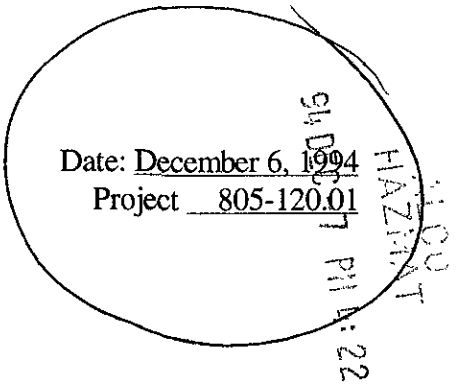
EMCON Associates
1921 Ringwood Avenue • San Jose, California 95131-1721 • **(408) 453-7300** • Fax (408) 437-9526

Oct 94



Date: December 6, 1994
Project 805-120.01

To:
Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harborbay Parkway
Alameda, California 94502

We are enclosing:

Copies	Description
1	Workplan for additional off-site subsurface investigation and interim remediation for ARCO services station 276, 10600 MacArthur Blvd, Oakland, California.

For your:			Sent by:	
	X	Use		Regular Mail
		Approval		Standard Air
	X	Review		Courier
		Information	X	Other U.S. Certified Mail

Comments: _____

cc: Mr. Kevin Graves, RWQCB(U.S. Certified Mail)
Mr. Mike Whelan, ARCO Products Company
Ms. Beth Dorris, ARCO Products Company
Mr. Greg Garrison, Garrison Law Corporation(U.S. Certified Mail)
Mr. Richard Gilcrease, Drake Builders(U.S. Certified Mail)

John C. Young
Project Manager

WORKPLAN FOR ADDITIONAL OFF-SITE SUBSURFACE INVESTIGATION AND INTERIM REMEDIATION
10600 and 10700 MacArthur Boulevard
Oakland, California

Prepared for

ARCO Products Company

October 1994

Prepared by

EMCON Associates
1921 Ringwood Avenue
San Jose, California 95131-1721

Project 0C75-005.02

WORK PLAN FOR ADDITIONAL OFF-SITE SUBSURFACE INVESTIGATION AND INTERIM REMEDIATION
ARCO Station 276
Oakland, California

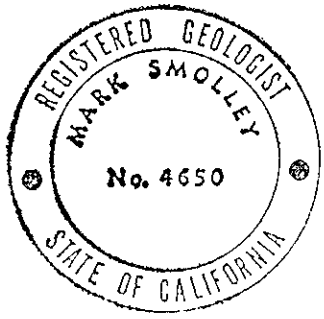
Project 0C75-005.02

John C. Young
Project Manager

12/6/94
Date

Mark Smolley, R.G. #4650
Senior Project Geologist

12/6/94
Date



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1 INTRODUCTION

This workplan has been prepared for ARCO Products Company (ARCO) by EMCON Associates (EMCON) for additional off-site investigation and remediation at the properties located at 10600 and 10700 MacArthur Boulevard, Oakland, California (Figure 1). The workplan was verbally approved by the Regional Water Quality Control Board (RWQCB) and the Alameda County Health Care Services Agency (ACHCSA) in a meeting held on September 30, 1992. EMCON's workplan describes the tasks proposed to further evaluate the lateral and vertical extent of gasoline hydrocarbons in the soil and groundwater, and to provide vapor-extraction and air-sparging points for remediation at the Foothill Square Shopping Center parking lot ("former Truck Manufacturing Plant site"), located adjacent to the 10600 property (Figure 2). The former Truck Manufacturing Plant site was operated as a bus, truck and tractor manufacturing facility for approximately 44 years. Based on recently discovered aerial photographs, it appears that the truck manufacturing plant may have had fuel tanks, fuel dispensers and storage drums on the site near the ARCO property. ARCO never had any involvement or interest in the former Truck Manufacturing Plant site.

The proposed work includes

- Obtaining well permit(s) from the Alameda County Flood Control and Water Conservation District (ACFCWCD)
- Drilling 12 off-site soil borings and collecting soil samples for description and possible laboratory analysis
- Installing six 4-inch-diameter vapor-extraction wells and six 2-inch-diameter air-sparging wells in the borings
- Excavating trenches and installing piping to connect the new vapor-extraction and air-sparging wells to the existing on-site soil vapor extraction (SVE) system
- Developing the air-sparging wells
- Surveying the off-site vapor-extraction and air-sparging wells
- Submitting selected soil samples for laboratory analysis
- Preparing a report summarizing the methods, results, and conclusions of the investigation

2 SITE DESCRIPTION AND BACKGROUND

2.1 General

Station 276 is located at the southeastern corner of the intersection of MacArthur Boulevard and 106th Avenue in Oakland, California (Figure 1). Adjacent to and immediately southeast of the station is a portion of the former Truck Manufacturing Plant site. Currently that portion of the property is used as a parking lot for Foothill Square Shopping Center. Aerial photographs may indicate the presence of fuel tanks, fuel dispensers and storage drums on several portions of the former Truck Manufacturing Plant. Several commercial businesses are located in the Foothill Square Shopping Center, including a grocery store, a coin laundry, a dry cleaner, a drug store, offices, and a former service station. There are private residences north and northeast of the service station. A schematic layout of the service station and the off-site area showing the existing vapor-extraction and groundwater monitoring wells is presented as Figure 2.

There are four underground storage tanks (USTs), designated T1 through T4, in the western portion of the site. These tanks were replacements for four former USTs (FT1 through FT4) removed in February 1990. The former tanks were located in the southern portion of the site. A former waste-oil tank located adjacent to the northeastern wall of the station building was removed in 1988. Although ARCO never used perchloroethelene (PCE) at the 10600 site, four soil samples were collected from beneath the former waste oil tank and analyzed for volatile organic compounds (VOC) including PCE. Analytical results of the collected soil samples indicated no detectable PCE. The locations of the former tanks, existing tanks, and other pertinent site features are shown in Figure 2.

Since groundwater monitoring began in 1989, PCE has been detected in groundwater monitoring wells located at 10600 and 10700 MacArthur Boulevard. Based on the analytical results of groundwater samples collected from wells located at both properties, PCE has only been detected in wells screened in the deeper water-bearing zone and not in wells screened in the shallow perched water-bearing zone. In addition, the highest concentrations of PCE have consistently been detected in well MW-6 located on the former Truck Manufacturing Plant. Based on flow directions in the deeper water-bearing zone, groundwater appears to be flowing from the former Truck Manufacturing Plant towards station 276.

It is EMCON's understanding that ACHCSA sent Drake Builders Inc., the owner of the 10700 property, a March 23, 1993, letter requesting investigation into possible PCE sources that may have impacted groundwater at the their facility. ARCO is not aware of any reports documenting this investigation.

2.2 Regional Geology and Hydrogeology

The site is located within the East Bay Plain, which is situated in the San Francisco Bay depression. The region is part of an irregular downdropped block bordered by northwest-trending faults (ACFCWCD, June 1988). The site is at an elevation of approximately 55 feet above mean sea level (MSL) and is approximately 1/2 mile west of the Hayward Fault Zone. The subsurface soils in the vicinity of the site consist of highly permeable Pleistocene alluvium composed of poorly consolidated to unconsolidated clay, silt, sand, and gravel. The alluvium was derived mainly from the erosion of bedrock underlying the foothills of the Diablo Range and deposited as coalescing alluvial fans (ACFCWCD, June 1988). The direction of groundwater flow in the area is generally inferred to be westward, toward the San Francisco Bay, but may locally flow northward and eastward due to recharge areas along the Hayward fault.

3 PROPOSED WORK

EMCON proposes the following tasks 1 through 6 to evaluate the lateral extent of gasoline hydrocarbons in soil and groundwater in the southeast portion of the site and in the adjacent Foothill Square Shopping Center parking lot and to enhance the current SVE system by installing 12 additional wells. Field work associated with the following project tasks will be performed in accordance with EMCON's field procedures (Appendix A). A site-specific safety plan is included in Appendix B. The proposed off-site SVE and air-sparging wells will be evaluated during system operation.

EMCON recommends the following work at the site based on findings from previous investigations.

Task 1. EMCON will prepare and submit well permit applications to ACFCWCD Zone 7 for approval.

Task 2. Review a design, permit and bid package for off-site remediation piping installation which was previously prepared by RESNA.

To enhance existing system.

Task 3. EMCON will drill borings at 12 locations (AS-1 through AS-6 and VW-8 through VW-13, Figure 2) on the Foothill Square Shopping Center parking lot adjacent to the site, and collect soil samples for description and possible laboratory analyses. We will then install six 4-inch-diameter vapor-extraction wells (VW-8 through VW-13) and six 2-inch-diameter air-sparging wells (AS-1 through AS-6) in the borings. These wells will be used to evaluate the extent of gasoline hydrocarbons off site in the soil and groundwater, and provide a means for soil and groundwater remediation. The vapor-extraction wells will be set at a total depth of approximately 25 feet below ground surface (BGS) and the air-sparging wells will be set to total depths between approximately 26 and 28 feet BGS. The wells will be installed according to the field procedures presented in Appendix A.

Use for that. This work is already done.

The air-sparging wells will consist of approximately 26 feet of 2-inch-diameter polyvinyl chloride (PVC) casing with 0.020-inch slots. The slotted section will be limited to the bottom 2 feet of each pipe.

Selected soil samples from the 12 off-site borings will be submitted with chain-of-custody documentation to a state-certified laboratory and, at a minimum, will be analyzed for total petroleum hydrocarbons as gasoline, benzene, toluene, ethylbenzene, and total xylenes by U.S. Environmental Protection Agency (EPA) methods 5030/8015/8020. The samples selected for laboratory analyses will be based on visual observations, photoionization detector (PID) readings, and lithologic changes observed in the field.

Task 4. EMCON will oversee the excavation of trenches and the installation of piping between the new vapor-extraction and air-sparging wells, and the on-site SVE system. After the placement of piping, EMCON will verify that the trenches are backfilled properly, the remediation boxes are installed over the new off-site vapor-extraction and air-sparging wells, and the trenched area is repaved.

Task 5. This task involves developing the air-sparge wells. EMCON will contract a licensed land surveyor to survey the elevations of the new off-site vapor-extraction and air-sparging wells to a U.S. Coast and Geodetic Survey datum relative to MSL.

Task 6. EMCON will prepare a report summarizing field and laboratory procedures, findings, and conclusions.

4 SCHEDULE

A preliminary time schedule to perform the tasks described above is included as Figure 3. This time schedule is an estimate and is subject to change due to unforeseen circumstances. EMCON will notify ARCO and the ACHCSA of any delays. As EMCON has obtained verbal approval of this workplan from ACHCSA, the work is scheduled to begin during the first quarter of 1995.

5 DISTRIBUTION

We recommend forwarding copies of this workplan to

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harborbay Parkway
Alameda, California 94502

Mr. Kevin Graves
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster, Suite 500
Oakland, California 94612

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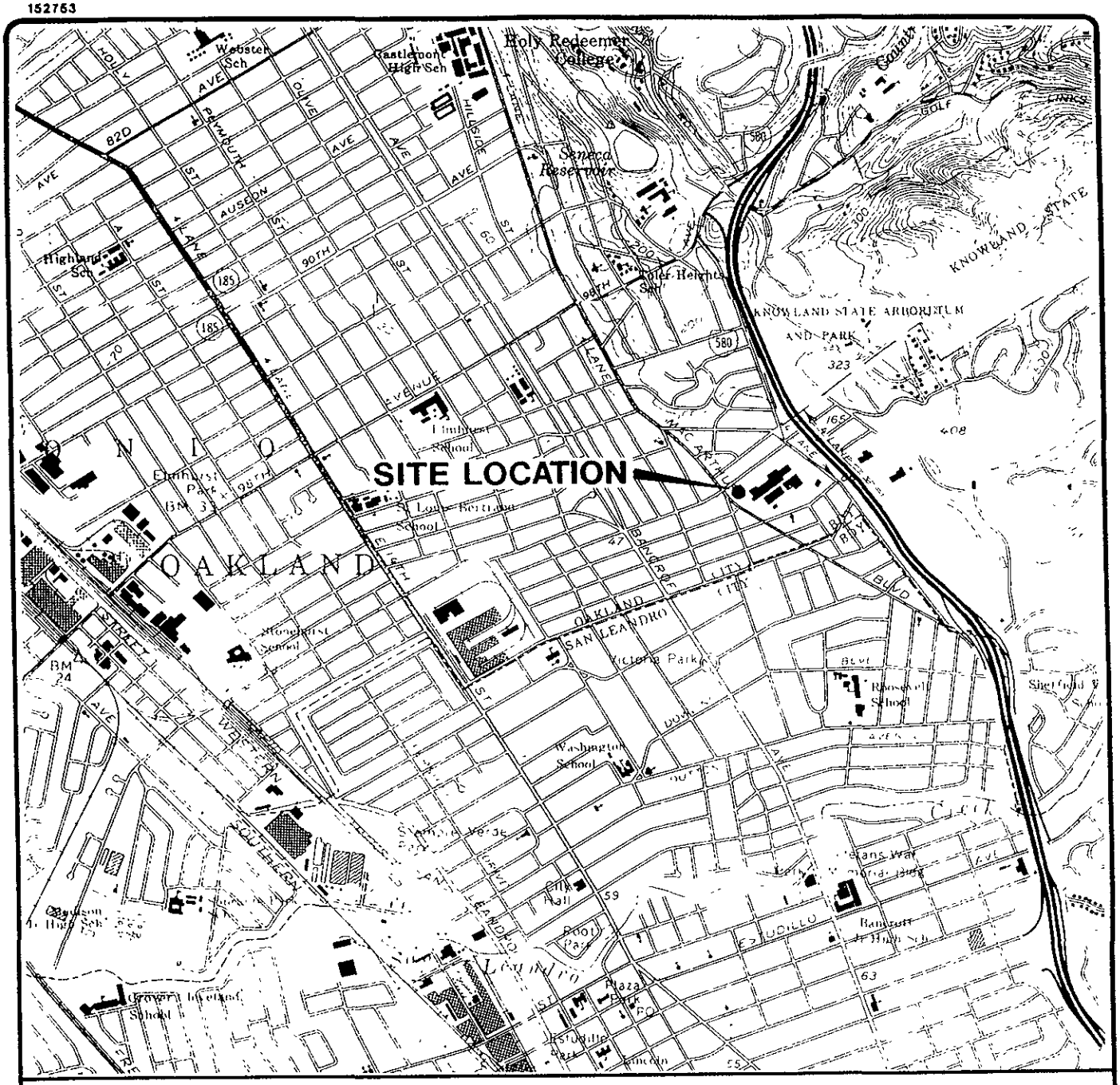


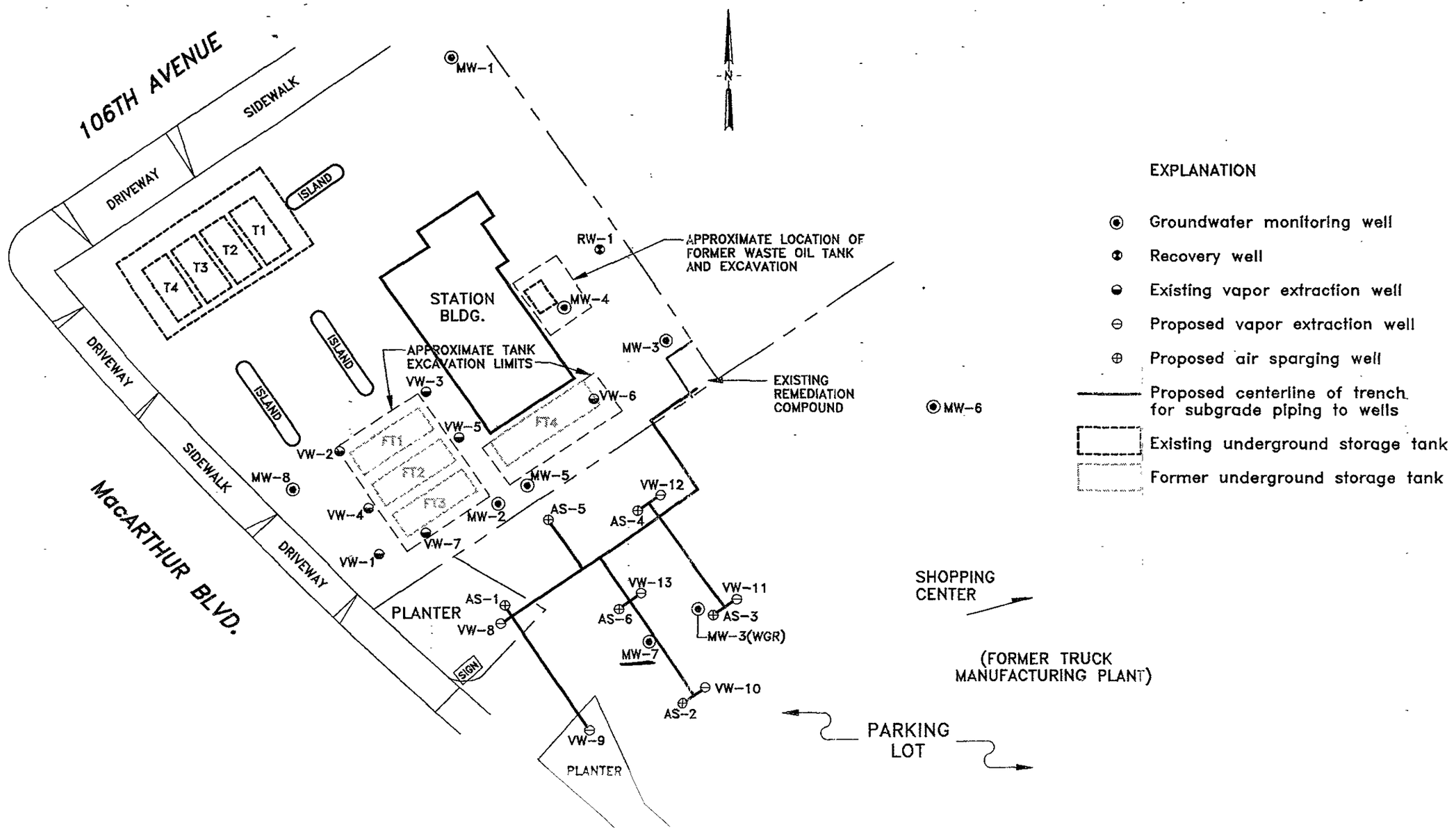
EMCON Associates

10600 AND 10700 MACARTHUR BLVD.
OFF-SITE WELL INSTALLATION
OAKLAND, CALIFORNIA

SITE LOCATION

FIGURE
1

PROJECT NO
C75-05.02



MODIFIED FROM RESNA INDUSTRIES SITE LAYOUT 10/93

EMCON Associates

SCALE: 0 30 60 FEET

10600 AND 10700 MCARTHUR BLVD.
OFF-SITE WELL INSTALLATION
OAKLAND, CALIFORNIA

SITE PLAN

FIGURE NO.
2

PROJECT NO.
C75-05.02

FIGURE 3
Preliminary Time Schedule
10600 and 10700 MacArthur Boulevard

Task No.	Description	weeks* 1	2	3	4	5	6	7	8	9	10	11
Task 1 -	Obtain well permits from ACFCWCD	■										
Task 2 -	Review the design, permit, and bid package for remediation piping installation	■	■									
Task 3 -	Drill & install 6 vapor extraction wells (VW-8 through VW-13)		■									
	and 6 air-sparging wells (AS-1 through AS-6)											
Task 4 -	Excavate trenches between new offsite wells and existing onsite SVE System			■	■	■						
Task 5 -	Develop air-sparging wells and survey new offsite wells						■					
Task 6a -	Prepare Draft Report and submit to ARCO					■	■	■				
Task 6b -	ARCO review of Report								■	■	■	
Task 6c -	Finalize report and submit to ACHCSA											■

*Tasks are in weeks following review of workplan and receipt of approval letter from ACHCSA

APPENDIX A

FIELD PROCEDURES

FIELD AND LABORATORY PROCEDURES

Exploratory Boring and Soil Sampling

Vadose-Zone Well Installation

Exploratory Boring and Soil Sampling

EXPLORATORY BORING AND SOIL SAMPLING

General procedures for drilling and sampling exploratory borings are discussed below.

Before a drilling rig is mobilized, access issues with private property owners are resolved and an underground utility locating service contracted to investigate proposed boring sites and arrange for site visits by public and private utility companies. The utility companies locate their installations with the aid of maps and the locating service verifies and marks the locations. Final boring locations are determined after these assessments are made. To confirm that no subsurface utilities will obstruct drilling, field personnel excavate the upper four feet of soil from each boring location with a post-hole digger.

For sites characterized by relatively shallow (less than 100-feet-deep) ground water, exploratory borings are drilled with 8- to 12-inch hollow-stem auger drilling equipment. The augers are steam-cleaned to prevent possible cross-contamination between boreholes. Where chemical analysis of samples is indicated, sampling equipment is also steam-cleaned between each sampling event.

Soil samples are collected at depths no farther apart than 5 feet using a modified California split-spoon sampler which is fitted with stainless-steel liners. As the sampler is driven into undisturbed soil ahead of the auger tip, soil accumulates in the liners. The sampler is retrieved from the ground and the liners are removed, sealed with Teflon® tape and polypropylene end-caps, and stored in ice chests with dry ice pending selection for analysis and transport to the laboratory. Chain-of-custody documentation accompanies samples to the laboratory.

Field characterization of contamination is based on visual and olfactory observations and on the results of a headspace analysis, in which a soil sample is removed from the liner, sealed in a mason jar, and exposed to direct sunlight for 10 to 15 minutes. The jar is shaken to release volatile hydrocarbons into the headspace between the soil and the jar cover. The

headspace is probed by a tube attached to a portable photoionization detector (PID), by which volatile hydrocarbon content is measured. A minimum of one sample, typically that having the highest PID reading from a boring, is submitted for chemical analysis.

A detailed boring log is maintained for each exploratory boring from auger-return material and representative soil samples. Soil is logged in the field according to the Unified Soil Classification System, and the logging supervised by a state-registered geologist. Borings not completed as wells are backfilled with a neat-cement slurry by the tremie method.

Drill cuttings are stockpiled on site and covered with plastic sheeting until the results of chemical analyses are known. The petroleum hydrocarbon content of the stockpile is determined by analysis of a composite formed from samples collected from the subsurface of the stockpile. Recommendations for disposal of the cuttings are made on the basis of the analysis, and the cuttings are disposed of by the client.

Sampling and Analysis Procedures

EMCON's sampling and analysis procedures for soils provide consistent and reproducible results and ensure that the objectives of the sampling program are met.

The following publications were used as guidelines for developing these procedures:

- *Leaking Underground Fuel Tank (LUFT) Field Manual* (State Water Resources Control Board, May 1988, revised October 1989)
- *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (EPA, SW-846, 3rd edition, November 1986)

Sample Handling

Sample containers are labeled immediately after sample collection, and are kept in ice chests with dry ice which is replaced daily until the containers are received at the laboratory. As a sample is collected, it is logged on the chain-of-custody record that accompanies samples to the laboratory.

Samples are transferred from the site to EMCON's laboratory by EMCON field personnel. Laboratory personnel assign a different number to each sample container and the number is recorded on the chain-of-custody

record and used to identify the sample on all subsequent internal chain-of-custody and analytical records. Within 24 hours of sample receipt, samples are routinely shipped from EMCON to laboratories performing the selected analyses. EMCON's laboratory manager ensures that the holding times for requested analyses are not exceeded.

Sample Documentation

The procedures for sample handling provide chain-of-custody control from collection through storage. Sample documentation includes the following:

- labels for identifying individual samples
- chain-of-custody records for documenting possession and transfer of samples
- laboratory analysis requests for documenting analyses to be performed

Labels

Sample labels contain the following information:

- project number
- sample number (i.e., boring designation)
- sampler's initials
- date and time of collection

Sampling and Analysis Chain-of-Custody Record

The sampling and analysis chain-of-custody record (figure 1), initiated at the time of sampling, includes the boring number, sample type, analytical request, date of sampling, the name of the sampler, and other information deemed pertinent. The sampler signs his name and records the date and time on the record sheet when transferring the samples to another person. Custody transfers are recorded for every sample; for example, if samples are split and sent to more than one laboratory, a record sheet accompanies each sample. The number of custodians in the chain of possession is kept to a minimum. A copy of the sampling and analysis chain-of-custody record is returned to EMCON with the analytical results.

Soil Analysis Request

The Soil Analysis Request (figure 2) or the purchase order that accompanies samples to the laboratory serves as official communication of the particular analysis(es) required for each sample and is evidence that the chain of custody is complete.

At a minimum, the soil analysis request includes the following:

- date submitted
- specific analytical parameters
- boring number
- sample source

Analytical Methods

Samples collected as part of the proposed sampling programs are analyzed by accepted analytical procedures. The following publications are the primary references:

- *Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods* (EPA, SW-846, 3rd edition, November 1986)
- *Leaking Underground Fuel Tank (LUFT) Manual*, State Water Resources Control Board, State of California Leaking Underground Fuel Tank Task Force, May 1988, revised October 1989

The laboratories performing the analyses are certified by the Department of Health Services (DHS) for hazardous waste testing.

Quality Control

Quality assurance measures confirm the integrity of field and laboratory data generated during the monitoring program. Procedures for assessing data quality are discussed in this section. Field and laboratory quality assurance data are evaluated in the technical reports.

Laboratory Quality Assurance

Laboratory quality assurance includes procedures required under the DHS Hazardous Waste Testing Program. For sites where Columbia Analytical Services conducts the chemical tests, its quality assurance procedures

include the reporting of surrogate recoveries, matrix spike recoveries, and matrix spike duplicates (or duplicate) results.

Method blanks are analyzed daily for the purpose of assessing the effect of the laboratory environment on analytical results, and are performed for each constituent analyzed.

Samples to be analyzed for organic constituents contain surrogate spike compounds. Surrogate recoveries are used to determine whether analytical instruments are operating within limits. Surrogate recoveries are compared with control limits established and updated by the laboratory on the basis of its historical operation.

Matrix spikes are analyzed at a frequency of approximately 10 percent. Matrix spike results are evaluated to determine whether the sample matrix is interfering with the laboratory analysis, and provide a measure of the accuracy of the analytical data. Matrix spike recoveries are compared with control limits established and updated by the laboratory on the basis of its historical operation.

Laboratory duplicates are analyzed at a frequency of approximately 10 percent. Spike duplicate results are evaluated to determine the reproducibility (precision) of the analytical method. Reproducibility values are compared with control limits established and updated by the laboratory on the basis of its historical operation.

Laboratory QC data included with the analytical results are method blanks, surrogate spike recoveries (for organic parameters only), matrix spike recoveries, and matrix spike duplicates.

When other state-certified laboratories conduct the testing, each laboratory will follow its own internal QA/QC program.

Vadose-Zone Well Installation

VADOSE-ZONE WELL INSTALLATION

General procedures for installing vadose-zone wells are discussed below.

Exploratory borings to be converted to vadose-zone wells are drilled no deeper than first-encountered ground water. Borings are converted to vadose-zone monitoring or soil-vapor extraction wells with 2- or 4-inch-diameter, flush-threaded, polyvinyl chloride (PVC) casing having a screen section of factory-perforated 0.060-inch slots.

Boring depths and screen lengths are established from geologic profiles and based on field screening of volatile hydrocarbons with a PID. The annulus is filled to approximately 2 feet above the screen with a gravel pack consisting of 3/8-inch-diameter pea gravel. The gravel pack is covered with a layer of bentonite a maximum of 1 foot thick, and the remaining annular space is sealed to the surface with a sanitary seal of neat cement in compliance with ACFCWCD guidelines. The well heads are completed with traffic-proof vault boxes set in concrete to protect the well and are capped with water-tight locking devices. The top of the vault box is labeled "monitoring well." Well locations are surveyed and top-of-casing elevations measured to the nearest 0.01 foot. Detailed well completion diagrams are prepared. Water well driller's reports containing geological data, well locations, and construction details are submitted to the California Department of Water Resources through the ACFCWCD.

APPENDIX B

SITE SAFETY PLAN

SITE SAFETY AND OPERATIONS PLAN

Site: ARCO Service Station No. 276 Project no.:

Location: 10600 MacArthur Blvd Date: August 17, 1994

Oakland, California Prepared by: T. Gyrion/ P. Graham

Client contact: Micheal Whelan

Project objectives: Install 6 air sparge and 6 vapor extraction wells for future remedial use.

Scheduled activities and time period: drilling and installation of 12 remedial wells.

Background Review

	Preliminary	Complete
Access, overhead/underground utilities, etc.:	☐	X
Waste characterization:	☐	X
Hazard/safety level determination	☐	X

Comments: Soil in the area of the proposed borings may contain fuel hydrocarbons as determined by previous investigations and monitoring at the site.

Waste Type(s)/Characteristics

Liquid	X	Solid	☐	Volatile	X
Corrosive	☐	Ignitable	X	Gas	☒
Toxic	X	Radioactive	☐	Unknown	☐

Special considerations and comments: Aromatic compounds are known to be present in site soil. Benzene is of primary toxicological significance. Benzene is a know human carcinogen with a permissible exposure limit of 1 part per million in air. Personal protective equipment should be used (if determined by air monitoring) to prevent exposure. Use the attached safe work practices to reduce the potential for exposure.

SITE SAFETY AND OPERATIONS PLAN

Project No.

Facility Description (see Workplan for additional on and off site characterization, ARCO Service Station 2114)

Size: 1/4 acre Buildings and structures: Service station, fuel islands, UST complex

Topography and access:

General geologic and hydrologic setting:

Storage and disposal method(s):

Status (active, closed, unknown): Active

History (injury, illness, complaints, public or agency):

Special conditions and comments:

Hazard Evaluation

Fuel hydrocarbons including benzene, toluene, ethylbenzene and xylenes may be encountered while performing the above described activities. Benzene is of primary toxicological significance. Benzene is a known human carcinogen with an Occupational Safety and Health Administration permissible exposure limit of 1 part per million in air. The primary route of exposure to benzene and aromatic compounds is inhalation. To a lesser extent exposure can occur through skin absorption, skin contact, or injestion. Use personal protective equipment and the attached safe work practices to prevent exposure. Use a photoionization detector to monitor the total organic vapors in general breathing zone. Performing work near traffic can be a greater hazard than chemical exposure. Use orange safety vests, traffic cones, barricades and flagging tape to delineate work zones and to keep traffic away. Heat exposure can be a significant hazard particularly when using personal protective equipment. Take apprpriate rest breaks and drink plenty of water or electrolytic drinks such as gatorade to prevent dehydration and heat exposure.

SITE SAFETY AND OPERATIONS PLAN

Project No.

Operations Plan (see Workplan for additional on and off site characterization, ARCO Service Station 2114)

A map or site sketch is attached.

Site control (for vehicles, workers, the public, etc.) shown on Exhibit __

Zones of contamination: ☐ Known X Projected ☐ Unknown

Excavation, drilling, or sampling method: Mechanical drilling rigs with hollow stem augers

Comments:

Safety Equipment and Procedures

Level of protection: ☐ A ☐ B ☐ C (possible) X D

Additions and modifications: level D protection includes: hard hat, safety glasses, steel-toed boots and vinyl gloves. Upgrade to level C protection if air monitoring results indicate the need for respiratory protection. Level C protective equipment includes: level D protective equipment and a half or full face respirator with organic vapor/acied gas (yellow) cartridges. If wet or damp soils are incountered and contact with the soil is unavoidable use tyvek coveralls (polyethylene coated) (yellow) and nitrile (green) outer gloves to prevent exposure.

Special surveillance equipment and materials: Use a photoionization detector (PID) to monitor the air in the general breathing zone for total organic vapors. If PID readings exceed 1 ppm use respiratory protection. If PID readings exceed 5 ppm in the general breathing zone, stop work, turn of all power equipment, move to a suitable upwind location and call the office.

Decontamination procedures: Equipment that has been exposed to site soil will be properly decontaminated to prevent transfer of contaminants off site.

Personal decontamination station(s) (PDS):

PDS equipment, materials, and special facilities: Have potable water readily available for drinking and washing.

SITE SAFETY AND OPERATIONS PLAN

Project No.

Site Entry Procedures

Site team (no.): X EMCON ☐ Client ☐ Agency X Drilling Co.

Entry briefing date: before beginning activities Location: Tailgate

Site work team (name/responsibility):

1. Terry Gyrion/Geologist/Site Safety officer
2. Dan Galasso/Geologist
3.
4.
5.
6.

Special conditions (e.g., work schedule or limitations):

Emergency Procedures

Acute exposure symptom(s):	*First aid:*
1. eye irratation	flush out eyes with water
2. headache, nausea, respiratory system irritation	move to upwind location, use respirator
3. dizziness, faintness	move to upwind shady location, remove PPE
4.	

Hospitals/emergency medical center (address/phone no.) Map attached? ☐ Yes X No

1. San Leandro Hospital 13855 East 14th Street, San Leandro, CA 510 357-6500
2.

Emergency transportation (fire, ambulance, police):

1. ambulance
2.

Emergency routes:

1. Take highway 580 east to the 150th street exit and turn right. Continue to East 14th Street and turn right. Continue to 136 Avenue and the hospital is on the left (13855 East 14th Street)
2.
3.

SITE SAFETY AND OPERATIONS PLAN

Project No.

Safety/Health Equipment Check-out List

General Safety:

First aid kit	X	Orange Safety Vests	☒
Safety glasses/face shield	X	Drinking water	X
Safety shoes/gloves	X	Tyvek suits/vinyl gloves	X
Personal clothing change	☐	Hearing protection	X
Wash/decontamination materials	☒	Cones, Barricades, flagging tape	X

Specific Safety Equipment:

- X Respirator: type (dust, cartridge, SCBA, etc.) half or full face with organic vapor/acid gas cartridges
- ☐ Combustible gas/explosimeter
- ☐ Oxygen indicator
- ☐ Dosimeter badge(s)
- ☐ Draeger/Sensidyne pump and benzene, chlorinated solvent detector tubes
- X Duct tape, brushes, buckets, water, soap, paper towels, caution tape, traffic cones
- X Photoionization detector
- X Fire extinguisher(ABC rated)
- ☐ _____

Special conditions and comments: Current OSHA HAZWOPER training status required to perform activities associated with this plan. Current medical monitoring status.

Note: This H&S plan has been developed for the use of EMCON personnel only. EMCON makes this plan available for review by other personnel on a work site; however, this plan does not cover the employees of any other employer on the work site.

Date:

Project Manager: _____ _____

Region HSM: Phillip R. Graham 8-16-94

Supplemental signature page included? X Yes ☐ No

SITE SAFETY AND OPERATIONS PLAN

Project No.

Site:_____ Date:_____

Note: EMCON personnel must understand and comply with the specific practices and guidelines described in the QA/QC Manual regarding field safety and health hazards.

Sign-off: I have read and I understand the attached Health and Safety Plan, and agree to comply with the requirements described within.

Name:	Title:	Date: