AB&I

AMERICAN BRASS & IRON FOUNDRY

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

December 27, 1991

ALAMEDA COUNTY HEALTH SERVICES
Att. Mr. Barney Chan
Hazardous Materials Specialist
80 Swan Way, Rm 200
Oakland, CA 94621

Dear Mr. Chan:

As per our conversation on November 5, 1991, please find below the information you had requested in order to clarify various issues with regards to your Notice of Violation letter dated July 30, 1991.

It was my understanding that the issues requiring clarification included:

* Underground storage tank (diesel)
* Oil storage room
* Waste Classification
* Previous UST removals

For each topic I have discuss below in detail, information pertinent to resolving any issue that you may have in understanding the scope of each individual project.

Underground storage tank (diesel)

It is AB&I intention to remove the existing UST presently being used for diesel fuel storage. Diesel fuel is the blood line of our operation and could pose dramatic consequences, if the removal operations are not well planned. For this reason, AB&I is in full swing of implementing two above ground storage tanks (Convault) before the removal operations begin. The storage tanks(2) should be operational by the first quarter of 1992, at which time the UST will become inactive. It is also our intention to start the removal process of the tank with the county and have attached a completed closure plan. The actual tank removal will be during the first quarter of 1992.

For additional information regarding the tank monitoring and testing program I have attached copies of both AB&I internal records and certification leak test records. It appears that precision and quantitative volumetric leak tests were performed from 1987 through 1990. Due to the fact that the tank was originally scheduled to be removed in the second quarter of 1991, the leak test for 1991 was postponed. As you are aware, several tanks have recently been removed causing some slip in the original schedule. Although the original removal date was postponed, the tank will be placed inoperative in 1991.

Oil Storage Room

As stated in AB&I original response to the Notice of Violation letter, a new oil storage room is presently in full swing of being constructed. A draft project management schedule has been attached specifying proposed time frame and task descriptions. Once the new structure has been completed, the existing structure will be removed and proper excavation procedure followed. The new structure will be in compliance with all requirement under 1991 Uniform Fire Codes and code of Federal Regulations, 29 CFR 1910, Subpart H.

Waste Classification

As you have requested, I have included laboratory analysis for the foundry waste sand, slag and mixtures generated from this site. It will be the future practice to evaluate on a regular basis each waste stream generated at this site as part of a ongoing waste minimization program. The analysis is in compliance with regulations under Title 22 CCR, Section 666946.

Previous UST Removal

As stated earlier in our response to your Notice of Violation letter, AB&I removed three tanks in 1987 at the south east end on the facility. Please find attached, for your reference, a tank location map. At that time, all three tanks had been emptied and had laid dormant for several years prior to excavation. At the request of the County, additional sampling was performed by Brown and Caldwell laboratories at various site borings. A copy of the lab result were also included for review. BC was contacted to determine if any field notes, maps, etc. are on file to assist in evaluating additional information, but records were found to be limited. From previous experience of BC, I feel confident that proper sample procedure were followed in sufficiently evaluating soil conditions surrounding the removal site.

We are working diligently in resolving all issues pertaining to your notice of violation and will continue our efforts for becoming an environmentally proactive company.

If you have further questions, please feel free in contacting me at (510) 632 - 3467.

Sincerely,

Dave Robinson
Environmental Manager

cc. Don Wixson

DIESEL FUEL INVENTORY - 1990 & 1991 4/9/91

DATE	QUANTITY ON HAND (GALLONS)	DATE	QUANTITY ON HAND (GALLONS)
12/29/89	3090	8/23	872
1/18/90	12000	8/30	668
1/25/90	11858	9/13	3831
2/22	8900	9/20	3378
3/3	9843	10/4	2645
3/15	9843	10/11	2363
3/22	8849	10/18	1825
4/1	8401	10/25	1569
4/12	7788	11/1	1207
4/26	6845	11/8	668
5/3	6526	11/15	4295
5/11	6281	11/29	3679
5/24	5400	12/6	3376
5/31	5241	12/13	2933
6/7	4766	12/20	2645
6/15	4295	1/3/91	2363
6/21	3985		
7/5	3527		
7/12	3227		
7/13	3079		
7/19	2933		
8/1	2090		
8/9	1569		
8/16	1207		

NDE'S VPLT COMPUTERIZED TANK TESTING SYSTEM Patent Pending
PRECISION UNDERGROUND TANK TESTING RESULTS AND CERTIFICATION
PAGE 1, GENERAL REPORT FORM - Copyright 1985
NDE TECHNOLOGY, INC. PROPRIETARY

TEST DATE: 02/05/1988

1.	Owner of storage tanks	AMERICAN BRASS & IRON FOUNDRY
	Company Representative	
	Title	Owner
2.	Mailing address of owner	7825 San Leandro Street Oakland, California 94621
3.	Phone of owner	(415) 632-3467
4.	STATION NUMBER	N/A
	Location and address of the tanks	7825 San Leandro Street Oakland, California 94621
	Phone number	(415) 632-3467
	Regulatory Agency	County of Alameda
5.	TANK DESIGNATION OR ID #	Diesel
6.	Date each tank was tested	02/05/1988
7.	The name of the test method	VPLT COMPUTERIZED TANK TESTING SYSTEM
8.	Business name of tank testing company	WESTERN AMERICA TANK TESTING, INC.
9.	Mailing address of tank testing company	3131 FAIRHAVEN DRIVE BAKERSFIELD, CA 93308
10.	Person conducting test and completing report	Stephen Frasch (TECHNICIAN)
11.	Station Operator or manager	Don Wixson
12.	Phone number	(415) 632-3467
13.	Owner name and title	AMERICAN BRASS & IRON FOUNDRY
14.	Capacity of the tank	10,000 gallons
15.	Present or past contents	Diesel
16.	Tank construction material	Steel
17.	Testing fluid	Diesel

18. (a) THE UNDERGROUND STORAGE TANK SYSTEM CERTIFIED TIGHT AT PRODUCT HEIGHT EQUAL TO THE GRADE LEVEL. Yes

(b) Allowable leak resolution of instrumentation or allowable change per California Administrative Code Title 23 Waters, Chapter 3 Water Resources Control Board Subchapter 16 Underground Storage Regulations, Part 2643 (b), Page 4.14; 0.05 gallons per hour.

*** (c) MEASURED HOURLY CHANGE: LOSS (+) OR GAIN (-) GALLONS OR NUMERICAL LEAK RATE IS: -0.014 Gal/Hr

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This measurement is within the legal limits as defined in (b).

CAPACITY 10000 g PRECISION UNDERGROUND TANK TESTING RESULTS Patent Pending
TANK # Diesel PAGE 2
STAT # N/A GENERAL REPORT FORM
TEST DATE: 02/05/1988 Copyright 1985
NDE TECHNOLOGY, INC. PROPRIETARY

1.	Capacity of the tank	10,000 gallons
2.	Present or past contents	Diesel
3.	Tank construction material	Steel
4.	Tank end deflection	0"
5.	Internal diameter of tank	96"
6.	Fill pipe internal diameter	4"
7.	Fill pipe length	27"
8.	Air vents	1
9.	Type of fill pipe cap	Threaded
10.	Type of pumps associated with the appurtenant piping	Suction
11.	Coefficient of thermal expansion .00045075	volumetric coefficient of expansion/deg
12.	Specific gravity	.85
13.	Bulk modulus	216,000
14.	Type of phase II vapor recovery system	N/A
15.	Depth of groundwater from grade level	BELOW BOTTOM OF TANK
16.	Date and Time storage tank system was filled for testing	02/05/1988 09:00
17.	Testing fluid	Diesel
18.	NOTES:	None

Individual steps taken as part of the test but not limited to:

1. Topping of the tanks — 02/05/1988 09:00

2. Tank inclination 0, 90, 180, 270 degrees — 0

3. Groundwater level — BELOW BOTTOM OF TANK

Temperature calibration (see reduced data plots & raw data part III)
Pressure calibration (see reduced data plots & raw data part III)
Level readings (see reduced data plots & raw data part III)

4. Time of day for the end of the test — 17:56 (military hours)

5. Log entries: None

6. Other measurement or readings not included in the computer printout:

None

7. Any special procedures other than NDE Computerized VPLT Tank Testing Procedures:

None

8. Description of any repairs made to the storage tank prior to or during the test:

None

9. Were tanks subject to sludge deposits during normal use properly cleaned prior to testing: Yes, to the best of our knowledge.

1. (a) THE UNDERGROUND STORAGE TANK SYSTEM CERTIFIED TIGHT AT PRODUCT HEIGHT EQUAL TO THE GRADE LEVEL. Yes

(b) Allowable leak resolution of instrumentation or allowable change per California Administrative Code Title 23 Waters, Chapter 3 Water Resources Control Board Subchapter 16 Underground Storage Regulations, Part 2643 (b), Page 4.14; 0.05 gallons per hour.

*** (c) MEASURED HOURLY CHANGE: LOSS (+) OR GAIN (-) GALLONS OR NUMERICAL LEAK RATE IS: -0.014 Gal/Hr.

This measurement is within the legal limits as defined in (b).
(See also computer plots or reduced data of leakage rate, Part III)

Product level of the storage system at the time of testing:

2.	Total product level	123"
3.	Fill pipe height from bottom of tank	123"
4.	Test pipe height from bottom of tank	153"
5.	Grade level from bottom of tank	123"
6.	Tank top height from bottom of tank excluding piping, or tank diameter	96"
7.	Groundwater level	BELOW BOTTOM OF TANK
8.	Test conduction - total time Time leak rate calculated	1:24 Hours
9.	Start	16:32
10.	End	17:56

(See also computer plots or reduced data of leakage rate, Part III)

(Calculated leak rate shall be based on data generated during the second hour of testing)

Distance from grade level and/or location at which the test was conducted (tank top level, distance below grade level, distance above grade, etc.)

11. Distance from grade level to location test conducted: 0"

12. Fluid level where the test was conducted. Fill Pipe Top

13. Piping Pressure Test - None - Suction Pump Used

14. Pneumatic Pressure Data
Amount of pressure applied to system: N/A

1. Amount of pressure drop if any: N/A

2. Amount of time elapsed during the test N/A

3. Piping Pressure Test Leak Rate is N/A

If computer is used see computer printout of leakage rate and all test parameters on Test Results, Part IV, Page 11, 12
Test results of storage systems that utilize pressurized piping systems will not be recognized unless the turbine pump is activated after the completion of a successful system test

4. Was turbine pump activated? N/A

5. Pressure piping systems shall be tested under actual operating pressures, and statement describing results must be included.

See Page 4 #13

6. Leakage rate(s) that is/are not isolated and confined to the tank or piping system (system leaks) will not be recognized as conclusive. Are leakage rates less than the legal limit and conclusive?
Yes

If a tank test is inconclusive per 6. above, the owners: must be informed as to the proper steps that must be taken to isolate a leak.

7. If no on 6., were the owners informed? N/A

8. If applicable, has the isolation procedure in addition to the product line been completed? N/A

If a tank is unable to be tested due to the presence of a vapor pocket, the owner must be informed that steps must be taken to release all vapor pockets to complete testing.

1. Does the tank show the presence of vapor pockets?

No

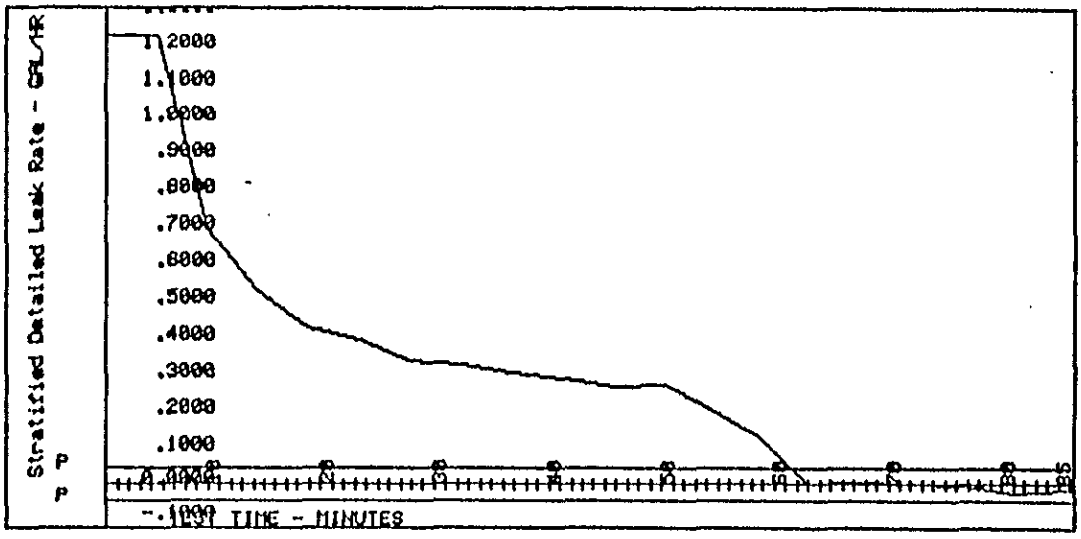
2. If yes, was the owner informed of steps that must be taken to release all vapor pockets in order to complete testing?

Owners of storage tanks are under a legal obligation to report any leaking tanks to the agency having jurisdiction of the tank test.

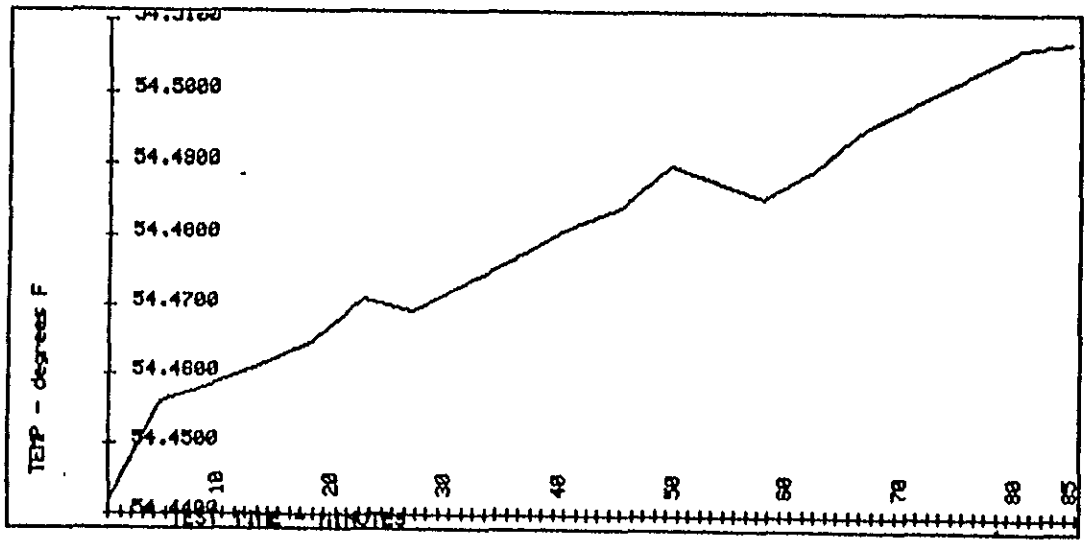
COMPUTERIZED PRINTOUT OF DIGITAL LEAKAGE RATE DATA

Tank Owner - AMERICAN BRASS & STEEL
Tank Number - DIESEL
Measurement # 18
Date of Test 02/05/1988
Time of measurement =17:56:49
Tank Temperature = 54.5076 degrees F
Tank Pressure = .2597 psi
Basic Tank Volume = 10000.196 Gallons.
Temperature Correction = -24.757 Gallons.
Pressure Correction = .012 Gallons.
Corrected Volume = 9975.451 Gallons.
Volume Change = .1769 Gallons.
Expected Level Change = 3.25143 inches
Measured Level Change = 3.23645 inches
Total Fluid Level = 128.171 inches
Primary Apparent Leak = .001 Gallons.
Elapsed time = 00:57:56
Primary Apparent Leak Rate = .001 Gallons/Hour
Geometry Band = .0036 Gallons/Hour
Stratified Expected Level Change = 2.994 inches
Stratified Apparent Leak = -.013 Gallons.
Stratified Apparent Leak Rate = -.014 Gallons/Hour
Averaged Measured Level Change = 2.97174 inches.
Averaged Volume Change = .1729 Gallons.
Averaged Expected Level Change = 3.17914 inches.
Averaged Apparent Leak = .011 Gallons.,
Averaged Apparent Leak Rate = .012 Gallons/Hour.
Averaged Stratified Volume Change = .1556 Gallons.
Averaged Expected Stratified Level Change = 2.86112 inches.
Averaged Stratified Apparent Leak = -.006 Gallons.,
Averaged Stratified Apparent Leak Rate = -.006 Gallons/Hour.

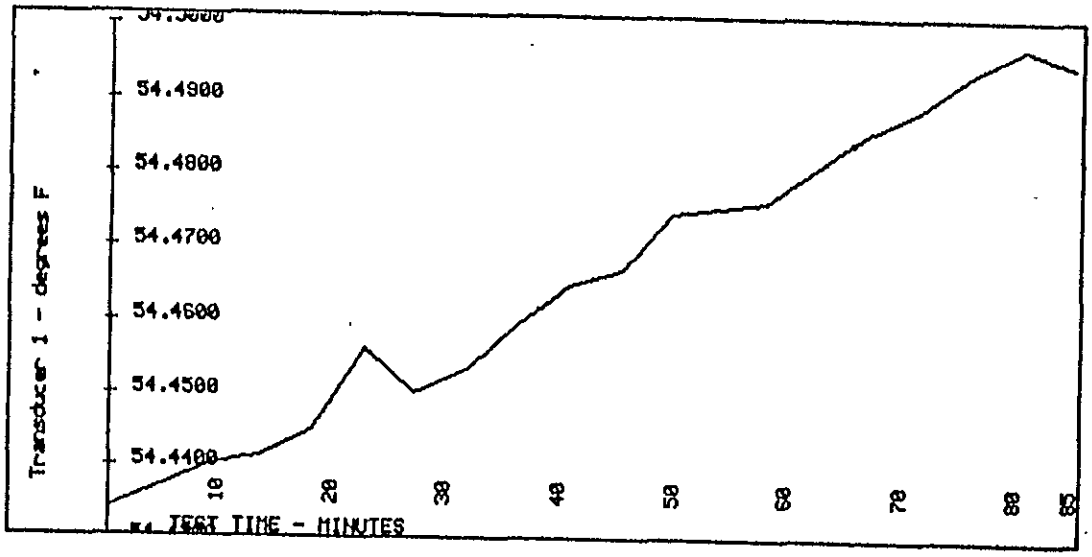
COMPUTERIZED PLOTS OF LEAKAGE RATE DATA



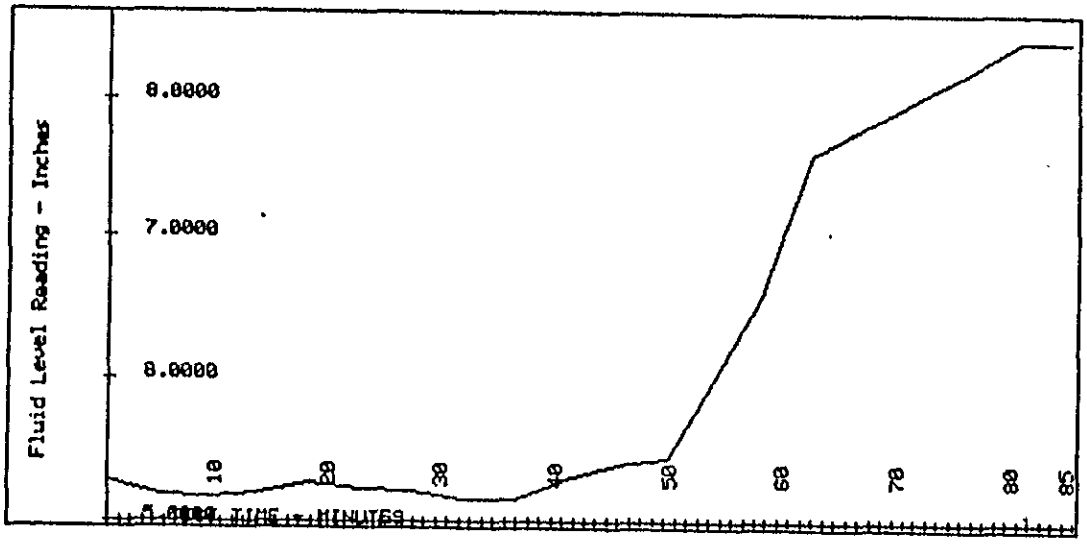
COMPUTERIZED PRINTOUT OF AVERAGE TEMPERATURE



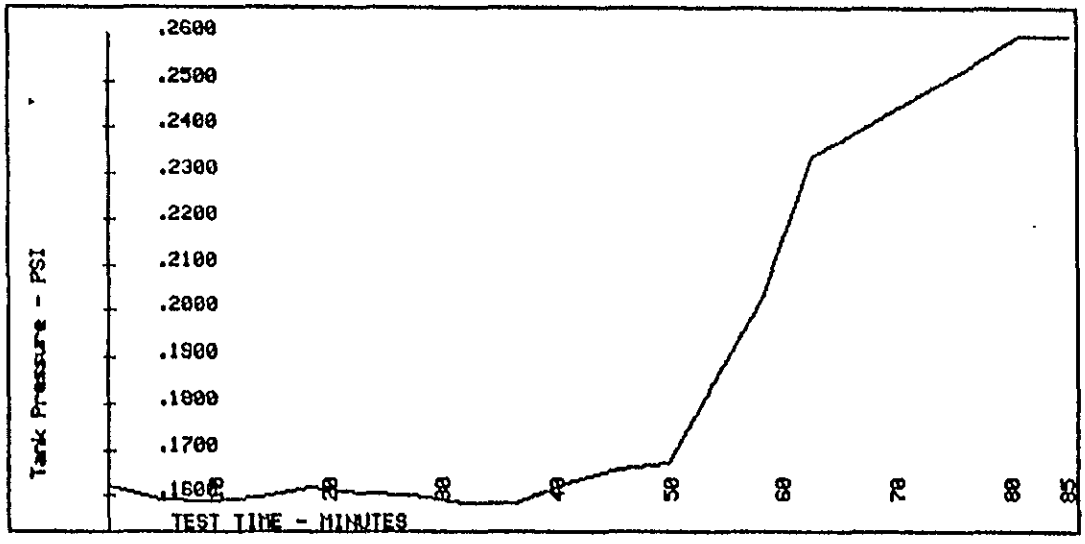
COMPUTERIZED PRINTOUT OF INDIVIDUAL TEMPERATURES (continued on page 10)



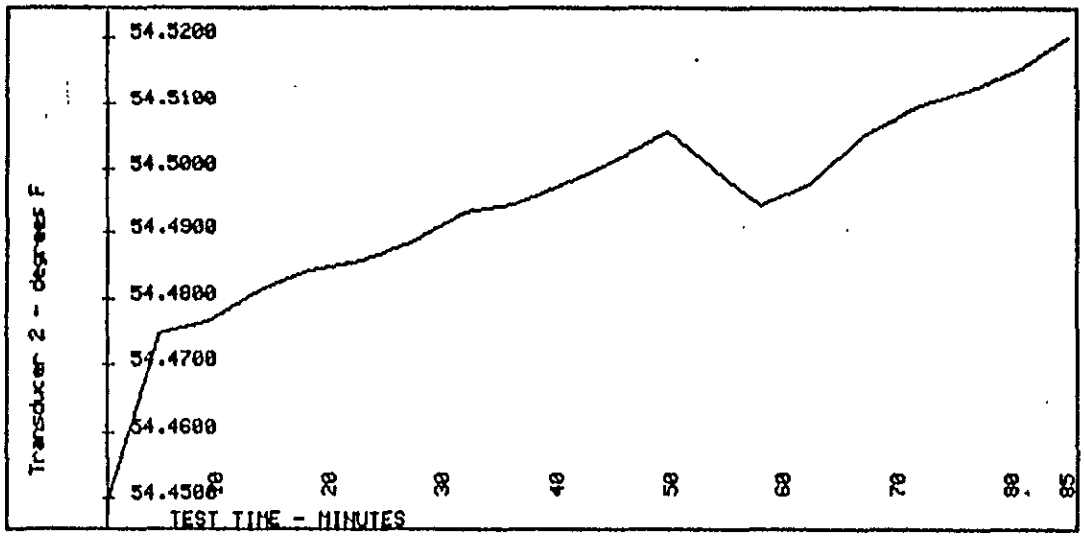
LEVEL DATA



PRESSURE DATA



COMPUTERIZED PRINTOUT OF INDIVIDUAL TEMPERATURES (continued from page 8)



WESTERN AMERICA TANK TESTING, INC.

**** CERTIFICATE OF UNDERGROUND STORAGE TANK INTEGRITY ****

PRECISION VOLUMETRIC QUANTITATIVE VOLUMETRIC LEAK TEST

WESTERN AMERICA TANK TESTING, INC. has tested the following underground storage tank systems, and certifies them tight at the product height equal to the grade level.

List of Tank Systems Tested:

TANK CONTENTS	TANK CAPACITY	TANK NUMBER	STATION NUMBER
Diesel	10,000 gal.	10K Diesel	N/A
Regular Gas	550 gal.	Gas	N/A

TANK LOCATION: AMERICAN BRASS & ~~STEEL~~ IRON
7825 San Leandro
Oakland, CA 94621

WESTERN AMERICA TANK TESTING, INC. is authorized to test and certify these tanks using the VPLT Tank Testing System by the manufacturer, NDE Technology, Inc.

This certification meets or exceeds certification standards set by the State of California, Federal and the Local jurisdictional agency: the County of Alameda.

WESTERN AMERICA TANK TESTING, INC. CERTIFICATION meets the requirements of California Administrative Code Title 23 Water Resources Control Board, Subchapter 16 Underground Storage Regulations, Part 2643. The leak test certifies the leak resolution of instrumentation or allowable change is no more than 0.05 gallons per hour as cited in Part 2643(b) on Page 4.14.

Date : 01/20/1989
Certification No. : 890117
Certified Tester : Bob Myrann
Recertification Date recommended: 01/20/1990

NDE'S VPLT COMPUTERIZED TANK TESTING SYSTEM Patent Pending
PRECISION UNDERGROUND TANK TESTING RESULTS AND CERTIFICATION
PAGE 1, SHORT REPORT FORM - Copyright 1985
NDE TECHNOLOGY, INC. PROPRIETARY

TEST DATE: 01/20/89

1.	Owner of storage tanks	AMERICAN BRASS & STEEL
	Company Representative	Don Wixson
	Title	
2.	Mailing address of owner	7825 San Leandro Oakland, CA 94621
3.	Phone of owner	(415) 632-3467
4.	STATION NUMBER	American Brass & Steel
	Location and address of the tanks	7825 San Leandro Oakland, CA 94621
	Phone number	
	Regulatory Agency	County of Alameda
5.	TANK DESIGNATION OR ID #	10K Diesel
6.	Date each tank was tested	01/20/89
7.	The name of the test method	VPLT COMPUTERIZED TANK TESTING SYSTEM
8.	Business name of tank testing company	WESTERN AMERICA TANK TESTING, INC.
9.	Mailing address of tank testing company	3131 FAIRHAVEN DRIVE BAKERSFIELD, CA 93308
10.	Person conducting test and completing report	Bob Myrann (TECHNICIAN)
11.	Station Operator or manager	Don Wixson
12.	Phone number	(415) 632-3467
13.	Owner name and title	AMERICAN BRASS & STEEL
14.	Capacity of the tank	10,000 gallons
15.	Present or past contents	Diesel
16.	Tank construction material	Steel
17.	Testing fluid	Diesel

18. (a) THE UNDERGROUND STORAGE TANK SYSTEM CERTIFIED TIGHT AT PRODUCT HEIGHT EQUAL TO THE GRADE LEVEL. Yes.

(b) Allowable leak resolution of instrumentation or allowable change per California Administrative Code Title 23 Waters, Chapter 3 Water Resources Control Board Subchapter 16 Underground Storage Regulations, Part 2643 (b), Page 4.14; 0.05 gallons per hour.

*** (c) MEASURED HOURLY CHANGE: LOSS (+) OR GAIN (-) GALLONS OF NUMERICAL LEAK RATE IS: -0.027 Gal/Hr.

This measurement is within the legal limits as defined in (b).

WESTERN AMERICA TANK TESTING, INC.

**** CERTIFICATE OF UNDERGROUND STORAGE TANK INTEGRITY ****

PRECISION VOLUMETRIC QUANTITATIVE VOLUMETRIC LEAK TEST

WESTERN AMERICA TANK TESTING, INC. has tested the following underground storage tank systems, and certifies them tight at the product height equal to the grade level.

List of Tank Systems Tested:

TANK CONTENTS	TANK CAPACITY	TANK NUMBER	STATION NUMBER
Diesel	10,000 gal.	Diesel	N/A

TANK LOCATION: AMERICAN BRASS & IRON FOUNDRY
7825 San Leandro
Oakland, California 94621

WESTERN AMERICA TANK TESTING, INC. is authorized to test and certify these tanks using the VPLT Tank Testing System by the manufacturer, NDE Technology, Inc.

This certification meets or exceeds certification standards set by the State of California, Federal and the Local jurisdictional agency: County of Alameda.

WESTERN AMERICA TANK TESTING, INC. CERTIFICATION meets the requirements of California Administrative Code Title 23 Water Resources Control Board, Subchapter 16 Underground Storage Regulations, Part 2643. The leak test certifies the leak resolution of instrumentation or allowable change is no more than 0.05 gallons per hour as cited in Part 2643(b) on Page 4.14.

Date : 01/18/1990
Certification No. : 890952
Certified Tester : Frank Miller
License Number : 91-1084
Recertification Date recommended: 01/18/1991

NDE'S VPLT COMPUTERIZED TANK TESTING SYSTEM Patent Pending
PRECISION UNDERGROUND TANK TESTING RESULTS AND CERTIFICATION
PAGE 1, SHORT REPORT FORM - Copyright 1985
NDE TECHNOLOGY, INC. PROPRIETARY

TEST DATE: 01/18/90

1.	Owner of storage tanks	AMERICAN BRASS & IRON FOUNDRY
	Company Representative	Don Wixson
	Title	
2.	Mailing address of owner	7825 San Leandro Oakland, CA. 94621
3.	Phone of owner	(415) 632-3467
4.	STATION NUMBER	N/A
	Location and address of the tanks	7825 San Leandro Oakland, CA. 94621
	Phone number	(415) 632-3467
	Regulatory Agency	County of Alameda
5.	TANK DESIGNATION OR ID #	Diesel
6.	Date each tank was tested	01/18/90
7.	The name of the test method	VPLT COMPUTERIZED TANK TESTING SYSTEM
8.	Business name of tank testing company	WESTERN AMERICA TANK TESTING, INC.
9.	Mailing address of tank testing company	3131 FAIRHAVEN DRIVE BAKERSFIELD, CA 93308
10.	Person conducting test and completing report	FrankMiller (TECHNICIAN)
	License Number	91-1084
11.	Station Operator or manager	Don Wixson
12.	Phone number	(415) 632-3467
13.	Owner name and title	AMERICAN BRASS & IRON FOUNDRY
14.	Capacity of the tank	10,000 gallons
15.	Present or past contents	Diesel
16.	Tank construction material	Steel
17.	Testing fluid	Diesel

18. (a) THE UNDERGROUND STORAGE TANK SYSTEM CERTIFIED TIGHT AT PRODUCT HEIGHT EQUAL TO THE GRADE LEVEL. Yes.

(b) Allowable leak resolution of instrumentation or allowable change per California Administrative Code Title 23 Waters, Chapter 3 Water Resources Control Board Subchapter 16 Underground Storage Regulations, Part 2643 (b), Page 4.14; 0.05 gallons per hour.

*** (c) MEASURED HOURLY CHANGE: LOSS (+) OR GAIN (-) GALLONS OR NUMERICAL LEAK RATE IS: -0.006 Gal/Hr.

This measurement is within the legal limits as defined in (b).

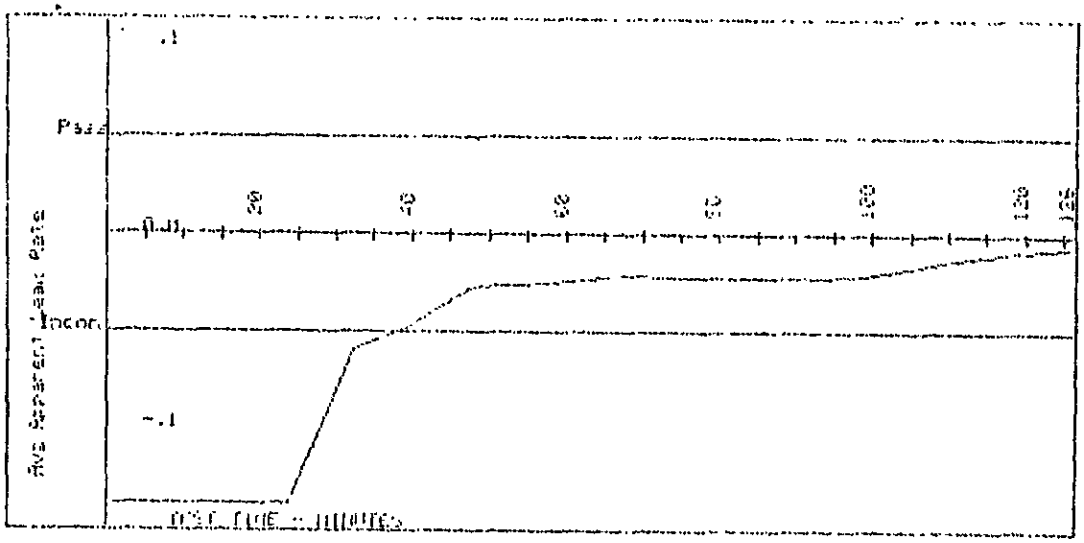
CAPACITY 10000 g PRECISION UNDERGROUND TANK TESTING RESULTS Patent Pending
TANK # Diesel PAGE 2
STAT # N/A SHORT REPORT FORM
TEST DATE: 01/18/90 Copyright 1985
NDE TECHNOLOGY, INC. PROPRIETARY

COMPUTERIZED PRINTOUT OF DIGITAL LEAKAGE RATE DATA

Tank Owner	=	AMERICAN BRASS & IRON	
Tank Number	=	DIESEL	
Measurement #	15		
Date of Test	01/18/1990		
Time of measurement	=	15:02:11	
Tank Temperature	=	54.7921	degrees F.
Tank Pressure	=	.1996	psi.
Basic Tank Volume **********	=	10000.307	Gallons.
Temperature Correction *******	=	-23.481	Gallons.
Pressure Correction **********	=	.089	Gallons.
Correction Volume **********	=	9976.815	Gallons.
Stratified Corrected Volume ***	=	9976.815	Gallons.
Total Fluid Level	=	133.36610	inches.
Fluid Pressure on Tank Bottom	=	4.1006	psi
Total Temperature Change	=	.00010	degrees F.
Total Level Change	=	1.36610	inches.
Leak Rate Calculation Time.....	=	01:07:32	
Geometry Bund	=	.0000	Gallons/Hour.
Rate of Temperature Change	=	.00062	degrees F./Hour.
Volume Change	=	.044	Gallons.
Expected Level Change	=	.64529	inches.
Measured Level Change ********	=	.59193	inches.
Primary Apparent Leak ********	=	.0037	Gallons.
Primary Apparent Leak Rate ****	=	.003	Gallons/Hour.
Strat Volume Change **********	=	.0444	Gallons.
Strat Expected Level Change ***	=	.64529	inches.
Strat Apparent Leak **********	=	.0037	Gallons.
Strat Apparent Leak Rate ******	=	.003	Gallons/Hour.
Avg Measured Level Change	=	.57654	inches.
Avg Volume Change	=	.0398	Gallons.
Avg Expected Level Change	=	.57525	inches.
Avg Apparent Leak	=	-.0070	Gallons.
Avg Apparent Leak Rate	=	-.006	Gallons/Hour.
Avg Strat Volume Change *******	=	.0396	Gallons.
Avg Strat Expected Level Change =		.57525	inches.
Avg Strat Apparent Leak *******	=	-.0070	Gallons.
Avg Strat Apparent Leak Rate **	=	-.006	Gallons/Hour.

Total Elapsed Test Time ..... = 02:05:31

COMPUTERIZED PLOTS OF LEAKAGE RATE DATA



OIL STORAGE ROOM
PROJECT MANAGEMENT PLAN

ACTION PLAN

The plan is comprised of two independent projects, one to construct a building storage in compliance with all storage codes and secondly to remove and eliminate the existing storage room.

Task Description (New Storage Room)

* Locate new location
* Address size and layout requirements
* Remove all building structural obstacles
* Prepare floor, walls and ceiling surfaces
* Develop excess doorways
* Install forklift berm
* Implement storage procedures
* Develop oil segregation and labeling
* Move oil into storage
* Modify HMMP
* Monitor storage program

Task Description (Removal of Existing Storage Room)

* Remove oil
* Dismantle existing structure
* Evaluate soil condition
* If necessary excavate all contaminated soil
* Take soil samples
* Aerate contaminated soil
* Back fill with clean soil
* Pour concrete
* Develop area for parts storage

FREDERIKSEN ENGINEERING
CONSULTING ENGINEERS ARCHITECTS
OAKLAND · LONG BEACH

LABORATORY REPORT

File: J-59-31
P.O. #: 5-00864

Client: AMERICAN BRASS & IRON FOUNDRY

Address: Mr. George Meyer
7825 San Leandro Street
Oakland, CA 94621

Sample: Slag

Date of Sampling: 6-16-85

Date of Report: 1-14-86

ANALYSIS	TTLC Wet Weight mg/kg	Slag Wet Weight mg/kg
Antimony	500	0.6
Arsenic	500	1.0
Barium	10,000	3,000
Beryllium	75	<0.1
Cadmium	100	2.9
Chromium (IV)	500	<0.1
Chromium	2,500	150
Cobalt	8,000	17
Copper	2,500	24
Lead	1,000	52
Mercury	20	0.14
Molybdenum	3,500	<0.1
Nickel	2,000	16
Selenium	100	<0.1
Silver	500	4.9
Thallium	700	<0.4
Vanadium	2,400	<0.5
Zinc	5,000	27

Conclusion: This is a non hazardous material.

These analyses were performed in accordance with the recommended procedures in the California Administrative Code, Title 22, Division 4, Section 66699.

Arnold B. Menar

Arnold B. Menar, Ph.D.
Laboratory Director

ABM/amh
Enclosure

FREDERIKSEN ENGINEERING
CONSULTING ENGINEERS ARCHITECTS
OAKLAND LONG BEACH

LABORATORY REPORT

File: J-59-84

Client: AMERICAN BRASS & IRON FOUNDRY

Address: Mr. George Meyer
7825 San Leandro Street
Oakland, CA. 94621

Sample: Foundry Sand

Date of Sampling: 5-15-86

Date of Report: 7-9-86

METALS	mg/1	STLC* mg/1
Antimony	<1.0	15
Arsenic	<1.0	5.0
Barium	<5.0	100
Beryllium	<0.10	0.75
Cadmium	<0.10	1.0
Chromium	<0.50	560
Cobalt	<1.0	80
Copper	0.98	25
Lead	<0.50	5.0
Mercury	<0.010	0.2
Molybdenum	<1.0	350
Nickel	<0.50	20
Selenium	<0.10	1.0
Silver	<0.10	5
Thallium	<1.0	7.0
Vanadium	<1.0	24
Zinc	<0.50	250

*STLC = Soluble Threshold Limit Concentration,
22CA66693 (CA Title 22)

The Foundry Sand was found to be non hazardous material

Arnold B. Menar

Arnold B. Menar, Ph.D.
Laboratory Director

ABM/amh

Analytical Report

LOG NO: E90-02-828

Received: 27 FEB 90
Reported: 16 MAR 90

Mr. John Ferhringer
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Purchase Order: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
02-828-1	Cupola Slag	21 FEB 90
02-828-2	Molding Sand	21 FEB 90

PARAMETER	02-828-1	02-828-2
Fourteen CAM Metals by ICAP		
Silver, mg/kg	0.5	<0.4
Barium, mg/kg	240	31
Beryllium, mg/kg	0.8	<0.2
Cadmium, mg/kg	<0.8	1.4
Cobalt, mg/kg	1.8	0.89
Chromium, mg/kg	62	9.1
Copper, mg/kg	16	10
Molybdenum, mg/kg	<2	<2
Nickel, mg/kg	<0.6	3.6
Lead, mg/kg	<6	6.6
Antimony, mg/kg	<1	<1
Thallium, mg/kg	<4	<4
Vanadium, mg/kg	14	4.0
Zinc, mg/kg	3.6	24
Arsenic, mg/kg	<0.8	1.6
Mercury, mg/kg	<0.01	<0.01
Selenium, mg/kg	<0.4	<0.4
CAM Digestions, Date	03.06.90	03.06.90

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

1255 Powell Street
Emeryville, CA 94608

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

BCA B C Analytical

Analytical Report

LOG NO: E90-06-580

Received: 26 JUN 90
Reported: 05 JUL 90

Mr. John Fehringer
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Purchase Order: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
06-580-1	Slag	26 JUN 90

PARAMETER	06-580-1
Fourteen CAM Metals by ICAP	
Silver, mg/kg	<0.4
Barium, mg/kg	340
Beryllium, mg/kg	2.8
Cadmium, mg/kg	1.6
Cobalt, mg/kg	2.8
Chromium, mg/kg	85
Copper, mg/kg	13
Molybdenum, mg/kg	<2
Nickel, mg/kg	0.7
Lead, mg/kg	<6
Antimony, mg/kg	<1
Thallium, mg/kg	<4
Vanadium, mg/kg	22
Zinc, mg/kg	5
Nitric Acid Digestion, Date	06.27.90

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

1255 Powell Street
Emeryville, CA 94608

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

BCA B C Analytical

Analytical Report

LOG NO: E90-06-604

Received: 26 JUN 90
Reported: 16 JUL 90

Mr. John Fehringer
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Purchase Order: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, CALIF WASTE EXTRACT SAMPLES	DATE SAMPLED
06-604-2	Slag	26 JUN 90

PARAMETER	06-604-2
Fourteen CAM Metals by ICAP	
Silver, mg/L	<0.05
Barium, mg/L	21
Beryllium, mg/L	0.04
Cadmium, mg/L	<0.05
Cobalt, mg/L	<0.05
Chromium, mg/L	1.0
Copper, mg/L	<0.05
Molybdenum, mg/L	<0.2
Nickel, mg/L	<0.1
Lead, mg/L	<0.2
Antimony, mg/L	<0.2
Thallium, mg/L	<0.2
Vanadium, mg/L	0.20
Zinc, mg/L	<0.05
Arsenic, mg/L	<0.02
Selenium, mg/L	<0.02
Mercury, mg/L	0.001
CAM WET Extraction, Date	06.29.90

Note: The remainder of the CAM TTLC metals are on BCA order E90-06-580.

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

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax 415/647-3643

BCA B C Analytical

Analytical Report

LOG NO: E90-06-604

Received: 26 JUN 90
Reported: 16 JUL 90

Mr. John Fehringer
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Purchase Order: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
06-604-1	Slag	26 JUN 90

PARAMETER	06-604-1
Arsenic, mg/kg	<2
Selenium, mg/kg	0.8
Mercury, mg/kg	<0.01
Nitric Acid Digestion, Date	06.27.90

1255 Powell Street
Emeryville, CA 94608

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

BCA B C Analytical

Analytical Report

LOG NO: E90-10-127

Received: 04 OCT 90
Reported: 16 OCT 90

Mr. Don Wixson
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

Purchase Order: 1268

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
10-127-1	Slag	04 OCT 90

PARAMETER	10-127-1
Cadmium, mg/kg	<1
Lead, mg/kg	<4
Zinc, mg/kg	3
Nitric Acid Digestion, Date	10.05.90

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

1255 Powell Street
Emeryville, CA 94608

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

BCA B C Analytical

Analytical Report

LOG NO: E91-09-322

Received: 16 SEP 91

Mr. John Fehringer
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

CC: Don Wixson, Dave Robinson

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
09-322-1	Sand	12 SEP 91

PARAMETER	09-322-1
B/N,A Ext. Priority Pollutants	
Date Analyzed	10.17.91
Date Extracted	09.23.91
Dilution Factor, Times	20
1,2,4-Trichlorobenzene, mg/kg	<0.7
1,2-Dichlorobenzene, mg/kg	<0.7
1,2-Diphenylhydrazine, mg/kg	<0.7
1,3-Dichlorobenzene, mg/kg	<0.7
1,4-Dichlorobenzene, mg/kg	<0.7
2,4,5-Trichlorophenol, mg/kg	<0.7
2,4,6-Trichlorophenol, mg/kg	<0.7
2,4-Dichlorophenol, mg/kg	<0.7
2,4-Dimethylphenol, mg/kg	<0.7
2,4-Dinitrophenol, mg/kg	<7
2,4-Dinitrotoluene, mg/kg	<0.7
2,6-Dinitrotoluene, mg/kg	<0.7
2-Chloronaphthalene, mg/kg	<0.7
2-Chlorophenol, mg/kg	<0.7
2-Methyl-4,6-dinitrophenol, mg/kg	<0.7
2-Methylnaphthalene, mg/kg	<0.7
2-Methylphenol (o-Cresol), mg/kg	<0.7
2-Nitroaniline, mg/kg	<3
2-Nitrophenol, mg/kg	<0.7
3,3'-Dichlorobenzidine, mg/kg	<0.7
3-Nitroaniline, mg/kg	<3
4-Bromophenylphenylether, mg/kg	<0.7
4-Chloro-3-methylphenol, mg/kg	<0.7
4-Chloroaniline, mg/kg	<3

1255 Powell Street
Emeryville, CA 94608

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

BCA B C Analytical

Analytical Report

LOG NO: E91-09-322

Received: 16 SEP 91

Mr. John Fehringer
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

CC: Don Wixson, Dave Robinson

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
09-322-1	Sand	12 SEP 91

PARAMETER	09-322-1
4-Chlorophenylphenylether, mg/kg	<0.7
4-Methylphenol (p-Cresol), mg/kg	<0.7
4-Nitroaniline, mg/kg	<3
4-Nitrophenol, mg/kg	<10
Acenaphthene, mg/kg	<0.7
Acenaphthylene, mg/kg	<0.7
Aniline, mg/kg	<0.7
Anthracene, mg/kg	<0.7
Benzidine, mg/kg	<30
Benzo(a)anthracene, mg/kg	<0.7
Benzo(a)pyrene, mg/kg	1.3
Benzo(b)fluoranthene, mg/kg	2.5
Benzo(g,h,i)perylene, mg/kg	<0.7
Benzo(k)fluoranthene, mg/kg	2.5
Benzyl alcohol, mg/kg	<3
Benzoic acid, mg/kg	<3
Butylbenzylphthalate, mg/kg	<0.7
Chrysene, mg/kg	2.3
Di-n-octylphthalate, mg/kg	<0.7
Dibenzo(a,h)anthracene, mg/kg	<0.7
Dibenzofuran, mg/kg	<0.7
Dibutylphthalate, mg/kg	<0.7
Diethylphthalate, mg/kg	<0.7
Dimethylphthalate, mg/kg	<0.7
Fluoranthene, mg/kg	1.2
Fluorene, mg/kg	<0.7
Hexachlorobenzene, mg/kg	<0.7
Hexachlorobutadiene, mg/kg	<0.7

1255 Powell Street
Emeryville, CA 94608

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

BCA B C Analytical

Analytical Report

LOG NO: E91-09-322

Received: 16 SEP 91

Mr. John Fehringer
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

CC: Don Wixson, Dave Robinson

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
09-322-1	Sand	12 SEP 91

PARAMETER	09-322-1
Hexachlorocyclopentadiene, mg/kg	<0.7
Hexachloroethane, mg/kg	<0.7
Indeno(1,2,3-c,d)pyrene, mg/kg	<0.7
Isophorone, mg/kg	<0.7
N-Nitrosodimethylamine, mg/kg	<0.7
N-Nitrosodiphenylamine, mg/kg	<0.7
N-Nitrosodi-n-propylamine, mg/kg	<0.7
Nitrobenzene, mg/kg	<0.7
Naphthalene, mg/kg	<0.7
Phenanthrene, mg/kg	0.8
Phenol, mg/kg	1.3
Pentachlorophenol, mg/kg	<0.7
Pyrene, mg/kg	1.3
Bis(2-chloroethoxy)methane, mg/kg	<0.7
Bis(2-chloroethyl)ether, mg/kg	<0.7
Bis(2-chloroisopropyl)ether, mg/kg	<0.7
Bis(2-ethylhexyl)phthalate, mg/kg	<70
Other B/N,A Ext. Priority Pollutants	---
Semi-Quantified Results **	
C15-C35 Hydrocarbon Matrix, mg/kg	700

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

Larry E. Kenfold for

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

1255 Powell Street
Emeryville, CA 94608

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

BCA B C Analytical

Analytical Report

LOG NO: E91-09-323

Received: 16 SEP 91

Mr. John Fehringer
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

CC: Don Wixson, Dave Robinson

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
09-323-1	Slag	16 SEP 91

PARAMETER	09-323-1
B/N,A Ext. Priority Pollutants	
Date Analyzed	10.17.91
Date Extracted	09.23.91
Dilution Factor, Times	1
1,2,4-Trichlorobenzene, mg/kg	<0.03
1,2-Dichlorobenzene, mg/kg	<0.03
1,2-Diphenylhydrazine, mg/kg	<0.03
1,3-Dichlorobenzene, mg/kg	<0.03
1,4-Dichlorobenzene, mg/kg	<0.03
2,4,5-Trichlorophenol, mg/kg	<0.03
2,4,6-Trichlorophenol, mg/kg	<0.03
2,4-Dichlorophenol, mg/kg	<0.03
2,4-Dimethylphenol, mg/kg	<0.03
2,4-Dinitrophenol, mg/kg	<0.3
2,4-Dinitrotoluene, mg/kg	<0.03
2,6-Dinitrotoluene, mg/kg	<0.03
2-Chloronaphthalene, mg/kg	<0.03
2-Chlorophenol, mg/kg	<0.03
2-Methyl-4,6-dinitrophenol, mg/kg	<0.03
2-Methylnaphthalene, mg/kg	<0.03
2-Methylphenol (o-Cresol), mg/kg	<0.03
2-Nitroaniline, mg/kg	<0.2
2-Nitrophenol, mg/kg	<0.03
3,3'-Dichlorobenzidine, mg/kg	<0.03
3-Nitroaniline, mg/kg	<0.2
4-Bromophenylphenylether, mg/kg	<0.03
4-Chloro-3-methylphenol, mg/kg	<0.03
4-Chloroaniline, mg/kg	<0.2

1255 Powell Street
Emeryville, CA 94608

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

BCA B C Analytical

Analytical Report

LOG NO: E91-09-323

Received: 16 SEP 91

Mr. John Fehringer
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

CC: Don Wixson, Dave Robinson

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
09-323-1	Slag	16 SEP 91

PARAMETER	09-323-1
4-Chlorophenylphenylether, mg/kg	<0.03
4-Methylphenol (p-Cresol), mg/kg	<0.03
4-Nitroaniline, mg/kg	<0.2
4-Nitrophenol, mg/kg	<0.7
Acenaphthene, mg/kg	<0.03
Acenaphthylene, mg/kg	<0.03
Aniline, mg/kg	<0.03
Anthracene, mg/kg	<0.03
Benzidine, mg/kg	<1
Benzo(a)anthracene, mg/kg	<0.03
Benzo(a)pyrene, mg/kg	<0.03
Benzo(b)fluoranthene, mg/kg	0.06
Benzo(g,h,i)perylene, mg/kg	<0.03
Benzo(k)fluoranthene, mg/kg	0.06
Benzyl alcohol, mg/kg	<0.2
Benzoic acid, mg/kg	<0.2
Butylbenzylphthalate, mg/kg	<0.03
Chrysene, mg/kg	0.03
Di-n-octylphthalate, mg/kg	<0.03
Dibenzo(a,h)anthracene, mg/kg	<0.03
Dibenzofuran, mg/kg	<0.03
Dibutylphthalate, mg/kg	<0.03
Diethylphthalate, mg/kg	<0.03
Dimethylphthalate, mg/kg	<0.03
Fluoranthene, mg/kg	<0.03
Fluorene, mg/kg	<0.03
Hexachlorobenzene, mg/kg	<0.03
Hexachlorobutadiene, mg/kg	<0.03

1255 Powell Street
Emeryville, CA 94608

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

BCA B C Analytical

Analytical Report

LOG NO: E91-09-323

Received: 16 SEP 91

Mr. John Fehringer
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

CC: Don Wixson, Dave Robinson

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
09-323-1	Slag	16 SEP 91

PARAMETER	09-323-1
Hexachlorocyclopentadiene, mg/kg	<0.03
Hexachloroethane, mg/kg	<0.03
Indeno(1,2,3-c,d)pyrene, mg/kg	<0.03
Isophorone, mg/kg	<0.03
N-Nitrosodimethylamine, mg/kg	<0.03
N-Nitrosodiphenylamine, mg/kg	<0.03
N-Nitrosodi-n-propylamine, mg/kg	<0.03
Nitrobenzene, mg/kg	<0.03
Naphthalene, mg/kg	<0.03
Phenanthrene, mg/kg	<0.03
Phenol, mg/kg	<0.03
Pentachlorophenol, mg/kg	<0.03
Pyrene, mg/kg	<.03
Bis(2-chloroethoxy)methane, mg/kg	<0.03
Bis(2-chloroethyl)ether, mg/kg	<0.03
Bis(2-chloroisopropyl)ether, mg/kg	<0.03
Bis(2-ethylhexyl)phthalate, mg/kg	<3
Other B/N,A Ext. Priority Pollutants	---
Semi-Quantified Results **	
C15-C35 Hydrocarbon Matrix, mg/kg	10

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

Larry E. Penfold for
Sim D. Lessley, Ph.D., Laboratory Director

1255 Powell Street
Emeryville, CA 94608

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

BCA B C Analytical

Analytical Report

LOG NO: E91-10-679

Received: 29 OCT 91

Mailed: NOV 13 1991

Mr. Cliff Cooper
American Brass and Iron
7825 San Leandro Street
Oakland, California 94621

CC: Dave Robinson

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION	DATE SAMPLED
10-679-1	Sand	24 OCT 91

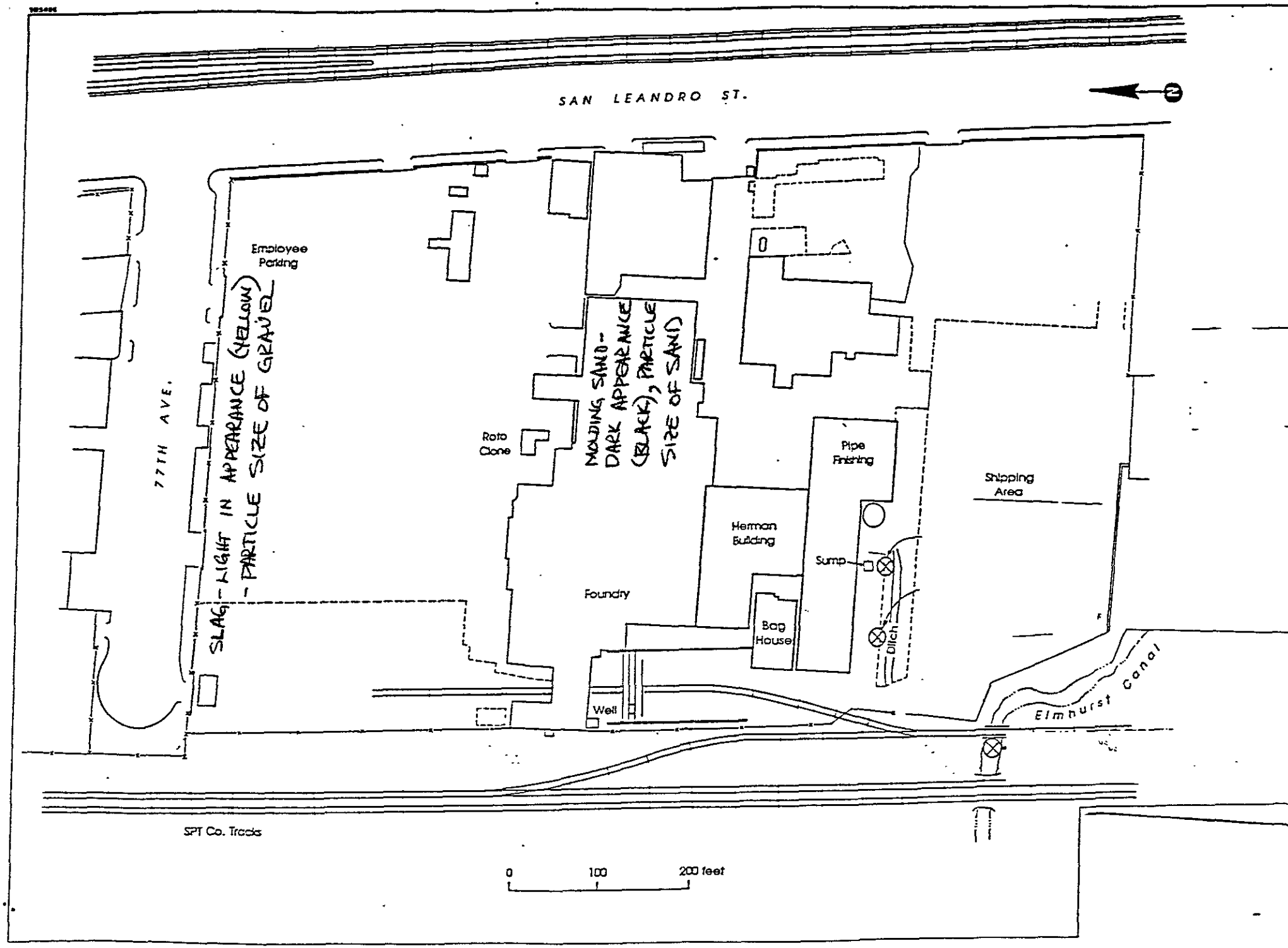
PARAMETER	10-679-1
Lead, mg/kg	5
Zinc, mg/kg	15
Nitric Acid Digestion, Date	11.07.91

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

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3613

BCA B C Analytical


SAN LEANDRO ST.
77TH AVE.
Employee Parking
SLAG - LIGHT IN APPEARANCE (YELLOW)
- PARTICLE SIZE OF GRAVEL
Roto Clone
MOLDING SAND - DARK APPEARANCE (BLACK), PARTICLE SIZE OF SAND
Foundry
Herman Building
Bag House
Pipe Finishing
Shipping Area
Sump
Ditch
Well
Elmhurst Canal
SPT Co. Tracks
0
100
200 feet

AB:I MOLDING SAND AND SLAG 12/30/91
SAMPLING

SAND AND SLAG SAMPLES WERE GENERALLY TAKEN IN ACCORDANCE WITH SW 846 GUIDELINES. THIS INCLUDED TAKING AT LEAST ONE SAMPLE FOR EVERY 50 CUBIC YARDS OF SOLIDS AND FOLLOWING CHAIN OF CUSTODY PROCEDURES. THE SITE MAP WHICH FOLLOWS SHOWS THE APPROXIMATE LOCATION OF SAND AND SLAG. BC ANALYTICAL WAS CONTACTED FOR INFORMATION ON SAMPLING PROCEDURES.

FOR METHOD 8270, SAMPLING PROCEDURES INCLUDED TAKING CORE SAMPLES AT LEAST ONE FOOT DEEP INTO THE PILE IMMEDIATELY AFTER THE PILE WAS UNCOVERED, FILLING THE SAMPLE CONTAINERS COMPLETELY, SEALING SAMPLE CONTAINERS, AND REFRIGERATING SAMPLE CONTAINERS ON SITE AND ENROUTE TO THE LABORATORY.

Waste Piles

In waste piles, the accessibility of waste for sampling is usually a function of pile size, a key factor in the design of a sampling strategy for a waste pile. Ideally, piles containing unknown wastes should be sampled using a three-dimensional simple random sampling strategy. This strategy can be employed only if all points within the pile can be accessed. In such cases, the pile should be divided into a three-dimensional grid system, the grid sections assigned numbers, and the sampling points then chosen using random-number tables or random-number generators.

If sampling is limited to certain portions of the pile, then the collected sample will be representative only of those portions, unless the waste is known to be homogeneous.

In cases where the size of a pile impedes access to the waste, a set of samples that are representative of the entire pile can be obtained with a minimum of effort by scheduling sampling to coincide with pile removal. The number of truckloads needed to remove the pile should be estimated and the truckloads randomly chosen for sampling.

The sampling devices most commonly used for small piles are thiefs, triers, and shovels. Excavation equipment, such as backhoes, can be useful for sampling medium-sized piles.

Landfills and Lagoons

Landfills contain primarily solid waste, whereas lagooned waste may range from liquids to dried sludge residues. Lagooned waste that is either liquid or semisolid is often best sampled using the methods recommended for large tanks. Usually, solid wastes contained in a landfill or lagoon are best sampled using the three-dimensional random sampling strategy.

The three-dimensional random sampling strategy involves establishing an imaginary three-dimensional grid of sampling points in the waste and then using random-number tables or random-number generators to select points for sampling. In the case of landfills and lagoons, the grid is established using a survey or map of the area. The map is divided into two two-dimensional grids with sections of equal size. (An alternative way of choosing random sampling locations is presented in the second example described in Section 9.2.2.1.) These sections are then assigned numbers sequentially.

Next, the depth to which sampling will take place is determined and subdivided into equal levels, which are also sequentially numbered. (The lowest sampling depth will vary from landfill to landfill. Usually, sampling extends to the interface of the fill and the natural soils. If soil contamination is suspected, sampling may extend into the natural soil.) The horizontal and vertical sampling coordinates are then selected using random-number tables or random-number generators. If some information is known about the nature of the waste, then a modified three-dimensional strategy may be more appropriate. For example, if the landfill consists of several cells, a more precise measurement may be obtained by considering each cell as a stratum and employing a stratified three-dimensional random sampling strategy (see Section 9.1).