT OF +28" LOSS RATE (GPH) -.0277 (+/-)

TESTED BY John Dager
JOHN DAGER

(5) COMMENTS

THE DATA FOR THIS TEST MEETS NFPA 329 STANDARDS. THE EQUIPMENT USED TO GENERATE THIS DATA IS ABLE TO DETECT A PRODUCT LOSS AT THE RATE OF 0.05 GALLONS PER HOUR. THIS IS NOT TO BE CONSTRUED AS AN ALLOWABLE LEAK RATE, BUT RATHER AS AN ACCURACY TOLERANCE OF THE TESTING EQUIPMENT WHICH ALLOWS FOR THE MANY VARIABLES INVOLVED. TAT GUARANTEES ONLY THAT THE DATA FOR THIS REPORT MEETS NFPA CRITERIA ON THE DAY OF THIS TEST. TAT MAKES NO WARRANTY OF TANK AND/OR LINE FITNESS NOR DO WE ASSUME

TESTING AND TECHNOLOGY

TEST REPORT AINLAY TANK 'TEGRITY TESTER

COMPANY CAVANAUGH MOTORS INVOICE # 2534 DATE 8/4/89

TANK # 2 PRODUCT UNLEADED CAPACITY 550

FULL SYSTEM TEST HEIGHT +28" LOW LEVEL TEST HEIGHT

MEASURED API GRAVITY 57.5 TEMP 75 ADJUSTED API 55.7 COE .00066035

TEMP SHIFT FACTOR .3632 OTHER 1 GALLON ADDED AT 09:30 TO OVERFILL TANK

1) VOLUME CHANGE DUE TO TEMPERATURE VARIATION

	START	15 MIN	30 MIN	45 MIN	END	SHIFT (+/-)	(X)	AVG SHIFT (+/-)
TIME	10:15	10:30	10:45	11:00	11:15			
TOP TEMP	77.44	77.47	77.47	77.49	77.51	+.06	(.25)	+.0150
MIDDLE T.	75.49	75.50	75.53	75.55	76.56	+.07	(.50)	+.0350
BOTTOM T.	73.99	73.01	73.01	73.01	73.04	+.05	(.25)	+.0125
					WEIGHTED AVERAGE TEMPERATURE SHIFT			+.0625

CALCULATIONS FOR VOLUME CHANGE DUE TO TEMPERATURE
TEMP SHIFT FACTOR .3632 (X) WEIGHTED SHIFT +.0625 = +.0227 GAL

2) VOLUME CHANGE DUE TO LEVEL VARIATIONS
EXACT AMOUNT OF LIQUID LOST & REPLACED (-) OR
GAINED & REMOVED (+) TO RESTORE ORIGINAL LEVEL = -.1360 GAL

3) NET VOLUME CHANGE
LEVEL CHANGE -.1360 (MINUS) TEMPERATURE CHANGE +.0227 = -.1587 GAL

4) RESULTS
CERTIFIED TIGHT NO AT TEST HEIGHT OF +28" LOSS RATE (GPH) -.1587 (+/-)

TESTED BY John A Dager
JOHN DAGER

(5) COMMENTS
FILL PIPE ADAPTOR LEAKING PROFUSELY. COULD NOT REMOVE TO REPAIR.

THE DATA FOR THIS TEST MEETS NFPA 329 STANDARDS. THE EQUIPMENT USED TO GENERATE THIS DATA IS ABLE TO DETECT A PRODUCT LOSS AT THE RATE OF 0.05 GALLONS PER HOUR. THIS IS NOT TO BE CONSTRUED AS AN ALLOWABLE LEAK RATE, BUT RATHER AS AN ACCURACY TOLERANCE OF THE TESTING EQUIPMENT WHICH ALLOWS FOR THE MANY VARIABLES INVOLVED. TAT GUARANTEES ONLY THAT THE DATA FOR THIS REPORT MEETS NFPA CRITERIA ON THE DAY OF THIS TEST, TAT MAKES NO WARRANTY OF TANK AND/OR LINE FITNESS NOR DO WE ASSUME RESPONSIBILITY FOR ANY LEAKAGE WHICH MAY HAVE OCCURRED AS A RESULT OF THIS TEST.

| TAT |

TESTING AND TECHNOLOGY
1027 Alabama St. * P.O. Box 4570 * Suite 104
Vallejo, Ca. 94590 * (707) 648-5014
S.F. Office * (415) 472-0375

PRELIMINARY TEST REPORT

INVOICE # 2288

COMPANY Cavanaugh Motors DATE 6-17-88

ADDRESS 1700 Park St. Alameda

CONTACT PERSON Dave Cavanaugh PHONE 523-5246

TANK #	PRODUCT	CAPACITY	LOSS/GAIN RATE	DOES/DOES NOT PASS
ONE	Waste Oil	300 gal	-.0001 gal/hr	Pass
TWO	Unleaded	550	-.0354	Pass
THREE				
FOUR				
FIVE				

TESTED BY John Godchaux

THE DATA FROM THIS TEST MEETS N.F.P.A. 329 STANDARDS OF VOLUME VARIATIONS OF (+) OR (-) 0.05 GALLONS PER HOUR ACCURACY UNDER TEST CONDITIONS ON THE DATE OF THE TEST. NO OTHER WARRANTY OF TANK AND/OR LINE FITNESS IS MADE BY TESTING AND TECHNOLOGY CO.

Data Chart for Tank System Tightness Test

petro tite TANK TESTER

PLEASE PRINT

1. OWNER Property [X] Tank(s) [X]

Cavanaugh Motors 1200 Park St. Alameda
Name — Address — Representative — Telephone

Same
Name — Address — Representative — Telephone

2. OPERATOR

Same
Name — Address — Telephone

3. REASON FOR TEST (Explain Fully)

State requirment

4. WHO REQUESTED TEST AND WHEN

Name — Title — Company or Affiliation — Date

Address — Telephone

5. WHO IS PAYING FOR THIS TEST?

Company, Agency or Individual — Person Authorizing — Title — Telephone

Billing Address — City — State — Zip

Attention of: — Order No — Other Instructions

6. TANK(S) INVOLVED

Identify by Direction	Capacity	Brand/Supplier	Grade	Approx. Age	Steel/Fiberglass
South Side of Driveway	550	Shell	Regunleaded	n/a	Steel

7. INSTALLATION DATA

Location	Cover	Fills	Vents	Siphones	Pumps
South/west of Building	Concrete	3"	1½	n/a	Suction Gilbarco
North inside driveway Rear of station, etc.	Concrete, Black Top, Earth, etc.	Size, Titefill make, Drop tubes, Remote Fills	Size, Manifolded	Which tanks?	Suction, Remote, Make if known

8. UNDERGROUND WATER

Depth to the Water table _____"

Is the water over the tank? [ ] Yes [ ] No

9. FILL-UP ARRANGEMENTS

Tanks to be filled _____ hr _____ Date Arranged by _____
Name — Telephone

Extra product to "top off" and run TSTT. How and who to provide? Consider NO Lead.

Terminal or other contact for notice or inquiry _____
Company — Name — Telephone

10. CONTRACTOR, MECHANICS, any other contractor involved

Scott Co.

11. OTHER INFORMATION OR REMARKS

Additional information on any items above. Officials or others to be advised when testing is in progress or completed. Visitors or observers present during test etc.

12. TEST RESULTS

Tests were made on the above tank systems in accordance with test procedures prescribed for petro tite TANK TESTER as detailed on attached test charts with results as follows:

Tank Identification	Tight	Leakage Indicated	Date Tested
South/west/Gas	Yes	+.005	8-15-86

13. CERTIFICATION

This is to certify that these tank systems were tested on the date(s) shown. Those indicated as "Tight" meet the criteria established by the National Fire Protection Asociation Pamphlet 329.

12-2-86
Date

1030
Serial No. of Thermal

4141811218
Timothy Silveira
Technicians

Scott Co, Timothy A. Silveira
Testing Contractor or Company. By (Signature)

Address

Appendix B

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621
PHONE NO. 415/271-4320

Fire Department must witness removal of all Underground Tanks, and all State and County Requirements must be met.

By [signature] Date 11-11-87

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

1. Business Name Cavanaugh Motors
   Business Owner Dave Cavanaugh
2. Site Address 1700 Park Street
   City Alameda Zip 94501 Phone (415)523-5250
3. Mailing Address Same
   City _____ Zip _____ Phone _____
4. Land Owner Same
   Address _____ City, State _____ Zip _____
5. EPA I.D. No. CAD-982019994
6. Contractor Scott Co.
   Address 1919 Market
   City Oakland, CA 94607 Phone (415)834-2333
   License Type A-Gen. Eng. ID# 184480
7. Consultant N/A
   Address N/A
   City N/A Phone N/A

PLEASE TYPE OR PRINT

LOG NO. | COMM CODE 088 | PERMIT NO. 89-728

JOB ADDRESS: 1700 PARK STREET

APPLICATION FOR PLUMBING/MECHANICAL PERMIT

CITY OF ALAMEDA
Central Permit Office
2263 Santa Clara Avenue
Alameda, CA 94501
748-4563

DESCRIPTION OF WORK: REMOVAL OF UNDERGROUND STORAGE TANK AT CAVANAUGH MOTORS 1700 PARK ST.

VALUATION OF WORK $: N.T.E. $4,990.00

CONTACT NAME: JAY GROH

CONTACT PHONE: 834-2333 XTN. 3379 (Michael 3455)

OWNER
TRACT | BLOCK PAGE | LOT PARCEL
NAME: DAVE CAVANAUGH 523-5250
ADDRESS: 1700 PARK STREET PHONE
CITY: ALAMEDA STATE: CA. ZIP: 94501

ARCHIT./ ENGR.
NAME: N/A LICENSE
ADDRESS: X PHONE
CITY STATE ZIP

CONTRACTOR
I hereby affirm that I am licensed under provisions of Chapter 9 commencing with section 7000 of Division 3 of the Business and Professions Code, and my license is in full force and effect.
LICENSE No. AND CLASS: #184982 A-GEN. ENG. | CITY BUSINESS LICENSE No.: #1185
CONTRACTOR NAME: SCOTT CO.
ADDRESS: 1919 MARKET STREET
CITY: OAKLAND STATE/ZIP: CA 94607 PHONE: 834-2333
SIGNATURE: [signature]

OWNER-BUILDER DECLARATION
I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 — commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500.):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law).

☐ I am exempt under Sec. _____
B&P.C. for this reason N/A

Owner's Signature _____ Date _____

RECEIVED NOV 9 1989

WORKERS' COMP. INSURANCE DECLARATION
I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab C.).
Policy No. WC 76-490 210968 Company ARGONAUT INSURANCE
☒ Certified copy is hereby furnished
☐ Certified copy is filed with the city Central Permit Office
Applicant SCOTT CO. Date 11-9-89

(This section need not be completed if the permit is for one hundred dollars ($100) or less).

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California.

Applicant _____ Date _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LENDER
I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.)
Lender's Name N/A
Lender's Address _____

APPLICANT
I certify that I have read this application and state that the information given is true and correct. I agree to comply with all local ordinance and state laws relating to building construction and I make this statement under penalty of law. I hereby authorize representatives of the city/county to enter upon the above mentioned property for inspection purposes. NOTICE! This permit will expire by limitation if work is not started in 180 days or if work is abandoned for more than 180 days. Do not conceal or cover any construction until the work is inspected and the inspection is recorded on the Building Inspection Card. All inspection requests are required 24 hours in advance of the inspection, 748-4563, 8:30 - 10:00 a.m.

☒ Contractor
☒ Owner
☐ Agent X _____
Signature of Contractor, Owner or Agent

ITEMS	NO.	FEE	TOTAL
PLUMBING			
Basins		$ 6.00	
Baths		6.00	
Catch Basin		6.00	
Closets		6.00	
Dishwasher		6.00	
Drinking Fountain		6.00	
Fire Sprinklers		30.00	
Floor Drain		6.00	
Floor Sinks		6.00	
Garbage Disposal		6.00	
Gas Lines/Meters		6.00	
Gas Outlets		2.00	
Gas Range		6.00	
Gas Test		4.00	
Hot Tub/Spa		60.00	
Lawn Sprinklers		10.00	
Leaders Rain Water		6.00	
Sewer Abandonment		14.00	
Sewer Extension/Replacement		20.00	
Sewer Repair		10.00	
Showers		6.00	
Sinks		6.00	
Solar System		38.00	
Sumps		30.00	
Storage Tanks	1	20.00	20.00
Toilet		6.00	
Vault Toilet		20.00	
Washing Machine/Dryer		6.00	
Water Heater Res/Comm		6.00/10.00	
Water Lines/Meters		6.00	
MECHANICAL			
Air Conditioning Equip.		10.00/20.00	
Boiler		20.00	
Control Change		6.00	
Convectors		4.00	
Dryer Res/Comm.		6.00/10.00	
Fans and Blowers		10.00	
Fireplace		4.00	
Flues		4.00	
Furnace		10.00	
Heaters		10.00	
Hoods Res./Comm		4.00/30.00	
Panels and Coils		4.00	
Registers		2.00	
Vents Bath/Kitchen		4.00	
ISSUANCE FEE		6.00	6.00

Sub-Total Fees	$ 26.00
AB 941 Fee	5.00
SMIP Fee	$ 23.50
Microfiche Fee	$ 23.00
Total Fees	$ 54.50

APPLICATION RECEIVED
DATE 11/9/89 SIGNED [signature]

APPROVAL
DATE 11/9/89 SIGNED [signature]

ISSUED
DATE 11/9/89 SIGNED [signature]

White: Office Copy — Yellow: Applicant's Copy

THIS CARD MUST BE POSTED ON THE PREMISES AND PLACED SO AS TO BE SEEN FROM THE STREET

CITY OF ALAMEDA, Building Inspection Office

DATE 12/1/89 VALUATION$ 4,990 — BLDG. PERMIT # ______ PLMG/MECH PERMIT # 89-7278

FORMS ______
REQUIRED BEFORE POURING CONCRETE

VAULT TOILET ______

PRELIMINARY GROUND PLUMBING ______

FINAL GROUND PLUMBING ______

ROUGH ELECTRIC ______

ROUGH PLUMBING ______

ROUGH HEATING & VENTILATING ______

SUB FLOOR ______

FRAME ______

INSULATION ______

ABOVE APPROVALS REQUIRED BEFORE INTERIOR LATHING OR COVERING

DO NOT OCCUPY STRUCTURE UNTIL CERTIFICATE OF OCCUPANCY HAS BEEN ISSUED.

JOB Removal of Underground Storage Tank

ADDRESS 1700 Park St.

OWNER Dave Cavanaugh

CONTRACTOR Scott Co.

WILLIAM C. NORTON BY [signature]
BUILDING OFFICIAL

INTERIOR LATH ______
REQUIRED BEFORE PLASTERING OR TAPING

EXTERIOR LATH ______
REQUIRED BEFORE STUCCO

DESIGN REVIEW ______

INSULATION CERTIFICATE ______

TRACT CONDITIONS ______

P.U.D. CONDITIONS ______

FINAL ELECTRIC ______

FINAL - FIRE DEPT. OK 12.15.89
[signature]

FINAL PLUMBING gas tank 550 gal
removal finish 12-15-89

FINAL HEATING & VENTILATING ______

FINAL BUILDING ______

DO NOT CALL FOR FINAL INSPECTION UNTIL OTHER ITEMS HAVE BEEN ISSUED

CERTIFICATE OF OCCUPANCY ISSUED ______

BY ______

REMARKS ______

NOTE: ALL INSPECTION REQUESTS ARE REQUIRED 24 HOURS IN ADVANCE

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY ☐ YES ☒ NO

HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? ☐ YES ☒ NO

FOR LOCAL AGENCY USE ONLY
I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFTY CODE.
SIGNED _____ DATE _____

REPORT DATE: M 12 M 0 D 6 D 9 Y 0 Y

CASE #:

REPORTED BY

NAME OF INDIVIDUAL FILING REPORT: David M. Cavanaugh

PHONE: (415) 523-5246

SIGNATURE:

REPRESENTING ☒ OWNER/OPERATOR ☐ REGIONAL BOARD ☐ LOCAL AGENCY ☐ OTHER _____

COMPANY OR AGENCY NAME: CAVANAUGH MOTORS, INC.

ADDRESS: 1700 (STREET) Park Street (CITY) Alameda (STATE) CA (ZIP) 94501

RESPONSIBLE PARTY

NAME: CAVANAUGH MOTORS, INC. ☐ UNKNOWN

CONTACT PERSON: David M. Cavanaugh

PHONE: (415) 523-5246

ADDRESS: 1700 Park Street (STREET) Alameda (CITY) CA (STATE) 94501 (ZIP)

SITE LOCATION

FACILITY NAME (IF APPLICABLE): CAVANAUGH MOTORS, INC.

OPERATOR: David M. Cavanaugh

PHONE: (415) 523-5246

ADDRESS: 1700 Park Street (STREET) Alameda (CITY) Alameda (COUNTY) 94501 (ZIP)

CROSS STREET: Buena Vista

IMPLEMENTING AGENCIES

LOCAL AGENCY — AGENCY NAME — CONTACT PERSON — PHONE ( )

REGIONAL BOARD — PHONE ( )

SUBSTANCES INVOLVED

(1) NAME: Unleaded Gas — QUANTITY LOST (GALLONS): _____ ☒ UNKNOWN

(2) _____ ☐ UNKNOWN

DISCOVERY/ABATEMENT

DATE DISCOVERED: M 12 M 1 D 5 D 8 Y 9 Y

HOW DISCOVERED: ☐ INVENTORY CONTROL ☐ SUBSURFACE MONITORING ☐ NUISANCE CONDITIONS ☐ TANK TEST ☒ TANK REMOVAL ☐ OTHER _____

DATE DISCHARGE BEGAN: M M D D Y Y ☒ UNKNOWN

HAS DISCHARGE BEEN STOPPED? ☒ YES ☐ NO IF YES, DATE: M 12 M 1 D 5 D 8 Y 9 Y

METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY)
☐ REMOVE CONTENTS ☐ REPLACE TANK ☐ CLOSE TANK
☐ REPAIR TANK ☐ REPAIR PIPING ☐ CHANGE PROCEDURE
☒ OTHER tank removal

SOURCE/CAUSE

SOURCE OF DISCHARGE: ☐ TANK LEAK ☒ UNKNOWN ☐ PIPING LEAK ☐ OTHER

CAUSE(S): ☐ OVERFILL ☐ RUPTURE/FAILURE ☐ SPILL ☐ CORROSION ☒ UNKNOWN ☐ OTHER

CASE TYPE

CHECK ONE ONLY
☒ UNDETERMINED ☐ SOIL ONLY ☐ GROUNDWATER ☐ DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALL

CURRENT STATUS

CHECK ONE ONLY
☐ NO ACTION TAKEN ☐ PRELIMINARY SITE ASSESSMENT WORKPLAN SUBMITTED ☐ POLLUTION CHARACTERIZATION
☐ LEAK BEING CONFIRMED ☒ PRELIMINARY SITE ASSESSMENT UNDERWAY ☐ POST CLEANUP MONITORING IN
☐ REMEDIATION PLAN ☐ CASE CLOSED (CLEANUP COMPLETED OR UNNECESSARY) ☐ CLEANUP UNDERWAY

REMEDIAL ACTION

CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)
☒ CAP SITE (CD) ☐ CONTAINMENT BARRIER (CB) ☐ VACUUM EXTRACT (VE)
☐ EXCAVATE & DISPOSE (ED) ☐ EXCAVATE & TREAT (ET) ☐ NO ACTION REQUIRED (NA) ☐ OTHER (OT) _____
☐ REMOVE FREE PRODUCT (FP) ☐ PUMP & TREAT GROUNDWATER (GT) ☐ TREATMENT AT HOOKUP (HU)
☐ ENHANCED BI ☐ REPLACE SUP ☐ VENT SOIL (VS)

COMMENTS

Leak report

Appendix C

Form Approved OMB No. 2050—0039 (Expires 9-30-91).
Please print or type. (Form designed for use on elite (12-pitch typewriter).

Toxic Substances Control Division
Sacramento, California

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

88402579

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD982019984
Manifest Document No.: 02579
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: CAVANAUGH MOTORS, 1700 PARK ST, ALAMEDA, CA 94501
4. Generator's Phone: (415) 523-5246

A. State Manifest Document Number: 88402579
B. State Generator's ID

5. Transporter 1 Company Name: HYDRO-CHEM SERVICES, INC
6. US EPA ID Number: CAD980814594
C. State Transporter's ID
D. Transporter's Phone: 415 ...

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: GIBSON OIL REFINERY, 2 N.D. COMMERCIAL RD, BAKERSFIELD, CA 93308
10. US EPA ID Number: CAD980883177
G. State Facility's ID
H. Facility's Phone: 805 323-2178

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. CALIFORNIA REGULATED WASTE ONLY - TANK RINSATE	001	TT	00150	G	State 241 / EPA/Other NONE
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above: 99% WATER, 1% GASOLINE

K. Handling Codes for Wastes Listed Above: a. b. c. d.

15. Special Handling Instructions and Additional Information: GLOVES, GOGGLES, PPE AS REQUIRED

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
[illegible]	[signature]	1/2/1/89

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
RUSS W. ALLEN	[signature]	1/2/1/89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

Do Not Write Below This Line

YELLOW - GENERATOR RETAINS

Please print or type. (Form designed for use on elite (12-pitch typewriter). Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD 9 8 2 0 1 9 9 9 8 — Manifest Document No.: 0 0 0 0 1
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
CAVANAUGH MOTORS
1700 Park Street
Alameda, CA 94501

4. Generator's Phone (415) 523-5250

A. State Manifest Document Number: 89493050

B. State Generator's ID

5. Transporter 1 Company Name: H & H Ship ServiceCCompany
6. US EPA ID Number: CAD 0 4 7 7 1 1 6 8
C. State Transporter's ID: 003765
D. Transporter's Phone (415) 543-4835

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
H & H Ship Service Company
220 China Basin Street
San Francisco, CA 94107

10. US EPA ID Number: CAD 0 0 4 7 7 1 1 6 8
G. State Facility's ID
H. Facility's Phone (415) 543-4835

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RESIDUE GASOLINE TANK (CALIFORNIA ONLY REGULATED WASTE)	001	TP	00550	P	State 512; EPA/Other
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above
PUMPED OUT 550 gallon tank last containing gasoline. Tank inerted with dry ice for transport.

K. Handling Codes for Wastes Listed Above
a. 01 b. c. d.

15. Special Handling Instructions and Additional Information

APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name — Signature — Month Day Year: 1 2 1 5 8 9

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DEBORAH KEYES — Signature: [signature] — Month Day Year: 1 2 1 5 8 9

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tony Garrett — Signature: [signature] — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

8022 A (1/88)
?00—22
(-88) Previous editions are obsolete.

Do Not Write Below This Line

YELLOW: GENERATOR RETAINS

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

GENERATOR / TRANSPORTER / FACILITY

ENVIRONMENTAL SERVICES
(DIVISION OF H&H SHIP SERVICE CO., INC.)

220 CHINA BASIN, P.O. BOX 77363 • SAN FRANCISCO, CA 94107 • DAY AND NIGHT: 543-4835

CERTIFICATE OF DISPOSAL

DECEMBER 19, 1989

H & H Ship Service Company hereby certifies to SCOTT COMPANY that:

1. The storage tank(s), sizes(s) ONE (1) 550 GALLON

   removed from the CAVANAUGH MOTORS

   facility at 1700 PARK STREET

   OAKLAND, CALIFORNIA

   were transported to H & H Ship Service Company, 220 China Basin Street, San Francisco, California 94107.

2. The following tank(s), H & H Job Number 2757 have been steamed cleaned, cut with approximately 2' x 2' holes, rendered harmless and disposed of as scrap metal.

3. Disposal site: LEVIN METALS CORPORATION, RICHMOND, CA.

4. The foregoing method of destruction/disposal is suitable for the materials involved, and fully complies with all applicable regulatory and permit requirements.

5. Should you require further information, please call (415) 543-4836.

Very Truly Yours,

Cleveland Valrey
Operations Coordinator

SCOTT CO.
JAN 02 1990
RECEIVED

Appendix D

WESTERN ENVIRONMENTAL SCIENCE & TECHNOLOGY

5 DEC 89 21 15

December 19, 1989
Sample Log 1224

Michael Schweickert-Stary
Scott Company
1919 Market Street
Oakland, CA 94607

Subject: Analytical Results for 3 Soil Sample(s)
Identified as: Cavanaugh Motors
Received: December 15, 1989

Dear Mr. Schweickert-Stary:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on December 19, 1989 and describes procedures used to analyze the samples.

Samples were received in brass sleeves that were sealed with aluminum foil and plastic endcaps. Each sample was transported and received under documented chain of custody, assigned a consecutive log number and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed for the following:

"BTEX" (EPA Method 8020/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)

Please refer to the following table(s) for summarized analytical results and contact us if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Submitted by:

Joel Kiff
Project Chemist

Approved by:

Robert G. Smith, Ph.D.
Laboratory Director

Western Environmental Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

December 19, 1989
Sample Log 1224

Table 1: 'BTEX' Results for 3 Soil Sample(s) Identified as Cavanaugh Motors
Received December 15, 1989

--all concentrations are units of mg/kg--

Sample	Benz.	Tol.	Eth.Benz.	Xyl.
# 1	65	350	140	650
# 2	56	350	160	870
# 3	17	130	75	430
Reporting Limit	.05	.05	.05	.05

Western Environmental Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

December 19, 1989
Sample Log 1224

Table 2: TPH Results for 3 Soil Sample(s) Identified as Cavanaugh Motors
Received December 15, 1989

--all concentrations are units of mg/kg--

Sample	TPH as Gasoline
# 1	7900
# 2	7200
# 3	3700
Reporting Limit	.5

Western Environmental Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

Western Environmental Science & Technology

1046 Olive Drive, Suite 3
Davis, CA 95616

916-753-9500
FAX #: 916-753-6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: J Scott Company

Phone #: 415-274-2733

Address: 1919 Market Street, Oakland CA.

FAX #:

Project Number:

Project Name: Cavanaugh Motors

Project Location: 1700 Park St Alameda CA

Sampler Signature:

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	ICE	NONE	OTHER	Sampling: DATE	TIME
# 1		1			X						X				
# 2		1			X						X				
# 3		1			X						X				

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
	X																
	X																
	X																

OTHER

SPECIAL HANDLING

RUSH SERVICE (12 hr) or (24 hr)

EXPEDITED SERVICE (48 hr) or (1 wk)

VERBALS/FAX

SPECIAL DETECTION LIMITS (SPECIFY)

Relinquished by:	Date	Time	Received by:
	12-15-97	17:13	
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:

Remarks:

Appendix E

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET
SAN FRANCISCO, CALIFORNIA 94109
415) 771-6000

REGULATION 8, RULE 40
Aeration of Contaminanted Soil and Removal of Underground Storage Tanks

NOTIFICATION FORM

☒ Removal or Replacement of Tanks
☒ Excavation of Contaminated Soil

SITE INFORMATION

SITE ADDRESS Cavanaugh Motors, 1700 Park Street
CITY, STATE, ZIP Alameda, California 94501
OWNER NAME Dave and Lee Cavanaugh
SPECIFIC LOCATION OF PROJECT 1700 Park Street, Alameda

TANK REMOVAL

SCHEDULED STARTUP DATE 12-15-89
VAPORS REMOVED BY:
[ ] WATER WASH
[✓] VAPOR FREEING (CO^2)
[ ] VENTILATION

CONTAMINATED SOIL EXCAVATION

SCHEDULED STARTUP DATE Late April 1990
STOCKPILES WILL BE COVERED? YES ✓ NO ____
ALTERNATIVE METHOD OF AERATION (DESCRIBE BELOW):
____
(MAY REQUIRE PERMIT)

CONTRACTOR INFORMATION

NAME Gene L. Failing Company (Excavating Contaminated Soil) CONTACT Gene Failing
ADDRESS 3924 Middletown Court PHONE (408) 246-4217
CITY, STATE, ZIP Campbell, CA 95008

CONSULTANT INFORMATION
(IF APPLICABLE)

NAME Tom Edwards & Associates CONTACT Tom Edwards
ADDRESS 13908 San Pablo Ave PHONE (415) 232-8366
CITY, STATE, ZIP San Pablo, CA 94806

FOR OFFICE USE ONLY

DATE RECEIVED ____ BY ____ (INIT.)
CC: INSPECTOR NO. ____ DATE ____ BY ____ (INIT.)
TELEPHONE UPDATE: CALLER ____ CHANGE MADE ____
BAAQMD N # ____

3/89

Appendix F

SITE SAFETY PLAN

Cavanaugh Motors
1700 Park Street
Alameda, California 94501

April 10, 1990
TEA Project No. 109001

1.0 INTRODUCTION

This document describes the health and safety procedures for the activities planned in performing a preliminary site investigation at Cavanaugh Motors, 1700 Park Street, Alameda, California 94501. All personnel from Tom Edwards & Associates and associated subcontractors will follow this plan. The prime responsibility for employee safety lies with each company for its own employees. It is expressly intended that all project work will comply with applicable sections of the California Occupational Health and Safety Code. All parties working on this project will maintain a general responsibility to identify and correct any health and safety hazards and are responsible for working in a safe manner.

2.0 PROJECT DESCRIPTION

The preliminary site investigation involves the excavation of gasoline contaminated soil and the evaluation of groundwater contamination. The work to be performed will include the excavation and stockpiling of contaminated soils and the installation of three monitoring wells. Soil samples will be collected during the excavation of contaminated soils along each sidewall in an attempt to determine the lateral extent of soil contamination. A soil sample may also be collected below the extent of contamination if the soil is not contaminated to the depth of groundwater. Soil samples will be collected every five feet during monitoring well installation. Groundwater samples will be collected from each well after the wells have been completed. All samples will be analyzed by a local certified laboratory under proper chain of custody for constituents as required by State and local agencies. The excavation will be back filled, compacted and resurfaced to grade with like material and finished.

3.0 KEY PERSONNEL

The project personnel who will have overall responsibility for the safe operation of this project are:

Project Manager:	Tom Edwards (415) 232-8366
	Gene Failing (408) 246-4217
Safety Officer:	Chris Nielson-Cerquone (415) 232-8366

P.O. Box 418 • Pinole, CA 94564 • (415) 724-7751

3.1 Project Manager and Safety Officer Responsibilities

The responsibilities of the Project Managers and Safety Officers are:

- Conduct initial site safety training for all project field team members as described in this document.
- Assure all field team personnel have read and understand the Health and Safety Plan.
- Assure that all work performed by field personnel is conducted in accordance with safe practices outlined in this plan.
- Coordinate with Safety personnel for fire-watch, traffic control and security services at work site.
- Monitor activities to insure the proper use of personal protective equipment such as hard hats, protective eye wear, gloves, coveralls, respirators, etc..
- Assure effective work place surveillance for hydrocarbon vapors is maintained and evaluate the results of surveillance.
- Insure that safety equipment for use by personnel is maintained in a usable condition, and
- Shut down or modify field work activity based on criteria presented in Section 12.0.

3.2 Sub-Contractor Responsibilities

The responsibilities of the sub-contractor supervisor with respect to safety are:

- Read, understand and accept this Health and Safety Plan.
- Have all members of its crew attend the safety training program.
- Insure equipment and other machines are properly inspected and maintained and are in compliance with applicable sections of the California Health and Safety Code.

- Supply and maintain safety related protective equipment such as hard hats, safety boots, protective coveralls, gloves, safety eye wear, respirators, etc., as specified in this plan.

- Assure personnel complies with this Health and Safety Plan, and

- Enforce corrective action under the direction of the Site Safety Officer.

3.3 Field Team Member Responsibilities

The responsibilities of the field team members are:

- Read, understand and follow this plan,

- Perform work safety

- Cooperate with safety personnel

- Report any unsafe conditions to the immediate supervisor,

- Be aware and alert for signs and symptoms of potential exposure to site contaminates and heat stress.

4.0 HAZARD EVALUATION

As air, water, soil and chemical substance monitoring and analyses data become available for all site work, the information will be evaluated by the Site Safety Officer. Appropriate action in the form of Health and Safety modifications will be initiated by the Safety Officer.

The anticipated activities of this project include:

- The excavation, removal and disposal of a subsurface soil. The excavation will be resurfaced with clean, like material to grade.

- Hydrocarbon monitoring of ambient concentrations during project activities.

- Drilling and installation of three monitoring wells.

- Collection or soil or water samples below ground,

- Analyses of collected samples by a California State certified laboratory.

The general types of hazards associated with this project are:

- Mechanical hazards: cuts, contusions, being struck by swinging objects, or being caught or pinned by operating machinery; also muscular injury potential caused by overexertion or improper movement (e.g. back injury due to improper lifting),

- Electrical hazards: possible excavation of buried cables and exposure to overhead power lines during excavation.

- Chemical hazards: exposure to chemicals (fuel constituents) during sample taking and preparation,

- Fire hazards: possible excavation of gas lines and petroleum pipe lines, flammable petroleum hydrocarbons, equipment fires,

- Thermal (heat stress) hazards: exposure to outside temperature extremes while wearing protective clothing,

- Acoustical hazards: exposure to excessive noise created by machinery operations and/or related to the site specific operations.

Job hazard analyses associated with each major work activity are presented in the following sections.

4.1 Hazard Evaluation: Soil Excavation

Excavation activities will potentially expose field personnel to the following hazards:

- Chemical hazards:

  -- Exposure to various chemical substances, including but not limited to petroleum hydrocarbon liquids and vapors, caustic and acidic mists, and liquid and solid material may be encountered. Certain precautions are necessary to properly control the potential fire/explosion and/or health hazards associated with these chemicals.

- Physical hazards: potential exposures to physical hazards associated with soil excavation include the following:
  - -- swinging boom
  - -- brush, equipment, gas-main, or hydrocarbon fires,
  - -- being hit by equipment
  - -- falling objects
  - -- exposure to excessive noise. and
  - -- exposure to outside temperature extremes.

4.2 Hazard Evaluation: Solid and Liquid Materials Sampling

Solid materials will be collected for analysis in a backhoe bucket above ground or from a hollow-stem auger during drilling. Liquid samples will be collected from PVC wells. Some of these samples may contain high levels of hazardous materials creating the potential for chemical inhalation exposure and skin contact. These activities may pose one of the greatest risks of chemical exposure for the site work plan. Appropriate worker training and protective measures will be enforced to control this potential health hazard.

4.3 Hazard Evaluation: Packaging and Shipment of Liquid or Solid Samples

After the samples have been collected in brass tubes or appropriate sample bottles, the containers will be properly packaged to protect shipping personnel from exposure. Sample control personnel will be trained and given personal protection to prevent unnecessary exposure. The hazards associated with shipping samples is minimal provided the containers are prevented from leaking or breaking.

4.4 Hazard Evaluation: Sample Preparation and Analysis

The preparation of samples for analysis may expose the technician to routine hazards associated with laboratory work. Standard laboratory safety procedures should be used to prepare and analyze the samples. The samples should be treated carefully and handled inside a properly operating fume hood due to their potentially volatile and hazardous nature.

4.5 Hazard Evaluation: Heat Stress and Noise

During day-to-day field work, the on-site supervisor will be alert for the signs and symptoms of heat stress. A hazard exists when individuals are required to work in warm temperatures while wearing impervious protective clothing. When the ambient air temperature exceeds 65 degrees, heat stress may become a problem. If these conditions are encountered, the following precautions will be taken:

- The on-site safety officer or supervisor will regularly monitor the ambient air temperatures.

Field team members will be observed for the following signs and symptoms of heat stress.

- profuse sweating, or complete lack of sweating,
- skin color change,
- increased heart rate,
- body temperatures in excess of 100 degrees as measured by fever detectors (forehead straps), and
- vision problems.

Any team member who exhibits any of these signs or symptoms will be removed immediately from field work and be requested to consume electrolyte fluid or cool water while resting in a shaded area after removing impervious clothing. The individual will be instructed to rest until the symptoms are no longer recognizable. If the symptoms appear critical, persist or get worse, immediate medical attention will be sought.

When working around mechanical equipment the potential exists for exposure to excessive noise. To deal with the health hazards of excessive noise, ear plugs will be provided. Personnel will be trained in noise hazards and how to wear the protective equipment.

5.0 HYDROCARBON VAPOR HAZARD CRITERIA

Exposure to elevated levels of hydrocarbon vapors presents potential health risks that need to be properly controlled. Work practices and methods will be instituted to limit exposures. Where elevated exposures persist, respiratory protection will be the primary control method to protect personnel from inhalation of hydrocarbon vapors. The hydrocarbon vapors expected to be

encountered during project activities are composed of a variety of volatile refined petroleum compounds. The majority of these have limited toxicity requiring minimal controls at the concentrations expected. There are certain compounds such as benzene vapors that present significant hazards and must be properly controlled.

A working limit of 100 ppmv total hydrocarbon is proposed as the maximum acceptable level of exposure without respiratory protection. A Bacharach 503 vapor analyzer will be used to measure real time breathing zone concentration for comparison with the 100 ppmv working limit. When a persistent level of 100 ppmv is observed, appropriate respirators will be donned and other vapor measurements will be made. In a typical situation, with 1% of the hydrocarbon vapors being benzene, a 100 ppmv concentration of total hydrocarbon will result in a breathing zone of less than 1 ppmv benzene. This is one tenth of the current occupational Permissible Exposure Limit (PEL) for an 8 hour exposure to benzene. If hydrocarbon vapors exceed 1000 ppmv, work will be stopped. The field crew will be instructed to stay up wind and methods will be applied to subdue fugitive vapor emissions (such as sprinkling soil with water, use of copus blower, etc.). The site Safety Officer will make such determination.

6.0 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

This section specifies personal protective equipment required for the various tasks of this project.

6.1 Excavation Operation

Respiratory Protection: all field personnel will be required to have available air purifying respirator with organic vapor cartridges with particulate pre-filter. These will be required to be worn based on criteria listed in Section 3.0.

Protective Clothing: all field personnel who handle contaminated soils or liquid will wear impervious coveralls and butyl rubber gloves.

Head Protection: Field personnel will wear non-metallic safety helmets.

Foot Protection: Field personnel will wear neoprene rubber boots with steel toes. Under non-liquid exposure conditions, leather boots with steel toes and shanks are permissible.

Ear Protection: Field personnel, based on-site noise levels,

may be required to wear hearing protection devices during excavation operations.

Eye Protection: Field personnel will wear impact-resistant safety glasses with attached side shield. where splashes of potentially hazardous liquid or particles are likely, chemical safety goggles will be required.

Impervious coveralls and neoprene boots will not be required if soil or water is not visibly contaminated, or if vapor measurements are below 500 ppmv.

6.2 Soil and Liquid Sample Collection

Personnel who are likely to be exposed to contaminated soil or water samples will be required to wear the following equipment.

Respiratory Protection: All sampling personnel will be required to have a half-mask air purifying respirator with organic vapor cartridges with particulate pre-filter. Respirators must be worn based on the criteria listed in Section 3.0.

Body Protection: all sampling personnel will wear impervious coveralls when contact with contaminated soil or water is likely to occur. Non-metallic safety helmets will be worn when overhead hazards exist.

Hand Protection: butyl rubber gloves will be worn under disposable PVC gloves when necessary.

Foot Protection: neoprene rubber boots with steel toes will be worn.

Eye Protection: field personnel will wear impact-resistant safety glasses with attached side shield during sampling activities. Where splashes may occur, chemical goggles will be worn.

6.3 Packaging and Shipment of Liquid and Solid Samples

Eye Protection: the field team will wear impact resistant safety glasses with attached side shield while packaging samples.

Hand Protection: butyl rubber or nitrile gloves will be worn under disposable PVC gloves.

Packaging and Shipping Requirements: all samples which are to be shipped for analysis must comply with Department of

Transportation (DOT) regulations. The following instructions shall be followed.

- o Package the primary container to protect it from breaking:
  - -- tape all lids with non hydrocarbon tape,
  - -- wrap the primary container with absorbent brown paper (wadding), and
  - -- place the primary container in a plastic (zip-loc) bag.

6.4 Sample Preparation and Analysis of Liquid and Solid Samples

Eye Protection: laboratory personnel should wear approved safety glasses during all phases of analytical procedures.

Hand Protection: butyl rubber or nitrile gloves should be worn under PVC gloves when direct skin contact with the samples may occur.

Foot Protection: closed toe shoes should be worn in the laboratory.

7.0 WORK ZONE ACCESS

During soil excavation and well drilling operations, a work zone around the immediate vicinity of the project will be established and taped off. Only authorized personnel will be permitted to enter this work zone. Authorized personnel will include those who have duties requiring their presence in the work zone and have read this site safety plan.

8.0 DECONTAMINATION PROCEDURES

The Preliminary Investigation Workplan specifies the soil excavation and well drilling activities at this site. Petroleum hydrocarbon liquids and vapors are anticipated. Due to the volatile nature of the hydrocarbons that may be encountered during the initial excavation and sampling operations, decontamination of equipment and vehicles will be of minimal importance since the volatile hydrocarbons will rapidly vaporize. Therefore, no formal decontamination procedure will followed with the exception of general cleaning. However, field team members will follow the following guidelines to insure that contaminants will not remain in contact with their body.

- All personnel involved in work activities will be instructed to wash their hands, face, neck and forearms at the end of the work day. Soap, water and towels will be provided at the site for this purpose. The field personnel will be instructed to shower at home at the end of each work day.

- No eating, drinking or smoking will be permitted in the immediate vicinity (i.e. taped off area).

As work progresses, the nature of materials handled and the extent of contamination may possibly require formal decontamination procedures and delineated work/clean zones. However, we do not expect that such formal procedures will be necessary at this site and will only proceed at the Safety Officers discretion. At the discretion of the Safety Officer, the following work zones and decontamination procedures will be implemented to minimize the transfer of hazardous substances from the site, and to protect the environment and public health.

8.1 Work Zones

The field team shall prevent uncontrolled waste material from moving from the site and from affecting the site itself. The team will prevent migration of site contaminants by using work zones and equipment/personnel decontamination procedures. The following describes the zones to be established during operations:

- Exclusion Zone: A 75 foot circle around the excavation site will be defined before work starts. The circle will constitute the "Exclusion Zone". This zone is where potentially hazardous airborne contaminants and physical hazards to the workers will be contained. Full personal protection must be available to all personnel in this area. Plastic sheeting and/or tarps will be used to control excavated soil. The size of the Exclusion Zone may be changed to accommodate site conditions and to ensure contaminant containment.

- Contamination Reduction Zone: A formal decontamination zone should not be required during the preliminary investigation. However, a waste container will be placed outside of the exclusion zone so contaminated disposal equipment can be placed inside and covered. Surface/soil contamination in this area will be controlled using plastic sheeting.

- Support Zone: A Support Zone, the outermost part of the site, must be defined for each field activity.

Support equipment is located in this uncontaminated or clean area. Normal work clothes are appropriate within this zone. The location of this zone depends on factors such as accessibility, wind direction (it should be up wind of excavation), and resources (e.g. roads, utilities, shelter).

8.2 Decontamination Protocol

Decontamination of personnel, equipment and vehicles will be important to insure that contamination does not spread to unsuspecting people. Personal decontamination mainly involves personal hygiene. Contamination should not be present on the skin if the proper protective methods specified in this plan are used. However all field team members will follow these guidelines to ensure that contamination does not remain on equipment, sample containers or in contact with their body.

- The field team should remove their personal protective clothing in a certain sequence to avoid contaminating themselves. When removing personal protective equipment, these steps should be followed:

  Step 1: Remove all equipment, sample containers, and move out of the exclusion zone and to the decontamination . Obtain decontamination solutions and decontaminate the spades, shovels and other equipment by brushing them under a water rinse. A high-pressure steam cleaner may also be used for decontamination. All wastes and spent decontamination liquids will be properly contained.

  Step 2: Remove outer gloves and boot covers and place them inside a garbage bag.

  Step 3: Remove tape from boots and gloves and remove the impervious coverall. Boots, under gloves, and respirator should still be worn.

  Step 4: Remove the under gloves and respirator when in the support zone.

8.3 Personal Hygiene Requirements

Some general rules to obey when in the support zone are as follows:

- All personnel will wash their hands, face, neck and forearms before consuming any food or liquids, smoking, or using the restroom.

- All personnel will take a full-body shower at the end of the work day. A full-body shower includes a complete soap down using a wash cloth. Pay particular attention to areas of the body that are typically overlooked, such as behind the ears or between the toes.

9.0 MONITORING PROGRAM

Personal exposure to ambient environmental levels of airborne hazards will be monitored to insure that personnel exposures do not exceed acceptable limits and that appropriate selection of protective equipment items is made. Airborne contamination and excavation hydrocarbon vapor concentrations will be measured primarily by the use of direct reading of hydrocarbon vapors in ppmv levels. If concentrations approach criteria levels, detector tubes will be used to determine the levels and concentrations of benzene. Audits will be conducted by the Safety Officer to insure compliance with the Safety Plan and to provide additional support as required.

9.1 Ambient Vapor Reading

A Bacharach 503 sniffer vapor monitor will be used during drilling and excavation activities. The instrument will be calibrated before and after field measurements each day using known calibration gases. This instrument will be used to measure both excavation and breathing zone concentrations of hydrocarbon vapors.

Readings will be taken in the area where the field team members are working and surrounding down-wind areas. Measurements will be taken every 30 minutes when hydrocarbon vapors indicate levels above 30 ppmv. All readings will be recorded in a field notebook.

10.0 SAFETY AND HEALTH TRAINING

This section summarizes the content of the health and safety training to be provided to the field team. It may be used as a future reference for the field team concerning health and safety matters.

All field personnel will be trained in methods of safety conducting field activities. Each section of this plan is intended to provide information to accomplish this goal. It will be the responsibility of the Project Safety Officer to ensure the field team has access to this plan, reads the safety procedures, and understands how to conduct this work safely. It will be the individuals responsibility to bring to the attention of the Safety Officer any portion of this plan and related training they

do not fully understand. Prior to beginning site work, the field team will discuss the contents of this plan and make sure all members are adequately informed in safe work practices.

All field team members will be instructed regarding potential health and safety hazards. Specifically, the following topics will be covered in the initial training session:

- Physical safety hazards, (e.g., muscular stress and strain, unguarded equipment, electrical shock, overhead hazards, etc.),
- Emergency procedures, (vapor controls, medical and fire emergencies, etc.),
- Explosive/flammability hazards,
- Hazardous material that may be encountered and potential routes of exposures, (inhalation and skin contact with petroleum hydrocarbons),
- Physical hazards such as noise and heat stress,
- Hygienic practices, (washing up before lunch/coffee breaks, no eating/drinking/smoking allowed in taped off areas, etc.), and
- Types, proper use, limitations, maintenance, inspection, and storage of protective clothing and equipment.

Personal protective equipment includes:

- eye protection
- gloves
- coveralls
- respirators
- hard hats, and
- hearing protection

Special emphasis will concern the use and limitations of respiratory protection. Half-mask respirators equipped with air purifying organic vapor cartridges will be used. Half-mask respirators and eye goggles will be used if eye irritation or

skin contact exposure potential exists. Each individual will be responsible for the limitations and maintenance of half-mask and full-face respirators including qualitative fit testing, routine inspection, replacement of parts, cleaning, disinfection, and storage requirements. Written instructions and procedures concerning respirators and criteria for use will be provided for each field worker by the Site Safety Officer if needed.

11.0 MEDICAL MONITORING PROGRAM

Soil excavation and drilling work is expected to involve active physical work and potential exposure to petroleum hydrocarbons, heat stress, noise and physical safety hazards common to subsurface operations. The work will require people of reasonable health with normal vision and hearing acuity. The companies involved with this project are responsible for assuring the health and fitness of their employees on this project. As a general rule, each worker should have clearance from a physician dated no later than one year prior to start-up of the project. This documentation should also indicate the employees' ability to perform the required work while wearing an air purifying respirator.

12.0 EMERGENCY RESPONSE PLAN

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

12.1 Injuries

Medical problems occurring on-site will be handled quickly. Emergency telephone numbers will be written down and posted in the passenger compartment of the field vehicles. The local emergency numbers are:

Alameda Police, Fire and Rescue Dial 911

The field team will be instructed to seek immediate professional medical attention for all serious injuries. A first aid kit will be present at the work site for use in case of minor injuries. If anyone receives a splash or particle in the eye, the field team will be instructed to irrigate the eye for 15 minutes. Instruction will also be provided to wash any skin areas with soap and water if direct contact with contaminants has occurred.

12.2 Fire and Explosion Hazards

Fires on site are of particular concern during soil excavation and removal activities due to the possibility of encountering flammable petroleum hydrocarbon liquid or vapors. During these activities the Site Safety Officer will be present and equipped with an explosive vapor monitor for area monitoring and a multi-purpose (A, B, C,) fire extinguisher.

The local fire department will be notified of the location and anticipated activities in order to minimize the fire risk to the surrounding neighborhood. In addition, any flammable brush and grass will be cleared away from the site prior to the start of work. If a fire does occur, the local fire department will be contacted immediately.

12.3 Operation Shutdown

Under extreme hazardous situations the on-site supervisor, Safety Officer, or Project Manager may request that operations be temporarily suspended while the underlying hazard is corrected or controlled. If excavation vapor measurements with the explosive vapor monitor shows levels approaching explosive limits, operations will be stopped while the area is controlled. During this activity, all personnel will be required to stand up wind to prevent exposure to fugitive vapor emissions. The Safety Officer will have ultimate authority for operations shutdown.

12.4 Community Protection

To assure the community is protected from health and fire hazards, up wind and downwind monitoring with the Bacharach 503 sniffer will be performed if the general work area has hydrocarbon levels exceeding 100 ppmv. If site down wind monitoring indicates persistent levels above 30 ppmv at the perimeter of the work area, work will be shut down and vapor emission control efforts will be instituted until measurements demonstrate levels have dropped below 30 ppmv. An alternative approach of expanding the taped off area zone may be used to provide additional community protection.

13.0 RECORD KEEPING REQUIREMENT

The following record keeping requirements will be maintained in the program file indefinitely. The particular organization responsible for these records are also listed.

- Copy of this Health and Safety Plan - T.E.A.

- Health and Safety Training Certification Form for Site Safety Officer - T.E.A.
- Any accident/illness report forms - All Parties
- Personal sampling results - T.E.A.
- Documentation of employees medical ability to perform work and wear respirators - All parties

14.0 REMARKS AND SIGNATURES

This Site Safety Plan was prepared following current standards and practices. All work performed at Cavanaugh Motors will be performed under the supervision of a California Registered Engineering Geologist.

Prepared By:

C.M. Nielson-Cerquone

Chris Nielson-Cerquone
Associate

Approved By:

Mark Youngkin

Mark Youngkin
California Registered
Engineering Geologist
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