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SITE ASSESSMENT REPORT
FOR
DOUBLE A METALS SITE
CHICAGO, COOK COUNTY, ILLINOIS
TDD: S05-9609-023
PAN: 6P2301SI

ecology and environment, inc.
International Specialists in the Environment

SITE ASSESSMENT REPORT
FOR
DOUBLE A METALS SITE
CHICAGO, COOK COUNTY, ILLINOIS
TDD: S05-9609-023
PAN: 6P2301SI

JANUARY 9, 1997

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency and Enforcement Response Branch
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1. Introduction

The United States Environmental Protection Agency (U.S. EPA) tasked the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E), under Technical Direction Document (TDD) S05-9609-023, to assess site conditions; threats to human health and the environment; and to present remedial options and costs for the Double A Metals site located in Chicago, Cook County, Illinois .

2. Background

2.1 Site Description

The Double A Metals site is an inactive aluminum foundry located at 3321 S. Pulaski Road, in Chicago, Cook County, Illinois (Figure 2-1). The site is located in an area of mixed industrial, commercial, and residential development. The site is bordered to the west by Pulaski Road, to the north by a rail line, and to the south and east by an unnamed service road. A Commonwealth Edison power plant is located south of the site and a City of Chicago recycling center is located to the east. The nearest residence is located on Pulaski Road, approximately 300 feet north of the site.

The site is located in a fenced area which covers approximately four acres (Figure 2-2). The site includes two main buildings connected in an "L" shape, a large front yard with a loading dock, and a back yard area. The site is not secured; the fence has several holes and the buildings contain graffiti, broken windows, and refuse.

The front and back yard areas contain large waste piles comprised of coarse slag. The waste piles vary in color and consistency. Some piles consist of brown material with rusted metal artifacts. Other piles are black with oxidized blue and white granules. One waste pile in the back yard appears to be fine-grained baghouse dust. The northern yard also contains four transformers which have been dismounted and stripped.

The loading dock is flooded with rainwater, and a sheen appears on the surface. It contains tires, propane tanks, drums, a fire extinguisher, and other debris. One drum is located at the southwest corner of the loading dock and eight drums are immediately northwest of the loading dock, next to the west building.

The west building is made of brick and contains four small rooms, one large room, an office area, and a partially closed area. The large room contains several piles of light gray material which has a very fine texture, similar to powder. This room also contains approximately 60 drums stacked on pallets. The small southwestern room contains six drums of volatile organic material and a large compressed air cylinder. The small southern room contains a tank and a drum. The small

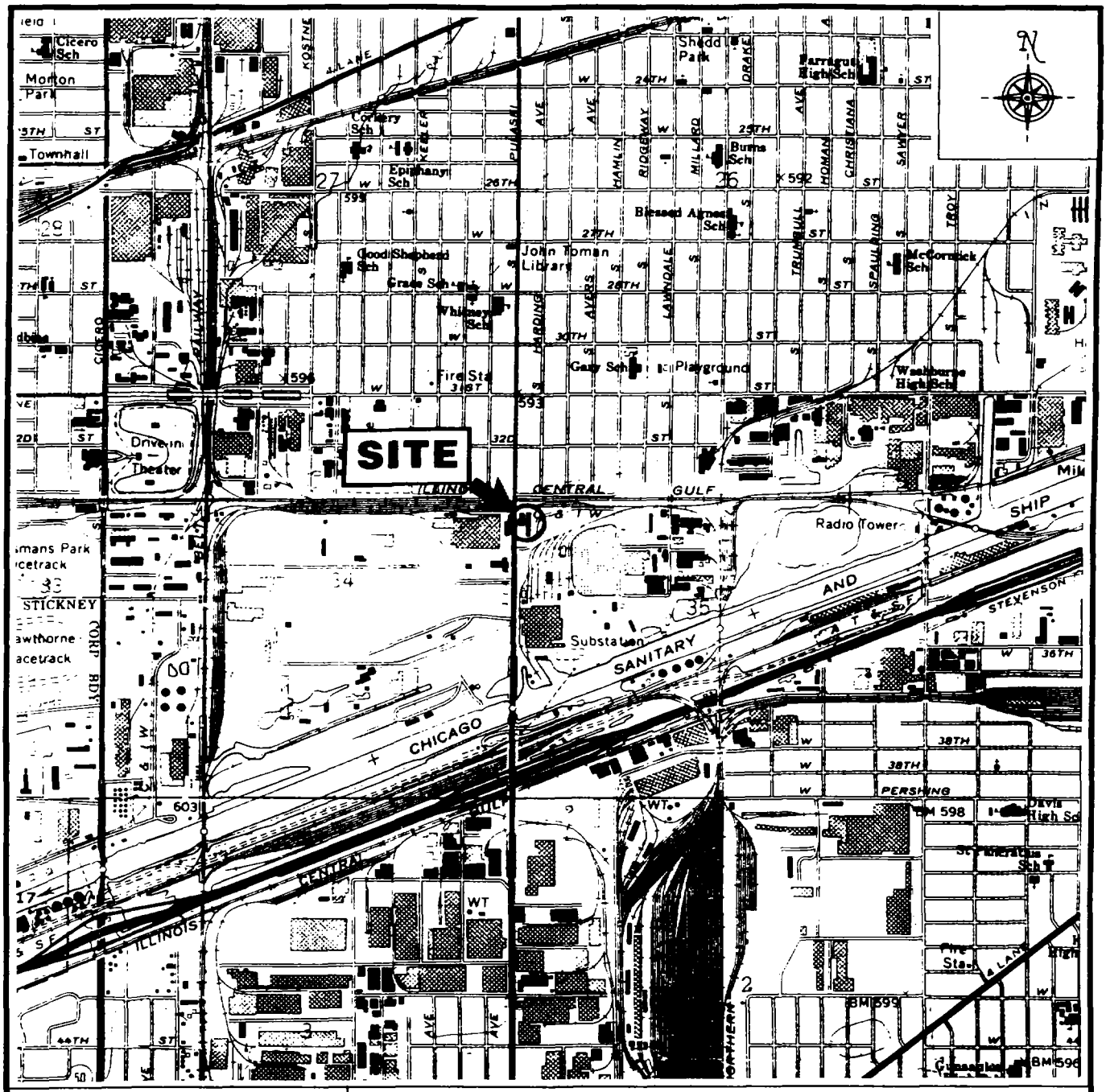
southeastern room is filled with empty containers and debris. The office area on the west side of the main room contains debris and office furniture. The partially enclosed area contains approximately 20 bags of hydrated lime on a pallet. The small room on the east side of the west building contains three drums.

The east building is made of metal and glass, and contains one large room. Approximately 80 percent of the surface area in this building is covered with waste piles similar to those in the west building on the site. This building also contains scattered empty drums and a large oven.

2.2 Site History

The Double A Metals site is an inactive aluminum foundry. A Phase 1 Property Assessment of the site was prepared by Gabriel Laboratories of Chicago, Illinois, for Jepscor Metals of Dixon, Illinois, the parent company of Double A Metals. According to this document, operations related to the recovery of aluminum on site began in approximately 1965 by the H. Winter Metal Company. Between 1983 and 1990, the site was operated by the Jay Armstrong Metals Company. Double A Metals, a subsidiary of Jepscor Metals, operated the site for only a short period; operations ended in approximately 1991. Prior to aluminum recovery, the site was used as a truck garage and for manufacturing operations, which began in approximately 1917.

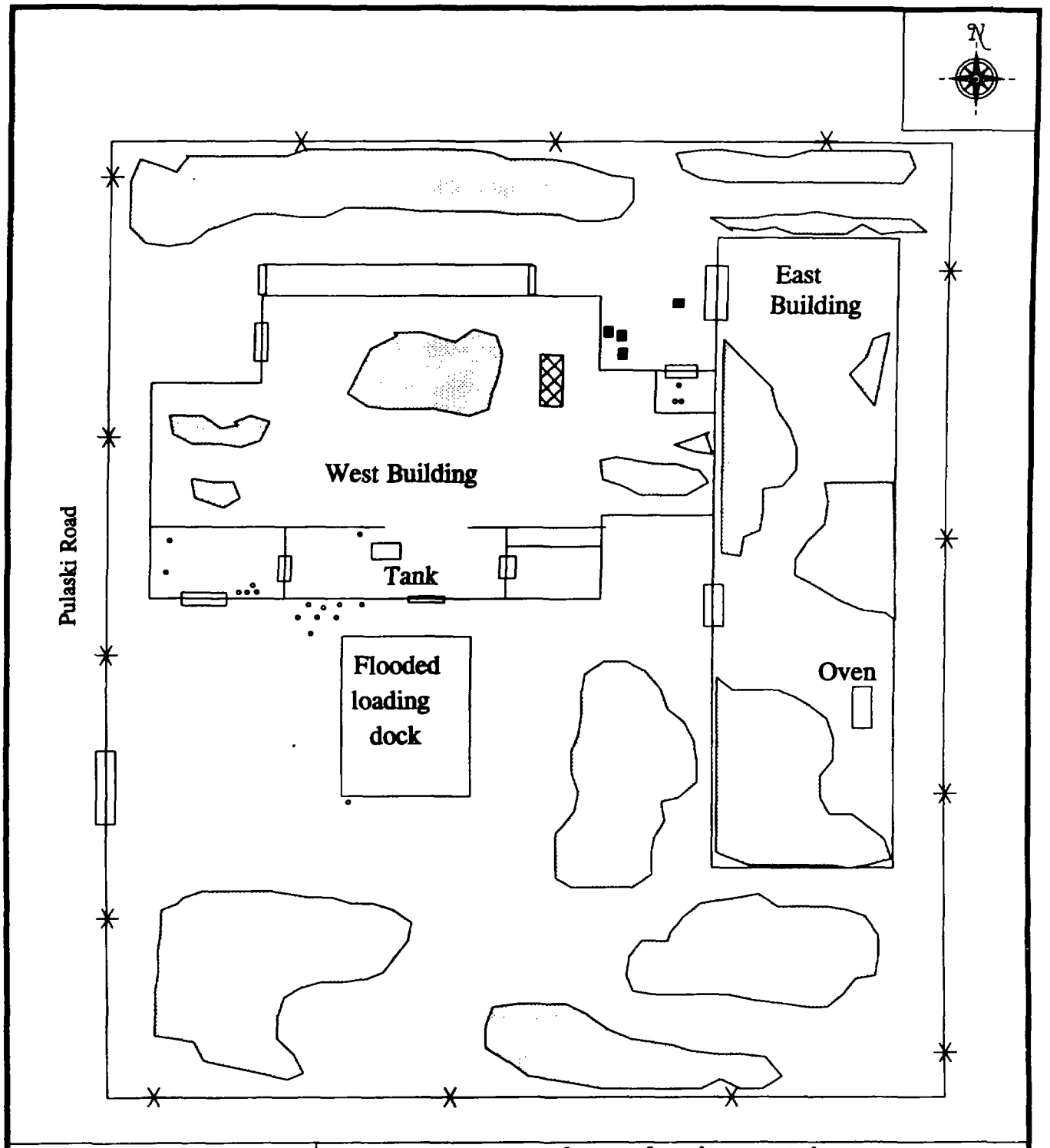
A Phase 2 Property Assessment of the site was completed in 1994 by Gabriel Laboratories. The assessment included 13 soil borings and sampling in areas where storage of fuel and lubricants was observed. Analytical results indicate that low levels of volatile organic compounds are present in on-site soils. The borings indicate that the site is underlain by black and gray clay.



Quadrangle Location

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region 5
33 North Dearborn Street, Suite 900, Chicago, Illinois 60602

TITLE: Site Location Map	FIGURE #: 2-1
SITE: Double A Metals	SCALE: 1:24000
CITY: Chicago STATE: Illinois	TDD: S05-9609-023
SOURCE: USGS Topographic Map, 7.5-Minute Series - Englewood, Illinois Quadrangle	DATE: 1980 REVISED:



Legend

- Debris
- Drum
- Drums on pallets
- Fence
- Transformer

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Region 5
33 North Dearborn Street, Suite 900, Chicago, Illinois 60602

TITLE	Site Features Map	FIGURE #	2-2
SITE	Double A Metals	SCALE	Not to Scale
CITY	Chicago STATE Illinois	TDD	S05-9609-023
SOURCE	Ecology and Environment, Inc.	DATE	10/96
		REVISED	

3. Site Assessment

On October 7, 1996, START members Donovan Robin and Damon Sinars, conducted a site assessment of the Double A Metals site. START was accompanied by U.S. EPA On-Scene Coordinator (OSC) Charlie Gebien, and Ray Lechnen from the U.S. Coast Guard. The site health and safety plan was reviewed and signed by each, and a site reconnaissance was conducted. Refer to Appendix A for photographs taken during the site assessment.

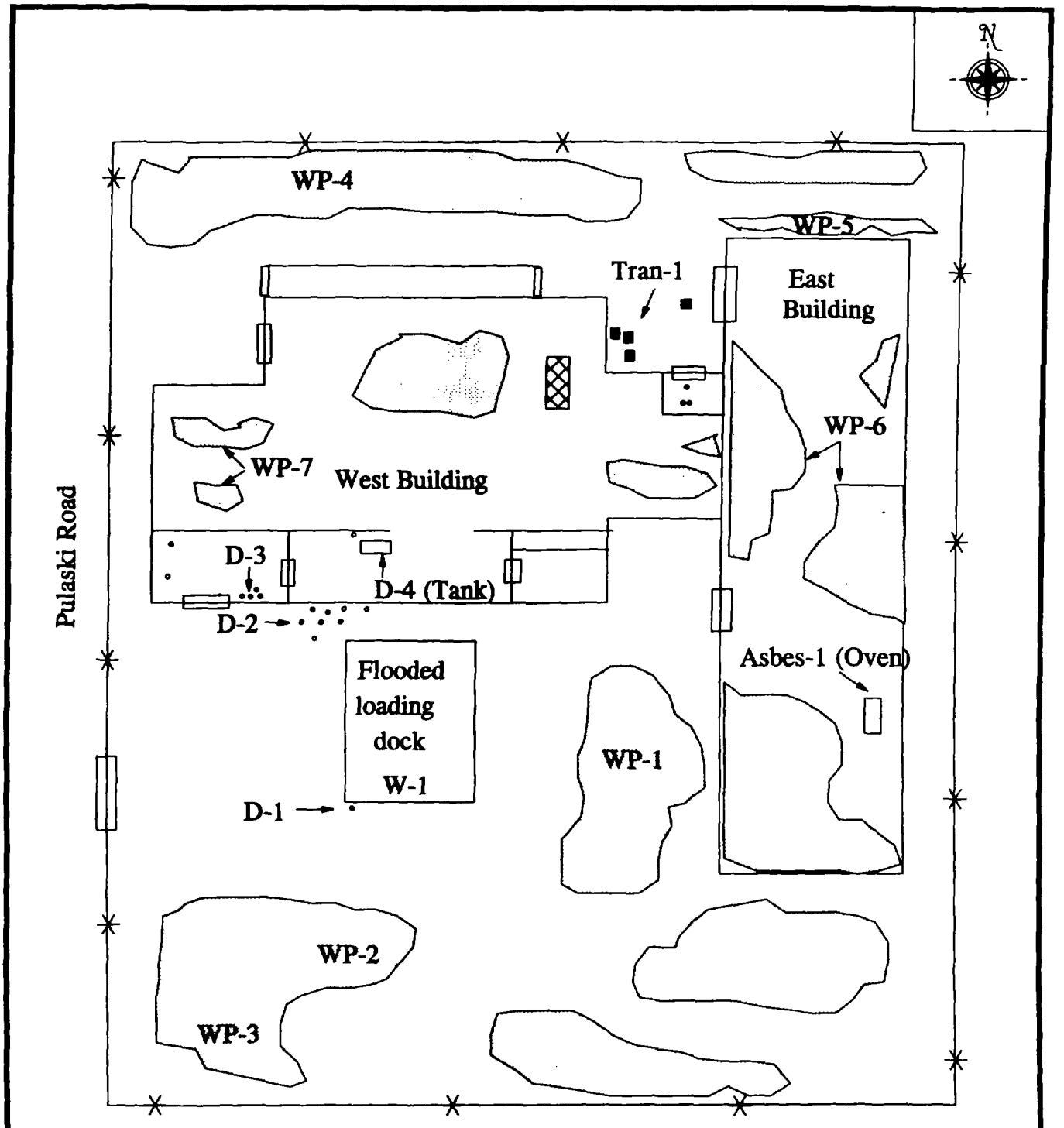
Four drum samples (D-1 through D-4), seven waste pile samples (WP-1 through WP-7), one transformer sample (Tran-1), one insulation sample (Asbes-1), and one water sample (W-1) were collected (Figure 3-1).

Four of the 17 accessible drums were sampled. Air monitoring of headspace, location, and accessibility determined which drums were sampled. The approximately 60 stacked drums were not accessible. Sampling was conducted in level B protection using non-spark tools to open the drums and a drum thief to extract the material. The samples were dark brown in color and appeared to be petroleum-based materials.

Seven waste piles were sampled from both outside and inside the buildings. Location and appearance determined which piles were sampled to ensure obtaining all types of material. Sampling of the waste piles was conducted in level C protection. Samples were collected at 0 to 6 inches below the surface, using a stainless steel hand shovel and stainless steel bowl, to obtain a homogenized composite sample from six to ten locations within a waste pile.

One composite transformer-area sample was obtained while in level C protection. Liquid from the transformers and soil from the area was placed in the sample container. A large insulated oven was sampled for asbestos with a hand shovel, while in level C protection. One water sample was collected by dipping the container into various places of the flooded area of the loading dock while in level D protection.

The samples were picked up on October 9, 1996, by a representative of NET Midwest, Inc., of Bartlett, Illinois. Drum samples were analyzed for pH, flash point, volatile organic compounds, and polychlorinated biphenyls (PCBs). The water and waste pile samples were analyzed for total Resource Conservation and Recovery Act (RCRA) metals. The transformer area sample was analyzed for PCBs. The insulation was analyzed for asbestos.



Legend	
D-1	Drum sample
WP-1	Waste pile sample
Tran-1	Transformer sample
Asbes-1	Insulation sample
W-1	Water sample

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Region 5
33 North Dearborn Street, Suite 900, Chicago, Illinois 60602

TITLE	Sample Location Map	FIGURE #	3-1
SITE	Double A Metals	SCALE	Not to Scale
CITY	Chicago STATE Illinois	TDD	S05-9609-023
SOURCE	Ecology and Environment, Inc.	DATE	10/96
		REVISED	

4. Analytical Results

Analytical results indicate that the waste materials on site exceed U.S. EPA removal action levels or RCRA characteristics for hazardous wastes. Analytical results are summarized in Tables 4-1 and 4-2. The validated data package is presented in Appendix B.

The RCRA hazardous waste criteria (40 Code of Federal Regulations [CFR] Subsection [§] 261.24) for toxicity characteristics leaching procedure (TCLP) lead (waste code D008) is 5 milligrams per liter (mg/L). Four of the seven waste pile samples contained levels of TCLP lead in excess of this level, with the highest level, 28.2 mg/L, detected in sample WP-2. Five samples contained total lead at levels at or above the U.S. EPA removal action level of 500 milligrams per kilogram (mg/kg) for lead in industrial soils. Other metals were not detected at levels which require a removal action or at levels characteristic of a hazardous waste. Arsenic and barium were detected in the water sample (W-1) collected from the loading dock, at levels below the Safe Drinking Water Act Maximum Contaminant Levels for these elements.

The drum samples each contained volatile organic compounds classified as hazardous waste according to 40 CFR § 261.31. Xylene and ethylbenzene are classified by the RCRA waste code F003, and toluene is classified by the waste code F005.

The characteristic of an ignitable waste, as defined in 40 CFR § 261.21, is exhibiting a flash point less than 140° Fahrenheit (°F). The drum sample results indicated that the waste materials are not ignitable.

The characteristic of a corrosive waste, as defined in 40 CFR § 261.24, is a liquid exhibiting a pH less than or equal to 2, or greater than or equal to 12.5. The drum sample results indicated that the waste materials are not corrosive.

Polychlorinated biphenyls are regulated under the Toxic Substances Control Act (TSCA). PCBs were not detected in any samples. Asbestos is also regulated under TSCA; however, asbestos was not identified in the sample of material from the oven.

Table 4-1
ANALYTICAL RESULTS FOR WASTE PILES AND WATER SAMPLES
DOUBLE A METALS
OCTOBER 7, 1996

(units = mg/kg)

Parameter	Sample Designation							
	W-1	WP-1	WP-2	WP-3	WP-4	WP-5	WP-6	WP-7
Arsenic	0.0084	8.5	19	17	28	20	14	17
Barium	0.106	127	123	72	150	66.4	97	211
Cadmium	ND	4.9	24	2.54	3.18	4.70	19	38
Chromium	ND	333	487	136	530	326	560	490
Lead	ND	500	3,180	237	3,180	310	910	1,800
TCLP lead (mg/L)	NA	0.3	28.2	ND	22	0.5	16	14
Mercury	ND	ND	ND	ND	ND	0.21	0.08	0.72
Selenium	ND	6.6	9.3	8.7	9.6	6.8	5.8	6.3
Silver	ND	14	18	2.3	12	2.2	10	16

Key:
TCLP = Toxicity Characteristics Leaching Procedure.
mg/L = Milligrams per liter.
mg/kg = Milligrams per kilogram.
ND = Not Detected.
NA = Not Analyzed.

Source: National Environmental Testing, Inc., Bartlett, Illinois, October 25, 1996 (Analytical TDD S05-9610-803).

Table 4-2
ANALYTICAL RESULTS FOR DRUM SAMPLES
DOUBLE A METALS
OCTOBER 7, 1996

Parameter	Sample Designation			
	D-1	D-2	D-3	D-4
Ethyl benzene (mg/kg)	340	320	120	2
Toluene (mg/kg)	120	400	ND	2
Total xylenes (mg/kg)	1,150	1,780	490	3
Flash point (°F)	170	>200	190	>200
pH (Standard Units)	5.0	6.3	6.1	8.5

Key:

mg/kg = Milligrams per kilogram.
ND = Not detected.
°F = Degrees Fahrenheit.
> = Greater than.

Source: National Environmental Testing, Inc., Bartlett, Illinois, October 25, 1996 (Analytical TDD S05-9610-803).

5. Discussion of Potential Threats

Conditions present at the Double A Metals site that warrant an appropriate removal action as set forth in paragraph (b) (2) of Section 300.415 of the National Oil and Hazardous Substances Contingency Plan (NCP) include:

- **Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.** Concentrations of TCLP lead up to 28.2 mg/L were detected in the waste pile samples collected from the Double A Metals site. These levels of TCLP lead exceed the maximum concentration for the toxicity characteristic of 5 mg/L.

  The Double A Metals site is located in an area with mixed commercial and residential development. The nearest residence is 300 feet north of the site. The site is not secure; there are holes in the perimeter fencing, and there is evidence of previous human intrusion in the building, such as graffiti, broken windows, and debris.

  The extent of exposure to lead is based on blood level testing. According to the Agency for Toxic Substances and Disease Registry (ATSDR), lead has been shown to affect virtually every organ and/or system in the bodies of both humans and animals. The most sensitive target organs of lead appear to be the nervous system, especially in children; the hematopoietic system; and the cardiovascular system. There is also evidence that lead can lead to kidney and immune system damage in humans and animals. Lead has also been proven to be carcinogenic in animals.

- **Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.** The drum samples contained ethylbenzene, toluene, and xylene; which are constituents of hazardous wastes from non-specific sources under RCRA. The drums are in poor condition and have no secondary containment. The site is not secure; unauthorized persons could enter the site and come into contact with drummed materials.

- **High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.** The waste piles and drums on site do not have adequate primary or secondary containment. Precipitation and wind could spread the waste material throughout the site, and to the subsurface and off-site areas.

- **Threat of fire or explosion.** Improper handling or vandalism of propane cylinders or drums on site could result in a fire or explosion.

6. Removal Cost Estimate

Conditions observed at the Double A Metals site warrant a removal based upon the presence of lead in waste piles and solvents in drums. The options for the removal action for this cost estimate include overpacking and off-site disposal of the drums, and either on-site stabilization of the waste pile material or off-site stabilization of this material; in each case the stabilized waste will be disposed off site.

6.1 General Assumptions

- The removal action will include removal of approximately 3,000 cubic yards (4,380 tons) of lead-contaminated waste piles, approximately 17 drums of petroleum-based materials mixed with water, and approximately 25,000 gallons of oily water.
- The removal action will require approximately 19 days and $832,402 to complete off-site treatment of the waste pile material, or will require approximately 20 days and $416,502 for on-site treatment of the waste pile material.
- The removal will be conducted by an Emergency Response Cleanup Services (ERCS) contractor.
- One U.S. EPA OSC and one START member will be on site during the removal action.
- One armed security guard will be on site 24-hours per day for the duration of the project.
- No cost for lease or rental of land for the project is expected.
- RCMS cost projection defaults include a 15% contractor contingency.

6.2 Health and Safety

A Health and Safety Plan will be prepared by ERCS and START prior to beginning work at the site. It is assumed that an ERCS industrial hygienist will be on site for approximately three days to oversee site operations and conduct personal air sampling, in order to determine lead and noise exposure levels during operations inside the buildings. High-volume air sampling will also be

conducted to determine if removal activities spread particulates to off-site areas.

6.3 Site Preparation

Preparation of the site for the removal action will consist of establishing support services and equipment, securing the site, and clearing the working areas of debris and standing water. This phase will take one to two days.

- Support facilities to be brought on site will include one 40-foot office trailer for U.S. EPA/START, one 40-foot office/decon trailer with showers for ERCS, one 20-foot equipment storage trailer, and two modular bathrooms. It is assumed that the cost to establish telephone, electrical, and plumbing services for the support facilities will be minimal, based on the proximity of such services to the site.

- Non U.S. EPA-owned support equipment will consist of two computers with printers, one fax machine, and one copier.

- The fence around the site will be repaired, a new gate will be installed, and razor wire will be installed at the top of the fence.

- The water in the loading dock (approximately 25,000 gallons) will be pumped into tank cars and disposed off site as oily water.

6.4 Drum and Cylinder Disposal

Approximately 80 drums were observed on site during the site assessment. Seventeen of these drums were accessible and contained petroleum-based materials or residues of these materials. The remaining drums were inaccessible. Removal of the 17 accessible drums will consist of overpacking and off-site disposal. The remaining drums will be inspected and sampled to determine if removal is necessary, those drums which do not contain hazardous wastes will be left on site.

Approximately 15 cylinders labeled as propane or argon were located on site. These cylinders will be inventoried and returned to the supplier, or otherwise removed from the site for reuse or disposal.

6.5 Off-Site Treatment

For this operation, end-dump trailers will be loaded with waste pile material and weighed on site. The material will be transported to an off-site facility for treatment and disposal in a RCRA-permitted landfill (Appendix C).

- A single wheel loader with a 2.5 cubic yard bucket will be used to gather and load the waste piles in the front yard. Two smaller wheel loaders will be used to move waste pile material from inside and behind the buildings to a staging area prior to being loaded onto a trailer using the larger loader.

- It is assumed that removal of the waste pile material from the building will be performed at level B due to high lead levels and the possibility of kicking up dust during the operation. A plastic tank with a sump pump and ordinary hose and sprayer will be used to control dust levels inside the building.

- It is assumed that each end-dump trailer will carry 22 tons (15 cubic yards) of waste material.

- Transportation will cost approximately $600 per load. Disposal will cost approximately $95 per ton. These prices are based on estimates received from Peoria Disposal Company, of Peoria, Illinois; Waste Management, Inc., of West Chester, Illinois; and Wayne Disposal Inc., of Belleville, Michigan (Appendix D).

6.6 On-Site Treatment

For this operation, a pugmill and associated equipment will be operated on site. A mixture of Portland cement and fly ash will be used to stabilize the hazardous waste pile material, which will be transported and disposed off site as nonhazardous waste (Appendix E).

- A mixture of 10% Portland cement and 5% fly ash by volume will be used as a stabilizing agent.

- The pugmill will process 300 cubic yards of waste pile material per day.

- The ERCS equipment and labor to be utilized for loading the stabilized material will be the same as described for off-site treatment.

- Transportation will cost approximately $218 per 15-cubic-yard load. Disposal will cost approximately $24 per ton (Appendix F).

Appendix A

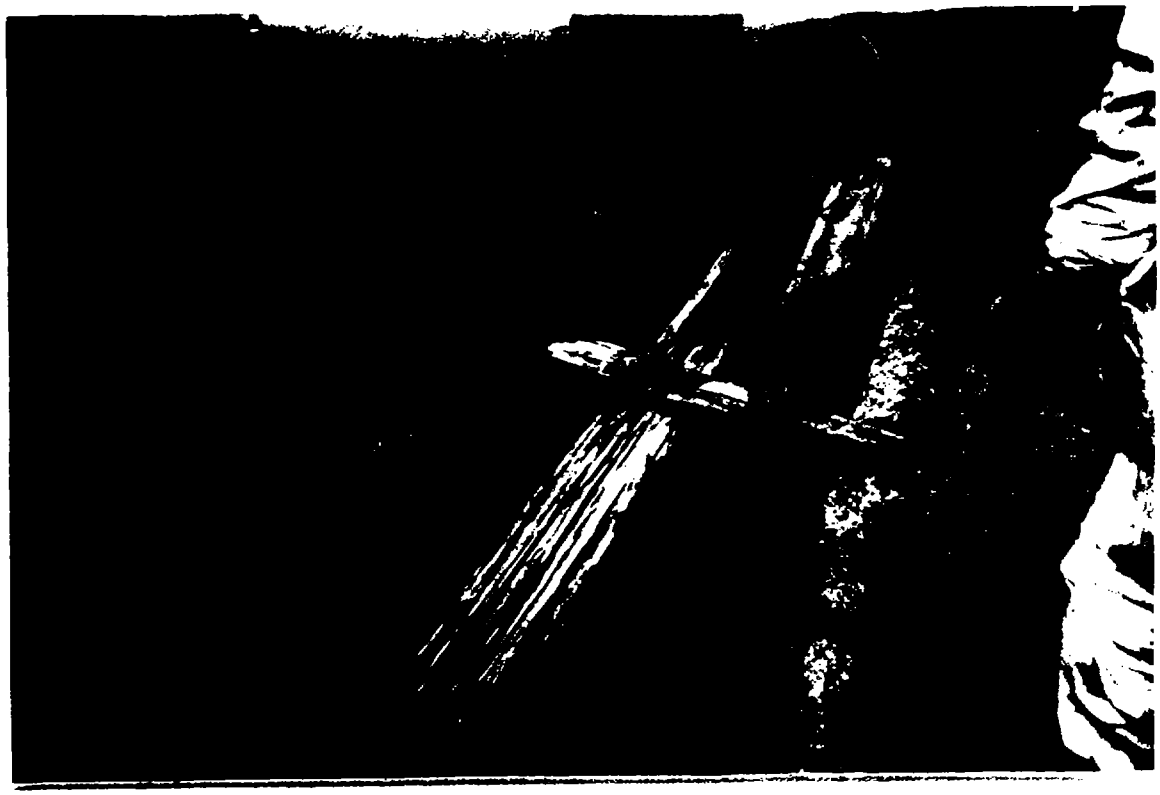
Photodocumentation

SITE NAME: DOUBLE A METALS
TDD #: S05-9609-023
DATE: OCTOBER 7, 1996
TIME: 1045-1130 HOURS
DIRECTION: NORTH
PHOTOGRAPHER: DONOVAN ROBIN

SUBJECT: VIEW OF WEST BUILDING, CORNER OF "L", (UPPER RIGHT), AND FLOODED LOADING DOCK FROM WHICH SAMPLE W-1 WAS COLLECTED. SAMPLE D-1 WAS COLLECTED FROM THE DRUM ON ITS SIDE (LOWER CENTER).

SITE NAME: DOUBLE A METALS
TDD #: S05-9609-023
DATE: OCTOBER 7, 1996
TIME: 1530 HOURS
DIRECTION: SOUTHEAST
PHOTOGRAPHER: DAMON SINARS

SUBJECT: VIEW OF DEBRIS PILES IN FRONT (SOUTH) YARD.

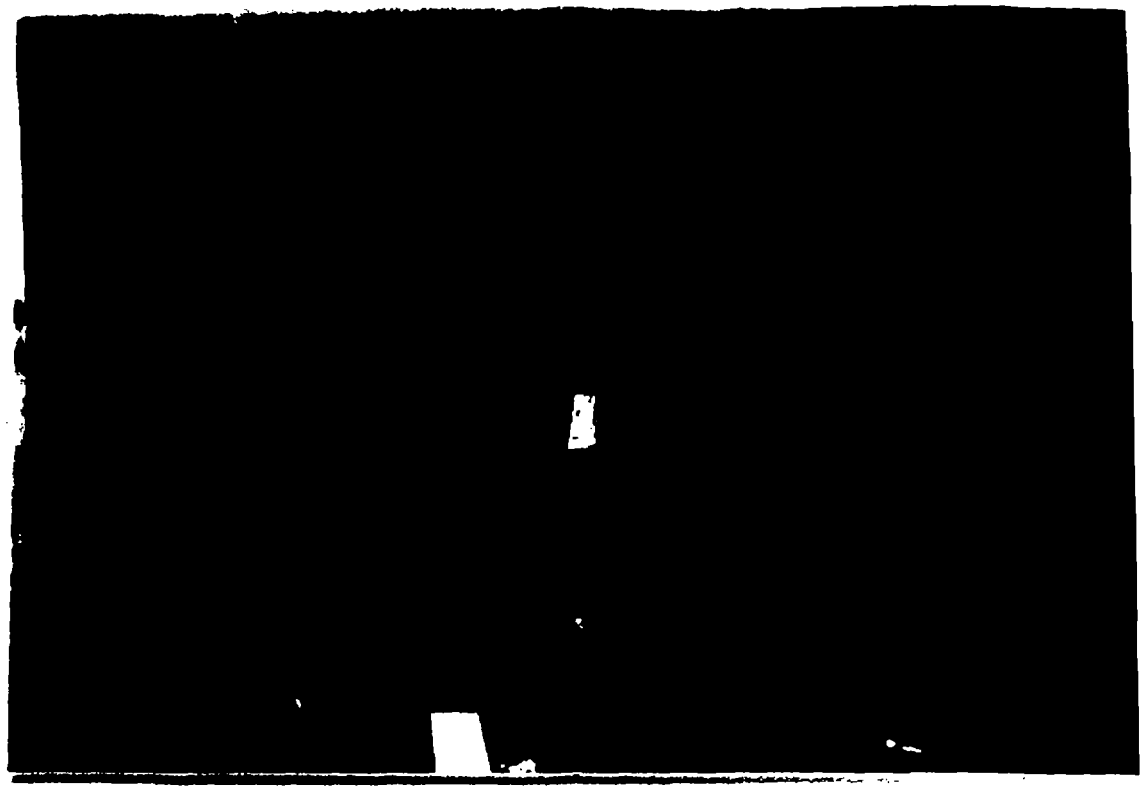


SITE NAME: DOUBLE A METALS
TDD #: S05-9609-023
DATE: OCTOBER 7, 1996
TIME: 1045-1130 HOURS
DIRECTION: NORTH
PHOTOGRAPHER: DONOVAN ROBIN

SUBJECT: PROPANE CYLINDERS AT THE SOUTHEAST CORNER OF THE LOADIN DOCK.

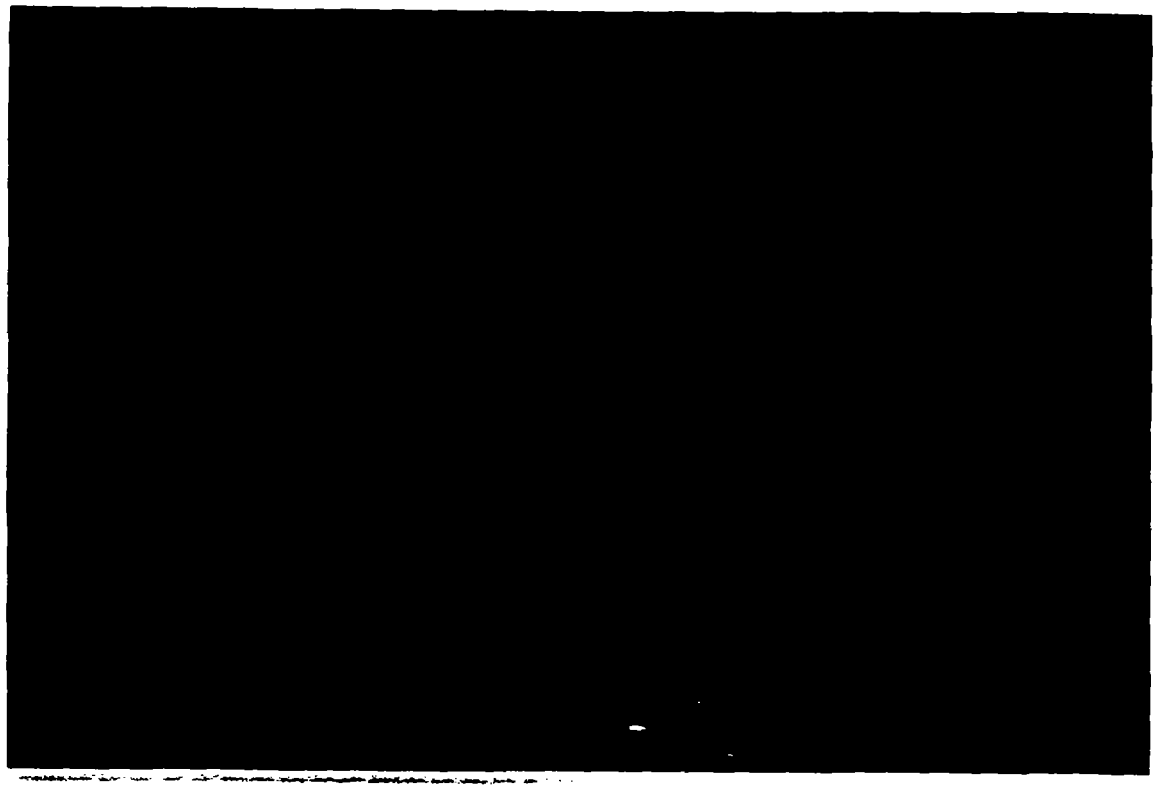
SITE NAME: DOUBLE A METALS
TDD #: S05-9609-023
DATE: OCTOBER 7, 1996
TIME: 1045-1130 HOURS
DIRECTION: NORTH
PHOTOGRAPHER: DONOVAN ROBIN

SUBJECT: VIEW OF EIGHT DRUMS OUTSIDE THE SOUTHWEST CORNER OF THE WEST BUILDING. SAMPLE D-2 WAS COLLECTED FROM THE ORANGE DRUM ON THE LEFT.



SITE NAME: DOUBLE A METALS
TDD #: S05-9609-023
DATE: OCTOBER 7, 1996
TIME: 1045-1130 HOURS
DIRECTION: NORTHWEST
PHOTOGRAPHER: DONOVAN ROBIN

SUBJECT: AIR CYLINDER LABELED "ARGON" AND A DRUM ON THE WEST WALL OF THE SOUTHWEST ROOM.



SITE NAME: DOUBLE A METALS
TDD #: S05-9609-023
DATE: OCTOBER 7, 1996
TIME: 1045-1130 HOURS
DIRECTION: NORTHEAST
PHOTOGRAPHER: DONOVAN ROBIN

SUBJECT: INDOOR ASH-LIKE DEBRIS PILE, SIMILAR TO SAMPLE WP-7.

SITE NAME:	DOUBLE A METALS
TDD #:	S05-9609-023
DATE:	OCTOBER 7, 1996
TIME:	1045-1130 HOURS
DIRECTION:	SOUTHWEST
PHOTOGRAPHER:	DONOVAN ROBIN

SUBJECT: VIEW OF FOUR TRANSFORMERS IN AREA WHERE SAMPLE TRAN-1 WAS COLLECTED.

SITE NAME:	DOUBLE A METALS
TDD #:	S05-9609-023
DATE:	OCTOBER 7, 1996
TIME:	1300 HOURS
DIRECTION:	NORTHWEST
PHOTOGRAPHER:	CHARLIE GEBIEN

SUBJECT: START COLLECTING SAMPLE D-2.

Appendix B

Analytical Results

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Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

M E M O R A N D U M

DATE: December 18, 1996

TO: Donovan Robin, START Project Manager, E & E, Chicago, Illinois

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Data Quality Review for Polychlorinated Biphenyls (PCBs), Double A Metals, Chicago, Cook County, Illinois

REFERENCE: Project TDD S05-9609-023 Analytical TDD S05-9610-803
Project PAN 6P2301SIXX Analytical PAN 6CAC01TA

The data quality assurance (QA) review of four liquid waste samples and one soil sample collected from the Double A Metals site is complete. The samples were collected on October 7, 1996, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to NET, Inc., Bartlett, Illinois. The laboratory analyses were performed according to the United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 8080.

Sample Identification

START Identification No.	Laboratory Identification No.
D01	378478
D02	378479
D03	378480
D04	378481
Tran-1	378490

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on October 7, 1996, extracted on October 10, 1996, and analyzed on October 23, 1996. This

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is within the 14-day holding time limit, from collection to extraction, and 40-day limit from extraction to analysis.

II. Instrument Performance: Acceptable

The chromatographic resolution was adequate in the standard and sample chromatograms. Surrogate retention times were consistent in the samples and standards.

III. Calibrations:

• Initial Calibration: Acceptable

A five-point initial calibration was performed prior to analysis. The percent relative standard deviations (%RSDs) between response factors were less than 20% for all PCBs.

• Continuing Calibration: Acceptable

The percent differences of the response factors were less than 15% for all PCBs.

IV. Blank: Acceptable

A method blank was analyzed with the sample. No target compounds or contaminants were detected in the blank.

V. Compound Identification: Not Applicable

There were no detected PCBs in the samples.

VI. Additional QC Checks: Acceptable

The recoveries of the surrogates used in the samples were within acceptable laboratory limits.

VII. Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 7.0, PCBs. Based upon the information provided, the data are acceptable for use.

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

M E M O R A N D U M

DATE: December 18, 1996

TO: Donovan Robin, START Project Manager, E & E, Chicago, Illinois

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Organic Data Quality Review for Volatile Organic Compounds, Double A Metals, Chicago, Cook County, Illinois

REFERENCE: Project TDD S05-9609-023 Analytical TDD S05-9610-803
Project PAN 6P2301SIXX Analytical PAN 6CAC01TA

The data quality assurance (QA) review of four liquid waste samples collected from the Double A Metals site is complete. The samples were collected on October 7, 1996, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to NET, Inc., Bartlett, Illinois. The laboratory analyses were performed according to the United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 8240.

Sample Identification

START Identification No.	Laboratory Identification No.
D01	378478
D02	378479
D03	378480
D04	378481

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on October 7, 1996 and analyzed on October 17, 1996. This is within the 14-day holding time limit.

recycled paper

II. Gas Chromatography/Mass Spectrometry (GC/MS) Tuning: Acceptable

GC/MS tuning to meet ion abundance criteria using bromofluorobenzene (BFB) were acceptable and samples were analyzed within 12 hours of BFB tuning.

III. Calibrations:

• Initial Calibration: Qualified

A five-point initial calibration was performed prior to analysis. All average response factors were greater than 0.05 except acrolein; therefore, the nondetect values for this compound have been flagged "R", as required. The percent relative standard deviations (%RSDs) between response factors were less than 30% for all detected target compounds.

• Continuing Calibration: Acceptable

The percent differences of the response factors were less than 25%, as required for detected target compounds except for the following:

Compound	%D
acetone	59.6
4-methyl-2-pentanone	26.3

Since these compounds were not detected in the samples, qualification is not required.

IV. Blank: Acceptable

A method blank was analyzed with the samples. No target compounds or contaminants were detected in the blank.

V. Internal Standards: Acceptable

The areas of the internal standards in the samples were within -50% to +100% of the associated calibration check standard. The retention time of the internal standard was within the 30-second control limit.

VI. Compound Identification: Acceptable

The mass spectrum and retention time of the detected compound matched those of the standards.

VII. Additional QC Checks: Acceptable

The recoveries of the surrogates used in the samples and blank were within laboratory-established guidelines.

VIII. Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 5.0, VOAs By GC/MS analysis. Based upon the information provided, the data are acceptable for use, with the above-stated qualifications.

Data Qualifiers and Definitions:

R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

M E M O R A N D U M

DATE: December 18, 1996

TO: Donovan Robin, START Project Manager, E & E, Chicago, Illinois

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Inorganic Data Quality Review for Resource Conservation and Recovery Act (RCRA) Metals, Double A Metals, Chicago, Cook County, Illinois

REFERENCE: Project TDD S05-9609-023 Analytical TDD S05-9610-803
Project PAN 6P2301SIXX Analytical PAN 6CAC01TA

The data quality assurance (QA) review of one water sample and seven solid samples collected from the Double A Metals site is complete. The samples were collected on October 7, 1996, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to National Environmental Testing, Inc. (NET), Bartlett, Illinois, for analyses. The laboratory analyses were performed according to the U.S. EPA solid Waste 846 Methods 6010, 7060 (for arsenic), 7421 (for lead), 7470 (for mercury), 7471 (for mercury in water), 7740 (for selenium), and 7760 (for silver).

Sample Identification

START Identification No.	Laboratory Identification No.
W-1	378482
WP-1	378483
WP-2	378484
WP-3	378485
WP-4	378486
WP-5	378487
WP-6	378488
WP-7	378489

recycled paper

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on October 7, 1996, and analyzed on October 17, 18, and 21, 1996. This is within the six month holding time limit (28 days for mercury).

II. Calibration:

- Initial Calibration: Acceptable

  Recoveries for the initial calibration verification were within 90 to 110% (80 to 120% for mercury), as required.

- Continuing Calibration: Acceptable

  All analytes included in the continuing calibration verification standard were within 90 to 110% (80 to 120% for mercury), as required.

III. Blanks: Acceptable

Calibration and preparation blanks were analyzed with each analytical batch. No target analytes were detected in the blanks. At least one blank was analyzed for each 20 samples.

IV. Interference Check Samples (ICSs): Acceptable

ICSs were analyzed and recoveries were acceptable.

V. Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990) Data Validation Procedures, Section 3.0, Metallic Inorganic Parameters. Based upon the information provided, the data are acceptable for use.

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M E M O R A N D U M

DATE: December 18, 1996

TO: Donovan Robin, START Project Manager, E & E, Chicago, Illinois

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Miscellaneous Data Quality Review for pH, Flash Point, and Asbestos, Double A Metals, Chicago, Cook County, Illinois

REFERENCE: Project TDD S05-9609-023 Analytical TDD S05-9610-803
Project PAN 6P2301SIXX Analytical PAN 6CAC01TA

The data quality assurance (QA) review of four liquid waste samples and one insulation sample collected from the Double A Metals site is complete. The samples were collected on October 7, 1996, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to NET, Inc., Bartlett, Illinois. The laboratory analyses were performed according to the United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 9040 for pH, and EPA method 1010 for flash point. The asbestos analysis was analyzed in accordance with EPA 40 CFR, Part 763, Appendix A to subpart F.

Sample Identification

START Identification No.	Laboratory Identification No.
D01	378478
D02	378479
D03	378480
D04	378481
Asbes-1	378491

recycled paper

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on October 7, 1996 and analyzed on October 15 for pH, October 18 for flash point, and October 14, 1996 for asbestos. The Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990) does not provide holding times for these parameters.

II. Calibrations: Acceptable

The pH meter was checked for accuracy prior to sample analysis with three pH standards (4.00, 7.02, and 10.06). The results were acceptable with the maximum percent difference received was 3.5% for the pH 4 standard.

The flash point of xylene was determined prior to sample analyses, with an acceptable result.

III. Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in Data Validation Procedures, Section 9.0, Generic Data Validation Procedures as stated in OSWER Directive 9360.4-01 (April 1990). Based upon the information provided, the data are acceptable for use.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378478

NET Job No.: 96.09523

Sample Description: Drum Near Dock; Grab
Double A Metals

Date Taken: 10/07/1996
Time Taken: 12:50
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep	Batch No. Run	Analytical Method
Flashpoint	170	Degree F	10/18/1996	72	sdf		392	1010 (1)
pH, Non aqueous	4.99	units	10/15/1996	0.10	sdf		381	9040 (1)
Prep PCBs Oil	extracted		10/10/1996		keh	33		3580A (1)
PCBs 8080 Oil								
PCB-1016	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1221	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1232	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1242	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1248	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1254	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1260	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1268	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
Surr: Dibutylchlorendate (DBC)	64.0	%	10/23/1996	29-128	tls	33	61	8080 (1)
Surr: Tetrachloroxylene (TCX)	43.0	%	10/23/1996	31-128	tls	33	61	8080 (1)
VOLATILE COMPDS 8240 - NONAQ								
Acetone	<600,000	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Acrolein	<600,000 A	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Acrylonitrile	<600,000	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Benzene	<30,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
Bromoform	<30,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
Bromomethane	<60,000	ug/Kg	10/17/1996	10	jap		1233	8240 (1)
Carbon Disulfide	<600,000	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Carbon Tetrachloride	<30,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
Chlorobenzene	<30,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
2-Chloroethylvinyl ether	<60,000	ug/Kg	10/17/1996	10	jap		1233	8240 (1)

VOC analysis performed at a 6,000x dilution due to sample matrix.

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10/25/1996

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Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Chlorodibromomethane	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Chloroethane	<60,000	ug/Kg	10/17/1996	10	jap	1233	8240 (1)
Chloroform	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Chloromethane	<60,000	ug/Kg	10/17/1996	10	jap	1233	8240 (1)
Dichlorobromomethane	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,2-Dichlorobenzene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,3-Dichlorobenzene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,4-Dichlorobenzene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1-Dichloroethane	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,2-Dichloroethane	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1-Dichloroethene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
cis-1,2-Dichloroethene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
trans-1,2-Dichloroethene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,2-Dichloropropane	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
cis-1,3-Dichloropropene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
trans-1,3-Dichloropropene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Ethyl Benzene	340,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
2-Hexanone	<300,000	ug/Kg	10/17/1996	50	jap	1233	8240 (1)
Methyl Ethyl Ketone	<600,000	ug/Kg	10/17/1996	100	jap	1233	8240 (1)
4-Methyl-2-pentanone (MIBK)	<300,000	ug/Kg	10/17/1996	50	jap	1233	8240 (1)
Methylene chloride	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Styrene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1,2,2-Tetrachloroethane	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Tetrachloroethene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Toluene	120,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1,1-Trichloroethane	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1,2-Trichloroethane	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)

VOC analysis performed at a 6,000x dilution due to sample matrix.

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
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Chicago, IL 60602

10/25/1996

Sample No. : 378478

NET Job No.: 96.09523

Sample Description: Drum Near Dock; Grab
Double A Metals

Date Taken: 10/07/1996
Time Taken: 12:50
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Trichloroethene	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Trichlorofluoromethane	<30,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Vinyl Chloride	<60,000	ug/Kg	10/17/1996	10	jap	1233	8240 (1)
o-Xylene	400,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
m,p-Xylenes	750,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Xylenes, total	1,150,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Surr: 1,2-Dichloroethane-d4	99.8	%	10/17/1996	70-121	jap	1233	8240 (1)
Surr: Toluene-d8	105.2	%	10/17/1996	81-117	jap	1233	8240 (1)
Surr: Bromofluorobenzene	105.4	%	10/17/1996	74-121	jap	1233	8240 (1)

VOC analysis performed at a 6,000x dilution due to sample matrix.

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10/25/1996

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IEPA Cert. No. 100221

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Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No.	Prep/Run	Analytical Method
Flashpoint	>200	Degree F	10/18/1996	72	sdf		392	1010 (1)
pH, Non aqueous	6.33	units	10/15/1996	0.10	sdf		381	9040 (1)
Prep PCBs Oil	extracted		10/10/1996		keh	33		3580A (1)
PCBs 8080 Oil								
PCB-1016	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1221	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1232	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
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PCB-1268	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
Surr: Dibutylchlorendate (DBC)	48.0	%	10/23/1996	29-128	tls	33	61	8080 (1)
Surr: Tetrachloroxylene (TCX)	126.0	%	10/23/1996	31-128	tls	33	61	8080 (1)
VOLATILE COMPDS 8240 - NONAQ								
Acetone	<500,000	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Acrolein	<500,000 R	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Acrylonitrile	<500,000	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Benzene	<25,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
Bromoform	<25,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
Bromomethane	<50,000	ug/Kg	10/17/1996	10	jap		1233	8240 (1)
Carbon Disulfide	<500,000	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Carbon Tetrachloride	<25,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
Chlorobenzene	<25,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
2-Chloroethylvinyl ether	<50,000	ug/Kg	10/17/1996	10	jap		1233	8240 (1)

VOC analysis performed at a 5,000x dilution due to sample matrix.

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ANALYTICAL REPORT

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10/25/1996

Sample No. : 378479

NET Job No.: 96.09523

Sample Description: Drum Near West Entrance; Grab Double A Metals

Date Taken: 10/07/1996
Time Taken: 13:00
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Date Received: 10/09/1996
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Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
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Chloroethane	<50,000	ug/Kg	10/17/1996	10	jap	1233	8240 (1)
Chloroform	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Chloromethane	<50,000	ug/Kg	10/17/1996	10	jap	1233	8240 (1)
Dichlorobromomethane	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,2-Dichlorobenzene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,3-Dichlorobenzene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,4-Dichlorobenzene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1-Dichloroethane	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,2-Dichloroethane	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1-Dichloroethene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
cis-1,2-Dichloroethene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
trans-1,2-Dichloroethene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,2-Dichloropropane	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
cis-1,3-Dichloropropene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
trans-1,3-Dichloropropene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Ethyl Benzene	320,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
2-Hexanone	<250,000	ug/Kg	10/17/1996	50	jap	1233	8240 (1)
Methyl Ethyl Ketone	<500,000	ug/Kg	10/17/1996	100	jap	1233	8240 (1)
4-Methyl-2-pentanone (MIBK)	<250,000	ug/Kg	10/17/1996	50	jap	1233	8240 (1)
Methylene chloride	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Styrene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1,2,2-Tetrachloroethane	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Tetrachloroethene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Toluene	400,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1,1-Trichloroethane	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1,2-Trichloroethane	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)

VOC analysis performed at a 5,000x dilution due to sample matrix.

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ANALYTICAL REPORT

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Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Trichloroethene	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Trichlorofluoromethane	<25,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Vinyl Chloride	<50,000	ug/Kg	10/17/1996	10	jap	1233	8240 (1)
o-Xylene	480,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
m,p-Xylenes	1,300,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Xylenes, total	1,780,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Surr: 1,2-Dichloroethane-d4	106.2	%	10/17/1996	70-121	jap	1233	8240 (1)
Surr: Toluene-d8	105.8	%	10/17/1996	81-117	jap	1233	8240 (1)
Surr: Bromofluorobenzene	104.0	%	10/17/1996	74-121	jap	1233	8240 (1)

VOC analysis performed at a 5,000x dilution due to sample matrix.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 West Bartlett Rd.
Bartlett, IL 60103
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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378480

NET Job No.: 96.09523

Sample Description: Drum In S.W. Room; Grab
Double A Metals

Date Taken: 10/07/1996
Time Taken: 13:05
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Flashpoint	190	Degree F	10/18/1996	72	sdf		392	1010 (1)
pH, Non aqueous	6.14	units	10/15/1996	0.10	sdf		381	9040 (1)
Prep PCBs Oil	extracted		10/10/1996		keh	33		3580A (1)
PCBs 8080 Oil								
PCB-1016	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1221	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1232	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1242	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1248	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1254	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1260	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1268	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
Surr: Dibutylchlorendate (DBC)	61.0	%	10/23/1996	29-128	tls	33	61	8080 (1)
Surr: Tetrachloroxylene (TCX)	43.0	%	10/23/1996	31-128	tls	33	61	8080 (1)
VOLATILE COMPDS 8240 - NONAQ								
Acetone	<570,000	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Acrolein	<570,000 R	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Acrylonitrile	<570,000	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Benzene	<28,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
Bromoform	<28,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
Bromomethane	<57,000	ug/Kg	10/17/1996	10	jap		1233	8240 (1)
Carbon Disulfide	<570,000	ug/Kg	10/17/1996	100	jap		1233	8240 (1)
Carbon Tetrachloride	<28,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
Chlorobenzene	<28,000	ug/Kg	10/17/1996	5.0	jap		1233	8240 (1)
2-Chloroethylvinyl ether	<57,000	ug/Kg	10/17/1996	10	jap		1233	8240 (1)

VOC analysis performed at a 6,000x dilution due to sample matrix.

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378480

NET Job No.: 96.09523

Sample Description: Drum In S.W. Room; Grab
Double A Metals

Date Taken: 10/07/1996
Time Taken: 13:05
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Chlorodibromomethane	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Chloroethane	<57,000	ug/Kg	10/17/1996	10	jap	1233	8240 (1)
Chloroform	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Chloromethane	<57,000	ug/Kg	10/17/1996	10	jap	1233	8240 (1)
Dichlorobromomethane	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,2-Dichlorobenzene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,3-Dichlorobenzene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,4-Dichlorobenzene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1-Dichloroethane	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,2-Dichloroethane	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1-Dichloroethene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
cis-1,2-Dichloroethene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
trans-1,2-Dichloroethene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,2-Dichloropropane	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
cis-1,3-Dichloropropene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
trans-1,3-Dichloropropene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Ethyl Benzene	120,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
2-Hexanone	<280,000	ug/Kg	10/17/1996	50	jap	1233	8240 (1)
Methyl Ethyl Ketone	<570,000	ug/Kg	10/17/1996	100	jap	1233	8240 (1)
4-Methyl-2-pentanone (MIBK)	<280,000	ug/Kg	10/17/1996	50	jap	1233	8240 (1)
Methylene chloride	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Styrene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1,2,2-Tetrachloroethane	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Tetrachloroethene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Toluene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1,1-Trichloroethane	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
1,1,2-Trichloroethane	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)

VOC analysis performed at a 6,000x dilution due to sample matrix.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378480

NET Job No.: 96.09523

Sample Description: Drum In S.W. Room; Grab
Double A Metals

Date Taken: 10/07/1996
Time Taken: 13:05
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Trichloroethene	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Trichlorofluoromethane	<28,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Vinyl Chloride	<57,000	ug/Kg	10/17/1996	10	jap	1233	8240 (1)
o-Xylene	190,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
m,p-Xylenes	300,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Xylenes, total	490,000	ug/Kg	10/17/1996	5.0	jap	1233	8240 (1)
Surr: 1,2-Dichloroethane-d4	103.0	%	10/17/1996	70-121	jap	1233	8240 (1)
Surr: Toluene-d8	106.6	%	10/17/1996	81-117	jap	1233	8240 (1)
Surr: Bromofluorobenzene	102.8	%	10/17/1996	74-121	jap	1233	8240 (1)

VOC analysis performed at a 6,000x dilution due to sample matrix.

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378481

NET Job No.: 96.09523

Sample Description: Tank Near Center Entrance; Grab
Double A Metals

Date Taken: 10/07/1996
Time Taken: 13:15
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Flashpoint	>200	Degree F	10/18/1996	72	sdf		392	1010 (1)
pH, Non aqueous	8.51	units	10/15/1996	0.10	sdf		381	9040 (1)
Prep PCBs Oil	extracted		10/10/1996		keh	33		3580A (1)
PCBs 8080 Oil								
PCB-1016	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1221	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1232	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1242	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1248	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1254	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1260	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
PCB-1268	<1.0	ug/g	10/23/1996	1.0	tls	33	61	8080 (1)
Surr: Dibutylchlorendate (DBC)	45.0	%	10/23/1996	29-128	tls	33	61	8080 (1)
Surr: Tetrachloroxylene (TCX)	59.0	%	10/23/1996	31-128	tls	33	61	8080 (1)
VOLATILE COMPDS 8240 - NONAQ								
Acetone	<11,000	ug/Kg	10/18/1996	100	jap		1237	8240 (1)
Acrolein	<11,000 R	ug/Kg	10/18/1996	100	jap		1237	8240 (1)
Acrylonitrile	<11,000	ug/Kg	10/18/1996	100	jap		1237	8240 (1)
Benzene	<550	ug/Kg	10/18/1996	5.0	jap		1237	8240 (1)
Bromoform	<550	ug/Kg	10/18/1996	5.0	jap		1237	8240 (1)
Bromomethane	<1,100	ug/Kg	10/18/1996	10	jap		1237	8240 (1)
Carbon Disulfide	<11,000	ug/Kg	10/18/1996	100	jap		1237	8240 (1)
Carbon Tetrachloride	<550	ug/Kg	10/18/1996	5.0	jap		1237	8240 (1)
Chlorobenzene	<550	ug/Kg	10/18/1996	5.0	jap		1237	8240 (1)
2-Chloroethylvinyl ether	<1,100	ug/Kg	10/18/1996	10	jap		1237	8240 (1)

VOC analysis performed at a 110x dilution due to sample matrix.

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378481

NET Job No.: 96.09523

Sample Description: Tank Near Center Entrance; Grab
Double A Metals

Date Taken: 10/07/1996
Time Taken: 13:15
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Chlorodibromomethane	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
Chloroethane	<1,100	ug/Kg	10/18/1996	10	jap	1237	8240 (1)
Chloroform	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
Chloromethane	<1,100	ug/Kg	10/18/1996	10	jap	1237	8240 (1)
Dichlorobromomethane	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
1,2-Dichlorobenzene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
1,3-Dichlorobenzene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
1,4-Dichlorobenzene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
1,1-Dichloroethane	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
1,2-Dichloroethane	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
1,1-Dichloroethene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
cis-1,2-Dichloroethene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
trans-1,2-Dichloroethene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
1,2-Dichloropropane	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
cis-1,3-Dichloropropene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
trans-1,3-Dichloropropene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
Ethyl Benzene	2,000	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
2-Hexanone	<5,500	ug/Kg	10/18/1996	50	jap	1237	8240 (1)
Methyl Ethyl Ketone	<11,000	ug/Kg	10/18/1996	100	jap	1237	8240 (1)
4-Methyl-2-pentanone (MIBK)	<5,500	ug/Kg	10/18/1996	50	jap	1237	8240 (1)
Methylene chloride	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
Styrene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
1,1,2,2-Tetrachloroethane	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
Tetrachloroethene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
Toluene	2,000	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
1,1,1-Trichloroethane	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
1,1,2-Trichloroethane	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)

VOC analysis performed at a 110x dilution due to sample matrix.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378481

NET Job No.: 96.09523

Sample Description: Tank Near Center Entrance; Grab
Double A Metals

Date Taken: 10/07/1996
Time Taken: 13:15
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Trichloroethene	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
Trichlorofluoromethane	<550	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
Vinyl Chloride	<1,100	ug/Kg	10/18/1996	10	jap	1237	8240 (1)
o-Xylene	1,300	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
m,p-Xylenes	1,700	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
Xylenes, total	3,000	ug/Kg	10/18/1996	5.0	jap	1237	8240 (1)
Surr: 1,2-Dichloroethane-d4	96.0	%	10/18/1996	70-121	jap	1237	8240 (1)
Surr: Toluene-d8	104.0	%	10/18/1996	81-117	jap	1237	8240 (1)
Surr: Bromofluorobenzene	102.0	%	10/18/1996	74-121	jap	1237	8240 (1)

VOC analysis performed at a 110x dilution due to sample matrix.

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378482

NET Job No.: 96.09523

Sample Description: Ponded Water In Loading Dock; Grab Double A Metals

Date Taken: 10/07/1996
Time Taken: 15:20
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Arsenic, GFAA	0.0084	mg/L	10/18/1996	0.0050	jmt	794 672	7060 (1)
Barium, ICP	0.106	mg/L	10/18/1996	0.020	amj	1262 1950	6010 (1)
Cadmium, ICP	<0.010	mg/L	10/18/1996	0.010	amj	1262 1898	6010 (1)
Chromium, ICP	<0.040	mg/L	10/18/1996	0.040	amj	1262 1893	6010 (1)
Lead, GFAA	<0.0050	mg/L	10/21/1996	0.0050	jmt	794 1482	7421 (1)
Mercury, CVAA	<0.0002	mg/L	10/17/1996	0.0002	jmt	746 719	7470 (1)
Selenium, GFAA	<0.0050	mg/L	10/18/1996	0.0050	jmt	794 419	7740 (1)
Silver, AA	<0.040	mg/L	10/18/1996	0.040	jmt	559 570	7760 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378483

NET Job No.: 96.09523

Sample Description: East Of Dock; Comp
Double A Metals

Date Taken: 10/07/1996
Time Taken: 13:55
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Arsenic, GFAA	8.5	ug/g	10/17/1996	0.50	jmt	660	236	7060 (1)
Barium, ICP	127	ug/g	10/18/1996	1.0	amj	660	1105	6010 (1)
Cadmium, ICP	4.90	ug/g	10/18/1996	0.50	amj	660	1078	6010 (1)
Chromium, ICP	333	ug/g	10/18/1996	2.0	amj	660	1061	6010 (1)
Lead, ICP	500	ug/g	10/18/1996	4.0	amj	660	1274	6010 (1)
Mercury, CVAA	<0.03	ug/g	10/17/1996	0.03	jmt	440	547	7471 (1)
Selenium, GFAA	6.6	ug/g	10/18/1996	0.50	jmt	660	204	7740 (1)
Silver, AA	14	ug/g	10/17/1996	2.0	jmt	257	354	7760 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378484

NET Job No.: 96.09523

Sample Description: 95' South Of Dock; Comp
Double A Metals

Date Taken: 10/07/1996
Time Taken: 14:00
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Arsenic, GFAA	19	ug/g	10/18/1996	0.50	jmt	660	236	7060 (1)
Barium, ICP	123	ug/g	10/18/1996	1.0	amj	660	1105	6010 (1)
Cadmium, ICP	24.0	ug/g	10/18/1996	0.50	amj	660	1078	6010 (1)
Chromium, ICP	487	ug/g	10/18/1996	2.0	amj	660	1061	6010 (1)
Lead, ICP	3,180	ug/g	10/18/1996	4.0	amj	660	1274	6010 (1)
Mercury, CVAA	<0.03	ug/g	10/17/1996	0.03	jmt	440	547	7471 (1)
Selenium, GFAA	9.3	ug/g	10/18/1996	0.50	jmt	660	204	7740 (1)
Silver, AA	18	ug/g	10/17/1996	2.0	jmt	257	354	7760 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378485

NET Job No.: 96.09523

Sample Description: 115' South Of Dock; Comp
Double A Metals

Date Taken: 10/07/1996
Time Taken: 14:10
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Arsenic, GFAA	17	ug/g	10/18/1996	0.50	jmt	660	236	7060 (1)
Barium, ICP	72.0	ug/g	10/18/1996	1.0	amj	660	1105	6010 (1)
Cadmium, ICP	2.54	ug/g	10/18/1996	0.50	amj	660	1078	6010 (1)
Chromium, ICP	136	ug/g	10/18/1996	2.0	amj	660	1061	6010 (1)
Lead, ICP	237	ug/g	10/18/1996	4.0	amj	660	1274	6010 (1)
Mercury, CVAA	<0.03	ug/g	10/17/1996	0.03	jmt	440	547	7471 (1)
Selenium, GFAA	8.7	ug/g	10/18/1996	0.50	jmt	660	204	7740 (1)
Silver, AA	2.3	ug/g	10/17/1996	2.0	jmt	257	354	7760 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 West Bartlett Rd.
Bartlett, IL 60103
Tel: (630) 289-3100
Fax: (630) 289-5445

ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378486

NET Job No.: 96.09523

Sample Description: North West Side Of Site; Comp Double A Metals

Date Taken: 10/07/1996
Time Taken: 14:20
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Arsenic, GFAA	28	ug/g	10/18/1996	0.50	jmt	660	236	7060 (1)
Barium, ICP	150	ug/g	10/18/1996	1 0	amj	660	1105	6010 (1)
Cadmium, ICP	3.18	ug/g	10/18/1996	0.50	amj	660	1078	6010 (1)
Chromium, ICP	530	ug/g	10/18/1996	2.0	amj	660	1061	6010 (1)
Lead, ICP	3,180	ug/g	10/18/1996	4.0	amj	660	1274	6010 (1)
Mercury, CVAA	<0.03	ug/g	10/17/1996	0.03	jmt	440	547	7471 (1)
Selenium, GFAA	9.6	ug/g	10/18/1996	0.50	jmt	660	204	7740 (1)
Silver, AA	12	ug/g	10/17/1996	2.0	jmt	257	354	7760 (1)

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378487

NET Job No.: 96.09523

Sample Description: Rusted Dock Pipe North Side; Comp Double A Metals

Date Taken: 10/07/1996
Time Taken: 14:25
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Arsenic, GFAA	20	ug/g	10/18/1996	0.50	jmt	660	236	7060 (1)
Barium, ICP	66.4	ug/g	10/18/1996	1.0	amj	660	1105	6010 (1)
Cadmium, ICP	4.70	ug/g	10/18/1996	0.50	amj	660	1078	6010 (1)
Chromium, ICP	326	ug/g	10/18/1996	2.0	amj	660	1061	6010 (1)
Lead, ICP	310	ug/g	10/18/1996	4.0	amj	660	1274	6010 (1)
Mercury, CVAA	0.21	ug/g	10/17/1996	0.03	jmt	440	547	7471 (1)
Selenium, GFAA	6.8	ug/g	10/18/1996	0.50	jmt	660	204	7740 (1)
Silver, AA	2.2	ug/g	10/17/1996	2.0	jmt	257	354	7760 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378488

NET Job No.: 96.09523

Sample Description: East Room; Comp
Double A Metals

Date Taken: 10/07/1996
Time Taken: 14:35
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Arsenic, GFAA	14	ug/g	10/18/1996	0.50	jmt	660	236	7060 (1)
Barium, ICP	97.0	ug/g	10/18/1996	1.0	amj	660	1105	6010 (1)
Cadmium, ICP	19.0	ug/g	10/18/1996	0.50	amj	660	1078	6010 (1)
Chromium, ICP	560	ug/g	10/18/1996	2.0	amj	660	1061	6010 (1)
Lead, ICP	910	ug/g	10/18/1996	4.0	amj	660	1274	6010 (1)
Mercury, CVAA	0.08	ug/g	10/17/1996	0.03	jmt	440	547	7471 (1)
Selenium, GFAA	5.8	ug/g	10/19/1996	0.50	jmt	660	204	7740 (1)
Silver, AA	10	ug/g	10/17/1996	2.0	jmt	257	354	7760 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378489

NET Job No.: 96.09523

Sample Description: Main Room West Side; Comp
Double A Metals

Date Taken: 10/07/1996
Time Taken: 14:45
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Arsenic, GFAA	17	ug/g	10/18/1996	0.50	jmt	660	236	7060 (1)
Barium, ICP	211	ug/g	10/18/1996	1.0	amj	660	1105	6010 (1)
Cadmium, ICP	38.0	ug/g	10/18/1996	0.50	amj	660	1078	6010 (1)
Chromium, ICP	490	ug/g	10/18/1996	2.0	amj	660	1061	6010 (1)
Lead, ICP	1,800	ug/g	10/18/1996	4.0	amj	660	1274	6010 (1)
Mercury, CVAA	0.72	ug/g	10/17/1996	0.03	jmt	440	547	7471 (1)
Selenium, GFAA	6.3	ug/g	10/19/1996	0.50	jmt	660	204	7740 (1)
Silver, AA	16	ug/g	10/17/1996	2.0	jmt	257	354	7760 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 West Bartlett Rd.
Bartlett, IL 60103
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Fax: (630) 289-5445

ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378490

NET Job No.: 96.09523

Sample Description: Near Transformers; Comp
Double A Metals

Date Taken: 10/07/1996
Time Taken: 14:55
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Solids, Total	80.2	%	10/17/1996	0.1	tdw		1630	2540 (4)
Prep PCBs 8080 NonAqueous	extracted		10/10/1996		emb	284		3540 (1)
PCBs 8080 NonAqueous								
PCB-1016	<100	ug/Kg	10/16/1996	50	tls	284	381	8080 (1)
PCB-1221	<100	ug/Kg	10/16/1996	50	tls	284	381	8080 (1)
PCB-1232	<100	ug/Kg	10/16/1996	50	tls	284	381	8080 (1)
PCB-1242	<100	ug/Kg	10/16/1996	50	tls	284	381	8080 (1)
PCB-1248	<100	ug/Kg	10/16/1996	50	tls	284	381	8080 (1)
PCB-1254	<100	ug/Kg	10/16/1996	50	tls	284	381	8080 (1)
PCB-1260	<100	ug/Kg	10/16/1996	50	tls	284	381	8080 (1)
Surr: Tetrachloroxylene (TCX)	32.0	%	10/16/1996	31-128	tls	284	381	8080 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 West Bartlett Rd.
Bartlett, IL 60103
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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

10/25/1996

Sample No. : 378491

NET Job No.: 96.09523

Sample Description: Outside of Oven East Room; Grab Double A Metals

Date Taken: 10/07/1996
Time Taken: 15:00
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Asbestos/Bulk	See Attached Analytical Report from NET Chicago Division						

Asbestos analysis was sub-contracted to another NET location.

NET® NATIONAL ENVIRONMENTAL TESTING, INC.

Chicago Division
222 South Morgan
Chicago, IL 60607
Tel: (312) 666-4469
Fax: (312) 666-4355

F.D.A. EST. REG. NO. 14-16923

ANALYTICAL REPORT

NET MIDWEST - BARTLETT
850 W. Bartlett Road
Bartlett, IL 60103

DATE: 10/14/1996

Attn: Mr.Brian Warner

Sample Description: 378491

Job Number: 96.03571
Sample Number: 191606
Date Received: 10/11/1996
Page 1

ASBESTOS		
Sample Color	WH and BK	
FIBROUS ASBESTIFORMS	.	
Actinolite/Tremolite	ND	
Amosite	ND	
Anthophylite	ND	
Chrysotile	ND	
Crocidolite	ND	
Total Fibrous Asbestiforms	ND	
OTHER FIBROUS COMPONENTS	.	
Cellulose	ND	
Fibrous Glass	65	%
Synthetics	ND	
Other	ND	
NONFIBROUS COMPONENTS	35	%

All analyses are performed in accordance with EPA 40 CFR, Part 763 Appendix A to Subpart F. ND means less than 1%, and % refers to percent by volume.

Theresa Bednar 10/14/96
Theresa Bednar Date of Analysis
Analyst

L. Rosner
Lawrence Rosner
Director
NET Midwest Inc.
Chicago Division

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

M E M O R A N D U M

DATE: December 19, 1996

TO: Donovan Robin, START Project Manager, E & E, Chicago, Illinois

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Inorganic Data Quality Review for Toxicity Characteristic Leaching Procedure (TCLP) Lead and Chromium, Double A Metals, Chicago, Cook County, Illinois

REFERENCE: Project TDD S05-9609-023 Analytical TDD S05-9610-803
Project PAN 6P2301SIXX Analytical PAN 6CAC01TA

The data quality assurance (QA) review of seven solid samples collected from the Double A Metals site is complete. The samples were collected on October 7, 1996, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to National Environmental Testing (NET), Inc., Bartlett, Illinois, for analyses. The laboratory analyses were performed according to the U.S. EPA Solid Waste 846 Methods 1311 for TCLP, and 6010 for lead and chromium analysis.

Sample Identification

START Identification No.	Laboratory Identification No.
WP-1	381962
WP-2	381963
WP-3	381964
WP-4	381965
WP-5	381966
WP-6	381967
WP-7	381968

recycled paper

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on October 7, 1996, and analyzed on November 7, 1996. This is within the six month holding time limit.

II. Calibration:

- Initial Calibration: Acceptable

Recoveries for the initial calibration verification were within 90 to 110%, as required.

- Continuing Calibration: Acceptable

All analytes included in the continuing calibration verification standard were within 90 to 110%, as required.

III. Blanks: Acceptable

Calibration and preparation blanks were analyzed with each analytical batch. No target analytes were detected in the blanks.

IV. Interference Check Samples (ICSs): Acceptable

ICSs were analyzed and recoveries were acceptable.

V. Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990) Data Validation Procedures, Section 3.0, Metallic Inorganic Parameters. Based upon the information provided, the data are acceptable for use.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 West Bartlett Rd.
Bartlett, IL 60103
Tel: (630) 289-3100
Fax: (630) 289-5445

ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

11/08/1996

Sample No. : 381962

NET Job No.: 96.10418

Sample Description: WP-1 East Of Dock (378483)
Ecology & Environment 96.09523 TCLP

Date Taken: 10/07/1996
Time Taken: 13:55
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
TCLP Metals Extraction	LEACHED		11/04/1996		kaf	532	1311 (1)
TCLP-Chromium, ICP	<0.040	mg/L	11/07/1996	0.040	amj	1280 1906	6010 (1)
TCLP-Lead, ICP	0.30	mg/L	11/07/1996	0.080	amj	1280 2125	6010 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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Bartlett, IL 60103
Tel: (630) 289-3100
Fax: (630) 289-5445

ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

11/08/1996

Sample No. : 381963

NET Job No.: 96.10418

Sample Description: WP-2 95' South Of Dock (378484)
Ecology & Environment 96.09523 TCLP

Date Taken: 10/07/1996
Time Taken: 14:00
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
TCLP Metals Extraction	LEACHED		11/04/1996		kaf	532	1311 (1)
TCLP-Chromium,ICP	0.230	mg/L	11/07/1996	0.040	amj	1280 1906	6010 (1)
TCLP-Lead, ICP	28.2	mg/L	11/07/1996	0.080	amj	1280 2125	6010 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 West Bartlett Rd.
Bartlett, IL 60103
Tel: (630) 289-3100
Fax: (630) 289-5445

ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

11/08/1996

Sample No. : 381964

NET Job No.: 96.10418

Sample Description: WP-3 115' South Of Dock (378485)
Ecology & Environment 96.09523 TCLP

Date Taken: 10/07/1996
Time Taken: 14:10
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results		Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
TCLP Metals Extraction	LEACHED			11/04/1996		kaf	532	1311 (1)
TCLP-Chromium, ICP	<0.040		mg/L	11/07/1996	0.040	amj	1280 1906	6010 (1)
TCLP-Lead, ICP	<0.20	DX	mg/L	11/07/1996	0.080	amj	1280 2125	6010 (1)

DX: Parameter analysis performed at a dilution due to sample matrix.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 West Bartlett Rd.
Bartlett, IL 60103
Tel: (630) 289-3100
Fax: (630) 289-5445

ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

11/08/1996

Sample No. : 381965

NET Job No.: 96.10418

Sample Description: WP-4 North West Side (378486)
Ecology & Environment 96.09523 TCLP

Date Taken: 10/07/1996
Time Taken: 14:20
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
TCLP Metals Extraction	LEACHED		11/04/1996		kaf	532	1311 (1)
TCLP-Chromium, ICP	0.050	mg/L	11/07/1996	0.040	amj	1280 1906	6010 (1)
TCLP-Lead, ICP	22.0	mg/L	11/07/1996	0.080	amj	1280 2125	6010 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 West Bartlett Rd.
Bartlett, IL 60103
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ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

11/08/1996

Sample No. : 381966

NET Job No.: 96.10418

Sample Description: WP-5 Rusted Dock Of Pipe (378487)
Ecology & Environment 96.09523 TCLP

Date Taken: 10/07/1996
Time Taken: 14:25
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
TCLP Metals Extraction	LEACHED		11/04/1996		kaf	532	1311 (1)
TCLP-Chromium,ICP	0.106	mg/L	11/07/1996	0.040	amj	1280 1906	6010 (1)
TCLP-Lead, ICP	0.520	mg/L	11/07/1996	0.080	amj	1280 2125	6010 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 West Bartlett Rd.
Bartlett, IL 60103
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Fax: (630) 289-5445

ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

11/08/1996

Sample No. : 381967

NET Job No.: 96.10418

Sample Description: WP-6 East Room (378488)
Ecology & Environment 96.09523 TCLP

Date Taken: 10/07/1996
Time Taken: 14:35
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
TCLP Metals Extraction	LEACHED		11/04/1996		kaf	532	1311 (1)
TCLP-Chromium, ICP	<0.040	mg/L	11/07/1996	0.040	amj	1280 1906	6010 (1)
TCLP-Lead, ICP	16.0	mg/L	11/07/1996	0.080	amj	1280 2125	6010 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 West Bartlett Rd.
Bartlett, IL 60103
Tel: (630) 289-3100
Fax: (630) 289-5445

ANALYTICAL REPORT

Mr. Dave Hendren
ECOLOGY & ENVIRONMENT, INC
33 N. Dearborn
Suite 900
Chicago, IL 60602

11/08/1996

Sample No. : 381968

NET Job No.: 96.10418

Sample Description: WP-7 Main Room West Side (378489)
Ecology & Environment 96.09523 TCLP

Date Taken: 10/07/1996
Time Taken: 14:45
IEPA Cert. No. 100221

Date Received: 10/09/1996
Time Received: 16:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
TCLP Metals Extraction	LEACHED		11/04/1996		kaf	532	1311 (1)
TCLP-Chromium, ICP	0.053	mg/L	11/07/1996	0.040	amj	1280 1907	6010 (1)
TCLP-Lead, ICP	14.0	mg/L	11/07/1996	0.080	amj	1280 2125	6010 (1)

Appendix C

RCMS Cost Estimate for Off-Site Treatment

Cost Summary

Projection Name: DA Metal Off St.res
Projection Type: Initial

Date: 12/04/96
Prime Contractor: RES5

	Projection	Archive	Total
CONTRACTOR			
Personnel Cost	41729	0	41729
Equipment Cost	49380	0	49380
Other Direct Cost	614632	0	614632
Total for Contractor	705741	0	705741
Contractor Contingency:15.00%			105861
Including Contractor Contingency			811602
Site Contingency:0.00%			0
Including Site Contingency			811602
GOVERNMENT			
Personnel Cost	20800	0	20800
Equipment Cost	0	0	0
Other Direct Cost	0	0	0
Total for Goverment	20800	0	20800
Site Contingency: 0.00%			0
Including Site Contingency			20800
PROJECT TOTAL			832402

DOUBLE A METALS
SITE ASSESSMENT REPORT

APPENDIX C
RCMS COST ESTIMATE FOR OFF-SITE TREATMENT

CONTRACTOR & GOVERNMENT
ALL COSTS BY TASK CODE

REDACTED

NOT RELEVANT TO THE SELECTION OF REMOVAL ACTION

6 PAGES

Appendix D

Off-Site Treatment Correspondence

PEORIA DISPOSAL COMPANY
4700 N. Sterling Avenue
Peoria, IL 61615

F A X C O V E R S H E E T

DATE:	November 21, 1996	**TIME:**	4:10 PM
TO:	Donavan Robbins Ecology & Environment	**PHONE:** **FAX:**	(312) 578-9243 (312) 578-9345
FROM:	Debbie Livengood Technical Support Representative	**PHONE:** **FAX:**	(309) 688-0760 (309) 688-0881
RE:	Budgetary Estimate		

Number of pages including cover sheet: 3

Message

Thank you for the opportunity to present the attached budgetary estimate. If you have any questions or if I can be of any assistance to you, please call me at (309) 688-7595 ext. 218. Thanks.

Peoria Disposal Company

November 21, 1996

Mr. Donavan Robbins
Ecology & Environment
33 N. Dearborn
Suite 900
Chicago, IL 60602

Dear Mr. Robbins:

Thank you for giving us the opportunity to present the enclosed budgetary estimate. In addition to providing the specific services indicated in our estimate, we pledge to conduct our services in a manner which assures your satisfaction.

This budgetary estimate is representative of costs typically associated with a project of this type. However, once firm disposal options, waste volume and handling methods are decided we request the opportunity to provide a competitive quotation. This estimate is subject to revision pending receipt of more specific site and/or waste information. Our competitive pricing may be less or more than this budgetary estimate depending upon the final information provided.

As always, I will be happy to discuss any questions you or your colleagues may have regarding this budgetary estimate or any of our services. We look forward to being of service in meeting this and other environmental needs.

Sincerely,
PEORIA DISPOSAL COMPANY

Doug Newman

Doug Newman
Technical Representative

DN/ddl

P.O. Box 9071
Peoria, IL 61612-9071
(309) 688-0760

100% recycled paper

4700 N. Sterling Ave
Peoria, IL 61615-3647
Fax: (309) 688-0881

BUDGETARY ESTIMATE FOR ECOLOGY & ENVIRONMENT

Waste Name: Lead Contaminated Slag

Generating Facility: West Chicago, Illinois

Treatment Cost: $90.00 - $100.00 per ton

Treatment Method: Hazardous Stabilization

Treatment Facility: PDC #1 Landfill - Peoria, Illinois

Transportation:
$550.00 - $600.00 per load (dump trailer / roll-off box)
$650.00 - $700.00 per load (weekends and holidays)
One (1) hour in-plant, no charge
$ 65.00 demurrage per subsequent hour

The maximum net load is 34,000 pounds for the roll-off box and 46,000 pounds for the dump trailer. Charges incurred due to overloading of PDC supplied containers/vehicles are the responsibility of the generator.

Other Charges:
$250.00 per month container rental
22s capacity of container
$550.00 - $600.00 initial container delivery

Our final competitive quotation could be affected by the following conditions:

1. Acceptance by PDC's Wastestream Approval Committee.
2. Changes in regulatory assessments.
3. Changes in disposal methods and/or waste treatability.
4. PDC reserves the right to modify pricing upon receipt of a completed waste material data sheet and bench-scale treatability study, if appropriate.
5. Timing of the project.

FAX COVER SHEET

THE ENVIRONMENTAL QUALITY COMPANY
Midwest Regional Office
39W308 Baert Lane
St. Charles, IL 60175

DATE:	November 21, 1996	TIME:	5.19 PM
TO:	Tom Robin Ecology and Environment	PHONE: FAX:	(312) 578-9243 **(312) 578-9345**
FROM:	Wilson Anthony Midwest Regional Manager	PHONE: FAX:	(630) 443-7260 (630) 443-7905
RE:	Double A Metals Quote		
CC:			

Number of pages including cover sheet: 4

Message:

Tom:

Let me know if you have any questions. Speak with you soon.

Wilson Anthony

THE ENVIRONMENTAL QUALITY COMPANY®

QUOTE

☑ Michigan Disposal Waste Treatment Plant
49350 North I-94 Service Drive
Belleville, MI 48111
EPA ID # MID000724831

☐ Wayne Disposal, Inc
49350 North I-94 Service Drive
Belleville, MI 48111
EPA ID# MID000724831

Customer Quote #: 4000143 *Date of Quotation:* 11/21/96 *Effective Date:* 11/23/96

EQ is pleased to offer the following environmental management services. This Quote is valid for 90 days, after which the offer to perform services, and the prices, are subject to change or withdrawal. Payment terms are net 30 days. For further information regarding EQ's Standard Terms and Conditions, please refer to Page 2 of this document. To obtain a technical approval of the waste or other processing assistance, please contact your Customer Satisfaction Representative or Account Executive at 1-800-KWALITY (592-5489). When an approval is granted, you will receive an Approval Nonfication specifying the applicable price and billing unit.

CUSTOMER INFORMATION

Company Name: ECOLOGy and Environment
EQ Account #:
Contact: Don Robin
Address: 33 North Dearborn
Suite 900
Chicago, IL 60602

Telephone Number: (312) 578-9243 ext.
Fax Number: (312) 578-9345

GENERATOR INFORMATION

Company Name: Double A Metals Site
EPA ID #:
Contact:
Address: Chicago, IL

Telephone Number: ( ) - ext.
Fax Number: ( ) -

Waste General Description: Soil Contaminated with Lead

Primary Waste Code: D008
Secondary Waste Code(s):
Project Name: Double A Metals
Project Location: Chicago, IL
Volume: 3000 Yards
Frequency: Once
Treatment Train: D-series Metals to Nonhaz

Disposal Services: (Please Check One) ☐ Hazardous Waste Landfill (Subtitle C) ☑ Nonhazardous Waste Landfill (Subtitle D) ☐ Othe

Quote for Environmental Management Services: $60.000 Per TONS Unit(s)
Surcharge: $10.000
Type: (Please Check One) ☑ Hazardous ☐ Nonhazardous ☐ Exempt

Comments: Sample and analytical required for approval

Quoted By: [signature] Date: 11/21/96

EQ Site Services
Transportation Quote

November 21, 1996

Mr Don Robin
Ecology and Environment
33 North Dearborn
Suite 900
Chicago, IL 60602

Dear Mr. Robin:

EQ Site Services is pleased to provide you with a quotation for transportation of approximately **3000 yards of lead contaminated soil** from **Chicago, IL** to **Michigan Disposal, Inc in Belleville, MI**, in support of EQ Customer Quote **# 4000143**.

Type of Transportation (Truck/Rail).....Truck

Specific Type (Van, Dump, Gondola, Intermodal, etc.).....Dump trailer

Rate.....$38.00/ton

Load minimum.....22 tons

Liner charge.....included

Demurrage.....$60.00/hr
(two hours loading and full unloading are included in the rate.)

Taxes - Transporter tax assessed by federal, state, city, or county due to the nature, classification, or use of material being transported will be the shipper's responsibility

NOTES:

The above rates are quoted for use within thirty (30) days of the above date. Should the project start date extend beyond this period, please confirm the applicable rate prior to project start

If applicable, LOAD MINIMUMS WILL BE BILLED. (If the shipment does not meet stated load minimum, the load will be billed 22 tons X $38.00, for a total of $836.00, regardless of load weight).

Trucks ordered but not used will be billed at $1000.00. Daily layovers will be billed at $600.00.

Rejected and returned shipments will be billed at the original rate plus 50%.

Rejected shipments diverted to an alternate facility will be billed at $3.30 per mile with a minimum of $330.00 for less than 100 miles.

The above rates are based on equipment availability.

A SIGNED CONFIRMATION OF THE ACCEPTANCE OF THIS QUOTE MUST BE ON FILE TO ORDER SHIPMENTS.

If you have any exceptions or questions with any of the terms stated above, please provide a written response prior to service.

Sincerely,

Wilson Anthony
Midwest Regional Manager

ACKNOWLEDGMENT

Please sign the acknowledgment below confirming the rates and conditions listed and return it via FAX to (313) 326-5670.

By _____

Position/Title _____ Date _____

Proposal prepared by
AETS-Controlled Waste Division
for

Waste Management, Inc.

on

November 20, 1996

Waste:	Lead contaminated soil (3000 yards)
Location of Waste:	31st and Pulaski - Chicago, IL

WMX Site:	Controlled Waste Division/Orchard Ridge Landfill
Location:	Menomonee Falls, WI
Method:	Stabilization/Subtitle D Landfill

Analytical & Permitting: . . . . . No fee
Disposal: . . . . . $95.00 per ton
Transportation: . . . . . $15.00 per ton(22 ton minimal fee per shipment)
Liners: . . . . . Included
Taxes: . . . . . Included
Demurrage: . . . . . $85.00 per hour after one free hour of loading time

This pricing is subject to verification via the AETS approval and contracting process initiated upon submission of a representative sample of the waste stream and required paperwork.

All prices are subject to change with notification thirty (30) days in advance.

This proposal is submitted based upon the negotiation of a mutually agreeable contract.

Appendix E

RCMS Cost Estimate for On-Site Treatment

Cost Summary

Projection Name: DA Metal On Site.res
Projection Type: Initial

Date: 12/04/96
Prime Contractor: RES5

	Projection	Archive	Total
CONTRACTOR			
Personnel Cost	43816	0	43816
Equipment Cost	49380	0	49380
Other Direct Cost	250893	0	250893
Total for Contractor	344089	0	344089
Contractor Contingency:15.00%			51613
Including Contractor Contingency			395702
Site Contingency:0.00%			0
Including Site Contingency			395702
GOVERNMENT			
Personnel Cost	20800	0	20800
Equipment Cost	0	0	0
Other Direct Cost	0	0	0
Total for Government	20800	0	20800
Site Contingency: 0.00%			0
Including Site Contingency			20800
PROJECT TOTAL			416502

Contractor

All Costs by Task Code

Projection Name: DA Metal On Site.res Date: 12/04/96

Task:Health & Safety (11) 03/06/97 - 03/11/97 Projection Type: Initial

PERSONNEL

CLIN	Job Description	Ctr. Code	Regular Hrs/Day	O.T. Hrs/Day	Regular Rate	O.T. Rate	Qty	No. of Days	Projection Cost	Archive Cost	Total Cost
S4-30-01	Ind Hygienist/Safety	RES5	8.0	2.0	52.00	52.00	1	3	1630		1630
						(Subtotals:)			1630	0.00	1630

JIPMENT

CLIN	Equipment Description	Ctr. Code	Hrs/ Day	Qty	Reg Days	Mob Days	Stby Days	Decon Days	Projection Cost	Archive Cost	Total Cost
50112	Meter/Monitor-Explosion/Oxygen HR:0.00 DR:10.00 WR:0.00 MR:0.00	RES5	8.0	1	3	0	0	0	31		31
50120	Meter/Monitor-HNu (PID) HR:0.00 DR:32.66 WR:163.31 MR:571.58	RES5	8.0	1	3	0	0	0	102		102
50130	Meter/Monitor-Oxygen HR:0.00 DR:8.80 WR:43.98 MR:153.94	RES5	8.0	1	3	0	0	0	28		28
50155	Meter/Monitor-Noise HR:0.00 DR:20.00 WR:0.00 MR:0.00	RES5	8.0	1	3	0	0	0	63		63
52011	Sampler-Air/High Volume HR:0.00 DR:15.00 WR:0.00 MR:0.00	RES5	8.0	3	3	0	0	0	141		141
52012	Sampler-Air/Personnel Pump HR:0.00 DR:6.53 WR:32.67 MR:114.35	RES5	8.0	3	3	0	0	0	61		61
								(Subtotals:)	426	0.00	426

OTHER

Description	Ctr. Code	Vend Code	Cost Type	Billing	Unit Cost	Units	Qty	Projection Cost	Archive Cost	Total Cost
Lodging	RES5		Lodging	Sub Contr	357.00	Bulk	1.0	373		373

Contractor

All Costs by Task Code

Projection Name: DA Metal On Site.res | Date: 12/04/96

Task:Health & Safety (11) 03/06/97 - 03/11/97 | Projection Type: Initial

OTHER

Description	Ctr. Code	Vend Code	Cost Type	Billing	Unit Cost	Units	Qty	Projection Cost	Archive Cost	Total Cost
Perdiem	RES5		Perdiem	Sub Contr	114.00	Bulk	1.0	119		119
					(Subtotals:)			492	0.00	492
				Totals for Task Code: 11)				2,548	0.00	2,548

Contractor

All Costs by Task Code

Projection Name: DA Metal On Site.res — Date: 12/04/96

Task:Operations (13) 03/04/97 - 03/25/97 — Projection Type: Initial

PERSONNEL

CLIN	Job Description	Ctr. Code	Regular Hrs/Day	O.T. Hrs/Day	Regular Rate	O.T. Rate	Qty	No. of Days	Projection Cost	Archive Cost	Total Cost
S1-05-01	Response Manager	RES5	8.0	2.0	55.20	55.20	1	20	11537		11537
S2-05-01	Equipment Operator	RES5	8.0	2.0	39.78	51.12	2	20	17576		17576
S2-10-01	Field Clerk/Typist	RES5	8.0	2.0	26.32	36.76	1	20	5937		5937
S2-15-01	Laborer	RES5	8.0	2.0	30.56	37.45	1	20	6675		6675
S6-15-01	Level B	RES5	8.0	0.0	1.84	1.84	3	10	461		461
						(Subtotals:)			42186	0.00	42186

EQUIPMENT

CLIN	Equipment Description	Ctr. Code	Hrs/ Day	Qty	Reg Days	Mob Days	Stby Days	Decon Days	Projection Cost	Archive Cost	Total Cost
10910	Car-Passenger	RES5	8.0	2	19	0	0	0	2231		2231
	HR:0.00 DR:71.17 WR:355.85 MR:1245.46										
13610	Pickup-2 wheel drive	RES5	8.0	2	19	0	0	0	1634		1634
	HR:0.00 DR:52.12 WR:260.62 MR:912.15										
22010	Decon-8x20	RES5	8.0	1	19	0	0	0	1986		1986
	HR:0.00 DR:100.00 WR:0.00 MR:0.00										
25540	Office-8x40	RES5	8.0	2	19	0	0	0	4026		4026
	HR:0.00 DR:128.42 WR:642.09 MR:2247.30										
25710	Office/storage-40 ft.	RES5	8.0	2	19	0	0	0	3971		3971
	HR:0.00 DR:100.00 WR:0.00 MR:0.00										
36040	Loader/Wheel-CAT 936E 2.5 cyd	RES5	8.0	2	17	2	0	0	21841		21841
	HR:0.00 DR:550.00 WR:0.00 MR:0.00										
39510	Uni Loader-w/ bucket	RES5	8.0	2	17	2	0	0	6807		6807
	HR:0.00 DR:217.14 WR:1085.68 MR:3799.88										
50535	PPE-Escape Pack	RES5	8.0	1	17	0	0	0	178		178
	HR:0.00 DR:10.00 WR:0.00 MR:0.00										
50551	PPE-Lvl B/SCBA/Low Pres	RES5	8.0	3	17	0	0	0	1599		1599
	HR:0.00 DR:30.00 WR:0.00 MR:0.00										

Contractor

All Costs by Task Code

Projection Name: DA Metal On Site.res — Date: 12/04/96

Task:Operations (13) 03/04/97 - 03/25/97 — Projection Type: Initial

EQUIPMENT

CLIN	Equipment Description	Ctr. Code	Hrs/ Day	Qty	Reg Days	Mob Days	Stby Days	Decon Days	Projection Cost	Archive Cost	Total Cost
51510	Radio-Handheld	RES5	8.0	3	17	0	0	0	284		284
	HR:0.00 DR:7.29 WR:36.44 MR:127.56										
74510	Facsimile Machine-	RES5	8.0	1	17	0	0	0	711		711
	HR:0.00 DR:40.00 WR:0.00 MR:0.00										
75105	Generator-5 KW	RES5	8.0	1	17	0	0	0	510		[illegible]
	HR:0.00 DR:37.51 WR:187.57 MR:656.48										
75140	Generator-50 KW	RES5	8.0	1	17	0	0	0	2507		2507
	HR:0.00 DR:184.52 WR:922.59 MR:3229.06										
76710	Lighting-Conventional	RES5	8.0	1	17	0	0	0	669		669
	HR:0.00 DR:49.24 WR:246.19 MR:861.67										
				(Subtotals:)					48954	0.00	48954

OTHER

Description	Ctr. Code	Vend Code	Cost Type	Billing	Unit Cost	Units	Qty	Projection Cost	Archive Cost	Total Cost
Copier rental	RES5	06	Equipment	Sub Contr	400.00	Mnth	1.0	418		418
Dispose Treated Matl	RES5	WMI	Disposal	Sub Contr	23.50	Yds	3150.0	77356		77356
Drum Disposal	RES5	DISP	Disposal	Sub Contr	7300.00	Bulk	1.0	7300		7300
Fencing/gates/wire	RES5	02	Equipment	Purchase	600.00	Bulk	1.0	627		627
Fly Ash	RES5	PORT	Materials/Supplies	Purchase	22.00	Tons	217.0	4989		4989
Fuel/gener./vehicals	RES5	05	Fuel	Purchase	1.20	Gal	1500.0	1800		1800
Hose/Spray/Pump	RES5	SUPL	Materials/Supplies	Purchase	80.00	Bulk	1.0	80		80
Lodging	RES5		Lodging	Sub Contr	11900.00	Bulk	1.0	12436		12436
Office Supplies	RES5		Materials/Supplies	Purchase	400.00	Bulk	1.0	400		400
Oily Water Disposal	RES5	DISP	Disposal	Sub Contr	10000.00	Bulk	1.0	10000		10000
Perdiem	RES5		Perdiem	Sub Contr	3800.00	Bulk	1.0	3971		3971
Phone service	RES5	04	Utilities	Sub Contr	450.00	Mnth	1.0	450		450
Poly Tank 250 g	RES5	EQP	Equipment	Purchase	250.00	Bulk	1.0	250		250
Portable toilets	RES5	03	Utilities	Sub Contr	200.00	Bulk	1.0	200		200
Portland Cement	RES5	PORT	Materials/Supplies	Purchase	80.00	Tons	377.0	31517		31517
PPE Changeout	RES5		Personal Protection	Inventory	80.00	Chng	150.0	12540		12540
Pugmill Mobe/demob	RES5	CMC	Subctr/Consultant	Sub Contr	7000.00	Bulk	1.0	7315		7315
Pugmill rent/labor	RES5	CMC	Subctr/Consultant	Sub Contr	1500.00	Day	17.0	26648		26648

Contractor

All Costs by Task Code

Projection Name: DA Metal On Site.res Date: 12/04/96

Task:Operations (13) 03/04/97 - 03/25/97 Projection Type: Initial

OTHER

Description	Ctr. Code	Vend Code	Cost Type	Billing	Unit Cost	Units	Qty	Projection Cost	Archive Cost	Total Cost
Security	RES5	01	Subctr/Consultant	Sub Contr	240.00	Days	17.0	4264		4264
Trans Treated Matl'	RES5	TRAN	Transportation	Sub Contr	218.00	Load	210.0	47840		47840
					(Subtotals:)			250401	0.00	250401
				Totals for Task Code: 13)				341,541	0.00	341,541
				(Projection Totals:)				344,089	0.00	344,089
				(Contractor Contingency:15.00%)				395,702		395,702
				(Site Contingency:0.00%)				395,702		395,702

Government

All Costs by Task Code

Projection Name: DA Metal On Site.res Date: 12/24/96

Task:Administrative (06) 03/03/97 - 03/27/97 Projection Type: Initial

PERSONNEL

CLIN	Job Description	Ctr. Code	Regular Hrs/Day	O.T. Hrs/Day	Regular Rate	O.T. Rate	Qty	No. of Days	Projection Cost	Archive Cost	Total Cost
S1-05-01	On Scene Coordinator	EPA	8.0	2.0	50.00	50.00	1	20	10000		10000
S4-30-01	Ind Hygenist/Safety	TAT	8.0	2.0	50.00	50.00	1	2	800		800
S4-35-01	Scientist / Envir	TAT	8.0	2.0	50.00	50.00	1	20	10000		10000
						(Subtotals:)			20800	0.00	20800

EQUIPMENT

CLIN	Equipment Description	Ctr. Code	Hrs/ Day	Qty	Reg Days	Mob Days	Stby Days	Decon Days	Projection Cost	Archive Cost	Total Cost
						(Subtotals:)			0	0.00	0

OTHER

Description	Ctr. Code	Vend Code	Cost Type	Billing	Unit Cost	Units	Qty	Projection Cost	Archive Cost	Total Cost
										0
					(Subtotals:)			0	0.00	0
				(Totals for Task Code: 06)				20,800	0.00	20,800
					(Projection Totals:)			20,800	0.00	20,800
				(Site Contingency:0.00%)				20,800		20,800

Appendix F

On-Site Treatment Correspondence

Proposal

CMC, INC.
2601 Wilmore Road
NICHOLASVILLE, KENTUCKY 40356
(606) 885-4955

PROPOSAL SUBMITTED TO		PHONE	DATE
Ecology & Environment		312-578-9243	December 3, 1996
STREET: 33 N. Dearborn, Suite 900		JOB NAME	
CITY, STATE AND ZIP CODE: Chicago, IL 60602		JOB LOCATION	
ARCHITECT /Contact: Donovan Robin	DATE OF PLANS	Fax #312-578-9345	JOB PHONE

We hereby submit specifications and estimates for:

Excel Unit - Requires 400 AMP Service 3-Phase, Set-up time -- 2 days

Mob $ 4,500
Demob $ 3,200

Mix approximately 500 to 700 ton a day.

Excel Machine - $ 1,500 per day (Includes 3 men and a service truck)

20 Excavate, screen, and mix approximately $ 45.00 per ton

Does not include reagent

Elkin Mixer Self Contained

Mob $ 3,500
Demob $ 3,500

Set-up time -- 1 day

Mix approximately 300 ton a day.

same price.

We Propose hereby to furnish material and labor — complete in accordance with above specifications, for the sum of:

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx dollars ($ xxxxxxxxxxxxx).

Payment to be made as follows:

"Indemnification. Client and Contractor hereby agree to indemnify, save harmless and defend the other from and against any and all liabilities, claims, penalties, suits and costs and expenses incident thereto (including reasonable attorneys' fees), which the other may hereafter incur, become responsible for, or pay out as a result of death or bodily injury to any person, destruction or damage to any property, caused by any negligent act or omission of the indemnifying party or its employees in performance of this contract."

Authorized Signature [signature]

Note: This proposal may be withdrawn by us if not accepted within 30 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature ____________

Date of Acceptance: ____________

Signature ____________

Waste Management, Inc.

A WMX Technologies Company
P.O. Box 7070
Two Westbrook Corporate Center
Suite 1000
Westchester, IL 60154

Phone 708 409 0700
Fax 708 409 3773

Mr. Donovan Robins
Ecology and Environment, Inc.
33 North Dearborn Street; Suite 900
Chicago, IL 60602

Via Fax: (312) 578-9345
November 21, 1996

Re: Waste Management Proposal/USEPA

Dear Mr. Robins:

The following proposal is submitted for direct disposal of approximately 3,000 cubic yards of lead contaminated soil located at 31st & Pulaski. The landfill specified for this project is Laraway RDF located in Elwood, Illinois.

SERVICE	DESCRIPTION	RATE
Disposal	Lead Contaminated Soil	$23.50/CY
Transportation	Dump Trailers	$218.00/LD
Analytical	R+EOX+LN Panel	$1310.00

Pricing for project completion is only part of the total cost. There is always the possibility of costly Non-Sudden Environmental Liability problems. To protect you and your client against any future liability costs, we offer the following:

- *Indemnification*
- Environmental Impairment Liability Insurance
- Backed by the largest asset base in the environmental industry.

This proposal is good for sixty (60) days. These prices are subject to final confirmation via the WMI approval and contracting process initiated by submission of sample/analysis and proper paperwork. Thank you very much for the opportunity to quote on this project. If you have any questions or comments, please do not hesitate to contact me at **708/409-3521.** **If I am not in the office at the time of your call, please call my customer service representative at 708/409-3507.**

Sincerely,

Mike Egizie,
Special Waste Consultant
SPECIAL PROJECTS GROUP

Sincerely

Kerry Clancy
Customer Service Representative
SPECIAL PROJECTS GROUP