Versar INC. SACRAMENTO

UNDERGROUND STORAGE TANK REMOVAL REPORT
1441 EMBARCADERO, OAKLAND, CALIFORNIA

Prepared for:

CROWLEY MARINE SERVICES, INC.
2401 Fourth Avenue
Seattle, Washington 98111

Prepared by:

VERSAR, INC.
5330 Primrose Drive, Suite 228
Fair Oaks, California 95628

Versar Project No. 1457-027

July 29, 1994

EXECUTIVE SUMMARY

This Underground Storage Tank Removal Report for 1441 Embarcadero, Oakland, California, was prepared by Versar, Inc., for Crowley Marine Services, Inc. Mr. Lawrence Kleinecke, Senior Geohydrologist, prepared this report. Mr. Michael Holley, P.E., Engineering Program Manager, reviewed this report.

On February 17, 1994, Versar, Inc., removed a 500-gallon underground storage tank from the northeast corner of the Pacific Dry Dock Yard I site. The tank had been abandoned for some time and contained water with traces of total petroleum hydrocarbons as diesel (TPH-D); total petroleum hydrocarbons as gasoline (TPH-G); and benzene, toluene, ethylbenzene, and xylenes (BTEX).

Upon removal, the tank was found to have several small holes in the bottom, primarily in the south end. The excavated soils were found to contain concentrations of petroleum hydrocarbons sufficient to make the soil unusable for backfilling. The sidewall samples were clean, except for the south wall sample, which contained 72 milligrams per kilogram of TPH-D. A groundwater sample collected from the excavation contained TPH-D, TPH-G, and BTEX.

Prepared by:

Lawrence Kleinecke
Senior Geohydrologist

Approved for Release:

Michael D. Holley, P.E.
Engineering Program Manager

James R. Frantes, R.G.
Vice President

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1.0 INTRODUCTION

Versar, Inc. (Versar) is conducting an environmental site investigation at Pacific Dry Dock Yard I (PDDI), located at 1441 Embarcadero in Oakland, California, as proposed in its Phase II Site Investigation Work Plan (Versar, March 1992) and modified in the Addendum to Phase II Site Investigation Work Plan (Versar, September 1992). During this investigation an abandoned underground storage tank (UST) was identified near the northeast corner of PDDI. The volume of the UST was estimated to be between 500 gallons and 1,000 gallons. The origin and operational history of the UST are not known. Figures 1 and 2 show the site location and site layout, respectively.

As part of the Phase II site investigation, Versar collected soil samples using soil coring equipment on the three accessible sides of the UST and analyzed them for total petroleum hydrocarbons as gasoline (TPH-G); total petroleum hydrocarbons as diesel (TPH-D); total oil and grease (TOG); benzene, toluene, ethylbenzene, and xylenes (BTEX); semi-volatile organic compounds (SVOC); copper; lead; and mercury. Figure 3 shows the sampling locations near the UST with analytical results. (Ni, Cd, Cr, Zn)

At sampling location BH27E, located within five feet of the south end of the UST, minor concentrations totaling less than 5 milligrams per kilogram (mg/kg) of TPH-G and TPH-D and a somewhat higher concentration (98 mg/kg) of TOG were identified in the vadose soils. Laboratory analysis of the soil samples collected from BH27E did not identify any BTEX or SVOC. At sampling location BH29E, located 19 feet north of the UST, no TPH-G, TPH-D, or TOG was identified in either of two soil samples collected from 2.5 feet and 5.0 feet below ground surface (bgs), respectively. Toluene, however, was identified at a concentration of 0.0056 mg/kg (just above the reporting limit) in the sample collected at 2.5 feet bgs. Laboratory analysis of the sample collected from location BH28E, south of the UST, did not identify TPH-D, TPH-G, TOG, or BTEX.

Laboratory analysis of a sample of the contents of the UST identified fresh water (salinity of 0.86) containing dissolved TPH-G, TPH-D, and BTEX.

2.0 ENVIRONMENTAL SETTING

PDDI occupies approximately two acres of shoreline property between the Embarcadero and Brooklyn Basin (an estuary of Oakland Harbor). The property is physically divided into eastern and western sections by a marine railway (see Figure 1).

The site is nearly level at an elevation of between five and ten feet above lower low water (National Geodetic Vertical Datum of 1929). Versar has characterized the shallow soils as sand, silt, and clay fill material extending from the surface to the bay muds. The depth of the bay muds varies from approximately 6.5 feet bgs beneath the north edge of the Embarcadero to 12 feet bgs near the south edge of the site, near Brooklyn Basin. The bay muds consist of silty clays and clays with shell fragments and thin, water-saturated layers of sands or gravels.

Groundwater occurrence in the soils beneath the site appears to vary with the tides (Versar, February 1994). The depth to groundwater typically varies from the elevation of the bay muds to several feet above the bay muds. During the UST removal, groundwater entered the excavation from saturated soils that begin at approximately 7 feet bgs.

3.0 UNDERGROUND STORAGE TANK REMOVAL

Before removing the UST an underground tank closure plan was submitted to, and approved by, the Alameda County Health Care Services Agency (ACHCSA), the Bay Area Air Quality Management District (BAAQMD), the Oakland Fire Department, and the Port of Oakland. Appendix A contains a copy of the underground tank closure plan. Appendix B contains copies of manifest and permit documents.

Under an agreement between the Port of Oakland and Crowley Marine Services (Crowley), the UST removal was contracted by Crowley and the tank and rinse water shipping manifests were signed by the Port of Oakland as the generator. The UST removal was conducted on February 17, 1994. Oakland Fire Department inspector Mr. Larry James inspected the UST and authorized its removal. ACHCSA representative Ms. Eva Chu witnessed the UST removal and authorized the soil and groundwater sampling. Port of Oakland representative Mr. Dan Shernholz signed the manifests for the tank and rinse water transportation. The UST removal was conducted under the direction of Versar representative Mr. Lawrence Kleinecke, Senior Geohydrologist. Mr. R. Stephen Wilson of Crowley was present as an observer.

The UST fill port was set in a three-foot-square concrete pad located six feet from the eastern site boundary fence. The surface expression of a vent pipe and apparent product line were found six inches from the eastern fence. The piping was connected to the UST; however, the extent of the product line beyond the surface expression could not be defined or investigated because of its proximity to the property boundary. Figures 4 and 5 show the tank and piping locations and the excavation detail and sampling locations.

The UST backfill consisted of black silty sand extending to approximately 3 feet bgs, coincident with the top of the UST. A greenish-gray clay with occasional masses of shells extended to the bottom of the excavation. An excavation 11 feet long by 4 feet wide was required to expose the UST. The lower portion of the UST was below the water table.

The tank was constructed of steel with ribbed sides, cylindrical in shape, with dimensions of 10 feet long by 3 feet diameter (corresponding to an estimated capacity of 528 gallons). The fill port was located at the north end of the tank with vent and product connections located next to the fill port. The vent line was constructed of steel pipe, 1.5 inches in diameter, and extended six feet east to a pipe elbow and protruded through the asphalt surface. The product line was 3/4-inch-diameter steel pipe at the UST connection. The pipe appeared to extend six feet east with a 1/2-inch-diameter connector protruding through the surface.

Approximately 500 gallons of water were removed from the UST initially. The tank was triple rinsed, according to Port of Oakland requirements, and the rinsate removed. The water and rinsate had a slight hydrocarbon odor. Approximately 50 pounds of solid carbon dioxide (dry ice) was placed in the tank and allowed to sublime.

Following approval by the Oakland Fire Department, the tank was lifted from the excavation and inspected. The tank exhibited pitting and corrosion, and three pin-sized holes were observed in the central and south portions of the tank bottom. The tank was manifested by Mr. Dan Schoenholz and placed on a truck for delivery to the disposal company. The manifest listed the UST as 1,000-gallon capacity; however, later calculations determined the actual capacity to be approximately 500 gallons.

Versar collected three soil samples (SW1, SW2, and SW3) and one water sample (UST-1) from the excavation for laboratory analysis. To facilitate sampling without entering the excavation, soil was collected from the excavation walls just above the saturated soil with a backhoe bucket. The sample was then collected from the removed soil by driving a previously decontaminated brass tube into a relatively undisturbed portion in the center of the bucket. The brass tube was completely filled with soil and sealed with Teflon film, plastic caps, and Parafilm (a nonadhesive flexible tape); labeled appropriately; and placed on ice in a cooler. Ms. Chu observed the sampling and approved the sample locations and methods.

Soil sample SW1 was collected from the center of the south wall at 6 feet 3 inches bgs. Soil sample SW2 was collected from the center of the west wall at 6 feet 8 inches bgs. Soil sample SW3 was collected from the center of the north wall at 6 feet 8 inches bgs. A soil sample was not collected from the east wall as it was deemed unnecessary by Ms. Chu. A composite sample (UST-1) was collected from the excavated soils.

Groundwater was found to be entering the excavation from the saturated soils identified below 7 feet bgs. The groundwater exhibited a sheen typical of petroleum hydrocarbons. Before collecting a sample, the groundwater was removed and the excavation allowed to refill. After a second removal, the excavation was allowed to refill and a water sample (UST-l) was collected for laboratory analysis using a disposable bailer.

The samples were placed on ice in a cooler for delivery to the laboratory. A representative of Trace Analysis Laboratory, Inc. (Trace) picked up the samples and Versars chain-of-custody document from the site. The excavation was barricaded and left open pending receipt of the laboratory analytical results. Approximately 10 cubic yards of excavated soil were left on site pending the results of laboratory analysis.

4.0 LABORATORY ANALYTICAL RESULTS

As required in the underground tank closure plan, the soil samples were submitted to Trace for analysis for TPH-D by the DHS Method (GCFID), LUFT Field Manual; TPH-G by the DHS Method (GCFID), LUFT Field Manual; BTEX by EPA Method 8020; TOG by EPA Method 5520 D&F; and total lead by atomic absorption. The water sample was analyzed for TPH-D and TPH-G by the DHS Method, LUFT Field Manual; BTEX by EPA Method 602; and TOG by EPA Method 5520F. Tables 1 and 2 summarize the laboratory analytical results for soil and groundwater, respectively. Copies of the laboratory analytical results and chain-of-custody documents are included as Appendix C.

Laboratory analysis of the excavation sidewall soil samples did not identify any TPH-G or BTEX compounds. Sample SW1, collected from the south wall, was reported to contain 72 mg/kg of TPH-D. Lead concentrations were between 5.1 mg/kg and 8.2 mg/kg.

Laboratory analysis of the groundwater sample reported 8.4 milligrams per liter (mg/L) of TPH-D, 0.38 mg/L of TPH-G, 0.028 mg/L of benzene, 0.12 mg/L of toluene, 0.011 mg/L of ethylbenzene, and 0.035 mg/L of total xylenes.

The composite sample collected from the excavated soil was reported to contain 57 mg/kg of TPH-D, 0.51 mg/kg TPH-G, 0.0095 mg/kg of toluene, 0.047 mg/kg of total xylenes, and 18 mg/kg of lead.

5.0 REFERENCES

State of California, Regional Water Quality Control Board, Tri-Regional Board Staff Recommendations for Preliminary Evaluation of Underground Tank Sites.

State of California, 1989. State Water Resources Control Board, LUFT Field Manual.

Versar, Inc., March 1992. Phase II Site Investigation Work Plan, Pacific Dry Dock Yard I, 1441 Embarcadero, Oakland, California.

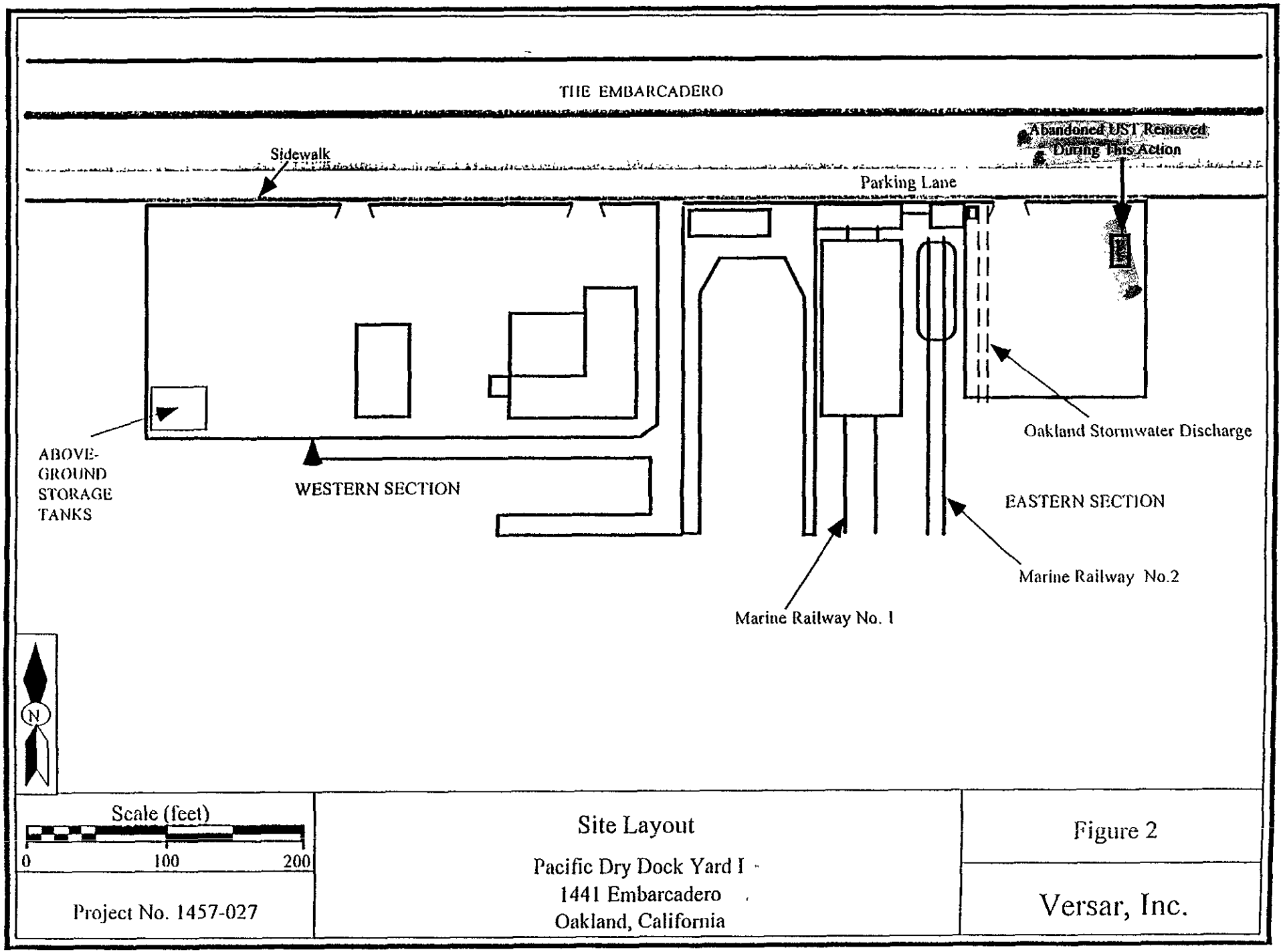
Versar, Inc., September 1992. Addendum to Phase II Site Investigation Work Plan, Pacific Dry Dock Yard I, 1441 Embarcadero, Oakland, California.

Versar, Inc., February 1994. Draft Second Quarterly Groundwater Monitoring Report, Pacific Dry Dock Yard I, 1441 Embarcadero, Oakland, California.

FIGURES

SOURCE: USGS TOPO 1959

Scale (miles) 0 0.25 0.50	Site Location	Figure 1
Project No. 1457-027	Pacific Dry Dock Yard I 1441 Embarcadero Oakland, California	Versar, Inc.



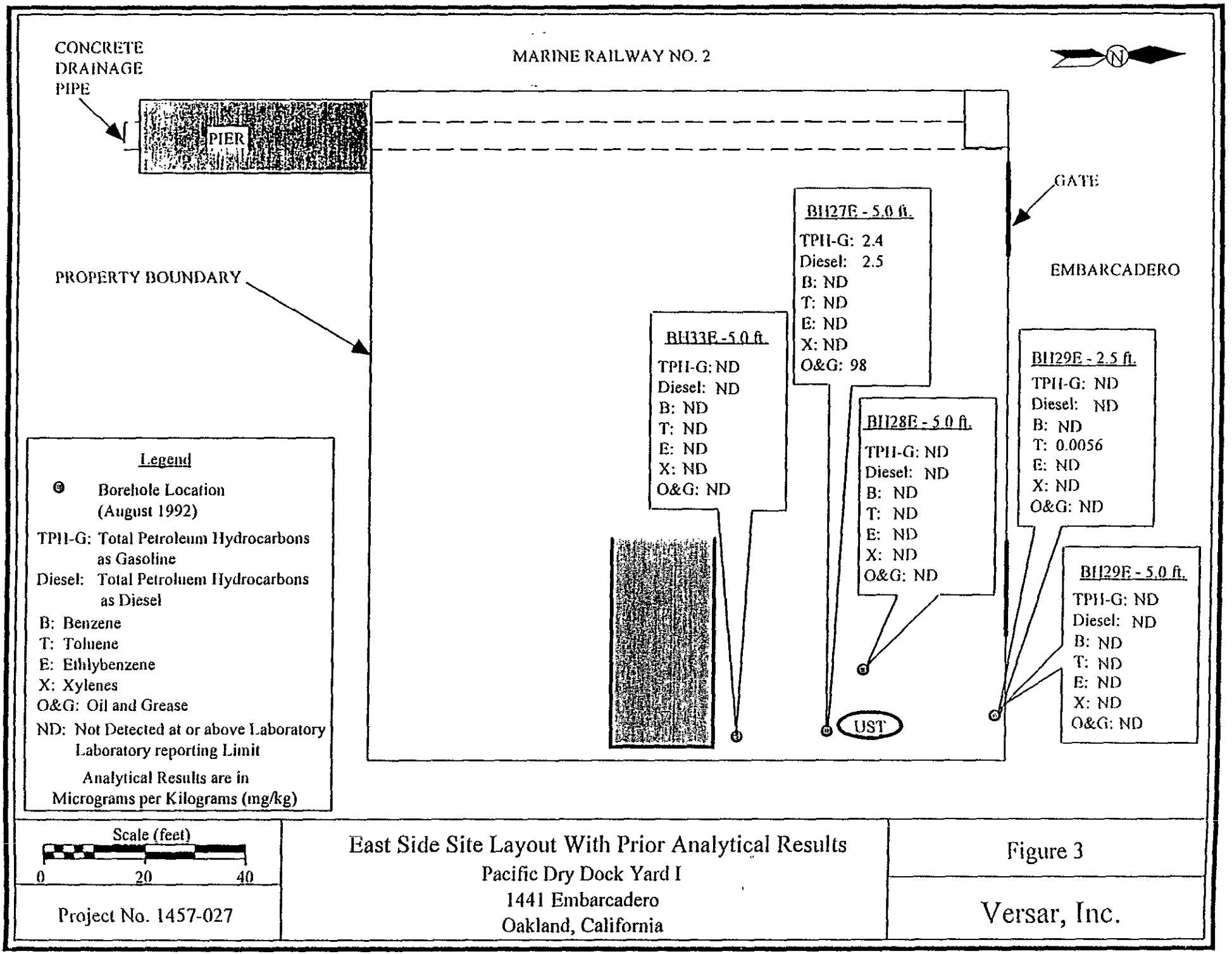
Project No. 1457-027

Site Layout

Pacific Dry Dock Yard I
1441 Embarcadero
Oakland, California

Figure 2

Versar, Inc.



East Side Site Layout With Prior Analytical Results

Pacific Dry Dock Yard I

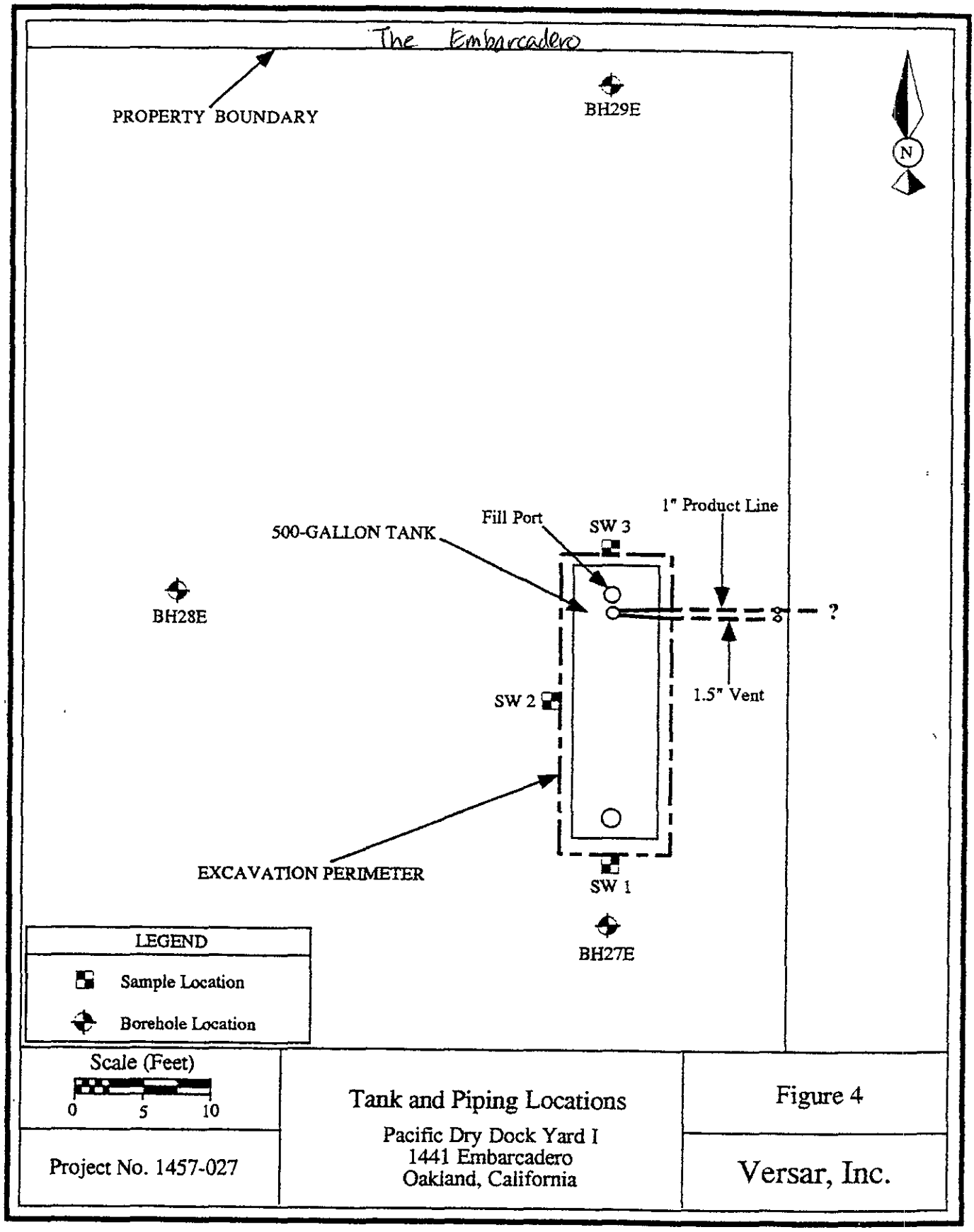
1441 Embarcadero

Oakland, California

Figure 3

Project No. 1457-027

Versar, Inc.


The Embarcadero
PROPERTY BOUNDARY
BH29E
N
1" Product Line
Fill Port
SW 3
500-GALLON TANK
BH28E
?
SW 2
1.5" Vent
EXCAVATION PERIMETER
SW 1
BH27E
LEGEND
Sample Location
Borehole Location
Scale (Feet)
0
5
10
Tank and Piping Locations
Pacific Dry Dock Yard I
1441 Embarcadero
Oakland, California
Figure 4
Project No. 1457-027
Versar, Inc.

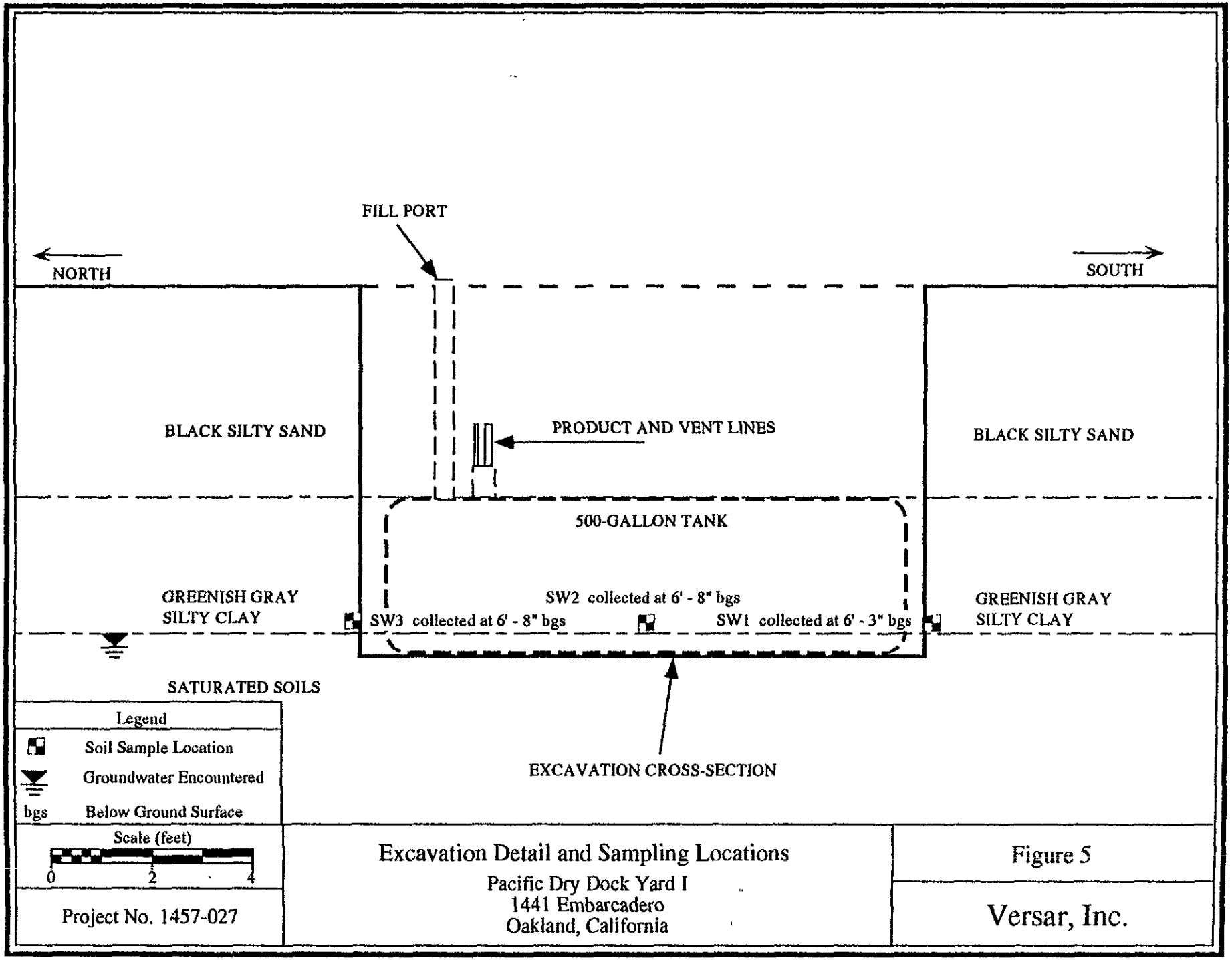

FILL PORT
NORTH
SOUTH
BLACK SILTY SAND
PRODUCT AND VENT LINES
BLACK SILTY SAND
500-GALLON TANK
GREENISH GRAY
SILTY CLAY
SW2 collected at 6' - 8" bgs
SW3 collected at 6' - 8" bgs
SW1 collected at 6' - 3" bgs
GREENISH GRAY
SILTY CLAY
SATURATED SOILS
EXCAVATION CROSS-SECTION
Legend
Soil Sample Location
Groundwater Encountered
bgs Below Ground Surface
Scale (feet)
0
2
4
Project No. 1457-027
Excavation Detail and Sampling Locations
Pacific Dry Dock Yard I
1441 Embarcadero
Oakland, California
Figure 5
Versar, Inc.

Table 1

Laboratory Analytical Results for Soils

Pacific Dry Dock and Repair Yard I
Oakland, California

Sample Number	Sample Collection Date	Total Petroleum Hydrocarbons[1]		T O G[2]	Volatile Organics[3]				Lead[5] (mg/kg)
		Gasoline (mg/kg)[4]	Diesel (mg/kg)	Total Oil and Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	
COMP-1	02/17/94	0.51	57	<5.0	<0.005	0.010	<0.005	0.047	18
SW1	02/17/94	<0.5	72	<5.0	<0.005	<0.005	<0.005	<0.015	8.2
SW2	02/17/94	<0.5	<1.0	<5.0	<0.005	<0.005	<0.005	<0.015	6.9
SW3	02/17/94	<0.5	<1.0	<5.0	<0.005	<0.005	<0.005	<0.015	5.1

[1] California DHS/LUFT Manual Method

[2] EPA Method 5220C&F

[3] EPA Method 8020

[4] Milligrams per kilogram (equivalent to parts per million)

[5] EPA Method 7420

Table 2

Laboratory Analytical Results for Groundwater

Pacific Dry Dock and Repair Yard I
Oakland, California

Sample Number	Sample Collection Date	Total Petroleum Hydrocarbons[1]		T O G [2]	Volatile Organics[3]			
		Gasoline (mg/L)[4]	Diesel (mg/L)	Total Oil and Grease (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)
UST1	02/17/94	0.38	8.4	<5.0	0.028	0.12	0.011	0.035

[1] California DHS/LUFT Manual Method

[2] EPA Method 5220C&F

[3] EPA Method 8020

[4] Milligrams per liter (equivalent to parts per million)

APPENDIX A

Underground Tank Closure Plan

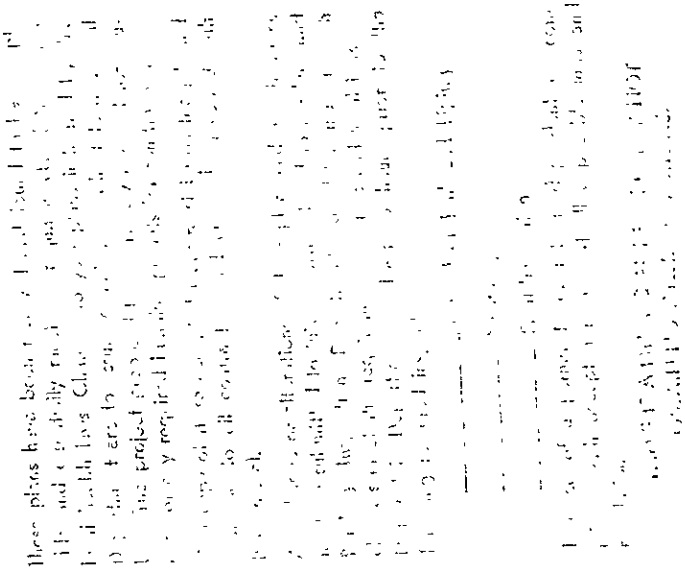
ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621
PHONE NO. 510/271-4320

FILE

5-11-93-MB

ACCEPTED

DEPARTMENT OF ENVIRONMENTAL HEALTH
470 - 27th St., Third Floor
Oakland, CA 94612
Telephone (510) 271-4320



UNDERGROUND TANK CLOSURE PLAN
*** * * Complete according to attached instructions * * ***

1. Business Name PACIFIC DRY DOCK & REPAIR YARD

   Business Owner CROWLEY MARINE SERVICES

2. Site Address 1441 EMBARCADERO

   City OAKLAND Zip 94606 Phone _____

3. Mailing Address 2401 FOURTH AVENUE, P.O. BOX 2287

   City SEATTLE, WA Zip 98111 Phone (206) 443-7882

4. Land Owner PORT OF OAKLAND

   Address 530 WATER STREET City, State OAKLAND, CA Zip 94607

5. Generator name under which tank will be manifested _____

   ~~CROWLEY MARINE SERVICES~~ PORT OF OAKLAND

   EPA I.D. No. under which tank will be manifested ~~CAD009140864~~ CAC000941296

   Verified with Tom Peacock 2/8/94

6. Contractor ARONSON ENGINEERING, INC.

Address 6809 McCOMBER STREET

City SACRAMENTO, CA 95828 Phone 916-381-1600

License Type* A-HAZ ID# 592010

*Effective January 1, 1992, Business and Professional Code Section 7058.7 requires prime contractors to also hold Hazardous Waste Certification issued by the State Contractors License Board. Indicate that the certificate has been received, in addition, to holding the appropriate contractors license type.

7. Consultant VERSAR, INC.

Address 5330 PRIMROSE DR., SUITE 228

City FAIR OAKS, CA Phone (916) 962-1612

8. Contact Person for Investigation

Name MR. LAWRENCE KLEINECKE Title VERSAR, PROJECT MANAGER

Phone

9. Number of tanks being closed under this plan ONE (1)

Length of piping being removed under this plan LESS THAN 20 FEET

Total number of tanks at facility ONE (1)

10. State Registered Hazardous Waste Transporters/Facilities (see instructions).

** Underground tanks are hazardous waste and must be handled as hazardous waste **

a) Product/Residual Sludge/Rinsate Transporter

Name REFINERY SERVICES EPA I.D. No. CAD 981696420

Hauler License No. 2591 License Exp. Date 10/31/93

Address P.O. BOX 1167

City PATTERSON State CA Zip 95363

b) Product/Residual Sludge/Rinsate Disposal Site

Name REFINERY SERVICES EPA I.D. No. CAD 981696420

Address P.O. BOX 1167

City PATTERSON State CA Zip 95363

c) Tank and Piping Transporter

Name ERICKSON, INC. EPA I.D. No. CAD 009466392

Hauler License No. 0019 License Exp. Date NONE

Address 255 PARR BLVD.

City RICHMOND State CA Zip 94801

d) Tank and Piping Disposal Site

Name ERICKSON, INC. EPA I.D. No. CAD 009466392

Address 255 PARR BLVD.

City RICHMOND State CA Zip 94801

11. Experienced Sample Collector

Name LAWRENCE KLEINECKE

Company VERSAR, INC.

Address 5330 PRIMROSE DR., SUITE 228

City FAIR OAKS State CA Zip 95628 Phone (916) 962-1612

12. Laboratory

Name TRACE ANALYSIS LABORATORY

Address 4323 INVESTMENT BLVD., UNIT 8

City HAYWARD State CA Zip 94545

State Certification No. 1199

13. Have tanks or pipes leaked in the past? Yes [ ] No [X]

If yes, describe.

14. Describe methods to be used for rendering tank inert

TRIPLE RINSE, ADD 25 LBS. DRY ICE PER 1,000 GALLONS TANK CAPACITY.

Before tanks are pumped out and inerted, all associated piping must be flushed out into the tanks. All accessible associated piping must then be removed. Inaccessible piping must be plugged.

The Bay Area Air Quality Management District (771-6000), along with local Fire and Building Departments, must also be contacted for tank removal permits. Fire departments typically require the use of explosion proof combustible gas meters to verify tank inertness. **It is the contractor's responsibility to bring a working combustible gas meter on site to verify tank inertness.**

15. Tank History and Sampling Information

Tank		Material to be sampled (tank contents, soil, ground-water, etc.)	Location and Depth of Samples
Capacity	Use History (see instructions)		
APPROXIMATE 400 GALS.	UNKNOWN	SOIL GROUND WATER (IF PRESENT)	SIDEWALL SOIL SAMPLE ABOVE THE WATER TABLE AND GROUND WATER IF PRESENT.

One soil sample must be collected for every 20 feet of piping that is removed. A ground water sample must be collected should any ground water be present in the excavation.

Excavated/Stockpiled Soil	
Stockpiled Soil Volume (Estimated) 15 CUBIC YARDS	Sampling Plan 1 DISCRETE SAMPLE FOR EVERY 20 CUBIC YARDS

Stockpiled soil must be placed on bermed plastic and must be completely covered by plastic sheeting.

16. Chemical methods and associated detection limits to be used for analyzing samples

The Tri-Regional Board recommended minimum verification analyses and practical quantitation reporting limits should be followed. See attached Table 2.

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Method Number	Method Detection Limit
TPH-G	EPA 5030:SOIL 5030:WATER	GCFID	SOIL: 1.0 PPM WATER 50 PPB
TPH-D	EPA 3550:SOIL 3510:WATER	GCFID	SOIL: 1.0 PPM WATER:50 PPB
BTEX		EPA 8020: SOIL EPA 602: WATER	SOIL: 0.005 PPM WATER: 0.5 PPB
OIL & GREASE		EPA 5520 D&F: SOIL EPA 5520 C&F: WATER	SOIL: 50 PPM WATER: 5,000PPB
TOTAL LEAD	SAMPLE DIGESTION	AA	AS PER CALIF. ADMIN. CODE

17. Submit Site Health and Safety Plan (See Instructions)

18. Submit Worker's Compensation Certificate copy

Name of Insurer GOLDEN EAGLE INSURANCE COMPANY

19. Submit Plot Plan (See Instructions)

20. Enclose Deposit (See Instructions)

21. **Report any leaks or contamination to this office within 5 days of discovery.** The report shall be made on an Underground Storage Tank Unauthorized Leak/Contamination Site Report form. (see Instructions)

22. Submit a closure report to this office within 60 days of the tank removal. This report must contain all the information listed in item 22 of the instructions.

I declare that to the best of my knowledge and belief the statements and information provided above are correct and true.

I understand that information in addition to that provided above may be needed in order to obtain an approval from the Department of Environmental Health and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I understand that all work performed during this project will be done in compliance with all applicable OSHA (Occupational Safety and Health Administration) requirements concerning personnel health and safety. I understand that site and worker safety are solely the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Once I have received my stamped, accepted closure plan, I will contact the project Hazardous Materials Specialist at least three working days in advance of site work to schedule the required inspections.

Signature of Contractor

Name (please type) GARY NYGREN

Signature Gary Nygren

Date 02/16/93

Signature of Site Owner or Operator

Name (please type) Charles F. Nalen

Signature Charles F. Nalen

Date 2/23/93

ACORD CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY)

PRODUCER

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
3096

INSURED

ARONSON ENGINEERING, INC AND
MICHAEL T. ARONSON, INC
8609 MC COMBER STREET
SACRAMENTO, CA 95829

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY LETTER A GOLDEN EAGLE INS. CO.

COMPANY LETTER B

COMPANY LETTER C

COMPANY LETTER D

COMPANY LETTER E

Aronson Engineering Incorporated

FEB 12 1993

RECEIVED

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				GENERAL AGGREGATE	$ [illegible]
	X COMMERCIAL GENERAL LIABILITY	RENEWAL OF	02/06/93	02/06/94	PRODUCTS-COMP/OP AGG.	$ 2000000
A	CLAIMS MADE / OCCUR.	[illegible]			PERSONAL & ADV. INJURY	$ 1000000
	X OWNER'S & CONTRACTOR'S PROT.	$1,000 PROPERTY			EACH OCCURRENCE	$ 1000000
		DAMAGE DEDUCT.			FIRE DAMAGE (Any one fire)	$ 50000
		PER CLAIM			MED. EXPENSE (Any one person)	$ 5000
	AUTOMOBILE LIABILITY					
	ANY AUTO				COMBINED SINGLE LIMIT	$ 1000000
	X ALL OWNED AUTOS					
A	SCHEDULED AUTOS	RENEWAL OF			BODILY INJURY (Per person)	$
	X HIRED AUTOS	[illegible]	02/06/93	02/06/94		
	X NON-OWNED AUTOS				BODILY INJURY (Per accident)	$
	GARAGE LIABILITY					
					PROPERTY DAMAGE	$
	EXCESS LIABILITY					
	UMBRELLA FORM	RENEWAL OF			EACH OCCURRENCE	$ [illegible]
A	X OTHER THAN UMBRELLA FORM	[illegible]	[illegible]	[illegible]	AGGREGATE	$ 1000000
	WORKER'S COMPENSATION				STATUTORY LIMITS	
A	AND	PWC 18 23 78-00	04/30/92	04/30/93	EACH ACCIDENT	$ 1000000
	EMPLOYERS' LIABILITY				DISEASE—POLICY LIMIT	$ 1000000
					DISEASE—EACH EMPLOYEE	$ 1000000
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL ___ DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE
LINDA HAMPTON Linda Hampton

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

UNDERGROUND STORAGE TANK PERMIT APPLICATION - FORM A

COMPLETE THIS FORM FOR EACH FACILITY/SITE

MARK ONLY ONE ITEM: ☐ 1 NEW PERMIT ☐ 2 INTERIM PERMIT ☐ 3 RENEWAL PERMIT ☐ 4 AMENDED PERMIT ☐ 5 CHANGE OF INFORMATION ☒ 6 TEMPORARY SITE CLOSURE ☐ 7 PERMANENTLY CLOSED SITE

I. FACILITY/SITE INFORMATION & ADDRESS - (MUST BE COMPLETED)

DBA OR FACILITY NAME: PACIFIC DRY DOCK & REPAIR YARD I	NAME OF OPERATOR: PACIFIC DRY DOCK		
ADDRESS: 1441 EMBARCADERO	NEAREST CROSS STREET	PARCEL # (OPTIONAL)	
CITY NAME: OAKLAND	STATE: CA	ZIP CODE: 94606	SITE PHONE # WITH AREA CODE: (510) 816-3819

✓ BOX TO INDICATE: ☒ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL-AGENCY DISTRICTS ☐ COUNTY-AGENCY ☐ STATE-AGENCY ☐ FEDERAL-AGENCY

TYPE OF BUSINESS: ☐ 1 GAS STATION ☐ 2 DISTRIBUTOR ☐ 3 FARM ☐ 4 PROCESSOR ☒ 5 OTHER	☐ ✓ IF INDIAN RESERVATION OR TRUST LANDS	# OF TANKS AT SITE: 1	E. P. A. I. D. # (optional)

EMERGENCY CONTACT PERSON (PRIMARY)		EMERGENCY CONTACT PERSON (SECONDARY) - optional	
DAYS: NAME (LAST, FIRST)	PHONE # WITH AREA CODE	DAYS: NAME (LAST, FIRST)	PHONE # WITH AREA CODE
NIGHTS: NAME (LAST, FIRST)	PHONE # WITH AREA CODE	NIGHTS: NAME (LAST, FIRST)	PHONE # WITH AREA CODE

II. PROPERTY OWNER INFORMATION - (MUST BE COMPLETED)

NAME: PORT OF OAKLAND	CARE OF ADDRESS INFORMATION: DAN SCHOENHOLZ		
MAILING OR STREET ADDRESS: 530 WATER STREET	✓ box to indicate: ☐ INDIVIDUAL ☐ LOCAL-AGENCY ☐ STATE-AGENCY ☐ CORPORATION ☐ PARTNERSHIP ☐ COUNTY-AGENCY ☐ FEDERAL-AGENCY		
CITY NAME: OAKLAND	STATE: CA	ZIP CODE: 94607	PHONE # WITH AREA CODE: (510) 272-1220

III. TANK OWNER INFORMATION - (MUST BE COMPLETED)

NAME OF OWNER: UNKNOWN	CARE OF ADDRESS INFORMATION		
MAILING OR STREET ADDRESS	✓ box to indicate: ☐ INDIVIDUAL ☐ LOCAL-AGENCY ☐ STATE-AGENCY ☐ CORPORATION ☐ PARTNERSHIP ☐ COUNTY-AGENCY ☐ FEDERAL-AGENCY		
CITY NAME	STATE	ZIP CODE	PHONE # WITH AREA CODE

IV. BOARD OF EQUALIZATION UST STORAGE FEE ACCOUNT NUMBER - Call (916) 323-9555 if questions arise.

TY (TK) HQ 4 4 - ☐☐☐☐☐☐

V. PETROLEUM UST FINANCIAL RESPONSIBILITY - (MUST BE COMPLETED) – IDENTIFY THE METHOD(S) USED

✓ box to indicate: ☐ 1 SELF-INSURED ☐ 2 GUARANTEE ☐ 3 INSURANCE ☐ 4 SURETY BOND ☐ 5 LETTER OF CREDIT ☐ 6 EXEMPTION ☐ 99 OTHER

VI. LEGAL NOTIFICATION AND BILLING ADDRESS

Legal notification and billing will be sent to the tank owner unless box I or II is checked.

CHECK ONE BOX INDICATING WHICH ABOVE ADDRESS SHOULD BE USED FOR LEGAL NOTIFICATIONS AND BILLING: I. ☐ II. ☐ III. ☐

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT

APPLICANT'S NAME (PRINTED & SIGNATURE)	APPLICANT'S TITLE	DATE MONTH/DAY/YEAR
LAWRENCE KLEINECKE	HYDROLOGIST	03/03/93

LOCAL AGENCY USE ONLY

COUNTY #	JURISDICTION #	FACILITY #
☐☐	☐☐☐	☐☐☐☐☐☐

LOCATION CODE - *OPTIONAL*	CENSUS TRACT # - *OPTIONAL*	SUPVISOR - DISTRICT CODE - *OPTIONAL*

THIS FORM MUST BE ACCOMPANIED BY AT LEAST (1) OR MORE PERMIT APPLICATION - FORM B, UNLESS THIS IS A CHANGE OF SITE INFORMATION ONLY.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

UNDERGROUND STORAGE TANK PERMIT APPLICATION - FORM B

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM.

MARK ONLY ONE ITEM: [ ] 1 NEW PERMIT [ ] 2 INTERIM PERMIT [ ] 3 RENEWAL PERMIT [ ] 4 AMENDED PERMIT [ ] 5 CHANGE OF INFORMATION [ ] 6 TEMPORARY TANK CLOSURE [ ] 7 PERMANENTLY CLOSED ON SITE [X] 8 TANK REMOVED

DBA OR FACILITY NAME WHERE TANK IS INSTALLED: PACIFIC DRY DOCK & REPAIR YARD I

I. TANK DESCRIPTION

COMPLETE ALL ITEMS – SPECIFY IF UNKNOWN

A. OWNER'S TANK I. D. # UNKNOWN

B. MANUFACTURED BY: UNKNOWN

C. DATE INSTALLED (MO/DAY/YEAR) UNKNOWN

D. TANK CAPACITY IN GALLONS: APPROX. 400 GALS. (UNKNOWN)

II. TANK CONTENTS

IF A-1 IS MARKED, COMPLETE ITEM C.

A. [ ] 1 MOTOR VEHICLE FUEL [ ] 2 PETROLEUM [ ] 3 CHEMICAL PRODUCT [ ] 4 OIL [ ] 80 EMPTY [X] 95 UNKNOWN

B. [ ] 1 PRODUCT [ ] 2 WASTE

C. [ ] 1a REGULAR UNLEADED [ ] 1b PREMIUM UNLEADED [ ] 2 LEADED [ ] 3 DIESEL [ ] 4 GASAHOL [ ] 5 JET FUEL [ ] 6 AVIATION GAS [ ] 7 METHANOL [ ] 99 OTHER (DESCRIBE IN ITEM D. BELOW)

D. IF (A.1) IS NOT MARKED, ENTER NAME OF SUBSTANCE STORED UNKNOWN C. A. S. # :

III. TANK CONSTRUCTION

MARK ONE ITEM ONLY IN BOXES A, B, AND C, AND ALL THAT APPLIES IN BOX D AND E

A. TYPE OF SYSTEM: [ ] 1 DOUBLE WALL [ ] 2 SINGLE WALL [ ] 3 SINGLE WALL WITH EXTERIOR LINER [ ] 4 SECONDARY CONTAINMENT (VAULTED TANK) [X] 95 UNKNOWN [ ] 99 OTHER _____

B. TANK MATERIAL (Primary Tank): [ ] 1 BARE STEEL [ ] 2 STAINLESS STEEL [ ] 3 FIBERGLASS [ ] 4 STEEL CLAD W/ FIBERGLASS REINFORCED PLASTIC [ ] 5 CONCRETE [ ] 6 POLYVINYL CHLORIDE [ ] 7 ALUMINUM [ ] 8 100% METHANOL COMPATIBLE W/FRP [ ] 9 BRONZE [ ] 10 GALVANIZED STEEL [X] 95 UNKNOWN [ ] 99 OTHER _____

C. INTERIOR LINING: [ ] 1 RUBBER LINED [ ] 2 ALKYD LINING [ ] 3 EPOXY LINING [ ] 4 PHENOLIC LINING [ ] 5 GLASS LINING [ ] 6 UNLINED [X] 95 UNKNOWN [ ] 99 OTHER _____

IS LINING MATERIAL COMPATIBLE WITH 100% METHANOL ? YES ___ NO ___

D. CORROSION PROTECTION: [ ] 1 POLYETHYLENE WRAP [ ] 2 COATING [ ] 3 VINYL WRAP [ ] 4 FIBERGLASS REINFORCED PLASTIC [ ] 5 CATHODIC PROTECTION [ ] 91 NONE [X] 95 UNKNOWN [ ] 99 OTHER _____

E. SPILL AND OVERFILL: SPILL CONTAINMENT INSTALLED (YEAR) _____ OVERFILL PREVENTION EQUIPMENT INSTALLED (YEAR) _____

IV. PIPING INFORMATION

CIRCLE A IF ABOVE GROUND OR U IF UNDERGROUND, BOTH IF APPLICABLE

A. SYSTEM TYPE: A U 1 SUCTION A U 2 PRESSURE A U 3 GRAVITY A U 99 OTHER NONE VISIBLE

B. CONSTRUCTION: A U 1 SINGLE WALL A U 2 DOUBLE WALL A U 3 LINED TRENCH A U 95 UNKNOWN A U 99 OTHER

C. MATERIAL AND CORROSION PROTECTION: A U 1 BARE STEEL A U 2 STAINLESS STEEL A U 3 POLYVINYL CHLORIDE (PVC) A U 4 FIBERGLASS PIPE A U 5 ALUMINUM A U 6 CONCRETE A U 7 STEEL W/ COATING A U 8 100% METHANOL COMPATIBLE W/FRP A U 9 GALVANIZED STEEL A U 10 CATHODIC PROTECTION A U 95 UNKNOWN A U 99 OTHER _____

D. LEAK DETECTION: [ ] 1 AUTOMATIC LINE LEAK DETECTOR [ ] 2 LINE TIGHTNESS TESTING [ ] 3 INTERSTITIAL MONITORING [X] 99 OTHER NONE

V. TANK LEAK DETECTION

[ ] 1 VISUAL CHECK [ ] 2 INVENTORY RECONCILIATION [ ] 3 VADOZE MONITORING [ ] 4 AUTOMATIC TANK GAUGING [ ] 5 GROUND WATER MONITORING [ ] 6 TANK TESTING [ ] 7 INTERSTITIAL MONITORING [ ] 91 NONE [X] 95 UNKNOWN [ ] 99 OTHER

VI. TANK CLOSURE INFORMATION

1. ESTIMATED DATE LAST USED (MO/DAY/YR)

2. ESTIMATED QUANTITY OF SUBSTANCE REMAINING 100 GALLONS

3. WAS TANK FILLED WITH INERT MATERIAL ? YES [ ] NO [X]

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT

APPLICANT'S NAME (PRINTED & SIGNATURE) LAWRENCE KLEINECKE Lawrence Kleinecke DATE 03/03/93

LOCAL AGENCY USE ONLY

THE STATE I.D. NUMBER IS COMPOSED OF THE FOUR NUMBERS BELOW

STATE I.D.# COUNTY # [ ][ ] JURISDICTION # [ ][ ][ ] FACILITY # [ ][ ][ ][ ][ ][ ] TANK # [ ][ ][ ][ ][ ][ ]

PERMIT NUMBER | PERMIT APPROVED BY/DATE | PERMIT EXPIRATION DATE

THIS FORM MUST BE ACCOMPANIED BY A PERMIT APPLICATION - FORM A, UNLESS A CURRENT FORM A HAS BEEN FILED.
FILE THIS FORM WITH THE LOCAL AGENCY IMPLEMENTING THE UNDERGROUND STORAGE TANK REGULATIONS

Versar INC. SACRAMENTO

SITE SAFETY PLAN

FOR THE

PACIFIC DRY DOCK AND REPAIR YARD I
1441 EMBARCADERO
OAKLAND, CALIFORNIA

Prepared for:

Crowley Marine Services

Prepared by:

Versar Inc. - Sacramento
5330 Primrose Drive, Suite 228
Fair Oaks, California

Versar Job No. 1457-027

VERSAR INC. SACRAMENTO

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1.0 INTRODUCTION

1.1 Background

The Crowley Maritime Corporation has retained Versar to perform a site investigation at the Pacific Dry Dock and Repair located at 1441 Embarcadero in Oakland, California.

1.2 Site Characterization

Client Name: Crowley Marine Services

Location of Site: 1441 Embarcadero, Oakland, California 94606

Client Contact Person(s):

Name: Mr. George Brooks

Topography of the area surrounding the site:

Hilly ____ Flat __X_ Hummocky ____ Marshy ____
Mountainous ____ Other ____

Area affected:

Urban ____ Rural ____ Residential ____
Industrial__X__ Commercial __X_ Other ____

Types of bodies of water bordering the site, if any:

Stream ____ River ____ Pond ____ Lake ____ Bay __X_
Ocean ____ Other ____ None ____

Are the services being provided as a consequence of orders from local, state, or federal officials?

Yes __X_ No ____

1.3 Purpose

The primary purpose of this site safety plan is to present information in regards to site safety for Versar, Inc., field personnel and contractors involved in the investigation at the site. This plan provides all personnel with an understanding of the potential chemical and physical hazards that may exist while the investigation of the site is being performed. Secondary, the

information contained herein will define the safety precautions necessary to respond to such hazards should they occur.

1.4 Objective

The primary objective is to ensure the well being of all personnel involved in the investigation, and the community surrounding the site. All personnel assigned to this project shall be familiar with the subsurface concerns and this and other site safety plans. In the situation that contaminant material is encountered, all personnel directly related shall be required to sign the Agreement Statement in Section 8.1 to certify that they have read, understood, and agreed to abide by its provisions.

1.5 Hazard Determination

Serious ____ Moderate ____ Low __X_ Unknown ____

1.6 Level of Protection

__X_ Modified level D

The minimum acceptable level of protection at this site is a Modified Level D, as described in the 5.0 Section entitled "Health and Safety Requirements."

1.7 Amendments

Any change in the scope of this project and/or site conditions must be amended in writing in the 8.2 Section entitled Site Safety Plan Amendment Sheet and approved by the Health and Safety Manager.

Proposed time frame for the site work: March 1993.

2.0 PROJECT PERSONNEL

During the investigation of the site, Versar personnel will be available to monitor and assist in the situation that contaminated material is encountered. In the situation that contaminated material is encountered, the following management structure will be instituted for the purpose of safety.

2.1 Project Manager: Michael Holley

The project Manager will be responsible for implementing the project and obtaining the necessary personnel and resources for the project completion. Specific duties will include:

- providing authority and resources to ensure that the Site Safety Officer is able to implement and manage safety procedures
- preparing reports and recommendations about the project to clients and affected Versar, Inc. personnel
- ensuring that all persons allowed to enter the site (i.e. EPA, contractors, state officials, visitors) are made aware of the potential hazards associated with the substances known or suspected to be on site and are knowledgeable as to the on-site copy of the specific site safety plan
- ensuring that the Site Safety Officer is aware of all of the provisions of this site safety plan and is instructing all personnel on site about the site practices and emergency procedures defined in the plan
- ensuring that the Site Safety Officer is making an effort to monitor the site safety and has designated a Field Team Leader to assist with the responsibility when necessary.

2.2 Health and Safety Manager: Lawrence Kleinecke

The Health and Safety Manager shall be responsible for the overall coordination and oversight of the site safety plan. Specific duties will include:

- approving the selection of the types of personal protective equipment (PPE) to be used on site for specific tasks

- monitoring the compliance activities and the documentation processes undertaken by the Site Safety Officer

- evaluating weather and chemical hazard information and making recommendations to the Project Manager about any modifications to work plans or personal protection levels in order to maintain personal safety

- coordinating upgrading or downgrading of PPE with Site Safety Officer, as necessary, due to changes in exposure levels, monitoring results, weather, other site conditions

- approving all field personnel working on site, taking into consideration their level of safety training, their physical capacity, and their eligibility to wear the protective equipment necessary for their assigned tasks (i.e. respirator fit testing results)

- overseeing the air-monitoring procedures as they are carried out by site personnel for compliance with all company health and safety policies

2.3 Site Safety Officer: Lawrence Kleinecke

The Site Safety Officer shall be responsible for the implementation of the site safety plan on site. Specific duties will include:

- monitoring the compliance of field personnel for the routing and proper use of the PPE that has been designated for each task

- routinely inspecting PPE and clothing to ensure that it is in good condition and is being stored and maintained properly

- stopping work on the site or changing work assignments or procedures if any operation threatens the health and safety of workers or the public

- monitoring personnel who enter and exit the site and all controlled access points

- reporting any signs of fatigue, work-related stress, or chemical exposures to the Project Manager and/or Health and Safety Manager <u>within 24 hours</u>

- dismissing field personnel from the site if their actions or negligence endangers themselves, co-workers, or the public and reporting the same to the Project Manager and/or Health and Safety Manager within 24 hours

- reporting accidents or violations of the site safety plan to the Project Manager and/or Health and Safety Manager within 24 hours

- knowing emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire and police departments

- ensuring that all project-related personnel have signed the personnel agreement and acknowledgements form contained in this site safety plan

- coordinating upgrading and downgrading of PPE with the Health and Safety Manager, as necessary, due to changes in exposure levels, monitoring results, weather, and other site conditions

- performing air monitoring with approved instruments in accordance with requirements stated in this Site Safety Plan.

2.4 Field Team Leader: Lawrence Kleinecke

In the event that the Project Manager and the Site Safety Officer are not on the site, the Field Team Leader will assume all responsibility for enforcing safety procedures.

2.5 Field Personnel

All field personnel shall be responsible for acting in compliance with all safety procedures outlined in this site safety plan. Any hazardous work situations or procedures should be reported to the Site Safety officer so that corrective steps can be taken. The Health and Safety Manager and/or Site Safety Officer has the authority to halt any operation related to any contaminated material that does not follow the provisions of this Site Safety Plan.

3.0 EMERGENCIES

In the event of an accident or emergency situation, immediate action must be taken by the first person to recognize the event. First aid equipment is located on site inside the Versar, Inc. vehicle. Immediately after emergency procedures are implemented, notify (1) the Site Safety Officer and (2) the Project Manager and the Health and Safety Manager about the situation.

3.1 Emergency Telephone Numbers

Immediate Emergencies:

Local Police:	911
Fire:	911
Ambulance:	911
Medical:	911

Medical Emergency:

Highland Hospital
1411 East 31th Street
Oakland, California
(415) 534-8055

Environmental Emergency:

Versar, Inc.	(916) 962-1612
OSHA	(800) 648-1003
Poison Control Center	(800) 532-2222
National Response Center	(800) 424-8802

3.2 Encountering Hazardous Situations (requiring evacuation)

Personnel encountering a hazardous situation shall **instruct others on site to evacuate the vicinity IMMEDIATELY** and call the (1) Site Safety Officer, (2) the Project Manager, and (3) the Health and Safety Manager for instructions.

The site must not be re-entered until the situation has been corrected (i.e. appropriate back-up help, monitoring equipment, personal protective equipment is at the site).

Usual Procedures for Injury

A. Call for ambulance/medical assistance if necessary. Notify the receiving hospital of the nature of the physical injury or chemical overexposure. If a telephone is not available, transport the person to the nearest hospital.

B. Send/take this site safety plan with the attached Material Safety Data Sheet (MSDS) to medical facility with the injured person, if applicable.

C. If the injury is minor, proceed to administer first aid.

D. Notify the Site Safety Officer, Project Manager, and Health and Safety Manager of all accidents, incidents, or near miss situations.

3.3 Emergency Treatment

When transporting an injured person to a hospital, bring this site safety plan to assist medical personnel with diagnosis and treatment. In all cases of chemical overexposure, follow standard procedures as outlined below for poison management, first aid, and if applicable, cardiopulmonary resuscitation. Four different routes of exposure and their respective first aid/poison management procedures are outlined below:

A. Ingestion:

IMMEDIATELY transport the person to the nearest medical facility, or call the poison control center at **911**

B. Inhalation/Confined Space:

DO NOT ENTER A CONFINED SPACE TO RESCUE A PERSON WHO HAS BEEN OVERCOME UNLESS PROPERLY EQUIPPED AND A STANDBY PERSON IS PRESENT.

C. Inhalation/Other:

Move the person from the containment environment. Initiate CPR, if necessary. Call, or have someone call, for medical assistance. Refer to Material Safety Data Sheet for additional specific information. If necessary, transport the victim to the nearest hospital as soon as possible.

D. Skin Contact:

IMMEDIATELY wash off skin with a large amount of water. Remove any contaminated clothing and rewash skin. Transport person to a medical facility, if necessary.

E. Eyes:

Hold eyelids open and rinse the eyes IMMEDIATELY with copious amounts of water for 15 minutes. If possible, have the person remove his/her contact lenses (if worn). Never permit the eyes to be rubbed. Transport the person to a hospital as soon as possible.

4.0 CHEMICALS OF CONCERN

4.1 Chemical Hazards

Potential effects of any exposure are dependant on several factors such as: toxicity of substance, timeframe of exposure, concentration of substance producing the exposure, general health of person exposed, and individual use of hazardous reduction methods.

4.1.1 Gasoline

Gasoline is a complex mixture of hydrocarbons and additives. Chronic exposures or exposures to a high concentration of gasoline vapor may cause unconsciousness, coma and possibly death from respiratory failure. Exposure to low concentrations of gasoline vapor may produce flushing of the face, slurred speech, and mental confusion.

Gasoline constituents can be divided into five major groups: alkanes, alkenes, cycloalkenes, aromatics, and additives. The aromatics are the constituents generally regarded to be of the greatest toxic concern. The major aromatics in gasoline ar benzene, toluene, and xylenes. Of these, benzene is considered to be the most potent. All of these chemicals can also irritate the skin if repeated or prolonged skin exposure occurs.

4.1.2 Benzene

Benzene can enter the body through inhalation, ingestion, and skin contact. Studies have noted that chronic exposure to benzene vapor can produce neurotoxic and hemopoietic (blood system) effects. Other effects can include headache, dizziness, nausea, convulsions, coma, and possible death if exposure is not reversed. The most significant chronic effect of benzene is bone marrow toxicity. Although the cause-effect relationship is not fully understood, it is believed that there might be a strong association between chronic exposures to benzene and the development of leukemia.

4.1.3 Toluene

Inhalation exposure to toluene vapor can produce effects such as central nervous system depression. Depending on exposure factors, signs and symptoms can include headache, dizziness, fatigue, muscular weakness, lack of coordination, drowsiness, collapse, and possible coma. Studies have noted anemia could be a possible effect of chronic exposure to toluene. Toluene can be a skin and mucous membrane irritant and has been shown to cause liver and kidney damage when overexposure is significant.

4.1.4 Xylenes

Depending on exposure factors, inhalation of xylenes vapor may produce central nervous system excitation followed by depression. Exposure to xylene vapor can produce dizziness, staggering, drowsiness, and unconsciousness. At very high concentrations, xylenes vapor may produce lung irritation, nausea, vomiting, and abdominal pain. Xylene is not known to possess the chronic bone marrow toxicity of benzene, but liver enlargement and nerve cell damage have been noted from chronic overexposure. Ingestion exposures to xylenes can produce temporary liver damage and should be avoided.

4.1.5 Ethylbenzene

Ethylbenzene is an eye, mucous membrane, respiratory tract, and skin irritant. High air levels can cause central nervous system depression, sense of chest constriction, headache and dizziness. Skin contact may cause irritation, inflammation and first or second degree burns.

4.2 Physical Hazard

The physical hazards are those typically associated with general construction. Slips, trips, and falls are of primary concern in accident prevention. The contractor will exercise care to maintain good housekeeping practices within the excavation area. Each excavation will be closed off with caution tape and barricades when work is not in progress.

4.2.1 Heavy Equipment

The more severe accidents will be related to the use of heavy equipment. During activities, excavators, backhoes, loaders, trucks, drilling, and steam cleaning equipment will be used. All heavy equipment used on this project will be in good working order and operated in accordance with recognized industry standard and Cal-OSHA Title 8, Subchapter 4, Construction Safety Orders. Safety maintenance checks of all equipment shall be conducted just prior to the start of each work day. All chains, cables, grounding equipment, lifting machinery shall be of sufficient grade or rating to handle the weights and conditions at the site. Employers and workers at the site shall comply with all Cal OSHA requirements including personal protection, safety, training, and safety planning rules. Removal activities that pose imminent hazard to site personnel will not be permitted. All cables, slings, and locks will be inspected daily by the contractor to insure that they are in safe working order. All

cranes and backhoes will use side bracing when in operation to secure against lateral movement. Bracing will have secure footing.

5.0 HEALTH AND SAFETY REQUIREMENTS

5.1 Work Zone Access

In the situation that significant contamination is encountered, access within a 30-foot radius of any on-site operation is prohibited to all but Crowley Marine Services and Versar, Inc. field personnel and subcontractors. Standard work practices, such as performing field activities in the upwind position, will be observed whenever possible. Personal protective equipment indicated in Section 5.4 will be worn by all onsite field personnel, including the subcontractor's personnel.

Exclusion Zones

Formal exclusion zones are not expected to be required. The site is fenced and will remain so throughout all field activities. Unauthorized personnel will not be permitted near the work zone area.

Decontamination Zone

A formal decontamination zone may be required. It would be sited in the upwind direction from the work zone area. Decontamination procedures are covered in Section 5.5. All site personnel will be required to follow the procedures.

Support Zones

No formal requirements will be necessary for the support zone area, although the general practice of locating the zone in the upwind direction will be followed.

5.2 Air/Gas/Vapor Monitoring Procedures

The greatest potential hazards to safety and health at this site include:

1) Exposure to chemical vapors - through inhalation

2) Exposure to chemical contamination - through skin contact and ingestion

In the situation that soil and/or ground water contamination is encountered, ongoing air monitoring during project tasks will be provide data to ensure that vapor concentrations are within acceptable ranges and will provide adequate selection criteria for respiratory and dermal protection.

- If PID/FID readings exceed 50 units in the breathing zone, an air purifying respirator with organic cartridges must be worn by all site workers within any area where monitoring results exceed 50 units.

- If PID/FID readings exceed 500 units in the breathing zone, Level B protection will be required. Personnel must leave the site immediately and contact the Site Safety Officer or the Health and Safety Manager for further instructions.

- Respirator cartridges will be changed once per day as a minimum. This can be accomplished at the end of the work day during respirator decontamination. If odor breakthrough is detected while wearing the respirator or breathing becomes difficult, change cartridges immediately.

5.3 Action Levels/Level of Personal Protection Equipment (PPE)

Air monitoring instrument	LEVEL D <50 ppm	LEVEL C 50-500 ppm	LEVEL B >500 ppm

5.4 Personal Protective Equipment

Modified Level D is the minimum acceptable level for this site. Modified Level D provides minimal dermal protection. Respiratory protection is optional unless air monitoring data indicates otherwise.

Modified Level D includes:

- coveralls/work uniform
- Tyvek (optional)
- Nitrile butyl-rubber or Viton gloves (optional)
- boots/shoes, leather or chemical resistant, with steel shank and approved toe protection
- approved safety glasses or chemical splash goggles if the potential for splash exists
- hard hat
- reflective traffic vest (if traffic, construction, or other related activities are present)
- hearing protection (as appropriate)

B. Additional equipment upgrade:

1. Protocols for upgrading

Once air monitoring data are complete and results are tabulated on the initial site entry, the Site Safety Officer and/or Health and Safety Manager will determine if changes in PPE are needed.

2. Upgraded equipment

a. Respirators

Respirators with organic vapor cartridges shall be worn by all personnel if photo-ionization detector readings exceed 50 units.

b. Other

Tyvek suits and appropriate gloves shall be worn if potential for dermal exposure exists while performing job tasks.

C. First Aid Equipment

Vehicles used for site work will be equipped with a first aid kit and safety equipment including:
- cones and flags
- barricades
- fire extinguisher
- water, suitable for drinking
- portable eye wash
- appropriate emergency bandage material

5.5 Decontamination Procedures

All operations conducted at this site have the potential to contaminate field equipment and personal protective equipment (PPE). To prevent the transfer of any contamination to vehicles, administrative areas, and other personnel, the following procedures must be followed:

1. Whenever possible, field equipment should be decontaminated with a solution of Alconox or Green Soap and thoroughly rinsed with water prior to leaving the site. This must be done outside of any work area or the hot zone.

2. Disposable PPE (for example, Tyvek suits, respirator cartridges) must be bagged and disposed of at the site.

Personal Decontamination

Level D: Segregated Equipment Drop
- wash/rinse outer boot (as appropriate)
- wash/rinse chemical resistant outer glove, then remove as appropriate
- remove and throw out inner disposable gloves in designated, lined receptacles

Level C: Segregated Equipment Drop
- wash/rinse outer boots
- wash/rinse chemical resistant outer gloves, then remove tape and gloves
- remove chemical resistant suit (remove by rolling down suit from the inside)
- remove outer boots
- remove first pair(s) of disposable gloves
- remove respirator, hard hat/faceshield and properly dispose of cartridges; wash respirator
- remove last pair of disposable gloves

Level B: Segregated Equipment Drop
- wash/rinse outer boots
- wash/rinse chemical resistant outer gloves
- cross hotline (into clean area) and change air tanks, then redress or
- cross hotline (into clean area)
- remove boots and gloves
- remove SCBA, if worn over chemical resistant suit
- if SCBA is worn under the suit, remove the chemical resistant suit, then the SCBA
- remove hard hat

5.6 Field Procedures

A digsafe number must be obtained from appropriate agency prior to drilling, excavation or trenching. To determine presence of subsurface metal utility lines, tanks and/or drums, a metal detector should be used before excavating on a site.

During the operation, two persons (one designated as "operator" and the other as the "helper") must be present at all times. The helper (whether Versar, Inc. personnel or subcontractors) must be instructed as to the whereabouts of the emergency shut-off switch. Every attempt must be made to keep unauthorized personnel from entering the work area. If this is

not possible, the operation should be shut down until the area is cleared. The Site Safety Officer or the Field Team Leader has the authority and responsibility to shut down the excavating operations whenever a hazardous situation is deemed present.

The arm of the any equipment should maintain a preferred clearance of 20 feet from any overhead electrical cables, with 10 feet being the minimum. All operations will immediately cease during any hazardous weather conditions.

Hard hats and safety boots shall be worn at all times.

5.7 Electrical Equipment and Ground Fault Circuit Interrupters

All electrical equipment and power cables used in and around wells or structures containing chemical contamination must be explosion-proof and/or intrinsically-safe and equipped with a three-wire ground lead that has been rated as explosion-proof for hazardous atmospheres (Class 1 Div 1&2). In accordance with OSHA 29 CFR 1926.404, approved ground fault circuit interrupters (GFCI) must be utilized for all 120 vault, single-phase, 15 and 20 amp receptacle outlets on the site that are in use by employees and that are not part of the permanent wiring as defined by the NEC 1987. Receptacles on the ends of the extension cords are not part of the permanent wiring and therefore, must be protected by GFCI's whether or not the extension cord is plugged into permanent wiring.

The GFCI is a fast-acting circuit breaker that senses small imbalances in the circuit caused by current leakage to ground, and in a fraction of a second, shuts off the electricity. However, the GFCI will not protect the employee from line-to-line contact hazards such as a person holding two "hot" wires or a hot and neutral wire in each hand. The GFCI does provide protection against the most common form of electrical hazard - the ground fault. It also provides protection against fires, overheating, and destruction of wire insulation.

GFCI's can be used successfully to reduce electrical hazards on construction sites. Tripping of GFCI's interruption of current flow, is sometimes caused by wet connectors and tools. It is good practice to limit exposure of connectors and tools to excessive moisture by using watertight or sealable connectors. Providing more GFCI's on shorter circuits can prevent tripping caused by the cumulative leakage from several tools or by leakages from extremely long circuits. (Adapted from OSHA 3007; Ground-Faulting Protection on Construction Sites - 1987.)

5.8 Fire Protection

Only approved metal cans will be used to transport and store flammable liquids. All gasoline and diesel-driven engines requiring refueling must be shut down and allowed to cool before filling. No open flame or spark is allowed in any area containing petroleum products or other flammable liquids.

Smoking is not allowed during any operations within the work area in which petroleum products or solvents in free-floating, dissolved or vapor forms, or other flammable liquids may be present.

5.9 General Health

Medicine and alcohol can increase the effects of exposure to toxic chemicals. Unless specifically approved by a qualified physician, prescription drugs should not be taken by personnel assigned to operations where the potential for absorption, inhalation, or ingestion of toxic substances exists.

Drinking and driving is prohibited at any time. Driving at excessive speeds is always prohibited. Skin abrasions must be thoroughly protected to prevent chemicals from penetrating the abrasion.

It is recommended that contact lenses not be worn by persons working on the site.

6.0 EMPLOYEE TRAINING

All Versar employees with the potential for hazardous exposures are required to participate in an initial minimum of 40 hours of training to recognize, evaluate, and control site hazards. Three days of supervised field-training is also included within the initial training program. Project manager level and above must also participate in an additional eight-hour supervisory training course. Once employees have received the above training, they receive a certificate of completion and are scheduled for an eight-hour refresher training session within one year of their initial training. Versar training includes specific details on the following:

- regulatory requirements
- confined space entry
- respiratory protection
- hazard communication
- decontamination procedures
- incident command system
- first aid/CPR
- air monitoring
- toxicology
- Prop. 65 (California)
- fire technology
- personal protective equipment

7.0 MEDICAL MONITORING PROGRAM

All Versar Inc. field personnel are required to have annual medical evaluations in accordance with the company's Health and Safety Program policy. Additional re-evaluation will be considered in the event of chemical over-exposure while working on this site.

The chemicals typical of this site can affect specific organ systems producing characteristic health effects. The medical evaluation will, therefore, focus on the liver, kidney, nervous system, blood systems, and skin and lung function. Laboratory testing will include complete blood count, and applicable kidney and liver function tests. Other tests include skin examination.

8.0 DOCUMENTATION

8.1 Site Safety Plan Agreement

In the situation that significant contamination is encountered which could come into contact with site development personnel, all details of this site safety plan will be implemented. Versar personnel have the authority to stop work performed by our subcontractors at this site if any work is not performed in accordance with the requirements of this Site Safety Plan.

All Versar Inc. project personnel and subcontractor personnel are required to sign the following agreement prior to conducting work at the site.

A. I have read and fully understand the Site Safety Plan and my individual responsibilities.

B. I agree to abide by the provisions of the Site Safety Plan.

Name	Company	Date	Signature
Kevin Stevens	AEI	2-17-94	
David Langhout	AEI	2-17-94	
[illegible]	GE	02-17-94	
[illegible]	CH2M	2-17-94	
Larry Kleineke	Versar	2-17-94	

8.2 Site Safety Plan Amendment Sheet

Project Name: _____

Project Number: _____

Location: _____

Changes in field activities or hazards:

Proposed Amendment:

Proposed By: _____ Date _____

Approved By: _____ Date _____
Project Manager

_____ Date _____
Health & Safety Manager

Declined By: _____ Date _____

Amendment Effective Date _____

RECEIVED FEB 1993 CROWLEY ENVIRONMENTAL

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

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

NOTIFICATION FORM
Removal or Replacement of Tanks
Excavation of Contaminated Soil

SITE INFORMATION

SITE ADDRESS 1441 EMBARCADERO
CITY, STATE, ZIP OAKLAND, CALIFORNIA 94606
OWNER NAME PORT OF OAKLAND (CROWLEY MARINE SERVICES)
SPECIFIC LOCATION OF PROJECT CORNER OF EAST SECTION

TANK REMOVAL

SCHEDULED STARTUP DATE MARCH 17, 1993

VAPORS REMOVED BY:

[X] WATER WASH
[X] VAPOR FREEING (CO^2)
[X] VENTILATION

CONTAMINATED SOIL EXCAVATION

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

CONTRACTOR INFORMATION

NAME ARONSON ENGINEERING INC. CONTACT GARY NYGREN
ADDRESS 6809 MCCOMBER STREET PHONE (916) 381-1600
CITY, STATE, ZIP SACRAMENTO, CALIFORNIA 95828

CONSULTANT INFORMATION
(IF APPLICABLE)

NAME VERSAR, INC. CONTACT MR LAWRENCE KLEINECKE
ADDRESS 5330 PRIMROSE DR., SUITE 228 PHONE (916) 962-1612
CITY, STATE, ZIP FAIR OAKS, CALIFORNIA 95628

FOR OFFICE USE ONLY

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

APPENDIX B

Manifest and Permit Documents

DAY OR NIGHT TELEPHONE
5 0) 235-1393

CERTIFICATE

CERTIFIED SERVICES COMPANY

255 Parr Boulevard • Richmond, California 94801

NO. 21252

CUSTOMER
JOB NO. 84207

FOR: Erickson, Inc. TANK NO. 13100

LOCATION: Richmond DATE: 02/22/94 TIME: 09:42:54

TEST METHOD Visual Gastech/1314 SMPN LAST PRODUCT D

This is to certify that I have personally determined that this tank is in accordance with the American Petroleum Institute and have found the condition to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

TANK SIZE 1000 Gallon Tank CONDITION SAFE FOR FIRE

REMARKS: OXYGEN 20.9%
LOWER EXPLOSIVE LIMIT LESS THAN 0.1%

"ERICKSON INC. HEREBY CERTIFIES THAT THE ABOVE NUMBERED TANK HAS BEEN CUT OPEN, PROCESSED, AND THEREFORE DESTROYED AT OUR PERMITTED HAZARDOUS WASTE FACILITY."

In the event of any physical or atmospheric changes affecting the gas-free conditions of the above tanks, or if in any doubt, immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

STANDARD SAFETY DESIGNATION

SAFE FOR MEN: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissable concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

SAFE FOR FIRE: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration that permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

REPRESENTATIVE _____ TITLE _____ INSPECTOR DS

CP5995

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-94)
Please print or type. Form designed for use on elite (12-pitch) typewriter.

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CA000911408614
Manifest Document No.: 01150S
2. Page 1 of 1
Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address: Port of Oakland, 530 Water St. Oakland, Ca. 94607
4. Generator's Phone ( )

A. State Manifest Document Number: 93201505
B. State Generator's ID:

5. Transporter 1 Company Name: PRC ~~PATTERSON, INC~~
6. US EPA ID Number: C A T 0 8 0 0 1 1 0 5 9
C. State Transporter's ID: 400851
D. Transporter's Phone: 800-874-4444

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: PRC PATTERSON, INC ~~13331 N. HWY 33~~ 9280 14th Ave. ~~PATTERSON, CA 95363-9998~~ Sacto Ca 95826
10. US EPA ID Number: CAL000051079 ~~C A D 0 8 3 1 6 6 7 2 6~~
G. State Facility's ID: CAL000051079 ~~C A D 0 8 3 1 6 6 7 2 6~~
H. Facility's Phone: 800-874-4444

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 Number
a. NON RCRA HAZARDOUS WASTE LIQUID	0 0 1	T T	00.40	G	State 223; EPA/Other
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above: WATER & OIL
K. Handling Codes for Wastes Listed Above: a. 01 b. c. d.

15. Special Handling Instructions and Additional Information
24 HR. EMERGENCY CONTACT: PRC #1-(800)-874-4444
24 HR. EMERGENCY RESPONSE: CHEM TEL INC. #1-(800)-255-3924
APPROPRIATE PROTECTIVE CLOTHING & RESPIRATOR.
1441 Embarcadero Oakland, Ca 94607

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of the 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 federal, state and international laws.

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: DAN SCHOENHOLZ FOR PORT OF OAKLAND — Signature: Dan Schoenholz — Month/Day/Year: 02 17 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Larry Thompson agent for P.R.C. — Signature: Larry Thompson — Month/Day/Year: 02 17 94

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: Larry Thompson agent for P.R.C. — Signature: Larry Thompson — Month/Day/Year: 02 17 94

DO NOT WRITE BELOW THIS LINE.

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

GENERATOR / TRANSPORTER / FACILITY

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-94)
Please print or type. *Form designed for use on elite (12-pitch) typewriter.*

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

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

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. / Manifest Document No.: 3533
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: 92743533

3. Generator's Name and Mailing Address: PORT OF OAKLAND, 530 WATER ST, OAKLAND, CA 94607
SITE LOCATION: 1441 EMBARCADERO
4. Generator's Phone (510) 272-1100

5. Transporter 1 Company Name: Erickson, Inc
6. US EPA ID Number: CAD009466392

7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address:
Erickson, Inc.
255 Parr Blvd.
Richmond, Ca. 94801
10. US EPA ID Number: CAD009466392

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Waste Empty Storage Tank NON-RCRA Hazardous Waste Solid.	001	TP	1000	P
b.				
c.				
d.				

... Tanks have been purged with 15 lbs Dry Ice Per 1000 Gallon capacity.

15. Special Handling Instructions and Additional Information
Keep away from sources of ignition. Always wear hardhats when working around U.G.S.T.'s 24 Hr. Contact Name Dan Schoenholz & Phone (510) 272-1220

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of the 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 federal, state and international laws.

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
DAN SCHOENHOLZ FOR PORT OF OAKLAND	Dan Schoenholz	02	17	94

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Robert A. Dart	Robert A. Dart	02	17	94

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
DAVID SATO	DAVE SATO	02	17	94

DO NOT WRITE BELOW THIS LINE.

DTSC 8022A (7/92)
EPA 8700—22

CITY OF OAKLAND
REPORT OF FIRE INSPECTION

ENGINE CO. F.P.B

ADDRESS 1441 - EMBARCADERO

NAME

GENERAL INSPECTION ☐ PERMIT ☐ OTHER ☐ HAZARD NOTED ☐ HAZARD ABATED ☐

NOTICE LEFT ☐ LETTER ☐ | 1st NOTICE | 2nd NOTICE | FINAL

DATE	VIOLATION	O.F.C.	CONTACTED
	Under ground TANK		
	Removed 2-17-94		
1,000 GAL	LEL 9%		
	OXY 3%		
	OK TO Remove TANK		

A REINSPECTION WILL BE MADE WITHIN _____ DAYS.

FIRE PREVENTION BUREAU — PHONE 273-3851

338-5 (Rev. 5-77)

INSPECTOR

white -env.health
yellow -facility
pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

80 Swan Way, #200
Oakland, CA 94621
(415) 271-4320

Hazardous Materials Inspection Form

II,III

Site ID # ____ Site Name Pacific Dry Dock Today's Date 2/17/94

Site Address 1414 Embarcadero

City Oakland Zip 94 Phone

____ MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

____ I. Haz. Mat/Waste GENERATOR/TRANSPORTER
____ II. Business Plans, Acute Hazardous Materials
____ III. Underground Tanks

* Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

I.A BUSINESS PLANS (Title 19)

___	1. Immediate Reporting	2703
___	2. Bus. Plan Stds.	25503(b)
___	3. RR Cars > 30 days	25503.7
___	4. Inventory Information	25504(a)
___	5. Inventory Complete	2730
___	6. Emergency Response	25504(b)
___	7. Training	25504(c)
___	8. Deficiency	25505(a)
___	9. Modification	25505(b)

I.B ACUTELY HAZ. MAT'LS

___	10. Registration Form Filed	25533(a)
___	11. Form Complete	25533(b)
___	12. RMPP Contents	25534(c)
___	13. Implement Sch. Req'd? (Y/N)	
___	14. Offsite Conseq. Assess.	25524(c)
___	15. Probable Risk Assessment	25534(d)
___	16. Persons Responsible	25534(g)
___	17. Certification	25534(i)
___	18. Exemption Request? (Y/N)	25536(b)
___	19. Trade Secret Requested?	25538

III. UNDERGROUND TANKS (Title 23)

General

___	1. Permit Application	25284 (H&S)
___	2. Pipeline Leak Detection	25292 (H&S)
___	3. Records Maintenance	2712
___	4. Release Report	2651
___	5. Closure Plans	2670

Monitoring for Existing Tanks

___ 6. Method
1) Monthly Test
2) Daily Vadose
Semi-annual gndwater
One time soils
3) Daily Vadose
One time soils
Annual tank test
4) Monthly Gndwater
One time soils
5) Daily Inventory
Annual tank testing
Cont pipe leak det
Vadose/gndwater mon.
6) Daily Inventory
Annual tank testing
Cont pipe leak det
7) Weekly Tank Gauge
Annual tank tstng
8) Annual Tank Testing
Daily Inventory
9) Other ________

___	7. Precis Tank Test Date: ______	2643
___	8. Inventory Rec.	2644
___	9. Soil Testing	2646
___	10. Ground Water.	2647

New Tanks

___	11. Monitor Plan	2632
___	12. Access. Secure	2634
___	13. Plans Submit Date: ______	2711
___	14. As Built Date: ______	2635

Rev 6/88

Comments:

O_2 3%, LEL 9% OFD · Lairylames

1K UST. Bare steel - stored unknown fuel
Several pin size holes in bottom of tank
Pitting and corrosion -
Water in pit ~ 7' bgs. Pumped out and allowed to recharge ~ 3X

(3) (1) (2) (1) sheen on water

(1) sidewall 3 side at 10'3"
stained green clay
(2) 10'4" sidewall stained green w/ shells
(3) sidewall · stained green w/ shells
10'6"

← Embarcadero →

II, III

Contact: ~~Lawrence Klenak~~
Title: ____________
Signature: [signature]

Inspector: ____________
Signature: [signature]

Excavation Permit Granted _____ No. _____

CITY OF OAKLAND

Tank Permit

Permit to Excavate and Install, Repair, or Remove Inflammable Liquid Tanks. No. 9779

Oakland, California, February 14, 19 94

PERMISSION IS HEREBY GRANTED TO ~~XXXXXX~~ remove ~~XXXXX~~ Gasoline tank and excavate commencing _____ feet inside property line on the south side of Embarcadero Street Avenue _____ feet _____ of _____ Street Avenue

House No. 1441 Embarcadero Street Avenue Present Storage _____

Owner Port of Oakland Address 530 Water Street Phone 510-272-1220

Applicant Versar, Inc. Address 5330 Primrose Dr. Ste 228 Fair Oaks, 95628 Phone 916-962-1612

Dimensions of street (sidewalk) surface to be disturbed _____ X _____ Number of Tanks 1 Capacity 400 Gallons, each.

Remarks: _____

This Permit is granted in accordance with existing City Ordinances.
Owner hereby agrees to remove tanks on discontinuance of use or when notified by the City Authorities.
When installing, removing or repairing tanks, no open flame to be on or near premises.

Approved _____ Fire Marshal

Approved _____ Drainage Division Engineering Dept.

EXCAVATING PERMIT

Issued in accordance with Ord. No. 278 CMS, Sec. 6-2.04

_____ square feet of digging or removal granted.

The receipt of $ _____ special deposit is hereby acknowledged.

GENERAL DEPOSIT.

BUREAU OF PERMITS AND LICENSES.

Inspection Fee Paid . . . . . $ 150.00 ck#934 rec#698368

Received by G. M. Johnson
FIRE PREVENTION BUREAU

N
W E
S

CERTIFICATE OF TANK AND EQUIPMENT INSPECTION

Inspected and passed on _____ 19 _____

By _____ Fire Marshal

NOTICE

Before Covering Tanks, Above Certificate Must Be Signed.

When ready for inspection notify Fire Prevention Bureau, 271-3351

THIS PERMIT MUST BE LEFT ON THE WORK AS AUTHORITY THEREFOR.

538 88. (8-87)

APPENDIX C

Analytical Results and Chain-of-Custody Documents

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

COPY

TAL

February 25, 1994

Mr. Lawrence Kleinecke
Versar, Inc.
5330 Primrose Drive, Suite 228
Fair Oaks, California 95628

Dear Mr. Kleinecke:

Trace Analysis Laboratory received four soil samples and one water sample on February 17, 1994 for your Project No. 1457-027, PDDI (our custody log number 4127).

These samples were analyzed for Total Petroleum Hydrocarbons as Diesel and Gasoline, Benzene, Toluene, Ethylbenzene, Xylenes, and Oil and Grease. Our analytical report, the completed chain of custody form, and our analytical methodologies are enclosed for your review.

Trace Analysis Laboratory is certified under the California Environmental Laboratory Accreditation Program. Our certification number is 1199.

If you should have any questions or require additional information, please call me.

Sincerely yours,

For Scott T. Ferriman
Project Specialist

Enclosures

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

LOG NUMBER: 4127
DATE SAMPLED: 02/17/94
DATE RECEIVED: 02/17/94
DATE EXTRACTED: 02/18/94
DATE ANALYZED: 02/23/94 and 02/24/94
DATE REPORTED: 02/25/94

CUSTOMER: Versar, Inc.

REQUESTER: Lawrence Kleinecke

PROJECT: No. 1457-027, PDDI

Sample Type: Soil

Method and Constituent:	Units	COMP 1 Concentration	COMP 1 Reporting Limit	SW 1 Concentration	SW 1 Reporting Limit	SW 2 Concentration	SW 2 Reporting Limit
DHS Method:							
Total Petroleum Hydrocarbons as Diesel	ug/kg	57,000	1,000	72,000	1,000	ND	1,000

Method and Constituent:	Units	SW 3 Concentration	SW 3 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:					
Total Petroleum Hydrocarbons as Diesel	ug/kg	ND	1,000	ND	1,000

QC Summary:

% Recovery: 86
% RPD: 1.5

Concentrations reported as ND were not detected at or above the reporting limit.

Sample COMP 1 contains compounds eluting later than the diesel standard.

LOG NUMBER: 4127
DATE SAMPLED: 02/17/94
DATE RECEIVED: 02/17/94
DATE EXTRACTED: 02/23/94
DATE ANALYZED: 02/25/94
DATE REPORTED: 02/25/94
PAGE: Two

Sample Type: Water

Method and Constituent:	Units	UST-1 Concentration	UST-1 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:					
Total Petroleum Hydrocarbons as Diesel	ug/l	8,400	300	ND	50

QC Summary:

% Recovery: 86
% RPD: 1.9

Concentrations reported as ND were not detected at or above the reporting limit.

Sample UST-1 contains compounds eluting later than the diesel standard.

LOG NUMBER: 4127
DATE SAMPLED: 02/17/94
DATE RECEIVED: 02/17/94
DATE EXTRACTED: 02/24/94
DATE ANALYZED: 02/25/94
DATE REPORTED: 02/25/94
PAGE: Three

Sample Type: Soil

Method and Constituent:	Units	COMP 1 Concentration	COMP 1 Reporting Limit	SW 1 Concentration	SW 1 Reporting Limit	SW 2 Concentration	SW 2 Reporting Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	510	500	ND	500	ND	500
Modified EPA Method 8020 for:							
Benzene	ug/kg	ND	5.0	ND	5.0	ND	5.0
Toluene	ug/kg	9.5	5.0	ND	5.0	ND	5.0
Ethylbenzene	ug/kg	ND	5.0	ND	5.0	ND	5.0
Xylenes	ug/kg	47	15	ND	15	ND	15

Method and Constituent:	Units	SW 3 Concentration	SW 3 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:					
Total Petroleum Hydrocarbons as Gasoline	ug/kg	ND	500	ND	500
Modified EPA Method 8020 for:					
Benzene	ug/kg	ND	5.0	ND	5.0
Toluene	ug/kg	ND	5.0	ND	5.0
Ethylbenzene	ug/kg	ND	5.0	ND	5.0
Xylenes	ug/kg	ND	15	ND	15

QC Summary:

% Recovery: 73
% RPD: 5.8

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 4127
DATE SAMPLED: 02/17/94
DATE RECEIVED: 02/17/94
DATE ANALYZED: 02/25/94
DATE REPORTED: 02/25/94
PAGE: Four

Sample Type: Water

Method and Constituent:	Units	UST-1 Concentration	UST-1 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:					
Total Petroleum Hydrocarbons as Gasoline	ug/l	380	98	ND	50
Modified EPA Method 8020 for:					
Benzene	ug/l	28	1.1	ND	0.50
Toluene	ug/l	120	1.2	ND	0.50
Ethylbenzene	ug/l	11	1.4	ND	0.50
Xylenes	ug/l	35	3.7	ND	1.5

QC Summary:

% Recovery: 104
% RPD: 5.9

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 4127
DATE SAMPLED: 02/17/94
DATE RECEIVED: 02/17/94
DATE EXTRACTED: 02/23/94
DATE ANALYZED: 02/24/94
DATE REPORTED: 02/25/94
PAGE: Five

Sample Type: Soil

Method and Constituent:	Units	COMP 1 Concentration	COMP 1 Reporting Limit	SW 1 Concentration	SW 1 Reporting Limit	SW 2 Concentration	SW 2 Reporting Limit
Standard Method 5520F: Hydrocarbons							
Oil and Grease	ug/kg	ND	50,000	ND	50,000	ND	50,000

Method and Constituent:	Units	SW 3 Concentration	SW 3 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
Standard Method 5520F: Hydrocarbons					
Oil and Grease	ug/kg	ND	50,000	ND	50,000

QC Summary:

% Recovery: 84
% RPD: 2.3

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 4127
DATE SAMPLED: 02/17/94
DATE RECEIVED: 02/17/94
DATE EXTRACTED: 02/24/94
DATE ANALYZED: 02/25/94
DATE REPORTED: 02/25/94
PAGE: Six

Sample Type: Water

Method and Constituent:	Units	UST-1 Concentration	UST-1 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
Standard Method 5520 F:					
Hydrocarbon					
Oil and Grease	ug/l	ND	5,000	ND	5,000

QC Summary:

% Recovery: 90
% RPD: 1.4

Concentrations reported as ND were not detected at or above the reporting limit.

Louis W. DuPuis
Quality Assurance/Quality Control Manager

Versar

4127

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME
1457-027	PDD1

SAMPLERS: (Signature) Lawrence Kleinecke (Printed) Lawrence Kleinecke

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH/BTEX	TPH-D	O+G 5520	REMARKS
COMP1	2/17/94	1530				1	✓	✓	✓	Soil
SW2	2/17/94	1520				1	✓	✓	✓	Soil
SW3	2/17/94	1525				1	✓	✓	✓	Soil
SW1	2/17/94	1515				1	✓	✓	✓	Soil
UST-1	2/17/94	1500				4	✓	✓	✓	water

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
Lawrence Kleinecke	2/17/94 1607	Scott T. Ferrmin	2/17/94 1607	
(Printed) Lawrence Kleinecke		(Printed) Scott T. Ferrmin		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink). P/u, water, 2 VOAs, 2 L, Grey, soil, 4-BT, Y-S, 5-Day

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

COPY

TAL

March 10, 1994

Mr. Lawrence Kleinecke
Versar, Inc.
5330 Primrose Drive, Suite 228
Fair Oaks, California 95628

Dear Mr. Kleinecke:

Trace Analysis Laboratory received four soil samples and one water sample on February 17, 1994 for your Project No. 1457-027, PDDI (our custody log number 4127A).

The soil samples were analyzed for Total Lead. Our analytical report and the completed chain of custody form are enclosed for your review.

Trace Analysis Laboratory is certified under the California Environmental Laboratory Accreditation Program. Our certification number is 1199.

If you should have any questions or require additional information, please call me.

Sincerely yours,

Scott T. Ferriman

Scott T. Ferriman
Project Specialist

Enclosures

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

LOG NUMBER: 4127A
DATE SAMPLED: 02/17/94
DATE RECEIVED: 02/17/94
DATE EXTRACTED: 03/10/94
DATE ANALYZED: 03/10/94
DATE REPORTED: 03/10/94

CUSTOMER: Versar, Inc.

REQUESTER: Lawrence Klienecke

PROJECT: No. 1457-027, PDD1

Sample Type: Soil

Method and Constituent:	Units	COMP 1 Concentration	COMP 1 Reporting Limit	SW1 Concentration	SW1 Reporting Limit	SW2 Concentration	SW2 Reporting Limit
EPA Method 7420:							
Lead	ug/kg	18,000	3,600	8,200	3,600	6,900	3,600

Method and Constituent:	Units	SW3 Concentration	SW3 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
EPA Method 7420:					
Lead	ug/kg	5,100	3,600	ND	3,600

QC Summary:

% Recovery: 76
% RPD: 0.2

Concentrations reported as ND were not detected at or above the reporting limit.

Louis W. DuPuis
Quality Assurance/Quality Control Manager

Versar 4127A CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	INDUSTRIAL HYGIENE SAMPLE	Y / N
1457-027	PDD1		

SAMPLERS: *(Signature)* Lawrence Kleinecke — (Printed) Lawrence Kleinecke

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH/BTEX	TPH-D	O&G 5520	Total Pb	3/3/94 5-Day				REMARKS
COMP-1	2/17/94	1530				1	✓	✓	✓	X					soil
SW2	2/17/94	1520				1	✓	✓	✓	X					soil
SW3	2/17/94	1525				1	✓	✓	✓	X					Soil
SW1	2/17/94	1515				1	✓	✓	✓	X					soil
UST-1	2/17/94	1500				4	✓	✓	✓						water

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
(Printed)		(Printed)	(Printed)		(Printed)

Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks
Lawrence Kleinecke	2/17/94 1607	Scott T. Fermin	2/17/94 1607	
(Printed) Lawrence Kleinecke		(Printed) Scott T. Fermin		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink). P/u water 2 VOAs 2 l Green, Soil [illegible]

CROWLEY MARINE SERVICES, INC.

June 21, 1999

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, #250
Alameda, CA 94502-6577

500 Gallon Underground

RE: Pacific Dry Dock Yard I, 1441 Embarcadero, Oakland

Dear Barney:

As you requested, enclosed please find a copy of the July 19, 1994 report for the removal of an underground storage tank at the above referenced site. Based on the work performed to date and this risk assessment report I am requesting the regulatory closure of this site.

Please contact me with any questions or comments that you may have regarding this matter.

Sincerely

Stephen Wilson
Manager, Environmental Affairs

Enclosure:

cc: PDDI Correspondence w/o enclosure

Post Office Box 2287, Seattle, Washington 98111-2287 - (206) 443-8100 - Telex 6838207 - Fax (206) 443-8072
Pier 41 (Red & White Fleet), San Francisco, California 94133 - (415) 546-2800 - Fax (415) 546-2623 (Admin & Sales)
Pier D, Berths D47-D49, Long Beach, California 90802-1098 - (310) 491-4700 - Fax (310) 491-4790 (Admin) - Fax (310) 491-4789 (Operations)
4300 B Street, Suite 507, Anchorage, Alaska 99503-5997 - (907) 563-1114 - Telex 6732564 - Fax (907) 762-3330
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