AB&I

92 APR 14 PM 3:01

April 8, 1992

Mr. Barney Chan
Hazardous Materials Specialists
ALAMEDA COUNTY HEALTH AGENCY
Division of Hazardous Materials
80 Swan Way, Room 200, Oakland, CA 94621

Subject: Report on Removal of 8,000-Gallon Capacity Underground ~~Gasoline~~ TCA Storage Tank, American Brass & Iron, Oakland, California

Dear Mr. Chan,

In accordance with Alameda County Health Agency and Tri-Regional Board Staff Recommendations for Underground Storage Tank Removal Procedures, please find enclosed American Brass & Iron Foundry's closure report for the removal of an on site 8,000 gallon storage tank.

The closure report reflects a portion of the initial underground storage tank closure plan submitted to Alameda County Health Agency on August 1, 1991. It is our intention to address all ground water monitoring programs at the completion of the overall tank removal project at AB & I. Information on soil geology and ground water contamination for surrounding property locations are being reviewed in order to fully evaluate a soil ground water investigation.

If you require further information or have additional questions, please feel free in contacting me at (510) 632-3467 ext. 211.

Sincerely,

Dave Robinson
Environmental Engineering Manager

cc:Lester Feldman, Regional Water Quality Control Board
John Sturman, Levine*Fricke Consultants

AB&I

AMERICAN BRASS & IRON FOUNDRY

7825 San Leandro Street • Oakland, CA 94621 • (510) 632-3467
Fax No. (510) 632-8035

REMOVAL OF 8,000 GALLON CAPACITY
UNDERGROUND ~~GASOLINE~~ Solvent (TCA) STORAGE TANK
AT AMERICAN BRASS & IRON FOUNDRY
OAKLAND, CA 94621

APRIL 4, 1992

PREPARED BY: DAVE ROBINSON
ENVIRONMENTAL ENGINEERING MANAGER

TABLE OF CONTENTS

PAGE #

1.0 INTRODUCTION.....1

2.0 SITE HISTORY.....1

3.0 GENERAL DESCRIPTION OF CLOSURE ACTIVITIES.....2

4.0 CLOSURE ACTIVITIES

A. DESCRIPTION OF TANK AND MATERIALS.....3

B. DESCRIPTION OF EXCAVATION AND TANK REMOVAL.....3

C. DESCRIPTION OF SAMPLING METHODS.....4

5.0 REMEDIATION ACTIVITIES

A. EXCAVATION OF CONTAMINATED SOIL.....4

B. SAMPLING METHODS.....5

C. AERATION OF CONTAMINATED SOIL.....6

D. EXCAVATION BACKFILL PROCEDURES.....6

6.0 GENERAL FIELD OBSERVATION.....6

7.0 LABORATORY ANALYSIS.....7

8.0 SOIL / WATER QUALITY RESULTS.....8

9.0 CONCLUSION / RECOMMENDATIONS.....8

FIGURES

1.0 SITE LOCATION MAP.....10

2.0 TANK LAYOUT.....11

3.0 SAMPLING LOCATION MAP.....12

4.0 FINAL EXCAVATION LAYOUT.....13

TABLE OF CONTENTS (Con't)

TABLES

1.0 SUMMARY OF ANALYSIS RESULTS.....14

APPENDIX A

A. ORIGINAL UST CLOSURE PLAN
B. EXCAVATION PERMIT

APPENDIX B

A. FIRE INSPECTOR NOTES
B. LEVINE*FRICKE FIELD NOTES
C. DISPOSAL MANIFEST

APPENDIX C

A. LABORATORY ANALYSIS
B. GC CHARACTERIZATION ANALYSIS/NOTES
C. CHAIN OF CUSTODY

REMOVAL OF 8,000-GALLON CAPACITY UNDERGROUND SOLVENT STORAGE TANK AMERICAN BRASS & IRON FACILITY OAKLAND, CALIFORNIA

TCA

1.0 INTRODUCTION

This report describes American Brass and Iron removal program for one 8,000 gallon capacity underground solvent storage tank from the facility located at 7825 San Leandro Street in Oakland, California, refer to figure 1 for location details. This tank removal is the third of four UST removals as called out by AB&I's current on site tank closure program.

Throughout the tank removal process, AB&I solicited assistance from various support groups including, Levine*Fricke, Brown & Caldwell, Oakland Fire Department, Alameda County Health Services, Erickson Inc., H & H Environmental, Friedman & Bruya and Walts Excavation Services. Levine*Fricke Consultants were the main contributors in assisting with the interpretation and conclusions for addressing this tank removal process.

2.0 SITE HISTORY

AB&I has owned and operated at the present location since 1930. The main operations consist of the manufacturing of Gray Iron in the form of various sand castings, including an assortment of sizes pertaining to soil sewer pipe. As part of the manufacturing process of soil pipe, the pipe is coated inside and outside using an asphalt base coating.

In conjunction with the asphalt based coating a carrier solvent, 1,1,1 Trichloroethane, is used to transfer the asphalt on to the pipe. Although the solvent complies with air district regulations, AB&I is actively seeking a water base substitute.

The tank in question which was removed was the primary storage tank for the 1,1,1 Trichloroethane dilution solvent. The tank was originally installed in the early 1970's for the sole purpose of storing pipe dip coating. To our knowledge the tank was maintained for this purpose, the addition of any other material would have contaminated the pipe coating.

On a routine basis material was pump directly into the storage tank at which solvent was then transferred to the coating tank as a means of controlling viscosity and coating thickness. Except for the piping from the tank to the transfer pump, all transfer lines were above ground and in turn provide a visible means for determining if any line leakage occurred.

3.0 GENERAL DESCRIPTION OF CLOSURE ACTIVITIES

The overall tank removal program was managed by AB&I with direct assistance and involvement by all of the above mentioned parties. The tank was an 8,000 gallon, 1/4" thick steel tank, which was located virtually in the center of normal operations at the plant. Refer to figure 2 for details on tank location. Due to the site location the entire UST removal operation was performed during weekend shutdown which starts on Friday morning and ends on Sunday night. The actual operation began on October 4, 1991. This tank removal was the third of a series of four tanks to be remove on site at 7825 San Leandro Street, Oakland. Refer to appendix A for the original closure plan.

The tank was located beneath a 6" reinforced concrete pad with two building support columns approximately 5' and 10' respectively from the longitudinal side of the tank. The operation entailed the removal of the concrete pad of an area of 10' by 30' using a large motorized hydraulic pin digger to allow room for the removal of the tank. Soil was removed above and around the tank and the tank was removed, along with the minor piping system. Various soil samples were taken to determine if contamination was present and to what extent. On site a PID meter was used during the operation for indicating the potential contamination concentration of excavated soil. A water sample was also taken, although the water in the pit was not allowed sufficient time to flush to eliminate the mixing action created by the excavation work.

Once the tank had been removed, further excavation work was performed in attempt to eliminate as much suspected contamination as possible and secondly to determine both the lateral and vertical extent of the contamination. The excavation hole was greatly increased in attempt to remove any contaminated soil from around the tank. The hole was enlarged as much as possible and was back filled with clean dirt and rock. Due to the location and the high amount of traffic, the area was resurfaced with concrete and reinforced with steel mesh . The tank was manifested and disposed of through Erickson,Inc. A detailed account of each phase of the project is specified in the proceeding sections.

4.0 CLOSURE ACTIVITIES

A. Description of Tank and Materials

The excess solvent was transferred to an above ground holding tank for future use and the tank was pumped dry. The inside of the tank was high pressure rinsed using a steam generating machine. Approximately 55 gallons of rinsate was collected and pumped into a collection area for further treatment. The tank had been originally wrapped with tar and tar paper which appeared to be intact. Piping for the tank was relatively minor due to the fact that most of the piping system was above ground. Similar to the tank, the fill piping, which consisted of approximately a 6 foot section, appeared to be in good working order.

B. Description of Excavation and Tank Removal

On October 3, 1991 a large hydraulic digger, along with a jack hammer were brought in order to adequately break through the reinforced concrete pad. The original opening was approximately 15' by 30' to allow room for removal and ample area for excavation. This portion of the project was extremely time consuming and consisted of involvement throughout the day. The actual tank excavation began the next day on October 4, 1991. The initial excavation involved the overburden soil above and around the sides of the tank. All excavated soil were removed and piled away from the actual excavation activities.

During the operations the fill, product, and vent piping were removed and set aside for subsequent removal from the site. Two tank port holes were open and 200 pounds of pelletized dry ice was placed into the tank at each end. Although the solvent has no flash point, as a precaution the dry ice was added. Combustible gases and oxygen concentrations were measured in the tank using a combustible gas meter. The air inside the tank was drawn to the meter through tubing that was lowered approximately 4 feet into the tank. Inspector Gary Collins, with the Oakland Fire Department, witnessed and approved the removal of the tank. The final meter readings indicated that the combustible gases were below 10% of the lower explosion limit (LEL) and the oxygen content at 9.5% Refer to Appendix B for information.

The tank port holes were sealed with wood plugs and the tank was lifted out using two front end loaders. Once out, the tank was placed in a storage area along with support piping. At a later date, the tank was loaded on to a truck operated by Erickson, Inc. of Richmond, California. The tank was manifested as and recorded under EPA Manifest number 90573707. A copy of this manifest is included in Appendix B.

C. Description of Sampling Methods

Once the tank was removed from the site, along with all piping appurtenant to the tank, one initial soil sample was taken at the north end of the tank at approximately 10 feet, directly below the tank. Due to the extensive excavation we chose to take a water sample at the end of the excavation process. The PID meter was used throughout the process as an approximation of potential contamination.

Soil samples were collected using a backhoe. The backhoe operator was directed to remove portions of native soil (not tank bedding material) at the desired depth and location with the backhoe. After raising the backhoe bucket to the ground surface, soil samples were collected by driving 2-inch diameter brass liners into the desired portion of soil in the backhoe bucket. After filling the tube completely to minimize headspace, the ends of the tube were enclosed with plastic caps over aluminum foil and sealed with cloth tape. Samples were labelled and placed in a chilled ice chest.

The sampling process was perform solely by Mr. John Sturman with Levine*Fricke consultants, this included all sampling materials and suggested sampling locations. Also assisting with sampling locations was Mr. Barney Chan with Alameda County Health Services.

5.0 REMEDIATION ACTIVITIES

A. Excavation of Contaminated Soil

A photoionization detector (PID) was used to screen soils encountered in the excavation process for volatile organic compounds (VOC). This process was used as an indication of possible contamination and not a verification of the actual contamination concentration. Originally the soil surrounding the tank was excavated using a backhoe to a distance of 4-6 feet from the sides of the tank in determining the lateral extent of potentially solvent affected soil. On October 4, 1991, approximately 180 cubic yards of soil were removed by Walt's Excavation Service under the observation of Levine*Fricke.

The PID meter measurements indicated that the soil adjacent to the tank on the south and west sides were for all purposes unaffected by solvent contamination to depth of 10 - 13 feet. On the northeast corner and the north side appear to be unaffected by solvent contamination but was clearly apparent that a 2-3" layer approximately 3.5 foot below ground level contained a thick black hydrocarbon substance. Due to the viscosity of the material it appeared to be stable within the zone, with limited migration due

to leachate characteristics. At this point in the project, the excavation of solvent contamination appeared to be secondary in contrast to determining the lateral and vertical extent of contamination created by the tar like substance.

Using the backhoe and a jack hammer, the concrete pad on the northeast corner and the north side of the excavation hole were removed further in an attempt to eliminate the layer of tar material. A layout has been provided in Figure 4, illustrating the final outcome of the additional excavation efforts. As the layout shows, the excavation managed to remove the tar saturation on the northeast corner and most of the north side. Excavation was aborted due to the level of contamination and difficulty in removing the concrete surface structure.

B. Sampling Methods

Excavation continued until the PID measurements showed that the affected soils were removed. Samples of the remaining native soils were collected to confirm soil quality around the perimeter of the excavation. Based upon initial readings of the PID, it was evident that there was very limited contamination, if any, created by leakage in conjunction with the UST. It was apparent that the tar layer posed a potential contamination source and would require investigation. For this reason Mr. Barney Chan with Alameda County Health Services requested in addition to verification testing for chlorinated solvents, EPA method 8010, that additional testing be perform including Diesel Hydrocarbons 3550/8, TPH-Volatile/BTEX and a full characterization of the tar material in order to fully evaluate the possible soil contamination.

All sampling was performed by Mr. John Sturman, Senior Geologist, with Levine*Fricke consultants using the same methodology as stated previously in a prior section. Soil samples collected during the excavation were labelled T3-N-10, T3-N2-8, T3-S-10 AND T3-E-7.5. Two independent samples were taken of the stock pile of excavated soil, representing the soil contamination levels. The soil samples were labelled T3-SP-1 and T3-SP-2. A GC characterization was performed on the tar matter in order to fully evaluate the composition and to understand the potential environmental impact, if any, from the layer. A representative sample was taken by Mr. John Sturman from the excavated soil. Provided in Figure 3 is a sampling location map representing all sample locations in conjunction with UST site location.

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C. Aeration of contaminated soil

All excavated soil was removed from the excavation site and was transported by front end loaders to an area away from the central operations at the north end of the property. The material was placed on a concrete pad and covered with visqueen plastic sheeting to protect from any environmental concerns. Based on the PID indications and the stock pile results the contamination concentration in parts per million (ppm) was below the BAAQMD aeration permit requirements of 50 ppm. Although, prior to aeration the BAAQMD were notified of the plans for aerating the soil.

The soil was spread on a concrete pad into an approximately 6 inches high layer for proper aeration. Periodically the soil was turned by a front end loader in order to effectively aerate the excavated pile. When the soil indicated contamination levels were significantly reduced based on visual observations and PID measurements, representative soil samples were collected by Mr. John Sturman of each stock pile.

D. Excavation Backfill Procedures

On October 6, 1991 the back filling of the excavated area was conducted by AB&I personnel and assistance by Walts Backhoe service. This portion of the project was important not only from the standpoint of implementing clean soil into the excavated area but equally important was that the backfill process was done correctly to support heavy traffic of large operating equipment.

The backfill consisted of clean soil and gravel, layered to generate effective drainage and foundation support. A motorized soil compactor was used to enhance the compaction of the soil. The excavated section was cover with reinforced concrete approximately 10 inches thick.

6.0 GENERAL FIELD OBSERVATIONS

The storage tank was in surprisingly good condition with the outside tar wrap still intact and no apparent damage to the outside of the tank. The tank and piping appeared to be without any visible leaking or contamination of any soil directly in contact with the surface.

Using the PID meter and visual observations the excavated soil surrounding the tank in general appeared to be relatively unaffected by any potential solvent contamination. Due to the size of the tank, the excavation was fairly extensive reaching depths of

13 feet. A low permeability clay layer of approximately 11 inches thick was observed at a depth of 7.5 foot. Except for the actual tank position it was observed that the clay layer formed a uniformly distributed subsurface layer which would for all purposes become a potentially impermeable medium.

During the operations, a tar substances in the form of a 3 inch layer was discovered on the north end of the excavation area. The material was highly viscous and appear to remain within a layer approximately 3.5 feet below surface level. Samples of the tar material were taken and sent for chemical analysis. It was clearly evident that the material was independent of the tank removal process and was a result of past operations some 15 to 20 years ago. A large portion of the total excavation procedure was focused on the elimination of this layer.

Water seepage into the excavation was observed at a depth of about 12 foot, with standing water collecting in the south end corner. Based on prior field observation from previous removals of UGST here on site, it is expected that static ground water is at a depth of about 12 to 15 feet below ground surface. The ground water conditions were extremely poor due mainly to the excavation process which created a mixing action of the soil and water. Because of time restraints and pump equipment malfunctions the water was unable to sufficiently flush in order to take a representative sample. The visible observation of the sample indicated that a poor representative sample was chosen based on the amount of debris in the water from the excavation efforts.

7.0 LABORATORY ANALYSIS

All soil and water samples were taken by Mr. John Sturman of Levine*Fricke using EPA sampling methods during the excavation. The samples were submitted to BC Analytical with the Chain Of Custody being directly from Mr. John Sturman. In the case of the unidentified tar like material, a Fingerprint Characterization was perform using a Capillary Gas Chromatography by Friedman & Bruya, Inc.

Results of the laboratory analysis, along with the Chain of Custody are provided in Appendix D. The soil samples collected from the excavation indicated that the soil below and around the former tank was relevantly unaffected by 1,1,1 Trichloroethane contamination, with limits ranging from 0 to 1.3 milligrams per kilogram (mg/kg). Accessible soil immediately below the former tank were excavated to a depth of approximately 13 feet providing an adequate assessment in fully understanding potential vertical contamination.

The analysis for TPH - Volatile/BTEX indicated affected soil at the north end of the excavation demonstrated some hydrocarbon contamination. Limits for Benzene, Ethylbenzene and Toluene range from 0 to 3 mg/kg. Hydrocarbon compounds C6 to C12 had the highest levels ranging from 0 to 500 mg/kg from soil samples on the north end of the excavation.

As expected, the water sample indicated a conglomerate of material consisting of various levels of contamination. The concentration of 1,1,1 Trichloroethane was determine at 22000 micrograms per ~~kilogram (ug/kg)~~ liter (ug/l). With the TPH - Volatile/BTEX indicated the presence of all compounds at various concentrations, Refer to summary Table 1.0 for details.

8.0 SOIL/WATER QUALITY RESULTS

The soil analysis results demonstrated the soil was unaffected by solvent contamination caused from leakage of the storage tank and piping connections. The analysis did indicate a potential hydrocarbon contamination on the north side of excavation due to the unknown tar layer. The outcome of the GC Characterization based on the sample analysis characteristic pattern showed the presence of medium to high boiling compounds, such as those found in coal tar. The material was found to be relatively insoluble in water and consisted of a highly viscous compound. The stock piles of soil also indicated hydrocarbon contamination but of a lesser degree.

The water analysis indicated a higher level of contamination level for all compounds in question than was expected or indicated from both visible observations and soil analysis results. The high levels are more than likely a direct result of the extensive excavation process and the stringent time frame restraints due to plant operational difficulties. As indicated by the soil/water analysis results it appears the water sample was not representative of the water quality which exist.

9.0 CONCLUSION/RECOMMENDATIONS

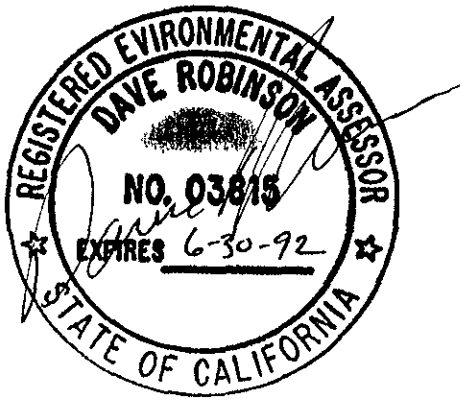
An 8,000 gallon underground solvent storage tank was removed from the site, and approximately 180 cubic yards of excavated soil were removed. The tank removal and excavation process went according to plan. The discovery of a tar layer was unexpected and create an extensive excavation process in attempt to eliminate the layer entirely.

Overall the soil was found for all purposes to be unaffected by 1,1,1 Trichloroethane contamination for both beneath and on the sides of the former storage tank. It is evident the tar layer was creating elevated levels of hydrocarbon contamination in soil samples taken at the north end of the excavation. Although, through the excavation process, 90 % of the layer was apparently removed, a small section still remains. Refer to Appendix C for details on final excavation. Based on the analytical characteristic results of the material and given the location of the layer, the potential for ground water contamination is negligible and in general should not pose an environmental impact.

As indicated by the water analysis contamination levels, in conjunction with soil analysis and visible observation of the removal process, it is apparent with the inconsistent results from the water sample taken was not representative. It is our judgement addition water samples must be taken to best qualify the water quality and the potential impact of contamination generated from the underground storage tank.

Based upon our review of the work performed, sampling and analysis procedures, and the results obtained, it is our opinion that the work was performed in compliance with applicable tank closure requirements.

It is our recommendation that a monitoring well be installed in the down gradient direction and a shallow ground water monitoring program established in order to access the extent of any potential ground water contamination.



Dave Robinson, REA
No. 03815, exp. 6-30-92


JANE ROBINSON
NO. 03813
EXPIRES

FIGURE 1

SITE LOCATION MAP

MAP SOURCE:
Oakland, Berkley, Alameda
California State Automobile Association
7-86

Figure 1 : SITE VICINITY

Project No. 1150

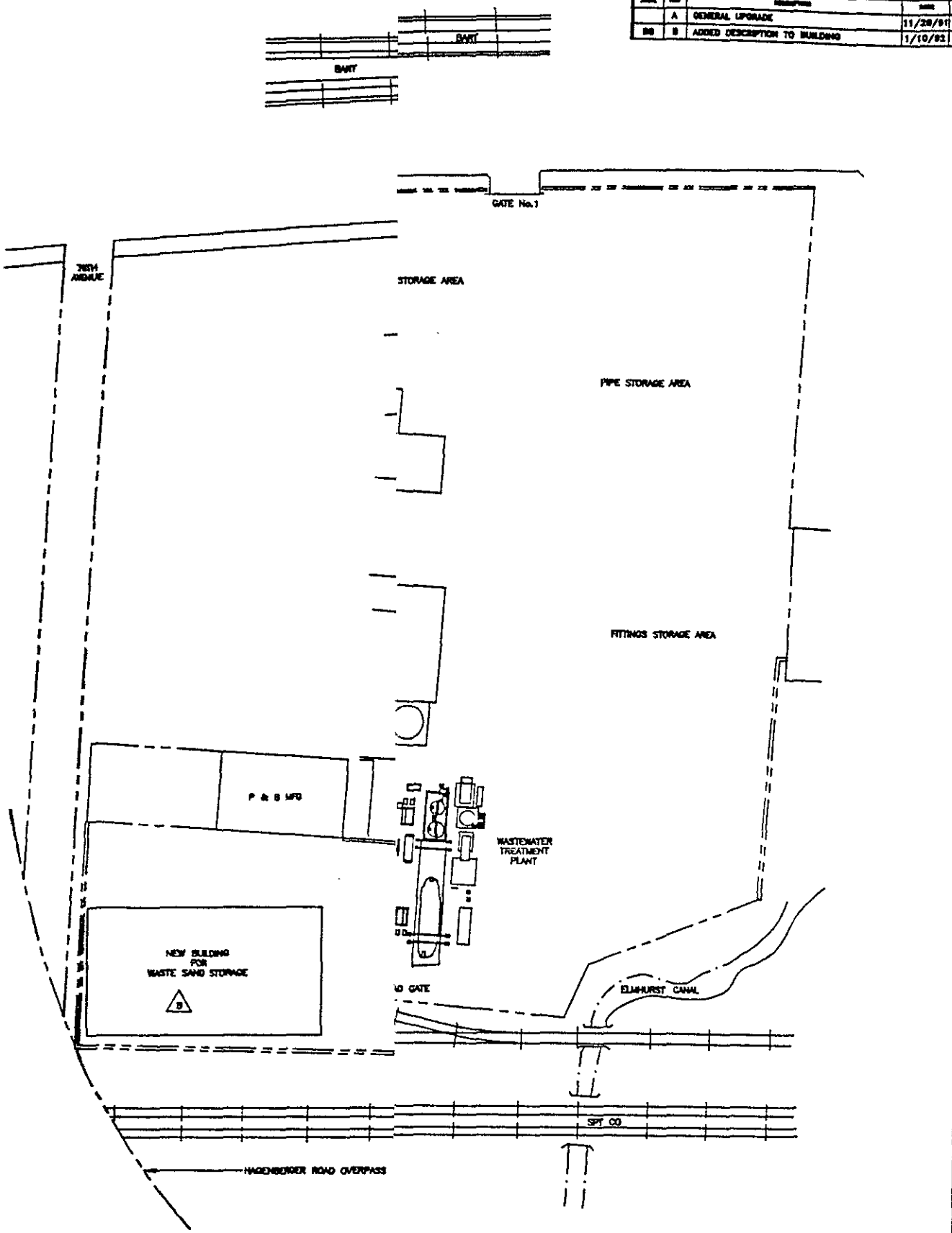
LEVINE•FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

PK75AUG88lm

FIGURE 2

TANK SITE LAYOUT

REVISIONS			
	A	GENERAL UPGRADE	11/28/91
BB	B	ADDED DESCRIPTION TO BUILDING	1/10/92



AMERICAN BRASS & IRON FOUNDRY
7825 San Leandro Street, Oakland, CA 94621

FOUNDRY PLOT PLAN

NEXT ASSY	USED ON	DATE 9/21/88	DRAWN JR
		SCALE NONE	D-MT-008 B
APPLICATION		FILE NAME: PLOTPLAN	PLOT: SHEET 1 OF 1

FIGURE 3

SAMPLING LOCATION MAP

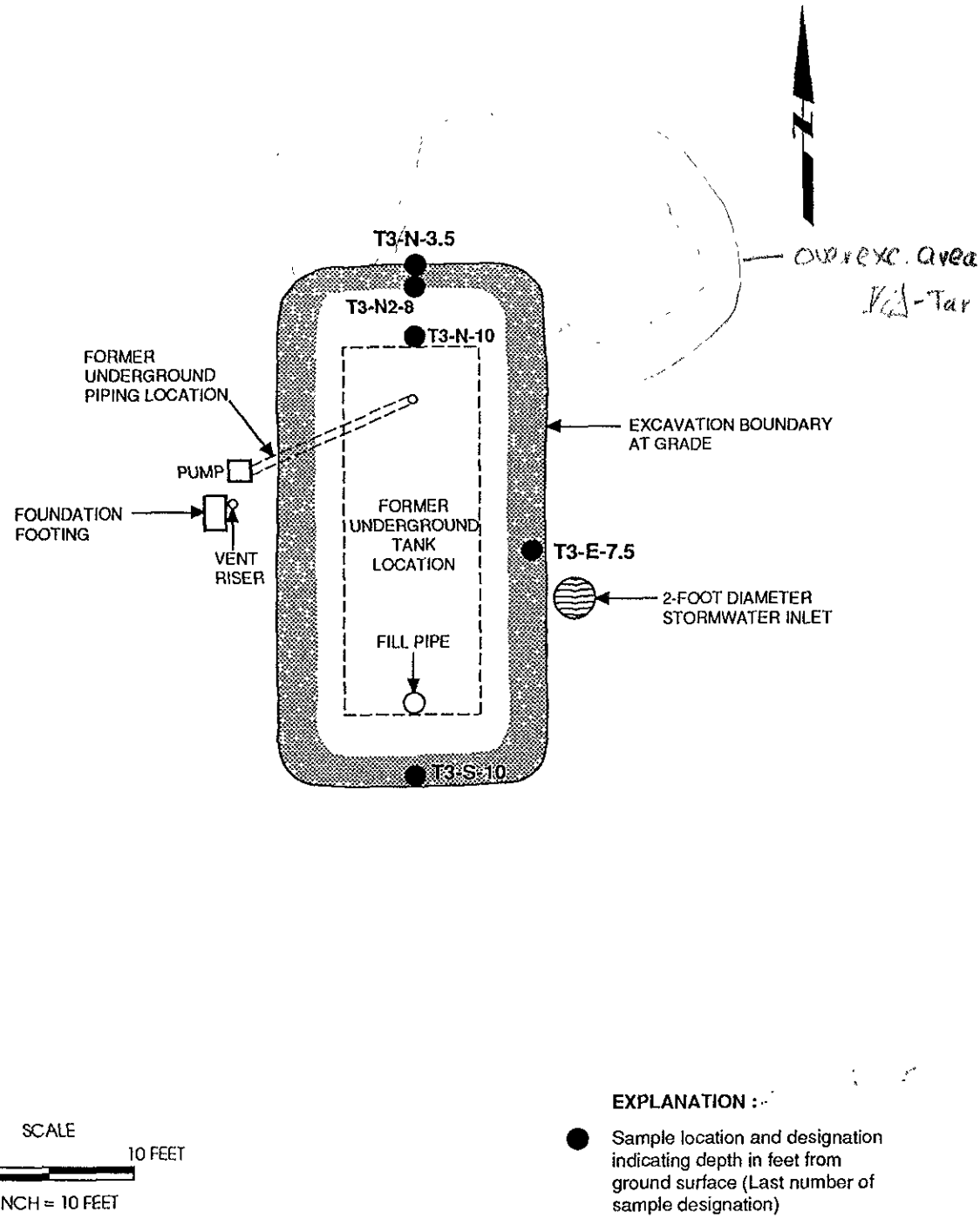


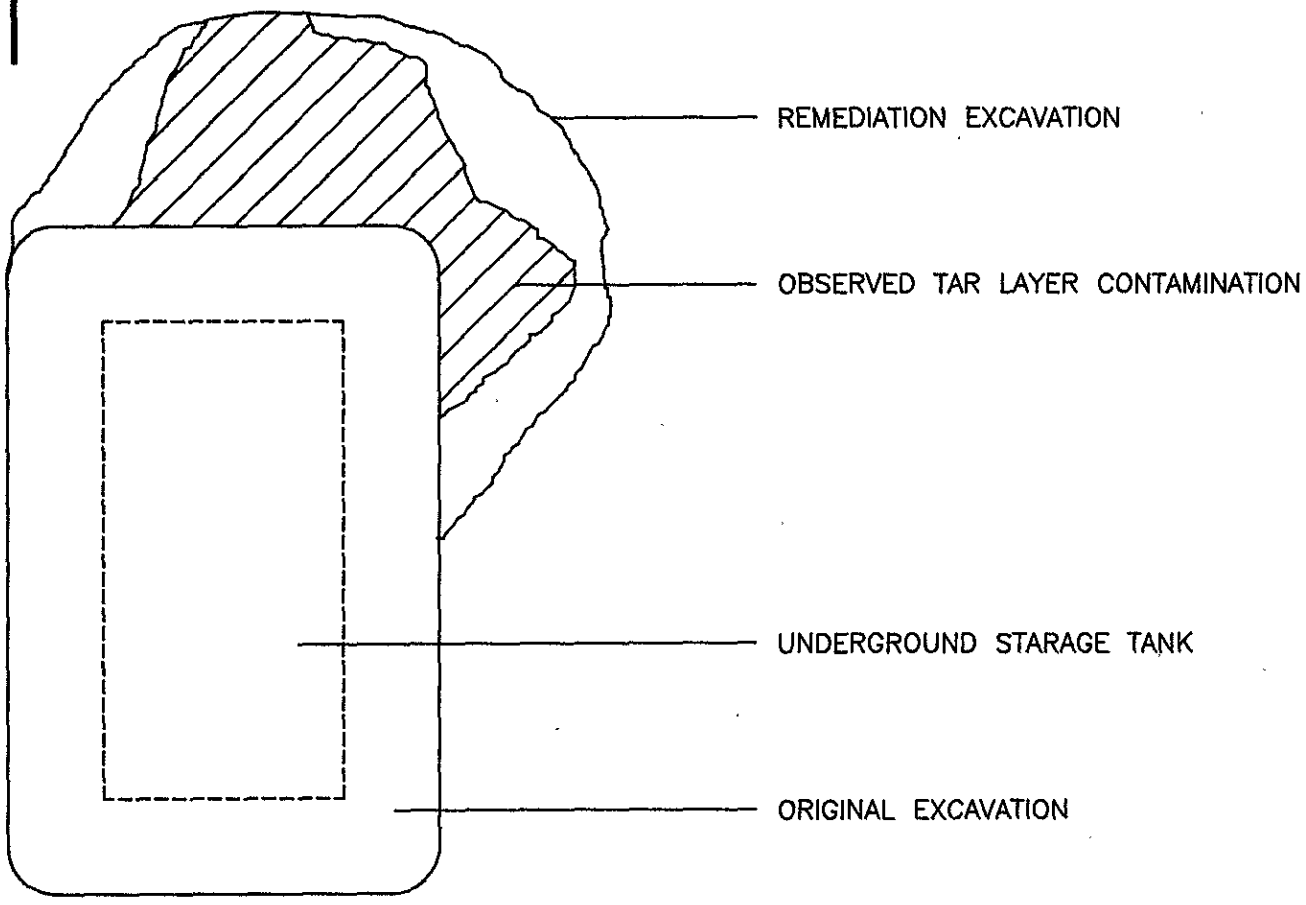
Figure 2 : SITE PLAN SHOWING FORMER 1,1,1-TCA TANK AND SOIL SAMPLE LOCATIONS

FIGURE 4

FINAL EXCAVATION LAYOUT

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPD

N



AB&I

AMERICAN BRASS & IRON FOUNDRY

7825 San Leandro Street, Oakland, CA 94621

REMOVAL PROJECT UNDERGROUND SOLVENT STORAGE TANK

		DATE 3/3/92	DRAWN JR	DRAWING NO. A-FC-005	REV
NEXT ASSY	USED ON	SCALE NONE	CHECKED		
APPLICATION		FILE NAME: UST	PLOT: 1=4	SHEET 1 OF 1	

TABLE 1.0

SUMMARY OF ANALYSIS RESULTS

TABLE 2

SOIL- AND WATER-QUALITY RESULTS
AMERICAN BRASS AND IRON FOUNDRY
8,000 GALLON 1,1,1,-TCA TANK REMOVAL
7825 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

			Petroleum Hydrocarbons						EPA 8010 Analytes			
Sample Number	Date Collected	Depth (feet)	TPH as* Gasoline	TPH as** Diesel	Benzene	Toluene	Ethyl-benzene	Xylenes	1,1,1,-Tri-chloroethane	1,1- Di-chloroethane	1,1 Di-chloroethene	Chloro-ethane
Soil Samples (results in milligrams per kilogram [mg/kg])									PRG in mg/kg 3000	3900	.082	2200
T3-N-10	04-Oct-91	10	500	34	<2	<2	3	6	<0.1	<0.1	<0.1	<0.1
T3-N2-8	04-Oct-91	8	0.6	<1	<0.005	<0.005	0.015	0.6	----	----	----	----
T3-S-10	04-Oct-91	10	----	----	----	----	----	----	0.14	0.05	<0.01	<0.01
T3-SP-1	04-Oct-91	1	13	7	<0.02	<0.02	0.12	0.39	1.30	0.50	0.06	0.67
T3-SP-2	04-Oct-91	2	18	8	<0.02	<0.02	0.16	0.34	0.19	0.23	0.02	1.10
T3-E-7.5	04-Oct-91	7.5	<0.1	<1	<0.005	<0.005	<0.005	<0.005	0.02	0.03	<0.01	0.33
Water Samples (results in milligrams per liter [mg/l])												
T3-GRAB	04-Oct-91		11.000	----	0.130	0.310	0.260	2.200	22.000	4.900	<.100	7.000

NOTES:

All samples were analyzed by BC Anayltical Laboratory, Emeryville, California (BCA).

TPH = Total Petroleum Hydrocarbons

* TPH as gasoline is reported by BC Analytical Laboratory as C6 to C12 Hydrocarbons

** TPH as diesel is reported by BC Analytical Laboratory as C[illegible] to C[illegible] Hydrocarbons

12 25

---- Samples were not analyzed for the above analytes.

< Concentrations below laboratory detection limits.

No other EPA 8010 analytes were detected in these samples.

Samples T3-SP-1 and T3-SP-2 were collected from a stockpile of soils around the tank.

APPENDIX A

ORIGINAL UST CLOSURE PLAN
EXCAVATION PERMIT

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

Project Specialist (print)

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

1. Business Name AMERICAN BRASS AND IRON FOUNDRY
   Business Owner ALLAN BOSCACCI
2. Site Address 7825 SAN LEANDRO STREET
   City OAKLAND Zip 94621 Phone (415) 632-3467
3. Mailing Address 7825 SAN LEANDRO STREET
   City OAKLAND Zip 94621 Phone (415) 632-3467
4. Land Owner ALLAN BOSCACCI
   Address 7825 SAN LEANDRO ST. City, State OAKLAND, CA Zip 94621
5. Generator name under which tank will be manifested AMERICAN BRASS AND IRON FOUNDRY
   EPA I.D. No. under which tank will be manifested CAD 021 774 559

rev 12/90

6. Contractor SAME AS OWNER

Address _____

City _____ Phone _____

License Type _____ ID# _____

7. Consultant LEVINE • FRICKE

Address 1900 POWELL STREET, 12TH FLOOR

City EMERYVILLE Phone (415) 652-4500

8. Contact Person for Investigation

Name JOHN STURMAN Title SENIOR PROJECT GEOTECHNICAL ENGINEER

Phone (415) 652-4500

9. Number of tanks being closed under this plan 3

Length of piping being removed under this plan APP. 10 FT. PER TANK

Total number of tanks at facility 4

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 EVERGREEN ENVIRONMENTAL SERVICES EPA I.D. No. CAD980695761

Hauler License No. _____ License Exp. Date _____

Address 6880 SMITH ROAD

City NEWARK State CA Zip 94560

b) Product/Residual Sludge/Rinsate Disposal Site

Name EVERGREEN ENVIRONMENTAL EPA I.D. No. CAD980887418

Address 6880 SMITH ROAD

City NEWARK State CA Zip 94560

rev 12/90

c) Tank and Piping Transporter

Name H & H SHIP SERVICE EPA I.D. No. CAD004771168

Hauler License No. 0334 License Exp. Date 1/31/92

Address 220 CHINA BASIN STREET

City SAN FRANCISCO State CA Zip 94107

d) Tank and Piping Disposal Site

Name SAME AS TRANSPORTER EPA I.D. No. _____

Address _____

City _____ State _____ Zip _____

11. Experienced Sample Collector

Name JOHN STURMAN

Company LEVINE · FRICKE

Address 1900 POWELL STREET

City EMERYVILLE State CA Zip 94608 Phone (415) 652-4500

12. Laboratory

Name BC ANALYTICAL

Address 1255 POWELL STREET

City EMERY VILLE State CA Zip 94608

State Certification No. 1353

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

If yes, describe. _____

14. Describe methods to be used for rendering tank inert

1) PRODUCT AND SLUDGE REMOVAL

2) RINSING PIPING AND TANKS

3) DRY ICE

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, groundwater, etc.)	Location and Depth of Samples
Capacity	Use History (see instructions)		
② 550 GAL	REGULAR GASOLINE STORAGE, INSTALLATION DATE UNKNOWN. LAST USED AUGUST 1991.	SOIL, GROUNDWATER IF SOIL IS CONTAMINATED OR IF GROUNDWATER IS PRESENT IN THE EXCAVATION	SOIL- 1" INTO NATIVE SOIL WATER- AT STATIC WATER LEVEL IN EXCAVATION

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.

14. Describe methods to be used for rendering tank inert

1) PRODUCT AND SLUDGE REMOVAL

2) RINSING PIPING AND TANKS

3) DRY ICE

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, groundwater, etc.)	Location and Depth of Samples
Capacity	Use History (see instructions)		
(1) 8000 GAL.	TCA (1,1,1 TRICHLOROETHANE) STORED. INSTALLATION DATE: UNKNOWN, LAST USED AUGUST 1991.	SOIL, GROUNDWATER IF SOIL IS CONTAMINATED OR IF GROUND WATER IS PRESENT IN THE EXCAVATION	SOIL - 1" INTO NATIVE SOIL WATER - AT STATIC WATER LEVEL IN EXCAVATION

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.

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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)		
8000 GAL	UNLEADED FUEL STORED. INSTALLATION DATE UNKNOWN. LAST USED AUGUST 1991.	SOIL, GROUNDWATER IF SOIL IS CONTAMINATED OR IF GROUNDWATER IS PRESENT IN THE EXCAVATION	SOIL - 1' INTO NATIVE SOIL WATER - AT STATIC WATER LEVEL IN EXCAVATION

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)	Sampling Plan

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
GAS TANKS: TPH GASOLINE	EPA 5030	EPA METHOD 8015	1 PPM SOIL 0.050 PPM WATER
GAS TANKS: BTXE	SAME	EPA METHOD 8020	0.005 PPM SOIL 0.0005 PPM WA
SOLVENT TANK: CHLORINATED SOLVENTS		EPA METHOD 8010	0.010 PPM SOI 0.0005 PPM WA

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

18. Submit Worker's Compensation Certificate copy

Name of Insurer SELF INSURED TO $ 400,000. TRANSAMERICA INSURANCE COMPANY THEREAFTER

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) JOHN P. FEHRINGER

Signature John P. Fehringer

Date 8/1/91

Signature of Site Owner or Operator

Name (please type) JOHN P. FEHRINGER

Signature John P. Fehringer

Date 8/1/91

STATE OF CALIFORNIA

Pete Wilson, *Governor*

DEPARTMENT OF INDUSTRIAL RELATIONS
SELF-INSURANCE PLANS
[redacted]48 Arden Way, Suite 105
[redacted]cramento, CA 95825
Phone (916) 924-4866
FAX (916) 920-7095

Our File: 1048

Mr. Paul Quezada
Personnel Manager
AMERICAN BRASS & IRON FOUNDRY
7825 San Leandro Street
Oakland, CA 94621

RECEIPT AND ACCEPTANCE OF IRREVOCABLE LETTER OF CREDIT AMENDMENT FOR AMERICAN BRASS & IRON FOUNDRY

THIS CERTIFIES that the above-named self-insurer has this day deposited with the Director of Industrial Relations of the State of California, to be held subject to the order of the said Director, under Section 3700 to 3705 of the Labor Code of California, the following described Irrevocable Letter of Credit:

Amendment No. 5, dated April 19, 1991, to be attached to and form a part of Bank of the West Irrevocable Standby Letter of Credit No. S-2069/054, for American Brass & Iron Foundry, said Amendment decreasing the penalty of said Letter of Credit from $970,000 to $400,000.

Total Deposit - Letter of Credit	$400,000
Total Deposit - Surety Bond	$ -0-
Total Deposit - Securities	$ -0-
Total Deposit - Cash/Certificate of Deposit	$ -0-
TOTAL DEPOSIT	$400,000

Dated at Sacramento, California
This 26th day of April, 1991

MARK B. ASHCRAFT, Manager
Self-Insurance Plans

dc
cc: Bank of the West
Internation Department
180 Montgomery Street
San Francisco, CA 94104

SPECIFIC EXCESS WORKERS COMPENSATION POLICY

TRANSAMERICA INSURANCE COMPANY
(A Stock Company, herein called the "Company")
6300 Canoga Avenue, Woodland Hills, California 91367

WEXFORD UNDERWRITING MANAGERS, INC.
260 California Street, Suite 900, San Francisco, CA 94111

POLICY NUMBER: W - 141719A

DECLARATIONS

ITEM 1 - Name and Address of Insured: American Brass & Iron Foundry
7825 San Leandro Street
Oakland, California 94621

ITEM 2 - Effective Date: October 4, 1990 Expiration Date: October 4, 1991
12:01 A.M., standard time at the address of the Insured as stated herein.
Cancellation Notice: 30 Days

ITEM 3 - Coverage under this Policy applies to the Workers Compensation Act of each of the following states:
California

ITEM 4 - Company's Limit of Indemnity Each Occurrence

(a) For Workers Compensation:	$ 10,000,000
(b) For Employers Liability:	$ 1,000,000
(c) For Workers Compensation & Employers Liability Combined:	$ 10,000,000

ITEM 5 - Insured's Retention Each Occurrence: $300,000

ITEM 6 - Business Operations of Insured

CLASSIFICATION OF OPERATIONS	CODE NO.	ESTIMATED ANNUAL REMUNERATION	RATE PER $100 REMUNERATION	ESTIMATED STANDARD PREMIUM
All Operations	____	$6,070,000		____
			Total Estimated Manual Premium:	$838,000

ITEM 7 - Policy Premium: $43,370 adjustable at .7145 per $100 of Payroll — Advance Premium for this Policy: $43,370

ITEM 8 - Minimum Premium for this Policy: $43,370

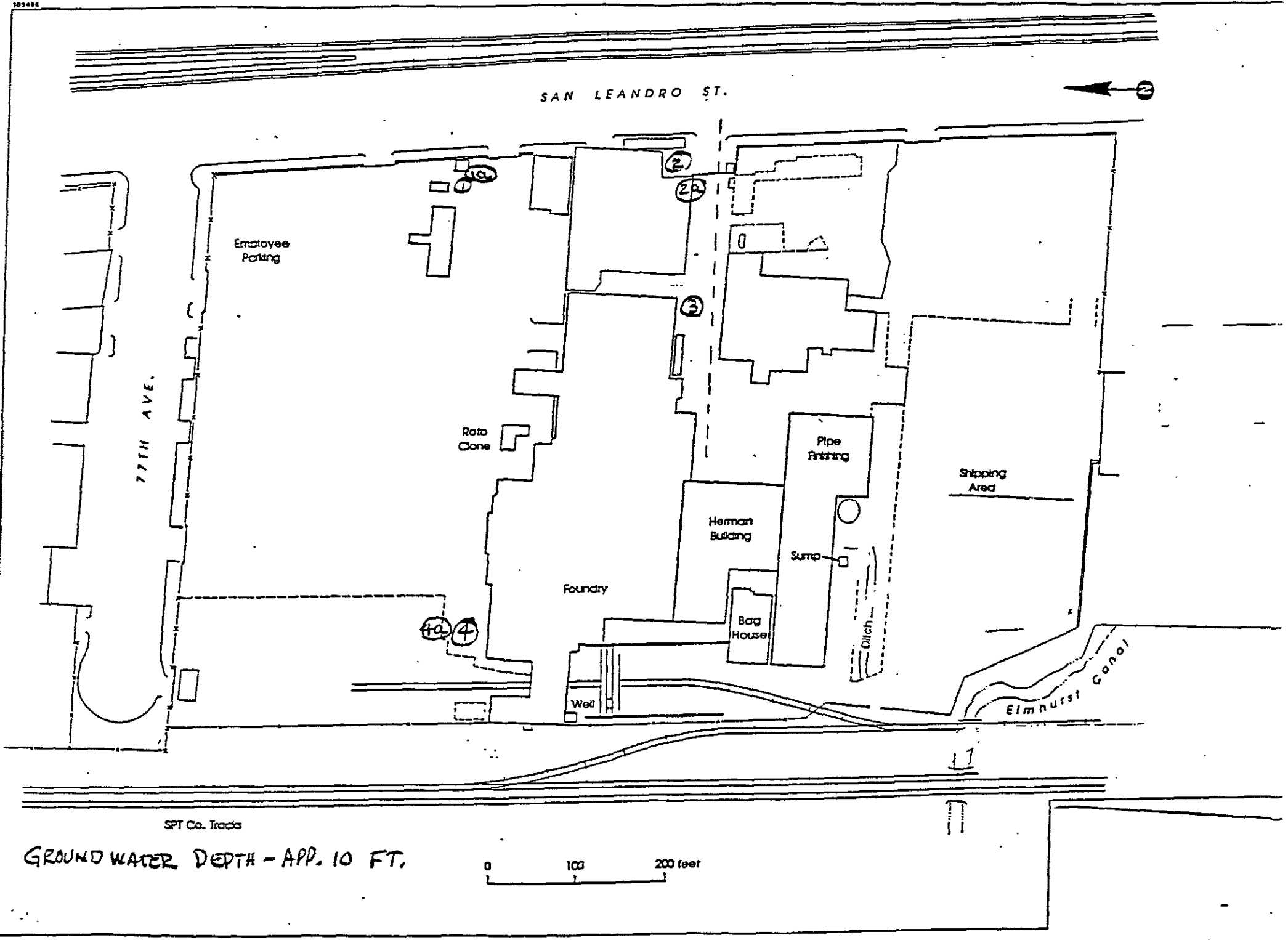
ITEM 9 - Endorsements forming part of Policy at time of issue: None

The declarations shall not be binding on the Company unless countersigned by a duly authorized representative of the Company.
Dated at San Francisco, Calif this 15th day of October, 1990.

By _____
(Authorized Representative)

Producer's Name: Swett & Crawford of San Francisco Producer's Code: WP - 0108

TAW - 01 (1-89)



GROUND WATER DEPTH - APP. 10 FT.

PLOT PLAN

(1) 6000 gal UNLEADED STORAGE TANK
(1a) UNLEADED DISPENSER

(2) 550 gal REGULAR STORAGE TANK
(2a) REGULAR DISPENSER

(3) 8000 gal TCA STORAGE TANK

(4) 12000 gal DIESEL STORAGE TANK
(4a) DIESEL DISPENSER

- - - - - MAIN POWER LINE (UNDERGROUND)

UNDERGROUND SERVICE ALERT WILL CONFIRM LOCATIONS OF LINES BY 8/1/91

APPENDIX B

FIRE INSPECTOR NOTES
LEVINE*FRICKE FIELD NOTES
DISPOSAL MANIFEST

CITY OF OAKLAND
REPORT OF FIRE INSPECTION

ENGINE CO.

ADDRESS 7825 San Leandro

NAME American Brass & Iron

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

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

DATE	VIOLATION	O.F.C.	CONTACTED
10/4/91	WITNESSED Removal of 8,000 gal tank. LEL 10%, O2 9.5 OK		Dave Robinson

A REINSPECTION WILL BE MADE WITHIN _____ DAYS.

FIRE PREVENTION BUREAU — PHONE 273-3851

338-5 (Rev. 5-77)

INSPECTOR [signature]

Abel Carbonic

CUSTOMER NUMBER	PURCHASE ORDER NO.	DATE	DELIVERY NUMBER
		10/4/91	1-196479

BY ACCEPTING THIS ORDER, CUSTOMER AGREES TO ALL OF THE TERMS AND CONDITIONS SET FORTH HEREIN, INCLUDING THOSE PRINTED ON THE REVERSE SIDE.

NAME AMERICAN BRASS

SHIPPED TO

ACCEPTED BY:

20 SOLID	21 HALF	22 SLICES	23 BLOCKS	24 AIRPORT	29 WET ICE	

UNIT	DESCRIPTION	CODE	POUNDS
4	DRY ICE ORM-A UN1845	23	200

Excavation Permit Granted ______ No. ______

CITY OF OAKLAND

Tank Permit

Permit to Excavate and Install, Repair or Remove Inflammable Liquid Tanks No. [illegible]78

Oakland, California, August 20, 19 91

PERMISSION IS HEREBY GRANTED TO install, remove, [illegible] Gasoline tank and excavate commencing ______ feet and [illegible] line

on the ______ side of ______ Street/Avenue ______ feet ______ of ______ Street/Avenue

House No. 7825 San Leandro Street/Avenue Present Storage ______

Owner American Brass & Iron Address same Phone 632-[illegible]07

Applicant same Address same Phone same

Dimensions of Street, sidewalk, surface to be disturbed ______ x ______ Number of Tanks ______ Capacity 8,000 / 550 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.

N

W E

S

EXCAVATING PERMIT

Issued in accordance with Ord. No. 278 C.M.S., Sec. 7-2.04

______ square feet of digging or removal granted.

The receipt of $ ______ special deposit is hereby acknowledged.

GENERAL DEPOSIT.

BUREAU OF PERMITS AND LICENSES.

CERTIFICATE OF TANK AND EQUIPMENT INSPECTION

Inspected and passed on ______ 19 ______

By ______ Fire Marshal

Inspection Fee Paid $80.00 ck#156686 rec#65734

Received by D. Clemons
FIRE PREVENTION BUREAU

NOTICE

Before Covering Tanks, Above Certificate Must Be Signed.
When ready for inspection notify Fire Prevention Bureau, 273-3851

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

38-68 (6-97)

LEVINE·FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

SHEET____ OF____
JOB NO.: 2408
DATE: 11/91
COMPUTED BY: JOS
CHECKED BY:____

PROJ
SUBJ

LEVINE·FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

To David Robinson	From John Sturman
Co. AB+I	Emeryville Office
Dept.	Phone No. (510) 652-4500
Fax No. 632-8035	Fax No. (510) 652-2246

No. of Pages 1

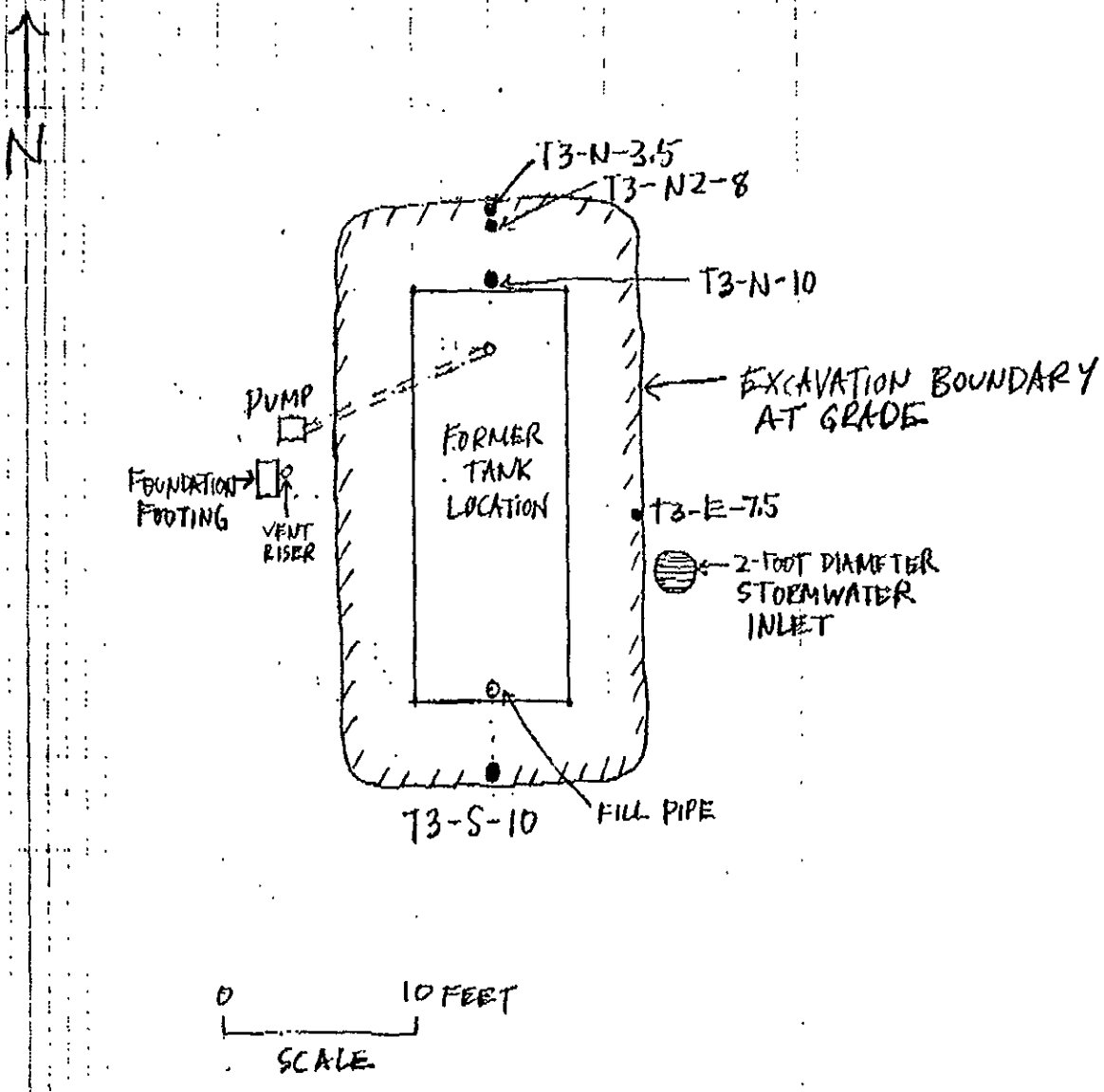


FIGURE 2: SITE PLAN SHOWING FORMER 1,1,1-TCA TANK AND SAMPLE LOCATIONS

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *Form designed for use on elite (12-pitch typewriter).*

77268

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
CAD021724559	73707		

GENERATOR

3. Generator's Name and Mailing Address: American Glass Film, 7825 San Leandro Blvd. Oakland, Ca. 94621

4. Generator's Phone (510) 632-3467

A. State Manifest Document Number: 90573707

B. State Generator's ID:

5. Transporter 1 Company Name: Erickson Trucking Inc

6. US EPA ID Number: CAD099466392

C. State Transporter's ID: 205166

D. Transporter's Phone: 510 235-1393

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: Erickson, Inc. 255 Parr Blvd. Richmond, Ca. 94801

10. US EPA ID Number: CAD009466392

G. State Facility's ID:

H. Facility's Phone: (415) 235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Empty Storage Tank NON-RCRA Hazardous Waste Solid.	001	TP	8000	P	State 512 / EPA/Other NONE
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above: Qty. 1 Empty Storage Tank (s) #7818, ____, ____, ____, ____. Tank (s) have been inerted with 15 lbs. Dry Ice per 1000 Gal. Capacity.

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

15. Special Handling Instructions and Additional Information: Keep away from sources of ignition. Always wear hardhats when working around U.S.T.'s 24 Hr. Contact Name ____ & Phone ____

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

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

Printed/Typed Name	Signature	Month	Day	Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Steve Fleming	Steve Fleming	12	17	91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

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

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

90573707

DHS 8022 A
EPA 8700—22
(Rev. 6-89) Previous editions are obsolete.

Do Not Write Below This Line

YELLOW: GENERATOR RETAINS

APPENDIX C

LABORATORY ANALYSIS
GC CHARACTERIZATION ANALYSIS
CHAIN OF CUSTODY

Analytical Report

LOG NO: E91-10-110

Received: 04 OCT 91

Mailed: NOV 0 1 1991

Mr. David Robinson
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Requisition: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
10-110-1	T3-S-10	04 OCT 91

PARAMETER	10-110-1
EPA Method 8010	
Date Analyzed	10.11.91
Date Extracted	10.09.91
Confirmation Date	10.12.91
Dilution Factor, Times	1
1,1,1-Trichloroethane, mg/kg	0.14
1,1,2,2-Tetrachloroethane, mg/kg	<0.01
1,1,2-Trichloroethane, mg/kg	<0.01
1,1-Dichloroethane, mg/kg	0.05
1,1-Dichloroethene, mg/kg	<0.01
1,2-Dichloroethane, mg/kg	<0.01
1,2-Dichlorobenzene, mg/kg	<0.01
1,2-Dichloroethene (Total), mg/kg	<0.01
1,2-Dichloropropane, mg/kg	<0.01
1,3-Dichlorobenzene, mg/kg	<0.01
1,4-Dichlorobenzene, mg/kg	<0.01
2-Chloroethylvinylether, mg/kg	<0.01
Bromodichloromethane, mg/kg	<0.01
Bromomethane, mg/kg	<0.01
Bromoform, mg/kg	<0.01
Chlorobenzene, mg/kg	<0.01
Carbon Tetrachloride, mg/kg	<0.01
Chloroethane, mg/kg	<0.01
Chloroform, mg/kg	<0.01
Chloromethane, mg/kg	<0.01
Dibromochloromethane, mg/kg	<0.01
Dichlorodifluoromethane, mg/kg	<0.01
Freon 113, mg/kg	<0.01

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

RCA B C Analytical

Analytical Report

LOG NO: E91-10-110

Received: 04 OCT 91

Mr. David Robinson
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Requisition: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
10-110-1	T3-S-10	04 OCT 91

PARAMETER	10-110-1
Methylene chloride, mg/kg	<0.01
Trichloroethene, mg/kg	<0.01
Trichlorofluoromethane, mg/kg	<0.01
Tetrachloroethene, mg/kg	<0.01
Vinyl chloride, mg/kg	<0.01
cis-1,2-Dichloroethene, mg/kg	<0.01
cis-1,3-Dichloropropene, mg/kg	<0.01
trans-1,2-Dichloroethene, mg/kg	<0.01
trans-1,3-Dichloropropene, mg/kg	<0.01

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

BCA B C Analytical

Analytical Report

LOG NO: E91-10-110

Received: 04 OCT 91

Mr. David Robinson
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Requisition: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
10-110-2	T3-N-10	04 OCT 91
10-110-4	T3-SP-1	04 OCT 91
10-110-5	T3-SP-2	04 OCT 91
10-110-6	T3-E-7.5	04 OCT 91

PARAMETER	10-110-2	10-110-4	10-110-5	10-110-6
Diesel Hydrocarbons 3550/8015				
Date Analyzed	10.20.91	10.20.91	10.20.91	10.19.91
Date Extracted	10.15.91	10.15.91	10.15.91	10.15.91
Dilution Factor, Times	1	1	2	1
C12 to C25 Hydrocarbons, mg/kg	34	7	8	<1
TPH-Volatile/BTEX				
Date Analyzed	10.16.91	10.15.91	10.15.91	10.16.91
Dilution Factor, Times	500	50	50	1
Benzene, mg/kg	<2	<0.02	<0.02	<0.005
Ethylbenzene, mg/kg	3	0.12	0.16	<0.005
Toluene, mg/kg	<2	<0.02	<0.02	<0.005
Total Xylene Isomers, mg/kg	6	0.39	0.34	<0.005
C6 to C12 Hydrocarbons, mg/kg	500	13	18	<0.1

1255 Powell Street
Emeryville, CA 94608

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Requisition: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
10-110-2	T3-N-10	04 OCT 91
10-110-4	T3-SP-1	04 OCT 91
10-110-5	T3-SP-2	04 OCT 91
10-110-6	T3-E-7.5	04 OCT 91

PARAMETER	10-110-2	10-110-4	10-110-5	10-110-6
EPA Method 8010				
Date Analyzed	10.11.91	10.12.91	10.11.91	10.11.91
Date Extracted	10.09.91	10.09.91	10.09.91	10.09.91
Confirmation Date	10.12.91	10.12.91	10.12.91	10.12.91
Dilution Factor, Times	10	1	1	1
1,1,1-Trichloroethane, mg/kg	<0.1	1.3	0.19	0.02
1,1,2,2-Tetrachloroethane, mg/kg	<0.1	<0.01	<0.01	<0.01
1,1,2-Trichloroethane, mg/kg	<0.1	<0.01	<0.01	<0.01
1,1-Dichloroethane, mg/kg	<0.1	0.50	0.23	0.03
1,1-Dichloroethene, mg/kg	<0.1	0.06	0.02	<0.01
1,2-Dichloroethane, mg/kg	<0.1	<0.01	<0.01	<0.01
1,2-Dichlorobenzene, mg/kg	<0.1	<0.01	<0.01	<0.01
1,2-Dichloroethene (Total), mg/kg	<0.1	<0.01	<0.01	<0.01
1,2-Dichloropropane, mg/kg	<0.1	<0.01	<0.01	<0.01
1,3-Dichlorobenzene, mg/kg	<0.1	<0.01	<0.01	<0.01
1,4-Dichlorobenzene, mg/kg	<0.1	<0.01	<0.01	<0.01
2-Chloroethylvinylether, mg/kg	<0.1	<0.01	<0.01	<0.01
Bromodichloromethane, mg/kg	<0.1	<0.01	<0.01	<0.01
Bromomethane, mg/kg	<0.1	<0.01	<0.01	<0.01
Bromoform, mg/kg	<0.1	<0.01	<0.01	<0.01
Chlorobenzene, mg/kg	<0.1	0.01	<0.01	<0.01
Carbon Tetrachloride, mg/kg	<0.1	<0.01	<0.01	<0.01
Chloroethane, mg/kg	<0.1	0.67	1.1	0.33
Chloroform, mg/kg	<0.1	<0.01	<0.01	<0.01
Chloromethane, mg/kg	<0.1	<0.01	<0.01	<0.01

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

BCA B C Analytical

Analytical Report

LOG NO: E91-10-110

Received: 04 OCT 91

Mr. David Robinson
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Requisition: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
10-110-2	T3-N-10	04 OCT 91
10-110-4	T3-SP-1	04 OCT 91
10-110-5	T3-SP-2	04 OCT 91
10-110-6	T3-E-7.5	04 OCT 91

PARAMETER	10-110-2	10-110-4	10-110-5	10-110-6
Dibromochloromethane, mg/kg	<0.1	<0.01	<0.01	<0.01
Dichlorodifluoromethane, mg/kg	<0.1	<0.01	<0.01	<0.01
Freon 113, mg/kg	<0.1	<0.01	<0.01	<0.01
Methylene chloride, mg/kg	<0.1	<0.01	<0.01	<0.01
Trichloroethene, mg/kg	<0.1	<0.01	<0.01	<0.01
Trichlorofluoromethane, mg/kg	<0.1	<0.01	<0.01	<0.01
Tetrachloroethene, mg/kg	<0.1	<0.01	<0.01	<0.01
Vinyl chloride, mg/kg	<0.1	<0.01	<0.01	<0.01
cis-1,2-Dichloroethene, mg/kg	<0.1	<0.01	<0.01	<0.01
cis-1,3-Dichloropropene, mg/kg	<0.1	<0.01	<0.01	<0.01
trans-1,2-Dichloroethene, mg/kg	<0.1	<0.01	<0.01	<0.01
trans-1,3-Dichloropropene, mg/kg	<0.1	<0.01	<0.01	<0.01

Analytical Report

LOG NO: E91-10-110

Received: 04 OCT 91

Mr. David Robinson
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Requisition: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
10-110-3	T3-N2-8	04 OCT 91

PARAMETER	10-110-3
Diesel Hydrocarbons 3550/8015	
Date Analyzed	10.19.91
Date Extracted	10.15.91
Dilution Factor, Times	1
C12 to C25 Hydrocarbons, mg/kg	<1
TPH-Volatile/BTEX	
Date Analyzed	10.15.91
Dilution Factor, Times	1
Benzene, mg/kg	<0.005
Ethylbenzene, mg/kg	0.015
Toluene, mg/kg	<0.005
Total Xylene Isomers, mg/kg	0.009
C6 to C12 Hydrocarbons, mg/kg	0.6

1255 Powell Street
Emeryville, CA 94608

415/428-2300
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Analytical Report

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Mr. David Robinson
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Requisition: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
10-110-7	T3-GRAB	04 OCT 91

PARAMETER	10-110-7
TPH-Volatile/BTEX	
Date Analyzed	10.14.91
Dilution Factor, Times	20
Benzene, ug/L	130
Ethylbenzene, ug/L	260
Toluene, ug/L	310
Total Xylene Isomers, ug/L	2200
C6 to C12 Hydrocarbons, ug/L	11000

Analytical Report

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American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Requisition: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
10-110-7	T3-GRAB	04 OCT 91

PARAMETER	10-110-7
EPA Method 8010	
Date Analyzed	10.16.91
Confirmation Date	10.16.91
Dilution Factor, Times	200
1,1,1-Trichloroethane, ug/L	22000
1,1,2,2-Tetrachloroethane, ug/L	<100
1,1,2-Trichloroethane, ug/L	<100
1,1-Dichloroethane, ug/L	4900
1,1-Dichloroethene, ug/L	<100
1,2-Dichloroethane, ug/L	<100
1,2-Dichlorobenzene, ug/L	<100
1,2-Dichloroethene (Total), ug/L	<100
1,2-Dichloropropane, ug/L	<100
1,3-Dichlorobenzene, ug/L	<100
1,4-Dichlorobenzene, ug/L	<100
2-Chloroethylvinylether, ug/L	<100
Bromodichloromethane, ug/L	<100
Bromomethane, ug/L	<100
Bromoform, ug/L	<100
Chlorobenzene, ug/L	<100
Carbon Tetrachloride, ug/L	<100
Chloroethane, ug/L	7000
Chloroform, ug/L	<100
Chloromethane, ug/L	<100
Dibromochloromethane, ug/L	<100
Dichlorodifluoromethane, ug/L	<100
Freon 113, ug/L	<100
Methylene chloride, ug/L	<100

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American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Requisition: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
10-110-7	T3-GRAB	04 OCT 91

PARAMETER	10-110-7
Trichloroethene, ug/L	<100
Trichlorofluoromethane, ug/L	<100
Tetrachloroethene, ug/L	<100
Vinyl chloride, ug/L	<100
cis-1,2-Dichloroethene, ug/L	<100
cis-1,3-Dichloropropene, ug/L	<100
trans-1,2-Dichloroethene, ug/L	<100
trans-1,3-Dichloropropene, ug/L	<100

Sim D. Lessley, Ph.D., Laboratory Director

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Emeryville, CA 94608

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BCA B C Analytical

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3008-B 16th Avenue West
Seattle, WA 98119
FAX: (206) 283-5044

February 28, 1992

John Sturman, Project Leader
Levine-Fricke, Inc.
1900 Powell, 12th Floor
Emeryville, CA 94608

Dear Mr. Sturman:

This letter is in reference to some work that we performed from Project 2408, AB&I Tanks which was reported on October 9, 1991. You have raised the question regarding the behavior of this material in the environment and it is discussed in the following paragraphs.

The sample analyzed (T3-N-3.5) contained a pattern of peaks that is characteristic of parent aromatic hydrocarbons. These types of compounds form a highly refractory medium that behaves in a manner that is similar to that expected of a tar. The compounds that are present are relatively water insoluble. Those that are only slightly water soluble, namely naphthalene, the methylnaphthalenes and perhaps the acenaphthenes, acenaphthalenes and phenanthrenes, will be encapsulated by the remaining compounds, such as perylene and indenopyrene, that are highly water insoluble. These aromatic compounds are commonly found in asphalt which is well known to be relatively water insoluble and excellent at encapsulating aromatic hydrocarbons.

This mixture of compounds is also expected to be highly viscous to the point where it may actually crystallize. This is due to the presence of a high percentage of aromatic hydrocarbons which will tend to stack, forming a highly ordered structure. We would expect this material to solidify in place rather than flow down through the soil.

We appreciate this opportunity to be of service to you and please feel free to call if you have any questions or concerns.

Sincerely,

James E. Bruya, Ph.D.

JEB

JOS

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3008-B 16th Avenue West
Seattle, WA 98119
FAX: (206) 283-5044

October 9, 1991

John Sturman, Project Leader
Levine-Fricke, Inc.
1900 Powell, 12th Floor
Emeryville, CA 94608

Dear Mr. Sturman:

Enclosed are the results of the analyses of the sample submitted on October 8, 1991 from Project 2408, AB&I Tanks.

We appreciate this opportunity to be of service to you on this project. If you have any questions regarding this material, or if you just want to discuss any aspect of your projects, please do not hesitate to contact me.

Sincerely,

Lisa Bentley

Lisa A. Bentley, Chemist

LAB

Enclosures

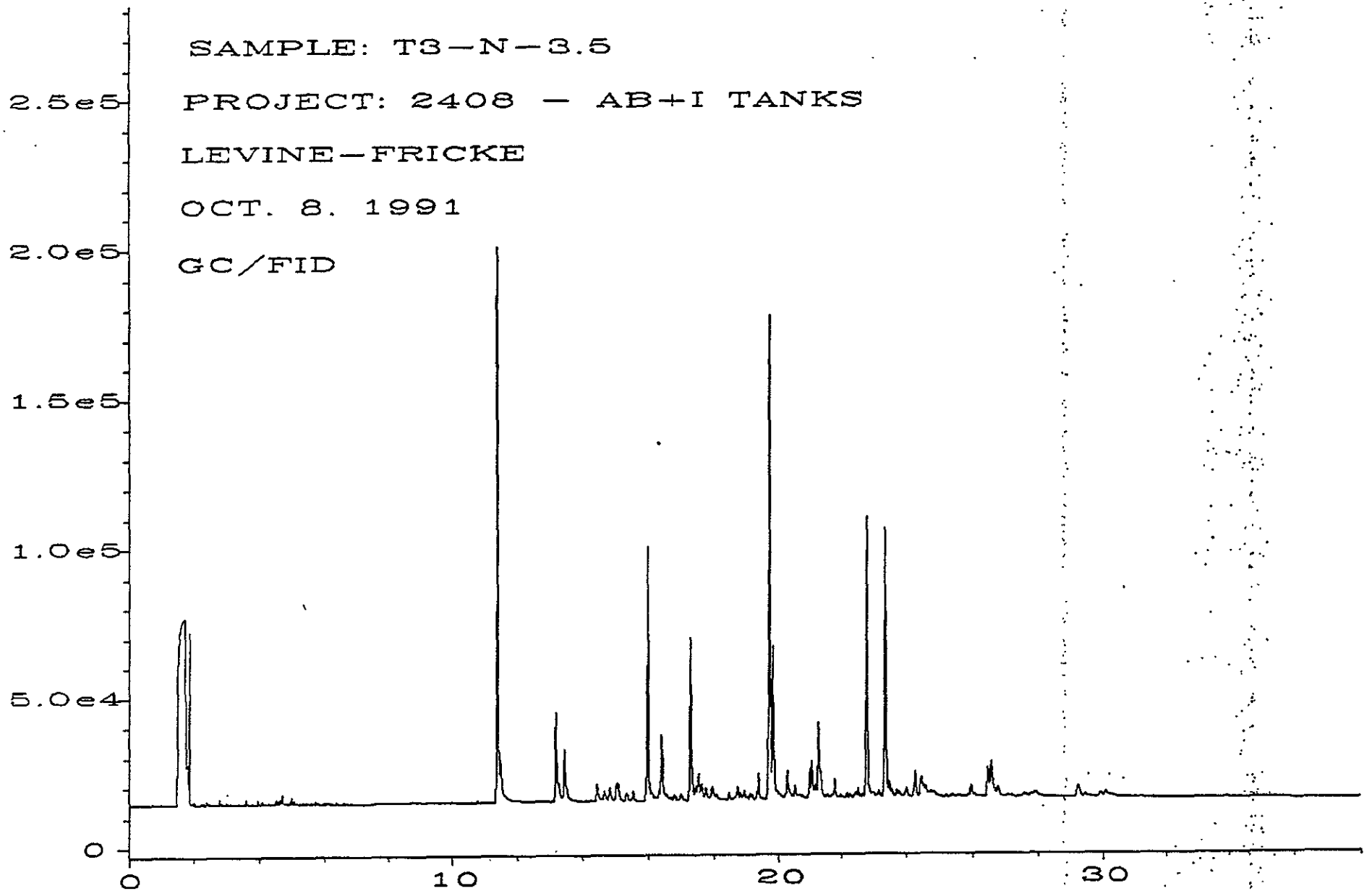
FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: October 9, 1991
Date Submitted: October 8, 1991
Project: 2408, AB&I Tanks

RESULTS OF ANALYSES OF THE SOIL SAMPLE FOR FINGERPRINT CHARACTERIZATION BY CAPILLARY GAS CHROMATOGRAPHY

Sample #	GC Characterization
T3-N-3.5	The gas chromatographic trace showed the presence of medium to high boiling compounds, such as those found in coal tar. This characterization is based on the presence of a relatively typical pattern of peaks indicative of the parent aromatic hydrocarbons from naphthalene to dibenzanthracene that are found in coal tar.



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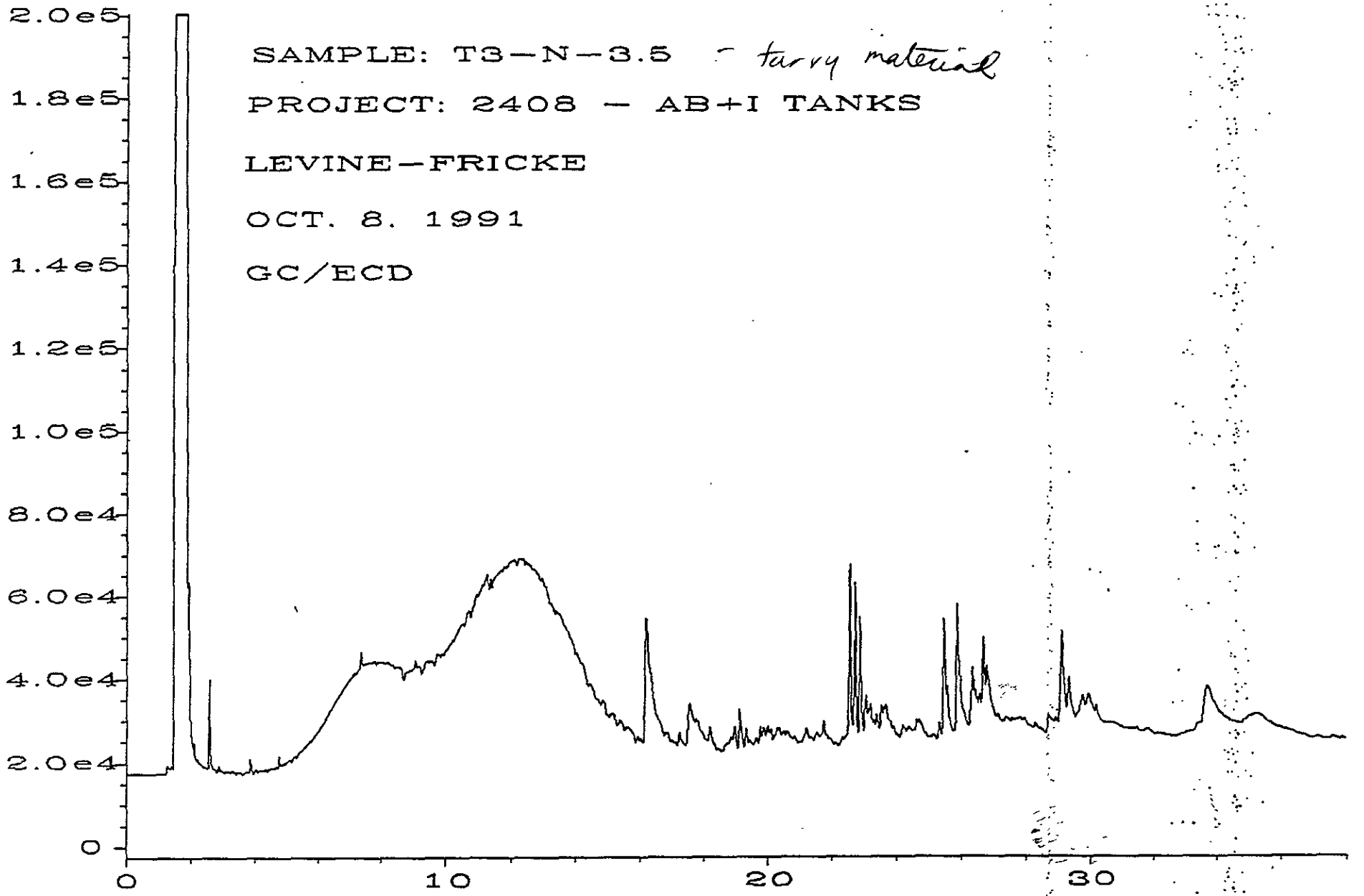
SAMPLE: T3—N—3.5 - tarry material
PROJECT: 2408 — AB+I TANKS
LEVINE—FRICKE
OCT. 8. 1991
GC/ECD
2.0e5
1.8e5
1.6e5
1.4e5
1.2e5
1.0e5
8.0e4
6.0e4
4.0e4
2.0e4
0
0
10
20
30
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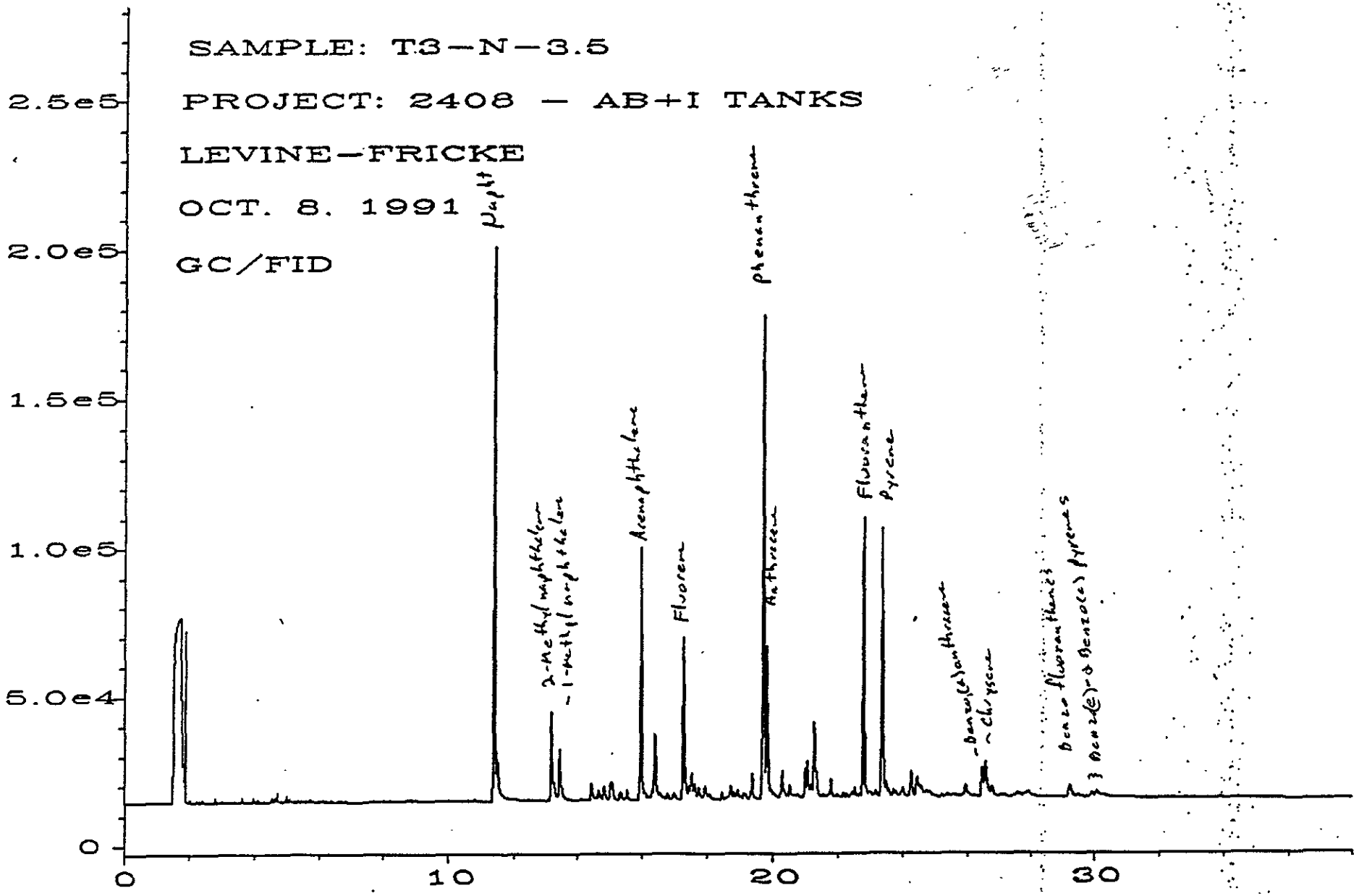

C:\HPCHEM\1\DATA\10-08-91\002F0301.D

CHAIN OF CUSTODY RECORD

BCA Log Number 10110

Client name: AB+I	Project or PO#:
Address: 7825 San Leandro Ave.	Phone #: 510-632-3467
City, State, Zip: Oakland CA	Report attention: Mr. David Robinson

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: J. Sturman / Sample description	Number of containers	EPA 8010	TPH g EPA 8015	TPH d EPA 8015	BTEX EPA 8020			Hazardous sample Special handling required		Remarks
T3-S-10	10/4/91	14:10	SO		1	X								
T3-N-10	10/4/91	14:20	"		1	X	X	X	X					
T3-W2-8	10/4/91	15:05	"		1		X	X	X					
T3-SP-1	10/4/91	14:30	"		1	X	X	X	X					
T3-SP-2	10/4/91	14:30	"		1	X	X	X	X					
T3-E-7.5	10/4/91	17:40	"		1	X	X	X	X					
T3-GRAB	10/4/91	15:20	GW		2	X	X	X	X					
								Do not analyze per John Sturman's instructions 10/7/91 TMK						

	Signature	Print Name	Company	Date	Time
Relinquished by	John Sturman	John Sturman	Levine-Fricke	10/4/91	19:00
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory	B. Randall	Betty S. Randall	BCA	10/04/91	19:05

BC ANALYTICAL

☑ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
☐ 1200 Pacifico Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

[redacted]SES REQUEST FORM

Project Name: AB+I Tanks LTUS	Field Logbook No.:	Date: 10/4/91	Serial No.: 7303
Sampler (Signature): J. Sturman	Project Location: Oakland, CA		Samplers: J. Sturman John Sturman

SAMPLES						ANALYSES								
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624					HOLD	RUSH	REMARKS
T3-N-3.5	10/4/91	17:50	23731	1	SOIL									Charackrize Material

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature) M. AIDANFORD FEB,1	DATE 10-8-91	TIME
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
METHOD OF SHIPMENT:	DATE	TIME	LAB COMMENTS:		

Sample Collector:
LEVINE-FRICKE
1900 Powell Street, 12th Floor
Emeryville, Ca 94608
(415) 652-4500

Analytical Laboratory: Friedman + Bruya
Seattle WA
(206) 285-8282
Jim Bruya or
attn: Andrew Friedman

[redacted]pping Copy (White) Lab Copy (Green) File Copy (Yellow) Field Copy (Pink) FORM NO. 86/COC/ARF