EPA Region 5 Records Ctr.
235080

SITE ASSESSMENT REPORT
FOR
GREENBERG SALVAGE YARD
MURPHYSBORO, JACKSON COUNTY, ILLINOIS

TDD: S05-9911-004
PAN: 9B0401SIXX

January 28, 2000

Prepared for:
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency Response Branch
77 West Jackson Boulevard
Chicago, Illinois 60604

Prepared by: Paul Atkociunas — Date: 1/28/00
Paul Atkociunas, START Project Manager

Reviewed by: Paul Atkociunas — Date: 1/28/00
for Pat Zwilling, START Assistant Program Manager

Approved by: Paul Atkociunas — Date: 1/28/00
for Mary Jane Ripp, START Program Manager

ecology and environment, inc.
International Specialists in the Environment
501 W. De Young Center, Building 1, Suite 3
Marion, Illinois 62959
Tel: (618) 998-9237, Fax: (618) 998-1106
recycled paper

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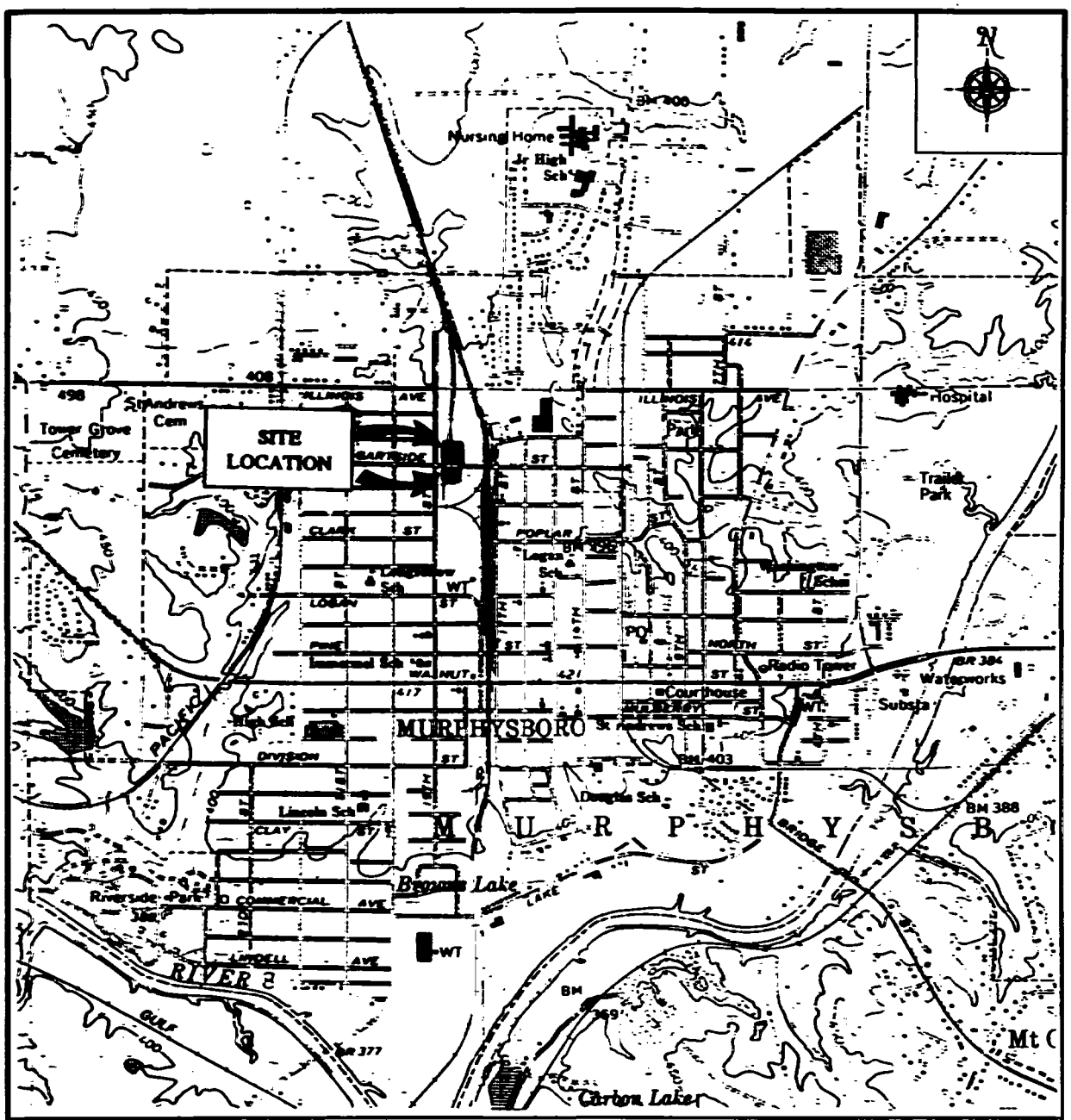
2. Background

2.1 Site Description

The Greenberg Salvage Yard (GSY) site is located in the City of Murphysboro, approximately 0.75 mile north of Route 149, west of the intersection of 19th Street and Gartside Street (Figure 2-1). Geographical coordinates for the site are latitude 37°46'20.34"N and longitude 89°20'38.88"W. The site consists of two parcels of land, divided by Gartside Street, totaling 2.34 acres in size. The site is located in area of mixed residential and commercial land use. The northern parcel is bordered by Cox Trucking to the north, an American Legion to the east, and residences to the west. The southern parcel is bordered by Associated Lumber to the south, and residences to the east and west. Currently, there are no site buildings or permanent structures. The northern parcel contains large areas of slag or cracked battery casings at the surface, and former burn area is located in the northeast quadrant. The southern parcel is overgrown with vegetation and contains an area where slag is exposed at the surface (Figure 2-2). There are also empty drums, cylinders, and equipment located in the south parcel. Lake Murphysboro State Park is located approximately 1.5 miles to the west and the Big Muddy River is located 1.5 miles to the southwest. The City of Murphysboro is supplied drinking water through intakes at Lake Kincaid. Murphysboro sewer system collects run-off from the site which is treated at their water treatment facility located adjacent to the Big Muddy River. There are three schools located within a mile of the site. Both parcels are secured with a six-foot high fence.

2.2 Site History

The site was historically owned by the Mobil and Ohio Railroad. The site was operated as the Murphysboro Iron and Metal Company, which was owned by Harry and Helen Greenberg. The company allegedly used the property as a junkyard and to salvage lead from lead acid batteries. The Jackson County Health Department (JCHD) issued a Violation Notice (99-129-VNL) to Cox Trucking,



Quadrangle Location

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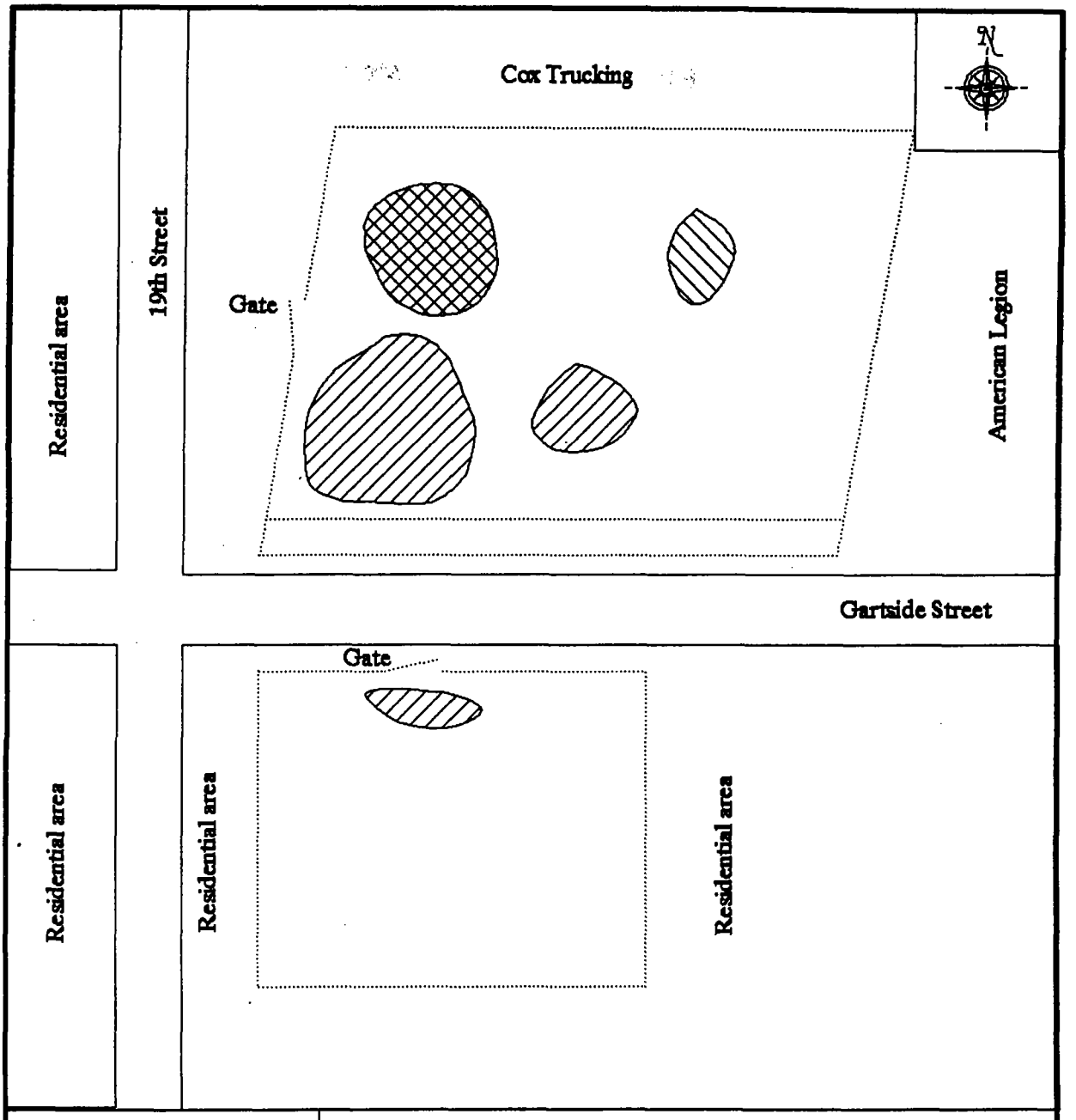
TITLE: Site Location Map	FIGURE: 2-1
SITE: Greenberg Salvage Yard	SCALE: 1:24,000
CITY: Murphysboro STATE: Illinois	TDD: S05-9911-004
SOURCE: U.S.G.S. 7.5 Minute Topographic Series, Murphysboro Quadrangle	DATE: 1968 REVISED: 1978



Legend

- Fence
- Cracked battery casings
- Slag
- Burn area

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TITLE: Site Features Map	FIGURE: 2-2
SITE: Greenberg Salvage Yard	SCALE: Not to scale
CITY: Murphysboro STATE: Illinois	TDD: S05-9911-004
SOURCE: Ecology and Environment, Inc.	DATE: 12/99

the current owner of the property. An employee of the JCHD observed open dumping of drums on the property located at the northeast corner of the intersection of 19th Street and Gartside Street by employees of Cox Trucking Company. On February 10, 1999, Cox Trucking entered the Illinois EPA Site Remediation Program (SRP) in order to address residual soil contamination.

At the request of the JCHD, the SRP remedial applicant (RA), and the RA's environmental consultant, the GSY site was investigated by Illinois EPA. On June 8, 1999, Illinois EPA representatives used X-ray fluorescence technology (XRF) to sample the site and adjacent areas to determine the extent of surface contamination for total metals. Illinois EPA estimated that the majority of the site is contaminated with lead concentrations exceeding 400 parts per million (ppm). The maximum total lead concentration detected on site was 54,221 ppm. The environmental consultant for Cox Trucking used XRF data to determine sample locations for additional analysis. A sample collected contained 193 milligrams per liter (mg/L) of toxicity characteristic leaching procedure (TCLP) lead.

Based on these results, Illinois EPA conducted an additional assessment during the week of August 16, 1999, to determine if lead and polynuclear aromatic hydrocarbon (PAH) contamination exists in the residential and commercial areas surrounding the site. Results indicate the southern parcel is also contaminated with lead and arsenic. Illinois EPA collected two soil samples for TCLP metals analysis from the south and the north parcels. Analytical results indicate 90 mg/L and 410 mg/L of lead present in the soil samples. Based on these results, Illinois EPA issued a "seal order" for the site and constructed a fence around the northern and southern parcels to restrict access to the site.

3. Site Assessment

On December 1 and 2, 1999, U.S. EPA OSC Kevin Turner, START member Paul Atkociunas, and Illinois EPA representatives arrived on site to conduct a site assessment. Illinois EPA representatives Mark D..smore, Tom Crause, Mark Weber, Peter Sorenson, and Bruce Everetts assisted with the site assessment. Illinois EPA and START gridded the northern and southern parcels into 50-foot by 50-foot sections. Sample locations within each section were identified and marked with a sample flag. Illinois EPA representatives collected boring samples using a Geoprobe and used a global positioning system (GPS) to map sample locations. Illinois EPA collected XRF readings at the surface and at depth for the sample locations. Based upon XRF readings at depth, START collected 13 samples from Geoprobe sample material. Each sample was collected with dedicated spoons and mixed in dedicated pie tins to avoid cross contamination. Sample material was then placed into appropriate laboratory containers, labels were completed and affixed, and a chain of custody was completed. Table 3-1 identifies soil sample designations, dates sampled, analysis performed, and sample locations. On December 2, 1999, samples were shipped to CT & E Environmental Services, located in Ludington, Michigan for analysis under analytical TDD S05-9911-803. Boring locations and lead contours completed by Illinois EPA can be located in Appendix A. XRF information collected by Illinois EPA can be located in Appendix B. Photodocumentation of site assessment activities can be located in Appendix C.

Table 3-1

SOIL SAMPLE DESIGNATIONS AND ANALYSIS PERFORMED
GREENBERG SALVAGE YARD
MURPHYSBORO, JACKSON COUNTY, ILLINOIS
DECEMBER 1 AND 2, 1999

Sample	Sample Date	Sample Depth	Analysis Performed	Location
SB-601	12/1/99	One foot	PPL metals, TCLP metals, PCBs, pH	Northern parcel, boring 6
SB-2401	12/1/99	One foot	PPL metals, TCLP metals, PCBs, pH	Northern parcel, boring 24
SB-401.5	12/1/99	One foot, six inches	PPL metals, TCLP metals, PCBs, pH	Northern parcel, boring 4
SB-1001	12/1/99	One foot	PPL metals, TCLP metals, PCBs, pH	Northern parcel, boring 10
SB-1301	12/2/99	One foot	PPL metals, TCLP metals, PCBs, pH	Northern parcel, boring 13
SB-1501	12/2/99	One foot	PPL metals, TCLP metals, PCBs, pH	Northern parcel, boring 15
SB-1801	12/2/99	One foot	PPL metals, TCLP metals, PCBs, pH	Northern parcel, boring 18
SB-2601	12/2/99	One foot	PPL metals, TCLP metals, PCBs, pH	Southern parcel, boring 26
SB-3201	12/2/99	One foot	PPL metals, TCLP metals, PCBs, pH	Southern parcel, boring 32
SB-3506	12/2/99	One foot	PPL metals, TCLP metals, PCBs, pH	Southern parcel, boring 35
SB-3601	12/2/99	One foot	PPL metals, TCLP metals, PCBs, pH	Southern parcel, boring 36
SB-4101	12/2/99	One foot	PPL metals, TCLP metals, PCBs, pH	Northern parcel, boring 41
SB-4201	12/2/99	One foot	PPL metals, TCLP metals, PCBs, pH	Northern parcel, boring 42

Key : PPL = Priority pollutant list.
TCLP = Toxicity characteristic leaching procedure.
PCBs = Polychlorinated biphenyls.

Source : START logbook.

4. Analytical Results

Samples collected at the GSY site were analyzed for priority pollutant list (PPL) metals and TCLP Resource Conservation and Recovery Act (RCRA) metals, polychlorinated biphenyls (PCBs), and pH. Analytical results indicate the presence of heavy metals and PCBs. Analytical results are summarized in Tables 4-1 and 4-2.

Elevated concentrations of lead were detected in both the northern and southern parcels. TCLP lead was detected in all thirteen soil samples with a maximum concentration of 330 mg/L in sample SB-2601. Six samples from the northern parcel and three samples from the southern parcel contained TCLP lead above 5.0 mg/L. Samples from the northern parcel contained an average total lead concentration of 6,400 milligrams per kilogram (mg/kg); samples from the southern parcel contained an average total lead concentration of 8,075 mg/kg. Total arsenic was detected in seven samples with a maximum concentration of 19 mg/kg in sample SB-4201. PCBs were detected in six samples from the northern parcel and four samples from the southern parcel; sample SB-1501 contained 290 micrograms per kilogram (μg/kg) of Arochlor 1248, sample SB-2601 contained 1,500 μg/kg of Arochlor 1254, and sample SB-2601 contained 810 μg/kg of Arochlor 1260.

Using XRF data, Illinois EPA derived lead concentrations at each depth interval for both parcels. A large percentage of the surface soils of both parcels contained lead concentrations above 400 ppm. A large area of surface soils on the west side of the northern parcel exceeded 10,000 ppm of lead. Lead concentrations in the northern parcel exceeded 1,000 ppm up to a depth of three feet bgs. Several areas of the southern parcel contained greater than 10,000 ppm of lead at the surface.

Table 4-1

SOIL SAMPLING RESULTS, NORTHERN PARCEL
GREENBERG SALVAGE YARD
MURPHYSBORO, JACKSON COUNTY, ILLINOIS
DECEMBER 1 AND 2, 1999

Parameter	SB-601	SB-2401	SB-401.5	SB-1001	SB-1301	SB-1501	SB-1801	SB-4101	SB-4201
Total PPL Metals (mg/kg)									
Antimony	4.1 J,M	9.0	8.3 J,M	5.0 J,M	9.3	14	3.3 J,M	8.2	33
Arsenic	17	ND	9.3	ND	ND	ND	3.7 J,M	3.3 J,M	19
Beryllium	0.45	0.46	0.62	0.7	0.30	0.24	0.59	0.57	0.65
Cadmium	16	3.4	2.4	ND	5.4	13	ND	9.0	ND
Chromium	35	80	39	30	38	77	18	61	22
Copper	580	450	710	340	590	990	1,200	1,400	1,000
Lead	11,000	7,300	7,000	4,600	4,300	6,800	2,600	7,700	6,300
Mercury	2.8 D	0.63 D	0.90 D	0.56	0.90 D	1.6 D	1.0 D	3.1 D	0.76 D
Nickel	41	51	66	49	71	120	32	89	32
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	2.3 J,M
Silver	4.8	4.1	5.5	5.4	4.4	13	3.9	8.3	5.0
Thallium	71	75	95	110	77	310	75	180	92
Zinc	2,000	2,200	2,100	1,800	3,100	2,400	4,000	4,400	1,300
TCLP Metals (mg/L)									
Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	0.84	0.78	0.83	0.83	0.67	1.5	1.7	1.0	1.0
Cadmium	0.096	0.080	0.059	0.031	0.14	0.099	0.033	0.16	0.027
Chromium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	1.6	16	14	5.1	26	9.4	3.9	19	3.8
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ND	0.028	ND	ND	ND	ND	0.020 J,M	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND
pH (SU)	7.48	7.39	7.08	7.07	7.07	7.24	7.37	7.24	7.23

Table 4-1 (cont.)

SOIL SAMPLING RESULTS, NORTHERN PARCEL
GREENBERG SALVAGE YARD
MURPHYSBORO, JACKSON COUNTY, ILLINOIS
DECEMBER 1 AND 2, 1999

Parameter	SB-601	SB-2401	SB-401.5	SB-1001	SB-1301	SB-1501	SB-1801	SB-4101	SB-4201
Polychlorinated Biphenyls (μg/kg)									
Arochlor 1248	ND	ND	ND	57	ND	290	ND	ND	ND
Arochlor 1254	ND	ND	ND	ND	ND	690 J,M	ND	ND	ND
Arochlor 1260	ND	110	44	250	290	470	ND	220 J,M	ND

Key:
- TCLP = Toxicity characteristic leaching procedure.
- μg/kg = Micrograms per kilogram.
- PPL = Priority pollutant list.
- mg/kg = Milligrams per kilogram.
- mg/L = Milligrams per liter.
- ND = Not detected.
- SU = Standard units.
- D = Dilution.
- J = Estimated result.
- M = Matrix interference.

Source: CT&E Environmental Services, Ludington, Michigan, analytical TDD S05 9911-803.

Table 4-2

SOIL SAMPLING RESULTS, SOUTHERN PARCEL
GREENBERG SALVAGE YARD
MURPHYSBORO, JACKSON COUNTY, ILLINOIS
DECEMBER 1 AND 2, 1999

Parameter	SB-2601	SB-3201	SB-3501	SB-3601
Total PPL Metals (mg/kg)				
Antimony	43	6.4 J,M	2.8 J,M	4.5 J,M
Arsenic	ND	7.9	ND	2.6 J,M
Beryllium	0.25	0.38	0.58	0.93
Cadmium	13	2.0	1.8	3.0
Chromium	110	68	40	62
Copper	970	880	550	650
Lead	26,000	1,800	1,800	2,700
Mercury	6.1 D	0.83 D	0.9 D	1.1 D
Nickel	130	61	44	77
Selenium	ND	ND	ND	ND
Silver	10	7.8	4.9	4.1
Thallium	240	140	100	94
Zinc	5,000	2,700	1,800	1,600
TCLP Metals (mg/L)				
Arsenic	ND	0.027 J,M	ND	ND
Barium	0.81	1.7	2.3	1.4
Cadmium	0.34	0.059	0.076	0.040
Chromium	ND	ND	ND	ND
Lead	330 D	5.5	5.7	0.58
Mercury	ND	ND	ND	ND
Selenium	0.053 J,M	0.020	ND	ND
Silver	ND	ND	ND	ND
pH (SU)	6.35	7.46	7.44	7.34

Table 4-2 (cont.)

SOIL SAMPLING RESULTS, SOUTHERN PARCEL
GREENBERG SALVAGE YARD
MURPHYSBORO, JACKSON COUNTY, ILLINOIS
DECEMBER 1 AND 2, 1999

Parameter	SB-2601	SB-3201	SB-3501	SB-3601
Polychlorinated Biphenyls (μg/kg)				
Arochlor 1248	ND	100	100	ND
Arochlor 1254	1,500 J,M	410 J,M	520 J,M	ND
Arochlor 1260	810	430	560	480

Key:
- TCLP = Toxicity characteristic leaching procedure.
- μg/kg = Micrograms per kilogram.
- PPL = Priority pollutant list.
- mg/kg = Milligrams per kilogram.
- mg/L = Milligrams per liter.
- ND = Not detected.
- SU = Standard units.
- D = Dilution.
- J = Estimated result.
- M = Matrix interference.

Source: CT&E Environmental Services, Ludington, Michigan, analytical TDD S05 9911-803.

5. Discussion of Potential Threats

Section 300.415, paragraph (b)(2) of the NCP lists factors to be considered when determining the appropriateness of a potential removal action at a site. Specifically, the following is a discussion of the applicable conditions which exist at the Greenberg Salvage Yard site.

- **Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.** Heavy metals were found at the surface and at depth throughout the site. Illinois EPA has documented the presence of lead in large portions of the site exceeding 1,000 mg/kg at the surface and maximum concentrations exceeding 80,000 mg/kg. Under the Illinois Tiered Approach to Corrective Action Objectives (TACO), the safe level for long-term exposure to lead is 400 mg/kg. Analytical results indicate the presence of lead exceeding the TCLP regulatory limit for D008 hazardous waste. According to the Agency for Toxic Substances and Disease Registry (ATSDR), lead exposure may decrease the intelligence quotient (IQ) scores and reduce the growth of young children. Three schools are located within one mile of the site. Residential areas are located to the west of the northern parcel and to the east and west of the southern parcel. A residential area lies less than 50 feet east of the southern parcel. Both parcels are secured from the public by a six-foot high fence.

- **High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate.** Hazardous levels of heavy metals in the soil were detected on site. Illinois EPA documented that surface soil lead concentrations exceed TACO residential cleanup objectives. Wind could cause dust particulates containing heavy metals to migrate offsite. The northern parcel contains large areas of barren ground. Without vegetative cover, contaminated surface soils can migrate off site more readily.

- **Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.** Wind could cause dust particulates containing heavy metals to migrate offsite.

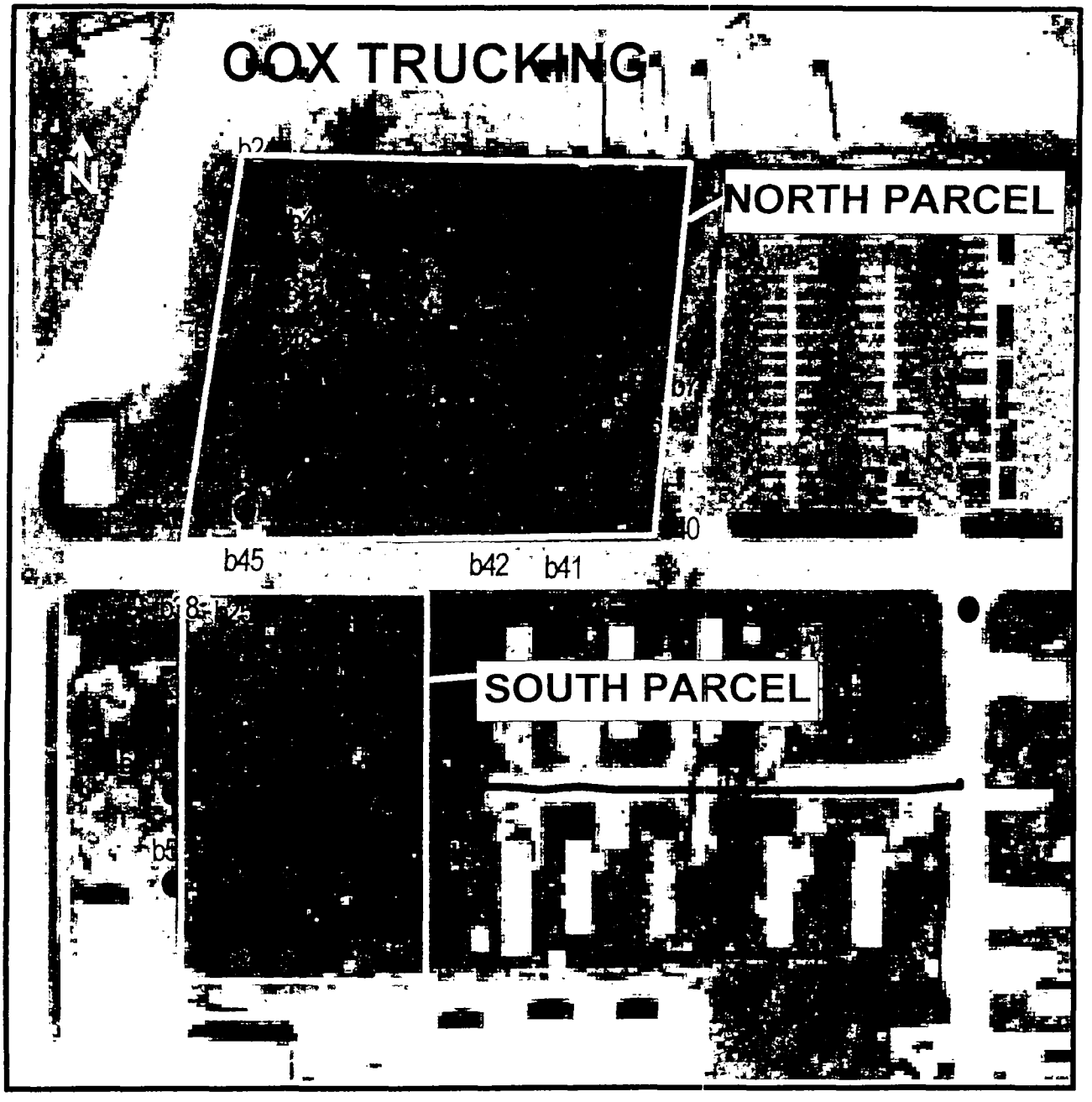
6. Conclusion

Elevated concentrations of heavy metals are located in soils throughout the GSY site. Residential areas adjacent to the site are susceptible to contamination that may be migrating off site. The site's proximity to residential areas and concentrations of contaminants indicates a hazard to human health. Based upon this information, a time critical removal action should be executed. Contaminated soil should be excavated and disposed; pits should be backfilled with clean fill and graded; and the site should be seeded to provide a vegetative cover.

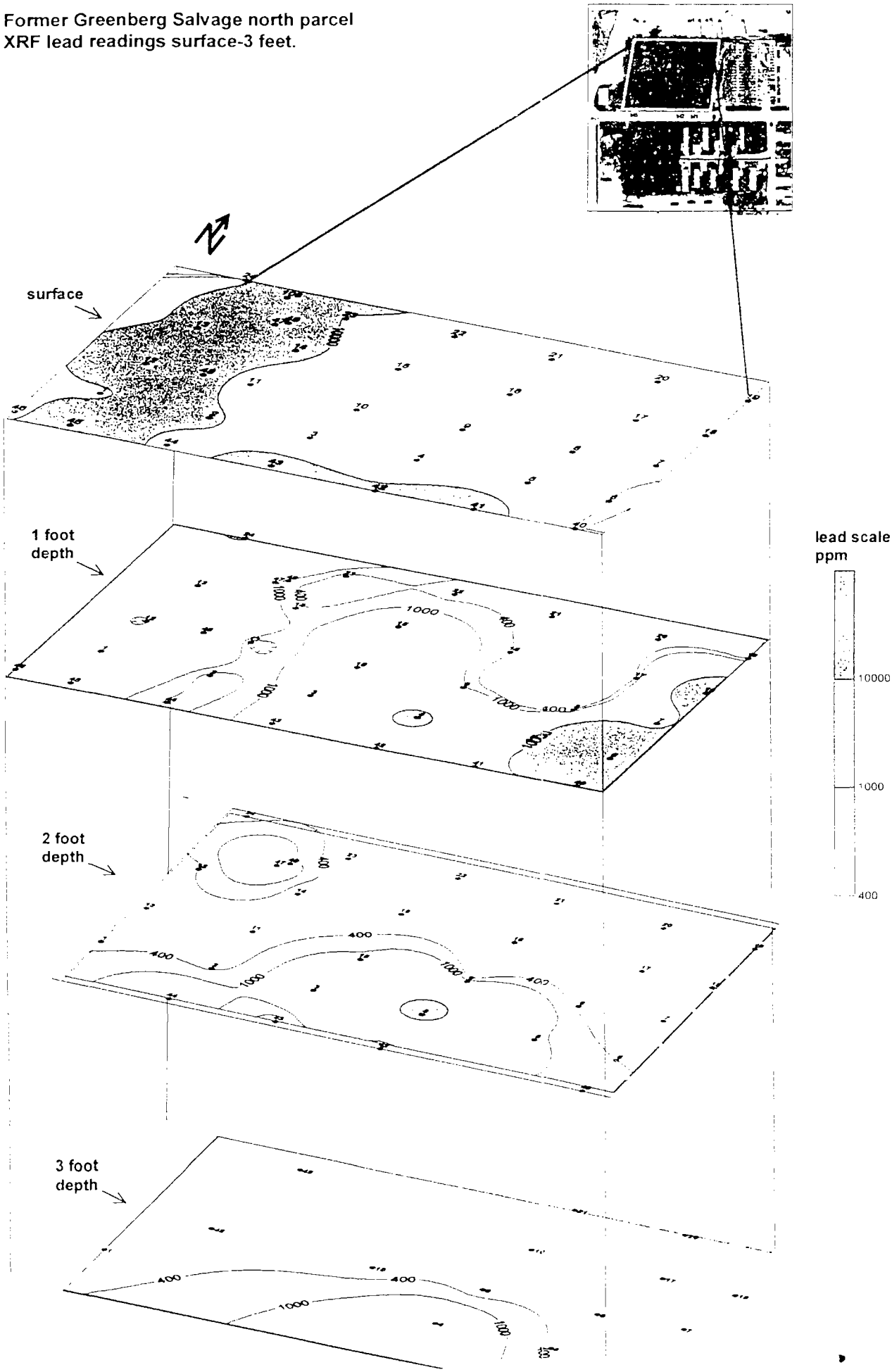
Appendix A

Boring Locations and Lead Contours (Completed by Illinois EPA)

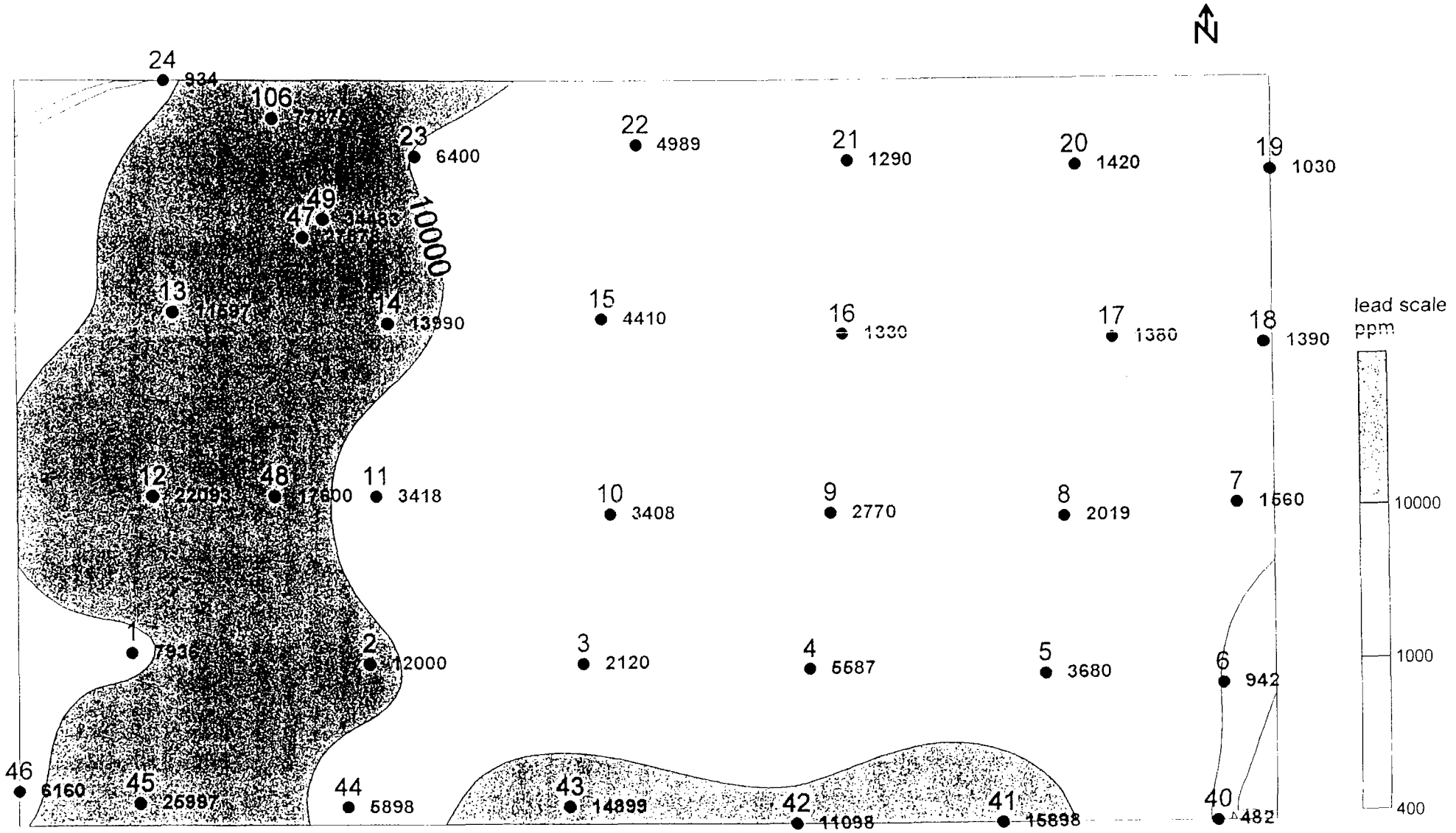
Aerial photograph showing parts of the former Greenberg Salvage which are being evaluated. Boring locations are marked with red dots.



Former Greenberg Salvage north parcel
XRF lead readings surface-3 feet.



Map of former Greenberg Salvage north parcel showing lead content in the surface soil. Lead values are derived from XRF readings.



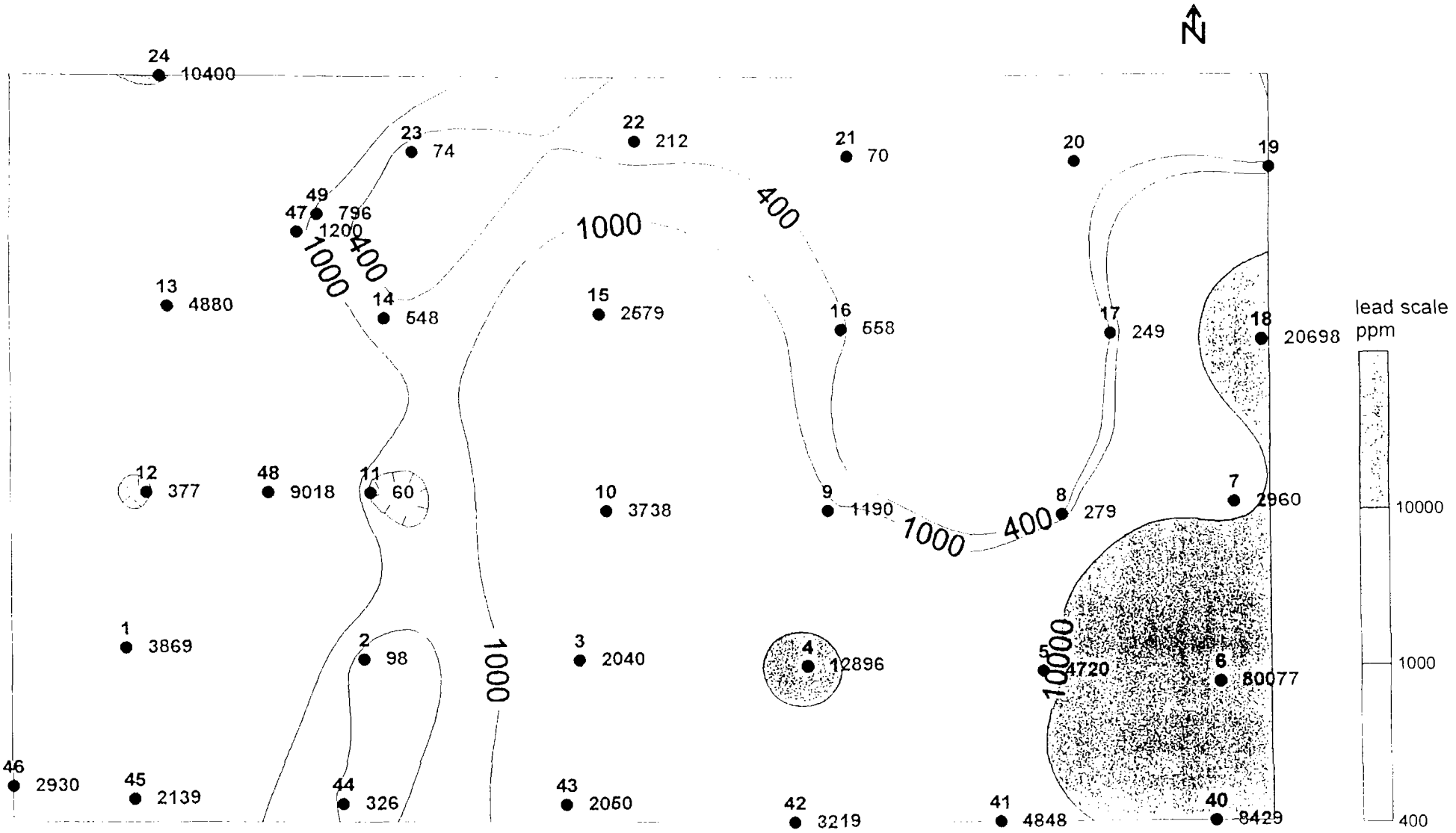
● boring location

- blue number represents XRF lead concentration

scale

0 100 ft

Map of former Greenberg Salvage north parcel showing lead content at the 1 foot level. Lead values are derived from XRF readings.



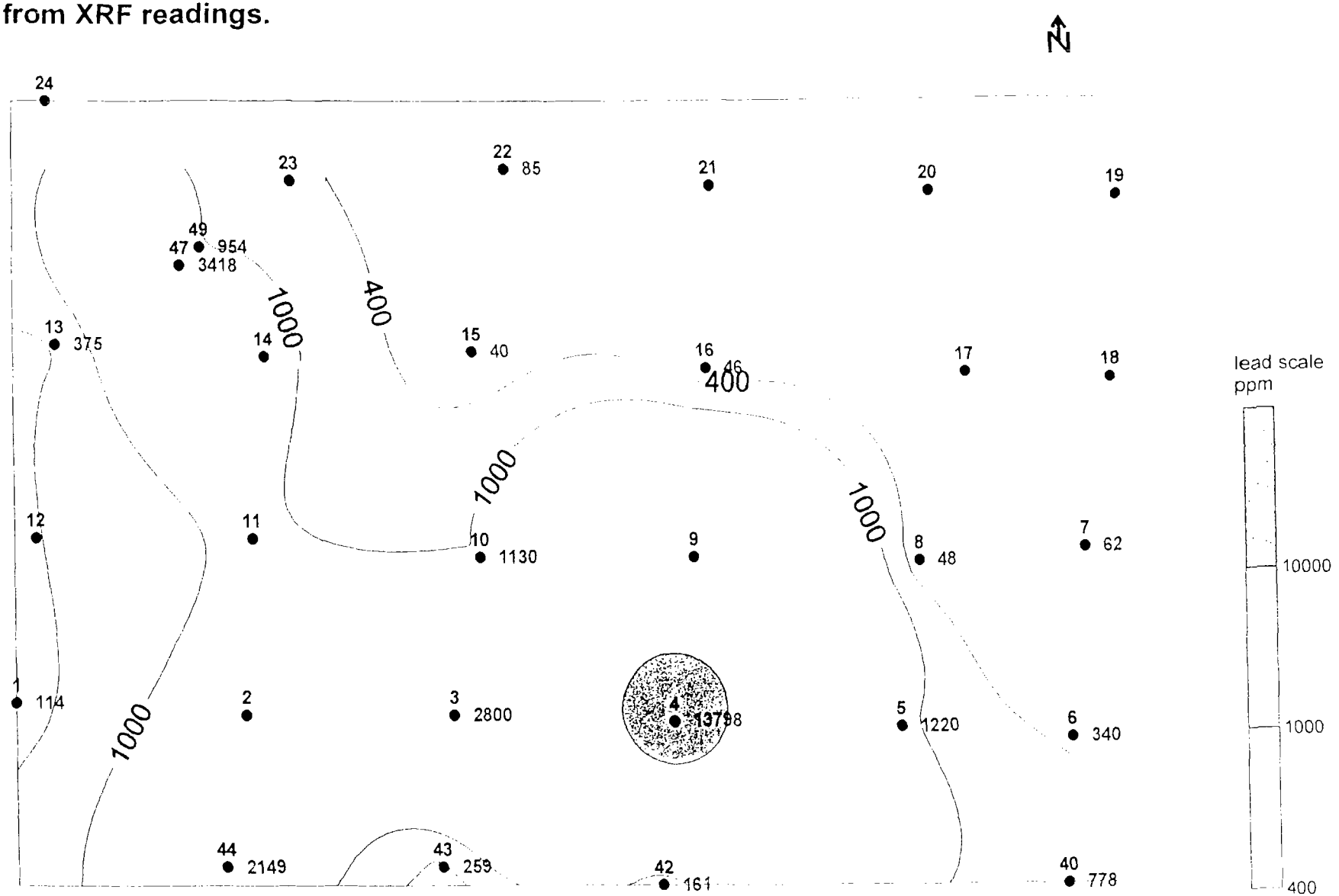
● boring location

- blue numbers represent XRF lead concentration

scale

0 100 ft

Map of former Greenberg Salvage north parcel showing lead content at the 2 foot level. Lead values are derived from XRF readings.



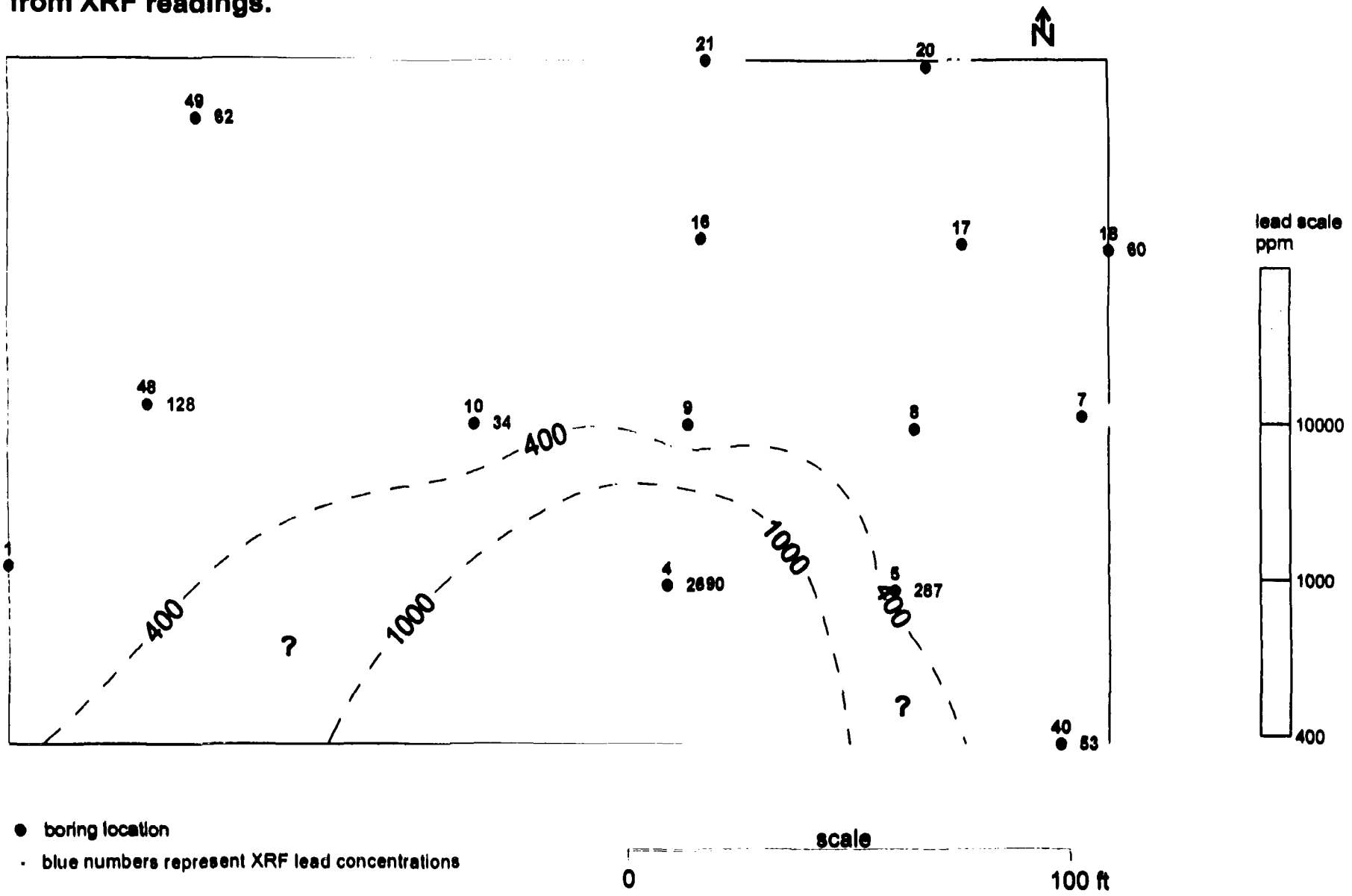
● boring location

- blue numbers represent XRF lead concentrations

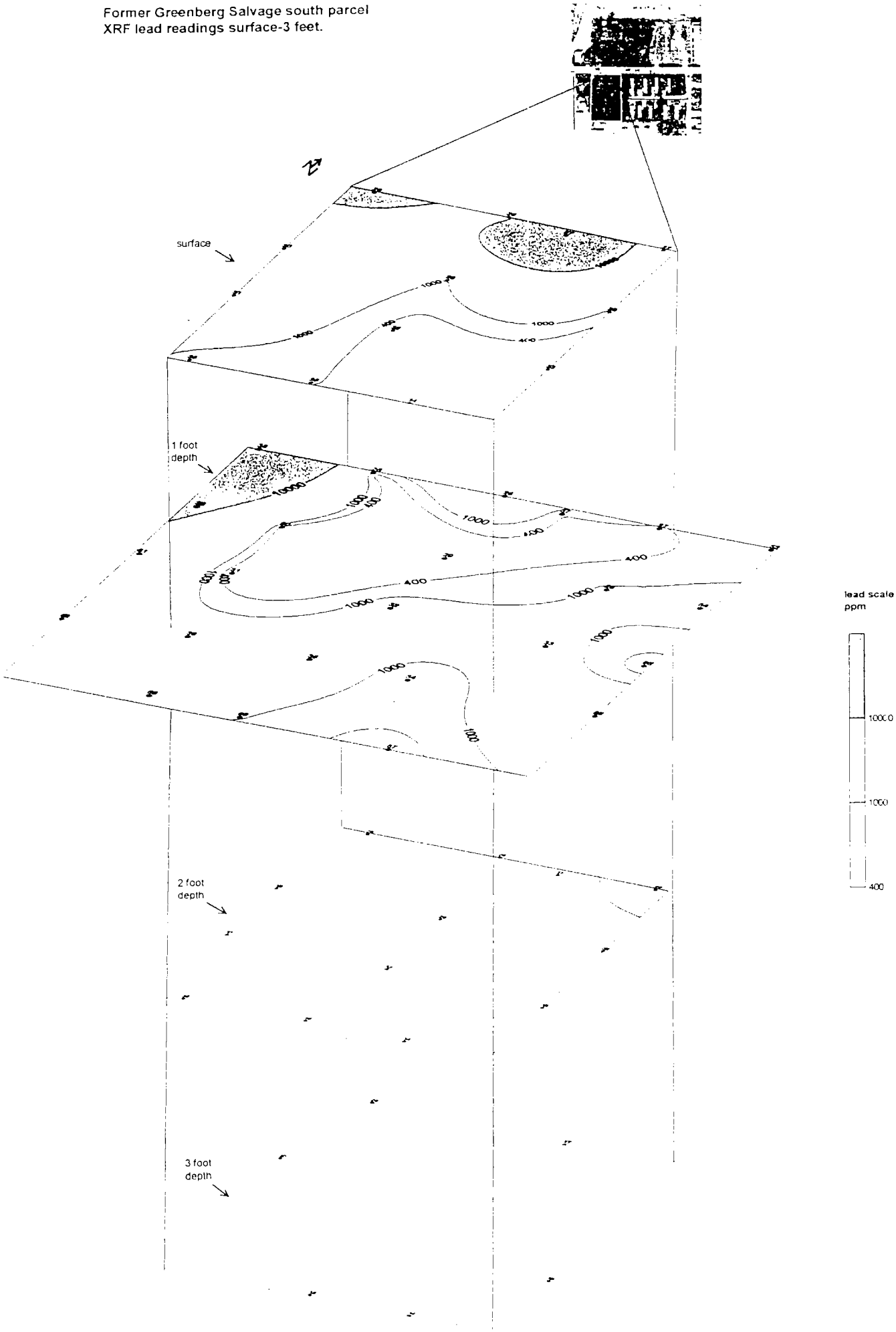
scale

0 100 ft

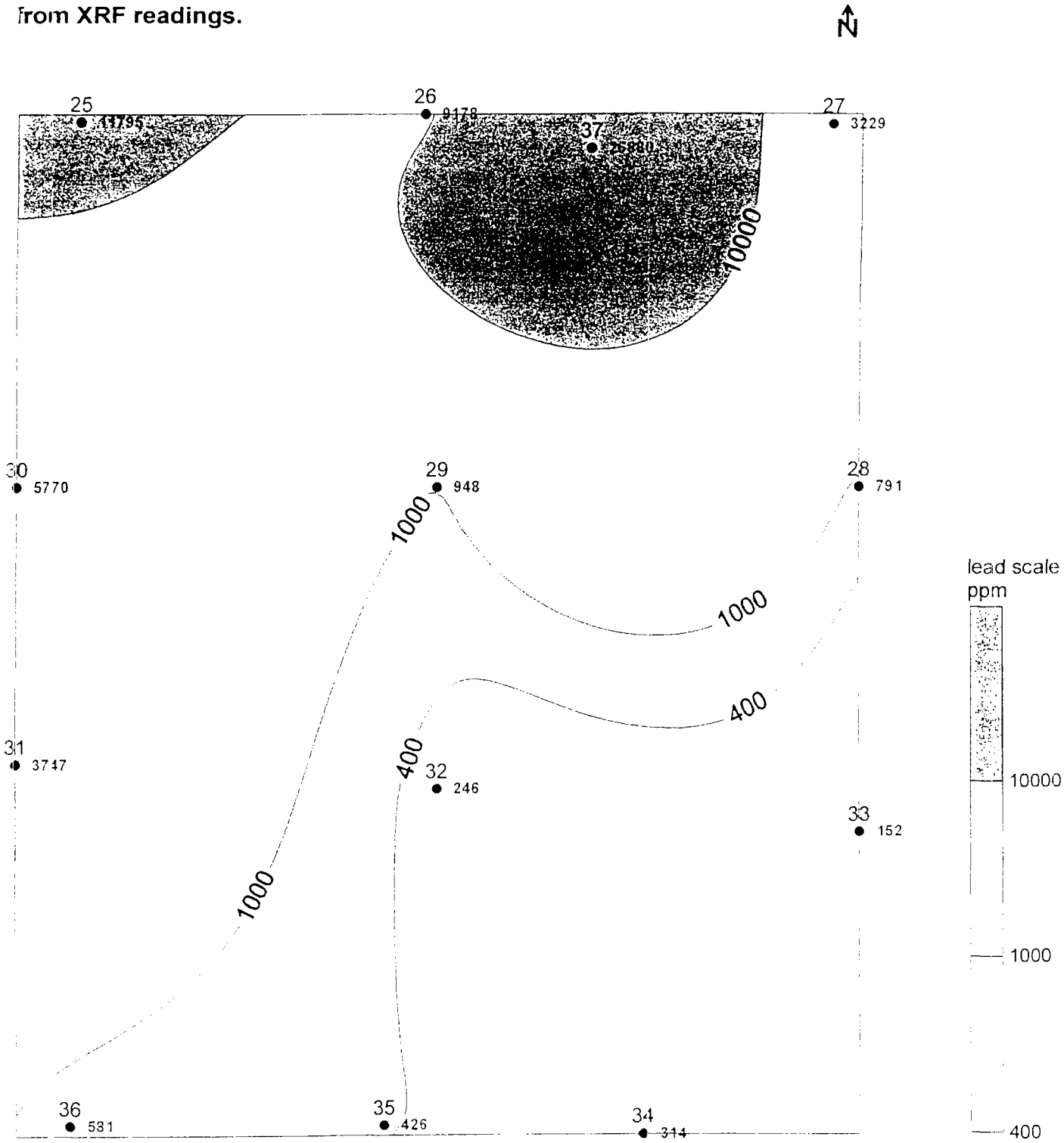
Map of former Greenberg Salvage north parcel showing lead content at the 3 foot level. Lead values are derived from XRF readings.



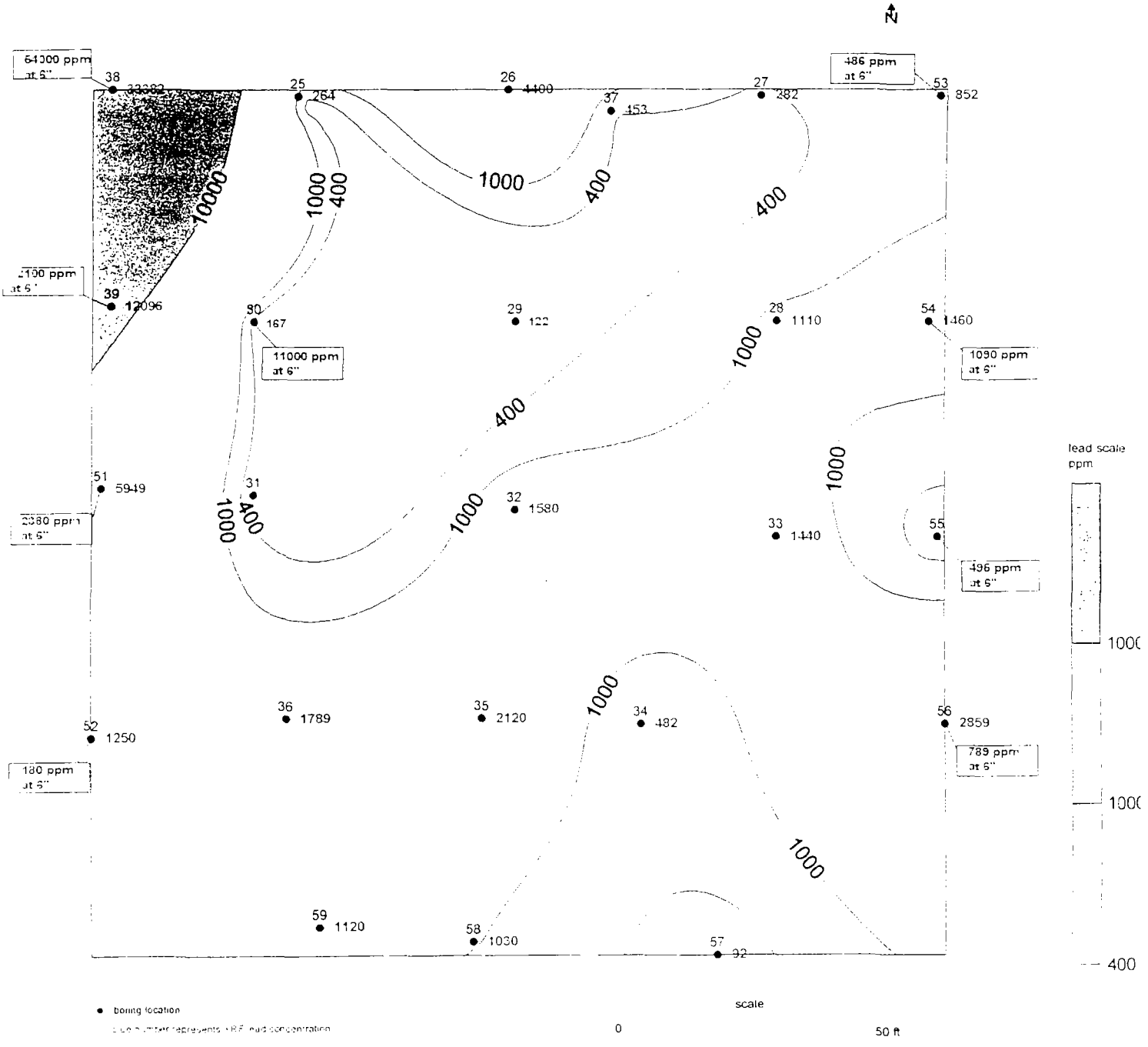
Former Greenberg Salvage south parcel
XRF lead readings surface-3 feet.



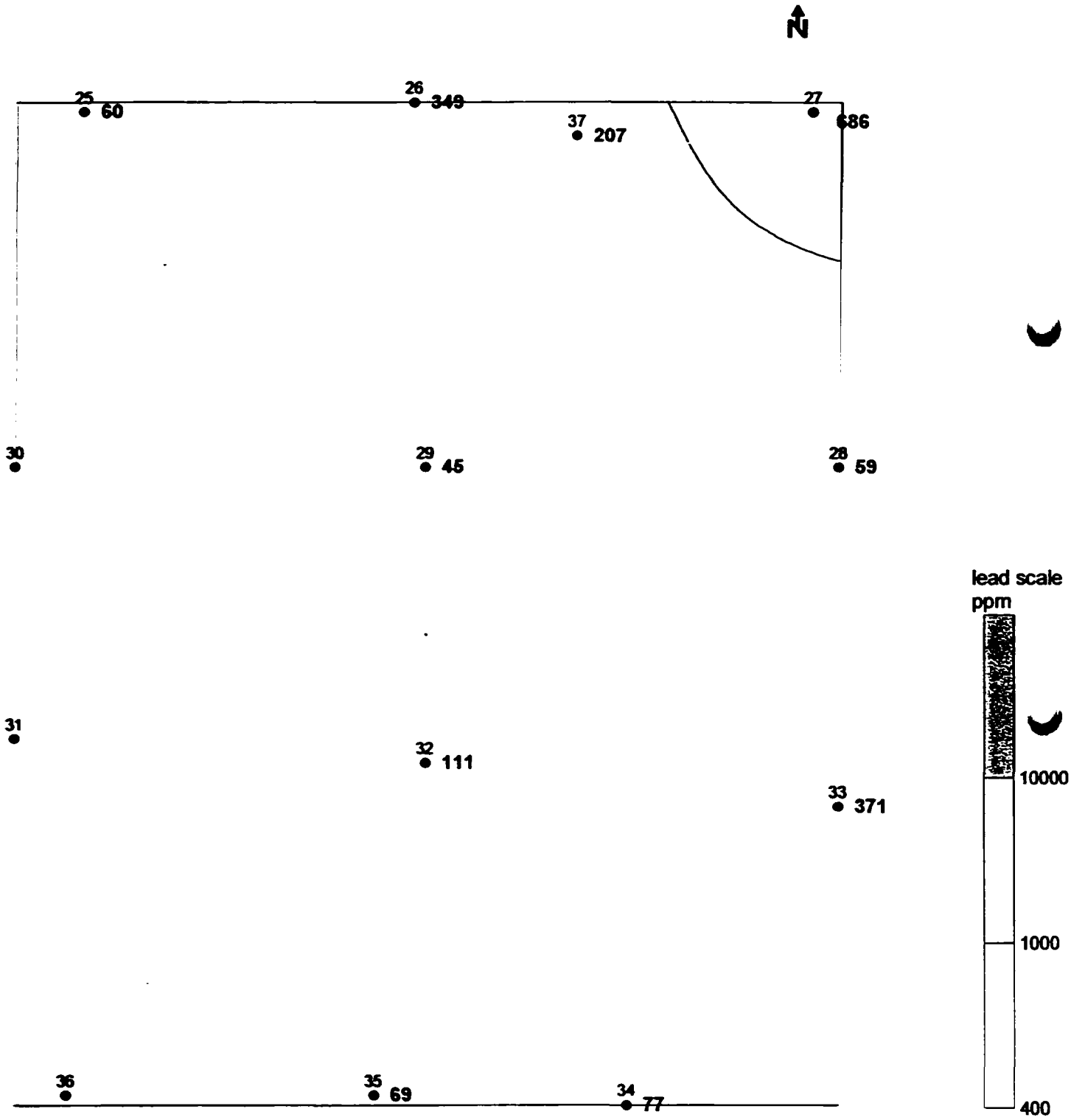
Map of former Greenberg Salvage south parcel showing lead content in the surface soil. Lead values are derived from XRF readings.



Map of former Greenberg Salvage south parcel showing lead content at 1 foot. Lead values are derived from XRF readings.



Map of former Greenberg Salvage south parcel showing lead content at 2 feet. Lead values are derived from XRF readings.



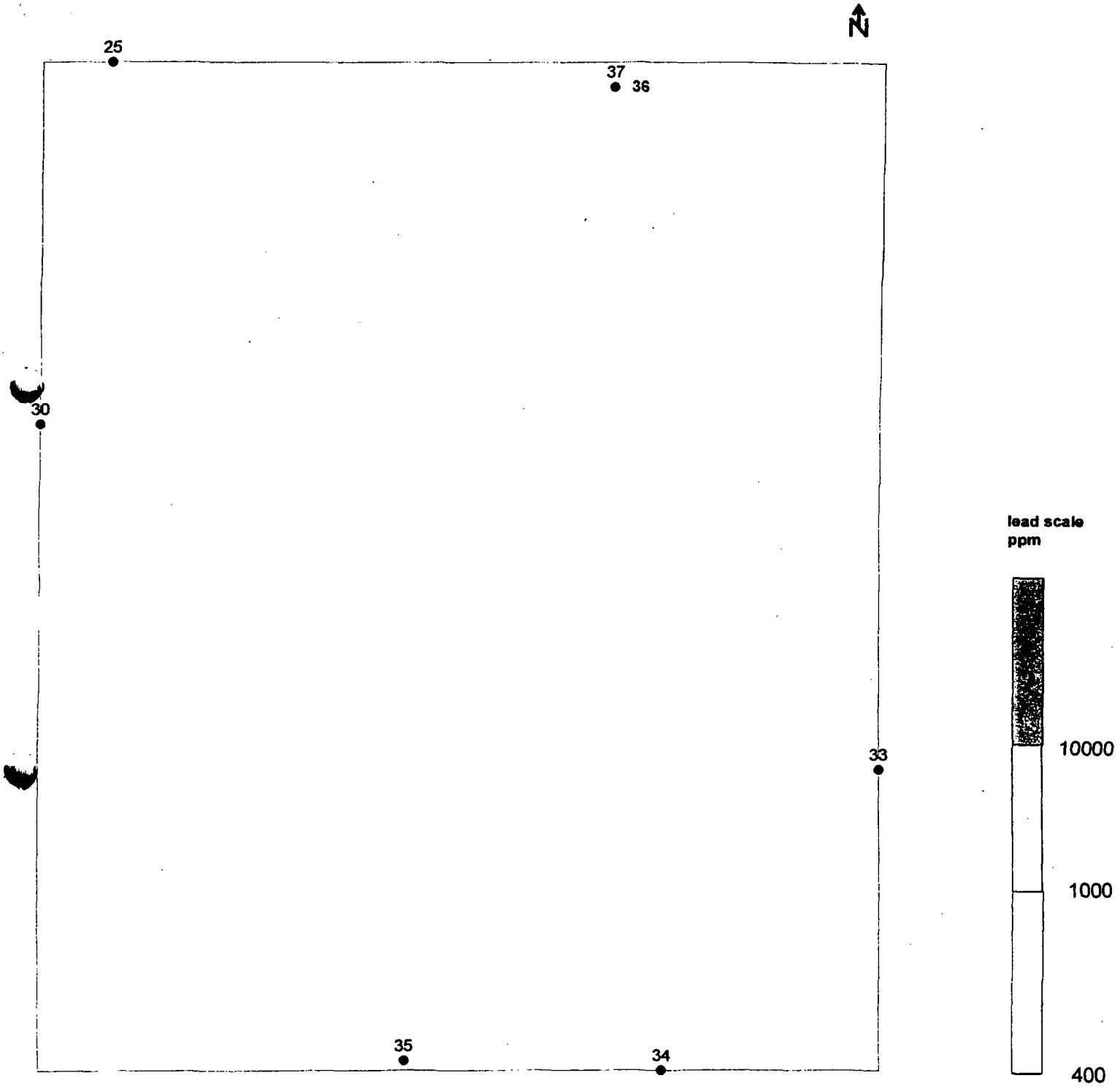
● boring location

- blue number represents XRF lead concentration

scale

0 50 ft

Map of former Greenberg Salvage south parcel showing lead content at 3 feet. Lead values are derived from XRF readings.



● boring location

- blue number represents XRF lead concentration

scale

0 50 ft

Header: XRF data
Site: "former Greenberg Salvage"

boring #	depth ft	XRFNo	Mo	Mo	Zr	Zr	Sr	Sr	Rb	Rb	Pb	Pb	Se	Se	As	As
		1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		2	<LOD	7	<LOD	7	27	7	<LOD	7	<LOD	20	<LOD	13	<LOD	21
		3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		6	9	6	59	8	39	9	39	11	589	59	<LOD	16	<LOD	69
		7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		8	<LOD	13	207	15	69	12	71	15	401	49	<LOD	19	<LOD	67
		9	520	70	<LOD	330	<LOD	330	<LOD	390	429951	24998	808	480	24998	3899
1	surface	10	16	9	<LOD	19	70	19	45	21	7938	260	<LOD	43	<LOD	300
		11	<LOD	13	28	13	61	19	53	21	4688	200	<LOD	39	<LOD	255
		12	<LOD	14	48	11	57	15	60	18	462	66	<LOD	24	<LOD	92
		13	24	9	40	10	54	13	54	16	323	53	<LOD	20	<LOD	71
1	4	14	17	7	187	12	83	11	61	12	<LOD	28	<LOD	14	<LOD	28
1	1	15	18	10	38	14	81	20	<LOD	27	3669	200	<LOD	39	<LOD	255
1	2	16	<LOD	12	55	10	57	12	69	16	114	36	<LOD	18	<LOD	52
1	3	17	16	10	45	11	53	15	65	19	<LOD	48	<LOD	25	<LOD	48
2	surface	18	31	16	<LOD	36	162	36	<LOD	55	12000	510	<LOD	75	<LOD	540
2	1	19	12	8	186	12	85	11	92	14	98	28	<LOD	15	<LOD	36
2	2	20	<LOD	11	57	9	55	11	73	15	<LOD	32	<LOD	17	<LOD	33
3	surface	21	18	10	125	16	124	19	70	20	2120	130	<LOD	29	<LOD	165
3	1	22	<LOD	19	69	17	49	20	54	25	2040	170	<LOD	47	<LOD	240
3	2	23	<LOD	10	<LOD	14	82	16	<LOD	22	2900	140	<LOD	29	<LOD	180
		24	<LOD	160	<LOD	120	<LOD	103	<LOD	185	<LOD	570	<LOD	240	<LOD	525
4	surface	25	19	12	112	20	87	23	36	24	6597	270	<LOD	47	<LOD	315
4	1	26	<LOD	15	<LOD	23	50	25	<LOD	39	12896	420	<LOD	64	528	300
4	2	27	17	10	45	17	89	24	55	28	13798	390	<LOD	55	<LOD	405
4	3	28	16	8	172	14	92	14	56	15	2890	120	<LOD	28	<LOD	150
5	surface	29	<LOD	17	131	18	109	21	54	22	3680	190	<LOD	37	<LOD	240
5	1	30	21	10	21	13	57	18	46	21	4720	210	<LOD	40	<LOD	255
5	2	31	<LOD	11	144	12	66	11	37	12	1220	73	<LOD	18	<LOD	97
5	3	32	<LOD	12	189	13	84	12	68	13	267	38	<LOD	15	<LOD	55
6	surface	33	19	12	122	18	107	21	31	18	942	110	<LOD	34	<LOD	145
6	1'	34	99	27	<LOD	77	<LOD	125	<LOD	141	60077	3398	<LOD	255	<LOD	1800
6	2	35	<LOD	13	47	12	238	23	27	15	340	55	<LOD	25	<LOD	78
6	2.5	36	<LOD	17	154	17	76	16	57	18	62	40	<LOD	27	<LOD	63
7	surface	37	<LOD	18	100	18	72	20	48	21	1560	140	<LOD	36	<LOD	180
7		38	<LOD	20	283	24	106	20	69	22	280	62	<LOD	27	99	64
7	1	39	<LOD	13	58	12	72	16	38	17	2960	140	<LOD	30	182	120
7	2	40	<LOD	14	247	17	67	12	46	13	62	28	<LOD	18	<LOD	39
7	3	41	15	10	175	15	67	13	57	16	<LOD	33	<LOD	17	<LOD	35
8	surface	42	17	10	116	15	68	17	56	19	2019	130	<LOD	34	<LOD	165
8	1	43	<LOD	13	252	16	88	13	62	14	279	41	<LOD	17	<LOD	58
8	2	44	<LOD	13	216	15	48	11	74	15	48	25	<LOD	17	<LOD	38
8	3	45	20	9	160	13	83	13	72	15	<LOD	34	<LOD	18	<LOD	33
9	surface	46	17	10	181	17	80	16	59	18	2770	140	<LOD	29	<LOD	180
9	1	47	<LOD	14	280	18	66	13	65	15	1190	83	<LOD	22	<LOD	110
9	2	48	17	11	203	18	41	13	65	17	<LOD	38	<LOD	24	<LOD	44
9		49	<LOD	15	188	16	43	13	69	17	763	73	<LOD	23	110	69
9	3	50	<LOD	15	173	16	41	12	73	17	<LOD	34	<LOD	22	56	29
10	surface	51	21	11	180	18	85	18	72	20	3408	170	<LOD	35	219	140
10	1	52	<LOD	20	175	22	53	20	39	23	3738	220	<LOD	42	<LOD	285
10	2	53	<LOD	12	43	9	25	11	25	12	1130	84	<LOD	21	<LOD	113
10	3	54	22	10	309	18	82	12	57	13	34	21	<LOD	13	<LOD	31
11	surface	55	18	10	62	14	201	22	62	21	3418	170	<LOD	35	<LOD	210
11	1	56	16	9	133	14	115	16	86	18	60	30	<LOD	21	<LOD	47
11	2	57	14	5	25	6	36	8	41	9	<LOD	22	<LOD	12	<LOD	23
12	surface	58	29	13	<LOD	31	75	35	<LOD	53	22093	720	<LOD	94	913	430
12	1	59	17	9	76	11	60	13	60	16	377	55	<LOD	22	<LOD	77
12	2	60	11	7	36	7	28	9	47	12	<LOD	36	<LOD	17	<LOD	33
13	surface	61	<LOD	17	70	19	84	25	81	29	11597	390	<LOD	61	452	280
13	1	62	<LOD	17	<LOD	21	39	20	<LOD	34	4880	250	<LOD	51	<LOD	300
13	2	63	18	8	33	6	36	10	58	14	375	47	<LOD	16	<LOD	65
13	2.5	64	<LOD	11	203	12	83	11	69	12	<LOD	25	<LOD	14	<LOD	25
14	surface	65	<LOD	29	<LOD	45	98	45	<LOD	75	13980	780	<LOD	117	<LOD	750
14	1	66	18	9	62	11	36	12	52	15	548	64	<LOD	23	<LOD	86
14	2	67	17	7	49	8	34	9	75	13	<LOD	29	<LOD	15	<LOD	29
15	surface	68	24	14	178	23	98	24	59	25	4410	240	<LOD	43	<LOD	285
15	1	69	<LOD	24	48	20	110	29	<LOD	47	2579	240	<LOD	77	<LOD	315
15	2	70	22	9	296	17	71	12	74	14	40	22	<LOD	16	<LOD	34
16	surface	71	<LOD	16	211	20	124	19	60	19	1330	110	<LOD	30	<LOD	144
16	1	72	<LOD	14	294	17	63	12	60	14	558	57	<LOD	20	<LOD	78
16	2	73	<LOD	15	229	17	41	12	72	16	46	27	<LOD	17	<LOD	41
16	3	74	<LOD	17	190	19	63	15	66	18	<LOD	36	<LOD	22	<LOD	42
17	surface	75	<LOD	14	109	14	86	16	58	18	1380	100	<LOD	28	<LOD	141
17	1	76	24	11	243	19	106	16	90	19	249	48	<LOD	23	<LOD	68
17	2	77	<LOD	13	223	15	47	11	70	14	<LOD	27	<LOD	16	<LOD	32
17	3	78	<LOD	16	179	18	59	14	60	17	<LOD	40	<LOD	24	<LOD	43
18	surface	79	21	11	108	15	85	16	36	17	1380	110	<LOD	30	<LOD	148
18		80	<LOD	48	<LOD	84	592	120	<LOD	138	19789	1600	<LOD	195	<LOD	1380
18	1	81	<LOD	30	<LOD	56	615	72	<LOD	81	20698	990	<LOD	127	<LOD	870
18	2	82	<LOD	14	283	17	77	13	76	15	<LOD	28	<LOD	16	<LOD	32
18	3	83	15	9	187	15	56	12	78	15	60	27	<LOD	18	<LOD	42
19	surface	84	<LOD	12	109	12	74	13	43	14	1030	79	<LOD	21	<LOD	108
19	1	85	<LOD	14	264	18	64	13	53	14	<LOD	29	<LOD	17	<LOD	31
19	2	86	<LOD	13	187	15	57	12	81	16	<LOD	29	<LOD	18	<LOD	32
19	0.6	87	17	10	171	16	90	15	52	16	549	64	<LOD	22	<LOD	88
20	surface	88	<LOD	14	140	16	111	17	67	19	1420	110	<LOD	28	<LOD	141
20	1	89	16	11	271	19	79	14	66	16	<LOD	36	<LOD	19	<LOD	36
20	2	90	<LOD	15	176	17	52	13	63	17	<LOD	37	<LOD	20	<LOD	38
20	3	91	<LOD	14	151	15	77	14	51	15	<LOD	39	<LOD	20	<LOD	42
21	surface	92	<LOD	16	146	17	98	18	64	20	1280	110	<LOD	31	<LOD	143
21	1	93	<LOD	16	286	20	64	13	66	16	70	30	<LOD	18	<LOD	43
21	2	94	<LOD	18	223	21	42	14	71	20	<LOD	45	<LOD	28	<LOD	48
21	3	95	<LOD	17	162	19	58	17	74	21	<LOD	45	<LOD	29	<LOD	49
22	surface	96	24	12	61	17	83	21	35	21	4689	230	<LOD	42	<LOD	285
22	1	97	<LOD	14	281	18	68	13	89	17	212	40	<LOD	19	<LOD	58
22	2	98	<LOD	13	199	14	59	11	82	15	86	28	<LOD	17	<LOD	43
23	surface	99	<LOD	19	144	22	124	26	80	29	6400	300	<LOD	51	<LOD	345
23	1	100	<LOD	13	105	14	253	22	71	18	74	35	<LOD	23	<LOD	51
23	2	101	15	10	245	17	75	13	58	14	<LOD	30	<LOD	15	<LOD	30
24	surface	102	<LOD	18	207	18	99	17	62	18	934	67	<LOD	23	<LOD	113
24	1	103	17	11	61	17	98	23	<LOD	35	10400	340	<LOD	52	<LOD	360
24	2	104	<LOD	24	252	29	85	22	83	27	<LOD	57	<LOD	26	<LOD	54
24	2.5	105	<LOD	13	237	15	77	12	81	15	<LOD	30	<LOD	17	<LOD	32

Sampling #	depth ft	% Mo	Hg	Hg	Zn	Zn	Cu	Cu	Ni	Ni	Co	Co	Fe	Fe	Mn	Mn	Cr	Cr
		1	NA	337	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		2	<4.00	14	[illegible]	59	372	83	<4.00	134	<4.00	[illegible]	1410	239	<4.00	300	<4.00	255
		3	NA	<4.00	27	<4.00	68	<4.00	84	<4.00	117	<4.00	77	<4.00	225	<4.00	51	<4.00
		4	NA	339	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		5	NA	332	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		6	<4.00	21	434	68	<4.00	139	<4.00	279	<4.00	848	[illegible]	1300	<4.00	1320	<4.00	585
		7	NA	<4.00	42	141	63	<4.00	68	<4.00	161	<4.00	74	<4.00	185	<4.00	48	<4.00
		8	<4.00	22	724	97	<4.00	185	<4.00	285	<4.00	645	17100	680	<4.00	1110	<4.00	585
		9	<4.00	1185	[illegible]	880	<4.00	1484	2139	1380	<4.00	2840	31000	3880	<4.00	5400	<4.00	4340
1	surface	10	<4.00	70	[illegible]	210	1620	270	<4.00	630	<4.00	1930	131504	3880	<4.00	3140	<4.00	1384
		11	<4.00	39	1000	100	1130	250	<4.00	385	<4.00	1000	92282	3880	<4.00	2840	<4.00	1290
		12	<4.00	30	530	110	<4.00	225	<4.00	485	<4.00	1410	51001	2280	<4.00	2250	<4.00	975
		13	<4.00	27	171	70	<4.00	185	<4.00	485	<4.00	1470	73287	2480	<4.00	2480	<4.00	1110
1	4	14	<4.00	18	67	44	<4.00	185	<4.00	195	<4.00	485	12880	680	<4.00	855	610	350
1	1	15	<4.00	64	1000	180	384	230	<4.00	385	<4.00	1000	87757	3280	<4.00	3000	<4.00	1364
1	2	16	<4.00	24	<4.00	68	<4.00	150	<4.00	485	<4.00	1380	68180	2280	<4.00	2250	<4.00	975
1	3	17	<4.00	27	<4.00	113	<4.00	185	<4.00	480	<4.00	1580	53700	2480	<4.00	2480	<4.00	1085
2	surface	18	<4.00	126	3840	370	1810	460	<4.00	1035	<4.00	3140	170886	6480	<4.00	5080	<4.00	2400
2	1	19	<4.00	19	1020	98	<4.00	150	<4.00	255	<4.00	765	31785	1280	<4.00	1280	<4.00	600
2	2	20	<4.00	18	670	86	<4.00	180	<4.00	380	<4.00	1280	63283	2080	<4.00	1950	<4.00	825
3	surface	21	<4.00	42	623	130	314	170	<4.00	420	<4.00	1230	44808	1880	<4.00	2100	<4.00	880
3	1	22	<4.00	62	973	180	<4.00	485	<4.00	1020	<4.00	3380	[illegible]	6085	<4.00	5400	<4.00	2400
3	2	23	<4.00	46	518	140	384	150	<4.00	345	<4.00	975	33382	1580	<4.00	1850	<4.00	765
		24	<4.00	338	<4.00	1380	<4.00	2780	<4.00	4040	<4.00	7840	48886	13880	<4.00	18483	<4.00	16483
4	surface	25	<4.00	73	2480	280	579	280	<4.00	765	<4.00	2180	83883	3880	<4.00	3300	<4.00	1454
4	1	26	<4.00	164	4830	290	1220	330	<4.00	735	<4.00	2480	141828	4480	<4.00	3740	1680	1100
4	2	27	<4.00	98	1170	160	1380	240	<4.00	485	<4.00	1274	55881	2080	<4.00	2100	<4.00	1020
4	3	28	<4.00	37	528	86	210	130	<4.00	270	<4.00	780	27880	1280	<4.00	1280	<4.00	615
5	surface	29	<4.00	69	1030	160	483	210	<4.00	525	<4.00	1484	54784	2480	<4.00	2480	<4.00	1155
5	1	30	<4.00	63	2880	190	<4.00	330	<4.00	765	<4.00	2540	188876	5280	<4.00	4040	<4.00	1800
5	2	31	<4.00	28	213	39	<4.00	124	<4.00	255	<4.00	750	28884	1180	<4.00	1244	<4.00	600
5	3	32	<4.00	20	73	48	<4.00	117	<4.00	180	<4.00	465	18080	680	<4.00	765	<4.00	420
6	surface	33	<4.00	44	831	150	<4.00	285	<4.00	420	<4.00	1110	28778	1680	<4.00	1850	<4.00	1035
6	T	34	<4.00	485	4880	620	1480	680	<4.00	1800	<4.00	6880	355842	18000	<4.00	8880	<4.00	4340
6	2	35	<4.00	29	480	88	<4.00	195	<4.00	330	<4.00	900	23785	1380	<4.00	1500	<4.00	750
6	2.5	36	<4.00	29	330	100	<4.00	210	<4.00	510	<4.00	1850	75571	2880	<4.00	2700	<4.00	1170
7	surface	37	<4.00	52	2880	230	<4.00	375	<4.00	540	<4.00	1850	48886	2480	<4.00	2540	<4.00	1244
7		38	<4.00	41	2380	230	<4.00	345	<4.00	585	<4.00	1880	73882	3080	<4.00	3000	<4.00	1380
7	1	39	<4.00	50	4280	240	384	240	<4.00	585	<4.00	1850	128846	3480	<4.00	3000	<4.00	1350
7	2	40	<4.00	19	240	68	<4.00	141	<4.00	225	<4.00	510	16787	780	<4.00	885	<4.00	510
7	3	41	<4.00	20	125	62	<4.00	140	<4.00	255	<4.00	630	13481	820	<4.00	1080	<4.00	600
8	surface	42	<4.00	46	2440	200	<4.00	330	<4.00	765	<4.00	2230	178886	4580	<4.00	3740	<4.00	1650
8	1	43	<4.00	21	502	84	171	110	<4.00	240	<4.00	845	19280	980	<4.00	1110	680	410
8	2	44	<4.00	20	108	56	<4.00	130	<4.00	255	<4.00	680	18883	1000	<4.00	1080	<4.00	540
8	3	45	<4.00	21	<4.00	77	<4.00	126	<4.00	240	<4.00	630	16294	820	<4.00	1050	<4.00	555
9	surface	46	<4.00	45	787	120	281	150	<4.00	375	<4.00	1110	41882	1680	<4.00	1800	<4.00	915
9	1	47	<4.00	31	610	110	<4.00	185	<4.00	270	<4.00	720	22480	1100	<4.00	1280	<4.00	645
9		48	<4.00	24	<4.00	88	<4.00	180	<4.00	300	<4.00	735	18886	1180	<4.00	1290	<4.00	630
9	2	49	<4.00	30	419	103	<4.00	185	<4.00	345	<4.00	930	27776	1480	<4.00	1500	<4.00	750
9	3	50	<4.00	24	<4.00	94	<4.00	150	<4.00	330	<4.00	980	31386	1500	<4.00	1650	<4.00	780
10	surface	51	<4.00	53	1010	140	537	180	<4.00	450	<4.00	1280	54882	2880	<4.00	2100	<4.00	1050
10	1	52	<4.00	71	2810	270	<4.00	420	<4.00	870	<4.00	2840	183842	5080	<4.00	4500	<4.00	1950
10	2	53	<4.00	30	886	120	371	180	<4.00	480	<4.00	1500	82774	2880	<4.00	2540	<4.00	1080
10	3	54	<4.00	18	<4.00	72	<4.00	115	<4.00	185	<4.00	450	7526	610	<4.00	765	<4.00	450
11	surface	55	<4.00	55	1340	180	386	210	<4.00	600	<4.00	1950	113871	3380	<4.00	3000	<4.00	1274
11	1	56	<4.00	25	380	87	<4.00	180	<4.00	375	<4.00	1110	48883	1880	<4.00	1850	<4.00	780
11	2	57	<4.00	13	88	40	<4.00	99	<4.00	210	<4.00	815	24784	980	<4.00	975	<4.00	465
12	surface	58	<4.00	150	5880	410	4180	530	<4.00	1080	<4.00	3300	222822	7080	<4.00	5080	2380	1500
12	1	59	<4.00	27	<4.00	103	<4.00	195	<4.00	510	<4.00	1850	188886	3880	<4.00	2700	<4.00	1155
12	2	60	<4.00	18	<4.00	77	<4.00	150	<4.00	435	<4.00	1410	98884	2480	<4.00	2250	<4.00	980
13	surface	61	<4.00	95	3830	290	2140	380	<4.00	750	<4.00	2250	128846	4080	<4.00	3800	<4.00	1650
13	1	62	<4.00	84	6880	470	<4.00	630	<4.00	1085	<4.00	3440	278838	8180	<4.00	5540	3000	1600
13	2	63	<4.00	23	682	94	<4.00	165	<4.00	330	<4.00	1035	46282	1680	<4.00	1650	<4.00	780
13	2.5	64	<4.00	16	88	43	<4.00	97	<4.00	165	<4.00	405	6886	580	<4.00	720	<4.00	405
14	surface	65	<4.00	180	5080	550	<4.00	900	<4.00	1950	<4.00	6290	483886	18880	<4.00	18042	<4.00	4340
14	1	66	<4.00	27	180	77	<4.00	180	<4.00	450	<4.00	1454	74838	2480	<4.00	2400	<4.00	1035
14	2	67	<4.00	16	<4.00	59	<4.00	112	<4.00	300	<4.00	930	48881	1500	<4.00	1500	<4.00	680
15	surface	68	<4.00	74	1280	180	737	280	<4.00	570	<4.00	1850	55552	2800	<4.00	2700	<4.00	1280
15	1	69	<4.00	88	2480	370	1410	580	<4.00	2100	<4.00	7340	744853	25887	<4.00	12000	6147	3480
15	2	70	<4.00	20	<4.00	72	<4.00	119	<4.00	225	<4.00	465	8880	670	<4.00	825	<4.00	465
16	surface	71	<4.00	39	630	120	<4.00	225	<4.00	375	<4.00	1020	28884	1080	<4.00	1050	<4.00	855
16	1	72	<4.00	28	1110	120	<4.00	195	<4.00	300	<4.00	900	36378	1480	<4.00	1500	<4.00	780
16	2	73	<4.00	20	<4.00	67	<4.00	142	<4.00	285	<4.00	795	18588	1100	<4.00	1215	<4.00	600
16	3	74	<4.00	26	<4.00	98	<4.00	144	<4.00	300	<4.00	720	12294	1080	<4.00	1170	<4.00	600
17	surface	75	<4.00	42	2480	200	<4.00	300	<4.00	485	<4.00	1850	77158	2800	<4.00	2540	<4.00	1140
17	1	76	<4.00	22	587	110	<4.00	195	<4.00	380	<4.00	1085	38885	1880	<4.00	1950	<4.00	945
17	2	77	<4.00	18	<4.00	68	<4.00	115	<4.00	240	<4.00	680	16182	880	<4.00	1020	<4.00	570
17	3	78	<4.00	23	<4.00	93	<4.00	165	<4.00	300	<4.00	795	16182	1280	<4.00	1280	<4.00	680
18	surface	79	<4.00	40	1430	180	<4.00	273	<4.00	435	<4.00	1320	46182	2080	<4.00	2100	<4.00	1050
18		80	<4.00	380	58881	4180	<4.00	3149	<4.00	2400	<4.00	6440	174888	13880	<4.00	11242	<4.00	5846
18	1	81	<4.00	225	[illegible]	2880	<4.00	1950	<4.00	1470	<4.00	4200	181885	8880	<4.00	7046	5318	2490
18	2	82	<4.00	19	<4.00	72	<4.00	114	<4.00	210	<4.00	465	9875	680	<4.00	855	<4.00	495
18	3	83	<4.00	21	223	68	<4.00	149	<4.00	270	<4.00	780	23881	1180	<4.00	1320	<4.00	645
19	surface	84	<4.00	30	1880	128	386	150	<4.00	330	<4.00	900	31580	1480	<4.00	1470	<4.00	720
19	1	85	<4.00	19	<4.00	77	<4.00	121	<4.00	195	<4.00	420	4848	540	<4.00	720	<4.00	525
19	2	86	<4.00	17	134	68	<4.00	135	<4.00	240	<4.00	680	16881	870	<4.00	1080	<4.00	555
19	0.8	87	<4.00	26	321	83	<4.00	165	<4.00	315	<4.00	900	28384	1480	<4.00	1424	<4.00	680
20	surface	88	<4.00	41	2580	280	<4.00	315	<4.00	555	<4.00	1850	93481	3080	<4.00	2840	<4.00	1290
20	1	89	<4.00	22	119	63	<4.00	142	<4.00	225	<4.00	480	8675	680	<4.00	930	<4.00	585
20	2	90	<4.00	21	<4.00	92	<4.00	150	<4.00	300	<4.00	900	23880	1480	<4.00	1500	<4.00	840
20	3	91	<4.00	23	<4.00	88	<4.00	142	<4.00	345	<4.00	990	33382	1580	<4.00	1650	<4.00	795
21	surface	92	<4.00	44	2170	280	<4.00	315	<4.00	540	<4.00	1850	79482	2880	<4.00	2840	<4.00	1304
21	1	93	<4.00	22	171	68	<4.00	145	<4.00	270	<4.00	720	15883	1080	<4.00	1215	<4.00	680
21	2	94	<4.00	28	<4.00	107	<4.00	180	<4.00	330	<4.00	855	15194	1280	<4.00	1380	<4.00	780
21	3	95	<4.00	25	<4.00	107	<4.00	160	<4.00	380	<4.00	980	19888	1500	<4.00	1650	<4.00	870
22	surface	96	<4.00	78	1680	200	549	210	<4.00	480	<4.00	1394	47181	2280	<4.00	2250	<4.00	1110
22	1	97	<4.00	24	320	78	<4.00	144	<4.00	240	<4.00	675	17792	1080	<4.00	1155	<4.00	630
22	2	98	<4.00	21	105	57	<4.00	128	<4.00	270	<4.00	720	23888	1100	<4.00	1230	<4.00	615
23	surface	99	<4.00	84	1470	210	783	280	<4.00	705	<4.00	2100	98873	3780	<4.00	3440	<4.00	1500
23	1	100	<4.00	23	<4.00	106	<4.00	180	<4.00	495	<4.00	1500	81254	2880	<4.00	2540	<4.00	1085
23	2	101	<4.00	18	<4.00	68	<4.00	114	<4.00	210	<4.00	480	8880	710	<4.00	855	<4.00	525
24	surface	102	<4.00	32	330	88	<4.00	180	<4.00	285	<4.00	720	18888	1100	<4.00	1244	<4.00	645
24	1	103	<4.00	86	5880	320	986	320	<4.00	585	<4.00	1850	84488	2800	<4.00	2700	<4.00	1230
24	2	104	<4.00	31	<4.00	131	<4.00	210	<4.00	380	<4.00	1005	11288	1380	<4.00	1650	<4.00	825
24	2.5	105	<4.00	19	98	51	<4.00	114	<4.00	210	<4.00	525	12086	730	<4.00	885	<4.00	510

boring #	depth ft	XLNo	Mo	Mo	Zr	Zr	Sr	Sr	Rb	Rb	Pb	Pb	Se	Se	As	As
	surface	106	63	24	<LOD	69	<LOD	115	<LOD	127	77879	2899	<LOD	240	5187	1100
		107	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25	surface	108	<LOD	13	<LOD	20	58	20	<LOD	31	11796	320	<LOD	50	<LOD	345
25	1	109	<LOD	12	25	9	67	13	33	14	284	48	<LOD	19	<LOD	67
25	2	110	14	9	222	15	56	11	64	14	60	25	<LOD	15	<LOD	37
25	3	111	15	9	197	14	54	11	61	15	<LOD	30	<LOD	17	<LOD	32
26	surface	112	19	10	24	15	91	22	<LOD	35	9178	310	<LOD	50	<LOD	345
26	1	113	<LOD	11	<LOD	14	31	14	<LOD	23	4400	170	<LOD	38	232	140
26	2	114	<LOD	8	76	8	31	8	58	10	349	38	<LOD	15	<LOD	51
27	surface	115	<LOD	13	85	13	78	16	50	18	3229	150	<LOD	32	237	130
27	1	116	<LOD	10	46	8	46	10	49	12	282	42	<LOD	18	<LOD	60
27	2	117	<LOD	8	109	9	46	8	67	10	686	46	<LOD	14	<LOD	63
28	surface	118	<LOD	13	135	13	48	12	51	14	791	69	<LOD	21	<LOD	94
28	1	119	13	8	63	11	147	17	78	18	1110	84	<LOD	24	<LOD	115
28	2	120	<LOD	11	270	14	59	10	62	12	59	21	<LOD	14	<LOD	32
29	surface	121	<LOD	9	87	9	48	10	26	10	946	62	<LOD	17	<LOD	81
29	1	122	11	5	25	6	49	9	50	10	<LOD	24	<LOD	13	<LOD	23
29	2	123	19	7	55	8	31	9	43	11	48	22	<LOD	15	<LOD	34
30	surface	124	18	9	34	13	56	17	59	20	6770	220	<LOD	38	<LOD	255
30	1	125	17	7	255	13	63	10	49	10	197	27	<LOD	14	<LOD	38
30	2	126	<LOD	11	227	13	64	10	66	12	<LOD	23	<LOD	14	29	18
30	3	127	<LOD	10	173	11	58	9	70	12	<LOD	27	<LOD	14	<LOD	29
31	surface	128	<LOD	11	49	11	58	15	35	16	3747	150	<LOD	32	<LOD	195
31	1	129	17	7	41	8	39	10	36	11	<LOD	35	<LOD	18	<LOD	35
31	2	130	<LOD	10	237	12	63	9	77	11	<LOD	22	<LOD	12	<LOD	22
32	surface	131	13	8	202	14	68	12	59	13	248	37	<LOD	15	<LOD	54
32	1	132	<LOD	8	37	7	33	9	36	10	1580	75	<LOD	19	<LOD	99
32	2	133	<LOD	9	225	11	87	9	65	10	111	22	<LOD	13	<LOD	31
33	surface	134	<LOD	11	175	12	75	11	55	12	152	30	<LOD	16	<LOD	41
33	1	135	<LOD	14	74	13	58	15	41	17	1440	110	<LOD	30	<LOD	147
33	2	136	21	9	58	11	69	14	75	18	371	59	<LOD	26	<LOD	83
33	3	137	10	7	178	11	50	9	68	11	<LOD	25	<LOD	13	<LOD	26
33	0.67	138	<LOD	9	156	10	73	10	49	10	275	32	<LOD	14	<LOD	45
34	surface	139	12	8	193	13	68	12	56	12	314	39	<LOD	16	<LOD	55
34	1	140	[illegible]	8	193	13	62	11	58	12	482	46	<LOD	17	<LOD	62
34	2	141	<LOD	11	228	13	67	10	61	11	77	22	<LOD	15	<LOD	33
34	3	142	<LOD	11	162	12	52	10	68	13	<LOD	27	<LOD	17	38	21
35	surface	143	<LOD	10	144	11	73	10	55	11	428	42	<LOD	16	<LOD	59
35	1	144	<LOD	12	43	10	68	14	25	14	2120	110	<LOD	29	<LOD	147
35	2	145	13	7	56	8	47	9	61	12	69	24	<LOD	15	<LOD	35
35	3	146	10	7	229	12	88	10	63	11	<LOD	21	<LOD	13	<LOD	24
36	surface	147	<LOD	9	110	10	58	10	43	10	581	47	<LOD	14	<LOD	64
36	1	148	<LOD	12	35	10	50	14	<LOD	20	1789	110	<LOD	32	<LOD	150
36	2	149	11	4	21	4	<LOD	7	16	5	<LOD	15	<LOD	9	<LOD	16
37	surface	150	<LOD	20	<LOD	35	<LOD	55	<LOD	60	26880	860	<LOD	97	<LOD	720
37	1	151	13	7	48	9	49	11	55	13	453	52	<LOD	20	<LOD	71
37	2	152	<LOD	11	216	13	71	10	69	12	207	31	<LOD	14	<LOD	45
37	3	153	11	7	164	11	59	10	60	11	36	19	<LOD	15	<LOD	30
38	0.5	154	53	11	<LOD	30	<LOD	50	<LOD	59	53965	1100	<LOD	100	2360	480
38	1	155	29	12	<LOD	31	66	35	<LOD	56	33382	860	<LOD	93	1420	460
39	0.5	156	15	9	34	14	102	20	31	20	9715	280	<LOD	44	<LOD	315
39	1	157	<LOD	13	<LOD	21	73	22	<LOD	34	12096	350	<LOD	52	541	250
40	surface	158	<LOD	6	38	8	51	8	53	9	482	36	<LOD	13	131	36
40	1	159	<LOD	17	<LOD	23	75	24	41	27	6429	340	<LOD	61	440	260
40	2	160	<LOD	11	137	11	78	11	62	13	778	56	<LOD	18	<LOD	81
40	3	161	18	7	200	12	79	10	69	12	53	20	<LOD	13	<LOD	30
41	surface	162	<LOD	22	<LOD	32	<LOD	51	<LOD	53	15896	660	<LOD	68	875	430
41	1	163	<LOD	13	33	12	66	17	51	19	4848	190	<LOD	39	<LOD	225
41	1.5	164	23	8	141	12	84	12	59	13	618	53	<LOD	18	<LOD	75
42	surface	165	<LOD	19	<LOD	27	84	29	<LOD	48	11098	450	<LOD	73	798	320
42	1	166	21	9	48	12	100	17	54	18	3219	150	<LOD	34	<LOD	195
42	2	167	15	8	223	13	99	11	68	12	161	29	<LOD	16	<LOD	42
43	surface	168	34	16	<LOD	34	94	34	<LOD	58	14899	600	<LOD	68	714	400
43	1	169	15	7	39	9	91	14	41	14	2050	100	<LOD	25	141	92
43	2	170	17	8	264	15	91	12	59	12	259	36	<LOD	15	<LOD	50
44	surface	171	36	18	<LOD	32	49	28	<LOD	46	5898	360	<LOD	74	607	290
44	1	172	24	9	90	12	99	14	101	18	326	50	<LOD	19	<LOD	70
44	1.5	173	8	5	37	6	54	8	43	9	<LOD	23	<LOD	12	<LOD	23
45	surface	174	24	15	<LOD	37	<LOD	60	<LOD	66	25997	930	<LOD	111	817	520
45	1	175	11	7	53	9	61	12	50	13	2139	98	<LOD	23	155	67
45	1.5	176	15	7	46	9	72	12	56	14	452	52	<LOD	20	<LOD	75
46	surface	177	<LOD	12	<LOD	17	76	18	29	19	6160	220	<LOD	40	<LOD	270
46	1	178	<LOD	11	<LOD	11	26	12	<LOD	18	2930	130	<LOD	30	<LOD	165
46	1.5	179	<LOD	11	277	14	76	10	66	12	36	19	<LOD	15	<LOD	27
47	surface	180	49	21	<LOD	47	<LOD	74	<LOD	86	27676	1200	<LOD	138	2109	650
47	1	181	<LOD	8	15	6	18	8	28	10	1200	68	<LOD	19	114	63
47	2	182	16	7	16	8	49	12	42	13	2149	100	<LOD	23	<LOD	132
48	surface	183	22	12	<LOD	28	70	30	<LOD	49	17600	560	<LOD	77	1180	360
48		184	<LOD	68	704	100	<LOD	87	<LOD	94	10099	970	<LOD	150	<LOD	1035
48	1	185	<LOD	26	768	41	75	25	45	28	9018	350	<LOD	62	509	260
48	2	186	<LOD	11	<LOD	14	47	14	48	16	3416	150	<LOD	31	<LOD	195
48	3	187	<LOD	10	204	12	76	10	77	12	128	25	<LOD	14	43	26
48	4	188	<LOD	10	179	11	62	10	67	13	393	40	<LOD	15	<LOD	56
49	surface	189	33	16	<LOD	42	106	46	<LOD	72	34483	1100	<LOD	123	2269	590
49	1	190	15	8	67	11	74	12	107	17	796	66	<LOD	20	<LOD	91
49	2	191	<LOD	12	32	10	54	13	47	15	964	62	<LOD	24	<LOD	114
49	3	192	<LOD	10	243	13	86	10	57	11	62	20	<LOD	12	<LOD	29
50	0.5	193	18	9	<LOD	21	65	21	39	23	10995	340	<LOD	51	<LOD	360
50	1	194	<LOD	10	29	8	59	12	30	12	2280	100	<LOD	25	201	92
51	0.5	195	<LOD	11	30	10	101	15	24	14	2379	120	<LOD	27	176	100
51	0.5	196	<LOD	10	<LOD	15	63	16	25	16	5949	200	<LOD	35	<LOD	240
52	0.5	197	9	5	68	7	42	8	46	9	180	26	<LOD	13	<LOD	35
52	1	198	<LOD	10	51	10	123	15	41	14	1250	63	<LOD	23	<LOD	112
53	0.5	199	13	8	155	12	68	11	66	14	486	49	<LOD	18	<LOD	69
53	1	200	12	8	164	13	79	12	68	14	652	63	<LOD	18	<LOD	86
54	0.5	201	<LOD	8	27	6	46	9	46	10	1090	60	<LOD	16	<LOD	81
54	1	202	<LOD	10	85	10	148	14	58	13	1460	77	<LOD	19	<LOD	101
55	0.5	203	15	8	251	15	90	12	61	13	495	49	<LOD	18	<LOD	69
55	1	204	<LOD	11	246	14	61	10	75	12	<LOD	26	<LOD	14	<LOD	26
56	0.5	205	<LOD	11	145	12	61	11	48	12	789	60	<LOD	18	<LOD	80
56	1	206	<LOD	12	66	12	74	15	42	16	2859	130	<LOD	29	<LOD	165
57	0.5	207	<LOD	12	33	10	127	17	40	16	730	76	<LOD	26	<LOD	105
57	1	208	14	7	37	8	74	11	50	12	92	29	<LOD	16	<LOD	41
58	0.5	209	<LOD	10	13	8	176	16	26	12	410	49	<LOD	18	<LOD	65
58	1	210	<LOD	10	43	10	154	16	28	13	1030	77	<LOD	23	<LOD	103
59	0.5	211	<LOD	9	29	8	140	14	33	12	610	54	<LOD	18	<LOD	72
59	1	212	13	7	26	8	120	13	39	12	1120	71	<LOD	18	<LOD	95

Sample #	Depth ft	Al Ale	Ba	Ba	Be	Be	Ca	Ca	Mg	Mg	Na	Na	Fe	Fe	Mn	Mn	Cr	Cr
	[illegible]	195	<4.00	373	3000	510	1900	610	<4.00	1900	<4.00	4000	232000	9007	<4.00	7200	3627	2290
		197	NA	333	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25	[illegible]	198	<4.00	53	8000	380	2100	380	<4.00	910	<4.00	1200	58474	1000	<4.00	1050	1100	670
25	1	200	<4.00	27	117	75	<4.00	195	<4.00	400	<4.00	1424	[illegible]	2400	<4.00	2250	<4.00	875
25	2	199	<4.00	18	<4.00	77	<4.00	130	<4.00	285	<4.00	675	17395	900	<4.00	1140	<4.00	600
25	3	111	<4.00	18	111	54	<4.00	125	<4.00	240	<4.00	615	16704	900	<4.00	1020	<4.00	510
26	[illegible]	112	<4.00	65	4400	280	1700	330	<4.00	720	<4.00	2250	[illegible]	4200	<4.00	3440	1820	1000
26	1	113	<4.00	58	6100	280	<4.00	380	<4.00	765	<4.00	2400	[illegible]	5000	<4.00	3740	2440	1100
26	2	114	<4.00	19	597	65	<4.00	127	<4.00	210	<4.00	600	25283	900	<4.00	1020	<4.00	525
27	[illegible]	115	<4.00	51	4400	280	1000	300	<4.00	570	<4.00	1650	98154	2800	<4.00	2540	1800	800
27	1	116	<4.00	25	1450	120	<4.00	210	<4.00	400	<4.00	1350	[illegible]	2800	<4.00	2400	<4.00	1050
27	2	117	<4.00	10	286	51	<4.00	107	<4.00	180	<4.00	525	21300	700	<4.00	870	<4.00	435
28	[illegible]	118	<4.00	39	772	110	310	140	<4.00	330	<4.00	930	32384	1400	<4.00	1454	<4.00	680
28	1	119	<4.00	34	1110	130	280	170	<4.00	405	<4.00	1050	57382	2000	<4.00	2540	1170	700
28	2	120	<4.00	18	93	45	<4.00	105	<4.00	185	<4.00	525	15286	750	<4.00	885	<4.00	485
29	[illegible]	121	<4.00	24	886	91	<4.00	145	<4.00	210	<4.00	570	17807	820	<4.00	930	<4.00	465
29	1	122	<4.00	18	1310	97	<4.00	143	<4.00	240	<4.00	680	31500	1000	<4.00	1080	<4.00	480
29	2	123	<4.00	18	117	51	<4.00	120	<4.00	380	<4.00	945	59403	1500	<4.00	1500	<4.00	680
30	[illegible]	124	<4.00	68	2500	180	380	200	<4.00	380	<4.00	1650	37003	1000	<4.00	1650	<4.00	810
30	1	125	<4.00	17	405	61	<4.00	116	<4.00	210	<4.00	385	24794	800	<4.00	980	670	330
30	2	126	<4.00	18	88	44	<4.00	110	<4.00	185	<4.00	910	14884	720	<4.00	825	<4.00	450
30	3	127	<4.00	15	105	48	<4.00	114	<4.00	258	<4.00	750	34403	1100	<4.00	1230	<4.00	600
31	[illegible]	128	<4.00	52	3700	220	1100	250	<4.00	540	<4.00	1650	166676	2000	<4.00	2540	<4.00	1185
31	1	129	<4.00	17	165	62	<4.00	150	<4.00	405	<4.00	1200	75874	2000	<4.00	1650	<4.00	885
31	2	130	<4.00	12	62	38	<4.00	86	<4.00	148	<4.00	345	7484	400	<4.00	540	<4.00	330
32	[illegible]	131	<4.00	20	472	77	<4.00	148	<4.00	255	<4.00	765	23194	1000	<4.00	1125	<4.00	570
32	1	132	<4.00	27	1400	110	415	130	<4.00	285	<4.00	885	51000	1400	<4.00	1380	702	420
32	2	133	<4.00	14	102	38	<4.00	91	<4.00	150	<4.00	375	6007	520	<4.00	600	<4.00	345
33	[illegible]	134	<4.00	18	280	61	<4.00	119	<4.00	195	<4.00	525	12000	720	<4.00	840	<4.00	485
33	1	135	<4.00	42	2800	220	914	240	<4.00	600	<4.00	1050	117005	3000	<4.00	3140	<4.00	1394
33	2	136	<4.00	30	555	110	<4.00	240	<4.00	600	<4.00	1050	128022	3000	<4.00	3300	<4.00	1470
33	3	137	<4.00	16	<4.00	51	<4.00	82	<4.00	210	<4.00	570	21006	630	<4.00	930	<4.00	480
33	0.67	138	<4.00	18	1140	100	2200	180	<4.00	255	<4.00	525	18500	700	<4.00	870	<4.00	450
34	[illegible]	139	<4.00	20	781	87	<4.00	150	<4.00	240	<4.00	645	20002	930	<4.00	1050	<4.00	540
34	1	140	<4.00	21	600	80	<4.00	165	<4.00	300	<4.00	870	43107	1300	<4.00	1410	<4.00	645
34	2	141	<4.00	15	285	[illegible]	<4.00	112	<4.00	195	<4.00	465	15500	730	<4.00	810	505	300
34	3	142	<4.00	18	<4.00	84	<4.00	116	<4.00	255	<4.00	785	32000	1200	<4.00	1215	658	380
35	[illegible]	143	<4.00	20	832	85	<4.00	148	<4.00	225	<4.00	600	22000	910	<4.00	1005	528	350
35	1	144	<4.00	40	3820	210	911	220	<4.00	525	<4.00	1650	104000	2000	<4.00	2540	<4.00	1110
35	2	145	<4.00	18	79	47	<4.00	111	<4.00	270	<4.00	840	30005	1300	<4.00	1384	<4.00	645
35	3	146	<4.00	15	<4.00	53	<4.00	86	<4.00	150	<4.00	315	6000	430	<4.00	540	<4.00	330
36	[illegible]	147	<4.00	20	496	84	<4.00	126	<4.00	195	<4.00	480	14200	700	<4.00	795	<4.00	435
36	1	148	<4.00	42	2500	200	<4.00	330	<4.00	600	<4.00	2100	100073	4100	<4.00	3300	2340	1000
36	2	149	<4.00	9	<4.00	35	<4.00	66	<4.00	111	<4.00	255	5040	340	<4.00	380	<4.00	240
37	[illegible]	150	<4.00	105	13000	600	7300	740	<4.00	1050	<4.00	2700	142000	5200	<4.00	4200	<4.00	1950
37	1	151	<4.00	29	4340	220	<4.00	300	<4.00	450	<4.00	1424	92457	2400	<4.00	2250	1450	880
37	2	152	<4.00	17	102	51	137	81	<4.00	195	<4.00	525	16294	750	<4.00	855	<4.00	435
37	3	153	<4.00	16	75	44	<4.00	107	<4.00	210	<4.00	570	19008	630	<4.00	930	<4.00	480
38	0.5	154	<4.00	105	7100	340	6510	450	<4.00	600	<4.00	1484	67300	2800	<4.00	2400	<4.00	1200
38	1	155	<4.00	150	8107	330	2819	390	<4.00	600	<4.00	1650	77773	2800	<4.00	2700	<4.00	1364
38	0.5	156	<4.00	71	3807	240	2100	290	<4.00	465	<4.00	1384	71005	2200	<4.00	2250	<4.00	1020
39	1	157	<4.00	86	5347	280	1370	300	<4.00	510	<4.00	1484	76300	2400	<4.00	2400	<4.00	1085
40	[illegible]	158	<4.00	18	432	54	<4.00	105	<4.00	180	<4.00	485	22195	730	<4.00	780	<4.00	375
40	1	159	<4.00	93	4277	320	<4.00	325	<4.00	1125	<4.00	3800	310628	8000	<4.00	5000	2820	1600
40	2	160	<4.00	25	1030	98	<4.00	165	<4.00	255	<4.00	720	28200	1100	<4.00	1170	<4.00	555
40	3	161	<4.00	15	<4.00	50	<4.00	98	<4.00	185	<4.00	375	7219	510	<4.00	600	<4.00	375
41	[illegible]	162	<4.00	147	5120	450	2800	550	<4.00	1230	<4.00	3740	224070	8400	<4.00	8000	3700	1800
41	1	163	<4.00	81	13004	460	4000	460	<4.00	720	<4.00	1950	147000	3700	<4.00	3140	<4.00	1470
41	1.5	164	<4.00	25	1840	130	<4.00	195	<4.00	255	<4.00	600	25400	1000	<4.00	1155	<4.00	555
42	[illegible]	165	<4.00	113	5230	380	2130	460	<4.00	1085	<4.00	3300	218031	7200	<4.00	5400	2410	1600
42	1	166	<4.00	52	1400	160	310	200	<4.00	585	<4.00	1800	122002	3300	<4.00	3140	3450	1100
42	2	167	<4.00	18	153	50	<4.00	112	<4.00	210	<4.00	570	28198	870	<4.00	1035	<4.00	510
43	[illegible]	168	<4.00	136	6130	480	1000	520	<4.00	1350	<4.00	4340	323004	10005	<4.00	6000	4050	2090
43	1	169	<4.00	38	851	110	300	140	<4.00	380	<4.00	1215	68557	2000	<4.00	1950	<4.00	840
43	2	170	<4.00	19	171	53	<4.00	114	<4.00	210	<4.00	540	15194	700	<4.00	945	<4.00	495
44	[illegible]	171	<4.00	119	10004	720	8010	860	<4.00	1800	<4.00	5540	443507	10000	<4.00	8040	4050	2800
44	1	172	<4.00	28	706	120	634	180	<4.00	525	<4.00	1650	102403	2800	<4.00	2540	<4.00	1125
44	1.5	173	<4.00	13	65	38	<4.00	94	<4.00	225	<4.00	675	35200	1000	<4.00	1050	679	340
45	[illegible]	174	<4.00	180	13401	770	16102	1100	<4.00	1440	<4.00	3800	223040	8000	<4.00	5000	<4.00	2540
45	1	175	<4.00	34	2000	180	670	180	<4.00	345	<4.00	980	52378	1600	<4.00	1650	<4.00	785
45	1.5	176	<4.00	28	980	110	237	150	<4.00	435	<4.00	1350	77158	2200	<4.00	2100	<4.00	980
46	[illegible]	177	<4.00	63	3290	230	1620	280	<4.00	540	<4.00	1500	81459	2800	<4.00	2400	<4.00	1110
46	1	178	<4.00	42	2229	160	<4.00	225	<4.00	270	<4.00	645	18000	900	1650	860	<4.00	785
46	1.5	179	<4.00	16	285	59	<4.00	130	<4.00	185	<4.00	375	7738	530	<4.00	615	<4.00	375
47	[illegible]	180	<4.00	225	4007	510	910	600	<4.00	1950	<4.00	6446	407004	19004	<4.00	10195	6218	3000
47	1	181	<4.00	27	1640	120	<4.00	180	<4.00	285	<4.00	825	38001	1200	<4.00	1304	<4.00	615
47	2	182	<4.00	32	783	93	219	130	<4.00	315	<4.00	930	43298	1500	<4.00	1500	<4.00	705
48	[illegible]	183	<4.00	124	8000	350	2210	410	<4.00	915	<4.00	2700	184034	5000	<4.00	4340	<4.00	1950
48		184	<4.00	240	1900	380	<4.00	1200	<4.00	2040	<4.00	9000	303071	21000	<4.00	14544	<4.00	6298
48	1	185	<4.00	95	2000	240	547	300	<4.00	1085	<4.00	3800	302000	8005	<4.00	5000	<4.00	2400
48	2	186	<4.00	46	1840	160	435	180	<4.00	420	<4.00	1274	68150	2000	<4.00	2100	<4.00	975
48	3	187	<4.00	17	89	42	<4.00	99	<4.00	180	<4.00	450	12400	640	<4.00	750	<4.00	405
48	4	188	<4.00	19	190	53	<4.00	118	<4.00	210	<4.00	570	21004	850	<4.00	930	<4.00	480
49	[illegible]	189	<4.00	195	2800	340	800	410	<4.00	1200	<4.00	3740	234076	8000	<4.00	6000	3080	1800
49	1	190	<4.00	28	386	83	<4.00	180	<4.00	435	<4.00	1394	93504	2400	<4.00	2250	<4.00	980
49	2	191	<4.00	34	586	100	<4.00	195	<4.00	345	<4.00	1000	41002	1600	<4.00	1800	<4.00	900
49	3	192	<4.00	16	60	39	<4.00	93	<4.00	180	<4.00	465	13000	670	<4.00	780	<4.00	420
50	0.5	193	<4.00	82	1000	190	1300	260	<4.00	675	<4.00	2100	138057	3000	<4.00	3300	<4.00	1470
50	1	194	<4.00	34	675	93	457	130	<4.00	345	<4.00	1085	57190	1600	<4.00	1800	<4.00	810
51	0.5	195	<4.00	40	1430	140	398	160	<4.00	405	<4.00	1215	82464	2000	<4.00	1950	<4.00	915
51	0.5	196	<4.00	56	2540	180	713	200	<4.00	465	<4.00	1454	90300	2400	<4.00	2400	<4.00	1080
52	0.5	197	<4.00	14	86	38	<4.00	91	<4.00	165	<4.00	480	16291	720	<4.00	795	<4.00	360
52	1	198	<4.00	33	1870	120	<4.00	210	<4.00	420	<4.00	1230	75874	2200	<4.00	2100	1340	980
53	0.5	199	<4.00	22	408	73	171	100	<4.00	255	<4.00	660	23001	1000	<4.00	1110	<4.00	555
53	1	200	<4.00	28	527	80	175	110	<4.00	270	<4.00	750	27981	1100	<4.00	1155	<4.00	570
54	0.5	201	<4.00	23	861	73	148	82	<4.00	255	<4.00	765	41002	1200	<4.00	1250	<4.00	600
54	1	202	<4.00	28	587	81	363	110	<4.00	285	<4.00	885	47181	1400	<4.00	1440	<4.00	690
55	0.5	203	<4.00	23	343	68	<4.00	137	<4.00	255	<4.00	720	27005	1100	<4.00	1200	<4.00	600
55	1	204	<4.00	15	<4.00	60	<4.00	87	<4.00	165	<4.00	405	8429	550	<4.00	660	405	290
56	0.5	205	<4.00	28	1500	120	<4.00	195	<4.00	300	<4.00	885	41002	1400	<4.00	1380	910	450
56	1	206	<4.00	47	3400	210	716	230	<4.00	525	<4.00	1650	100000	2800	<4.00	2540	1930	790
57	0.5	207	<4.00	41	4730	280	<4.00	300	<4.00	645	<4.00	2100	147000	4000	<4.00	3300	2530	980
57	1	208	<4.00	19	1000	110	<4.00	180	<4.00	380	<4.00	1140	61000	1600	<4.00	1800	<4.00	825
58	0.5	209	<4.00	22	400	78	<4.00	150	<4.00	270	<4.00	660	19302	900	<4.00	1110	<4.00	600
58	1	210	<4.00	31	853	110	<4.00	210	<4.00	405	<4.00	1244	64000	2000	<4.00	1950	<4.00	930
59	0.5	211	<4.00	24	806	82	<4.00	165	<4.00	240	<4.00	645	19004	930	<4.00	1050	<4.00	555
59	1	212	<4.00	27	638	85	<4.00	165	<4.00	300	<4.00	885	40400	1400	<4.00	1410	<4.00	660

Appendix C

Photodocumentation

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: January 25, 2000

TO: Paul Atkociunas, START Project Manager, E & E, Marion, Illinois

FROM: David Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

THROUGH: Patrick Zwilling, START Assistant Program Manager, E & E, Chicago, Illinois

SUBJECT: Data Quality Review for Polychlorinated Biphenyls (PCBs), Greenberg Salvage Yard, Murphysboro, Jackson County, Illinois

REFERENCE: Project TDD S05-9911-004 Analytical TDD S05-9911-803
Project PAN 9B0401SIXX Analytical PAN 9BAC01TAXX

The data quality assurance (QA) review of 13 soil samples collected from the Greenberg Salvage Yard site is complete. The samples were collected on December 1 and 2, 1999, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to CT&E Environmental Services, Inc., Ludington, Michigan. The laboratory analyses were performed according to the United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 8082.

Sample Identification

START Identification No.	Laboratory Identification No.
SB-601	3993326001
SB-2401	3993326002
SB-401.5	3993326003
SB-1001	3993326004
SB-1301	3993326005
SB-1501	3993326006
SB-1801	3993326007
SB-2601	3993326008
SB-3201	3993326009
SB-3501	3993326010
SB-3601	3993326011
SB-4101	3993326012
SB-4201	3993326013

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on December 1 and 2, 1999, extracted on December 7, 1999, and analyzed on December 7 and 8, 1999. This 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 detected 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: Acceptable

The chromatographic patterns of the detected PCBs in the samples matched those in the standards.

VI. Additional QC Checks: Acceptable

The recoveries of the surrogates used in the samples were outside acceptable laboratory limits, in some samples; no qualification was judged to be required.

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: January 24, 2000

TO: Paul Atkociunas, START Project Manager, E & E, Marion, Illinois

FROM: David Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

THROUGH: Patrick Zwilling, START Assistant Program Manager, E & E, Chicago, Illinois

SUBJECT: Data Quality Review for pH, Greenberg Salvage Yard, Murphysboro, Jackson County, Illinois

REFERENCE: Project TDD S05-9911-004 Analytical TDD S05-9911-803
Project PAN 9B0401SIXX Analytical PAN 9BAC01TAXX

The data quality assurance (QA) review of 13 soil samples collected from the Greenberg Salvage Yard site is complete. The samples were collected on December 1 and 2, 1999, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to CT&E Environmental Services, Inc., Ludington, Michigan. The laboratory analyses were performed according to the United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 9045.

Sample Identification

START Identification No.	Laboratory Identification No.
SB-601	3993326001,6014
SB-2401	3993326002,6015
SB-401.5	3993326003,6016
SB-1001	3993326004,6017
SB-1301	3993326005,6018
SB-1501	3993326006,6019
SB-1801	3993326007,6020
SB-2601	3993326008,6021
SB-3201	3993326009,6022
SB-3501	3993326010,6023
SB-3601	3993326011,6024
SB-4101	3993326012,6025
SB-4201	3993326013,6026

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Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on December 1 and 2, 1999, and analyzed on December 7, 1999. The Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990) does not specify a holding time for this parameter.

II. Calibrations: Acceptable

The calibration for pH was verified before sample analyses following analyses of three standard solutions.

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 OSWER Data Validation Procedures, Section 9.0, Generic Data Validation Procedures. 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: January 25, 2000

TO: Paul Atkociunas, START Project Manager, E & E, Marion, Illinois

FROM: David Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

THROUGH: Patrick Zwilling, START Assistant Program Manager, E & E, Chicago, Illinois

SUBJECT: Inorganic Data Quality Review for Priority Pollutant Metals and Toxicity Characteristic Leaching Procedure (TCLP) Metals, Greenberg Salvage Yard, Murphysboro, Jackson County, Illinois

REFERENCE: Project TDD S05-9911-004 Analytical TDD S05-9911-803
Project PAN 9B0401SIXX Analytical PAN 9BAC01TAXX

The data quality assurance (QA) review of 13 soil samples collected from the Greenberg Salvage Yard site is complete. The samples were collected on December 1 and 2, 1999, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to CT&E Environmental Services, Inc., Ludington, Michigan. The laboratory analyses were performed according to the United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Methods 1311, 6010, and 7470/7471.

Sample Identification

START Identification No.	Laboratory Identification No.
SB-601	3993326001,6014
SB-2401	3993326002,6015
SB-401.5	3993326003,6016
SB-1001	3993326004,6017
SB-1301	3993326005,6018
SB-1501	3993326006,6019
SB-1801	3993326007,6020
SB-2601	3993326008,6021
SB-3201	3993326009,6022

recycled paper

START Identification No.	Laboratory Identification No.
SB-3501	3993326010,6023
SB-3601	3993326011,6024
SB-4101	3993326012,6025
SB-4201	3993326013,6026

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on December 1 and 2, 1999, and analyzed on December 6, 1999. Analysis for mercury was performed on December 8 and 9, 1999. This is within the 6-month (28 days for mercury) holding time limit.

II. Calibration:

- Initial Calibration: Acceptable

Recoveries for the initial calibration verification were within 90 to 110% (80 to 120% for mercury), as required. The correlation coefficient for mercury exceeded 0.995.

- 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.

IV. 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.

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326001	**Matrix:**	Solid
Client Sample ID:	SB-601	**Location:**	Boring 6; 1'BGS
Collected:	12/01/1999 14:45	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Antimony	4.1 LM	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/09/99 11:13	HNI
Arsenic	17	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
Beryllium	0.45	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
Cadmium	16	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
Chromium	35	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
Copper	580	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
Lead	11000	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
Mercury	2.8 D	mg/Kg	0.11	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	41	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
Silver	4.8	mg/Kg	0.05	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
[illegible]lium	71	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
Zinc	2000	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 16:46	HNI
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.48	pH units		SW 9045C		12/07/99 13:54	SKP
Total Solids	91.9	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:01	DD
Aroclor-1221	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:01	DD
Aroclor-1232	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:01	DD
Aroclor-1242	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:01	DD
Aroclor-1248	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:01	DD
Aroclor-1254	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:01	DD
Aroclor-1260	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:01	DD

Reported: 12/10/1

Qualifiers

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Certification Numbers: WI #999999180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326001	**Matrix:**	Solid
Client Sample ID:	SB-601	**Location:**	Boring 6; 1'BGS
Collected:	12/01/1999 14:45	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Grizia

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

000079

Ecology and Environment, Inc.

Sample ID:	3993326002	Matrix:	Solid
Client Sample ID:	SB-2401	Location:	Boring 24 1'BGS
Collected:	12/01/1999 16:00	Project:	S05-9911-803
Received:	12/03/1999 11:00	Sampled By:	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Date / Time Analyzed	Analyst
TOTAL METALS ANALYSIS							
Antimony	9.0	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/09/99 11:20	HNL
Arsenic	ND	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:07	HNL
Beryllium	0.46	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 17:07	[illegible]
Cadmium	3.4	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 17:07	HNL
Chromium	80	mg/Kg	3	SW-846 6010	12/06/99 12:39	12/06/99 17:07	HNL
Copper	450	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:07	HNL
Lead	7300	mg/Kg	0.6	SW-846 6010	12/06/99 12:39	12/06/99 17:07	HNL
Mercury	0.63 D	mg/Kg	0.47	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	51	mg/Kg	0.6	SW-846 6010	12/06/99 12:39	12/06/99 17:07	HNL
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:07	HNL
Silver	4.1	mg/Kg	0.06	SW-846 6010	12/06/99 12:39	12/06/99 17:07	HNL
Thallium	75	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:07	HNL
Zinc	2200	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:07	HNL
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.39	pH units		SW 9045C		12/07/99 13:54	[illegible]
Total Solids	83.2	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:29	DDC
Aroclor-1221	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:29	DDC
Aroclor-1232	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:29	DDC
Aroclor-1242	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:29	DDC
Aroclor-1248	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:29	DDC
Aroclor-1254	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:29	DDC
Aroclor-1260	110	ug/kg	40	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:29	DDC

Reported: 12/10/199

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326002	**Matrix:**	Solid
Client Sample ID:	SB-2401	**Location:**	Boring 24 1'BGS
Collected:	12/01/1999 16:00	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Garcia

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326003	Matrix:	Solid
Client Sample ID:	SB-401.5	Location:	Boring 4; 1.5'BGS
Collected:	12/01/1999 16:30	Project:	S05-9911-803
Received:	12/03/1999 11:00	Sampled By:	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analys
TOTAL METALS ANALYSIS							
Antimony	8.3 JM	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/09/99 11:26	HNL
Arsenic	9.3	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:12	HNL
Beryllium	0.62	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 17:1[illegible]	[illegible]L
Cadmium	2.4	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 17:12	HNL
Chromium	39	mg/Kg	3	SW-846 6010	12/06/99 12:39	12/06/99 17:12	HNL
Copper	710	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:12	HNL
Lead	7000	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 17:12	HNL
Mercury	0.90 D	mg/Kg	0.12	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	66	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 17:12	HNL
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:12	HNL
S[illegible]ver	5.5	mg/Kg	0.05	SW-846 6010	12/06/99 12:39	12/06/99 17:12	HNL
[illegible]dium	95	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:12	HNL
Zinc	2100	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:12	HNL
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.08	pH units		SW 9045C		12/07/99 13:54	[illegible]P
Total Solids	86.4	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	39	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:58	DDC
Aroclor-1221	ND	ug/kg	39	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:58	DDC
Aroclor-1232	ND	ug/kg	39	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:58	DDC
Aroclor-1242	ND	ug/kg	39	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:58	DDC
Aroclor-1248	ND	ug/kg	39	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:58	DDC
Aroclor-1254	ND	ug/kg	39	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:58	DDC
Aroclor-1260	44	ug/kg	39	SW846 8082 PCB	12/07/99 18:19	12/07/99 22:58	DDC

Reported: 12/10/19

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3993326003	**Matrix:**	Solid
Client Sample ID:	SB-401.5	**Location:**	Boring 4; 1.5'BGS
Collected:	12/01/1999 16:30	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Galizia

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

000013

Ecology and Environment, Inc.

Sample ID:	3993326004	**Matrix:**	Solid
Client Sample ID:	SB-1001	**Location:**	Boring 10; 1'BGS
Collected:	12/01/1999 16:40	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Antimony	5.0 M	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/09/99 11:32	HNL
Arsenic	ND	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
Beryllium	0.70	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
Cadmium	ND	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
Chromium	30	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
Copper	340	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
Lead	4600	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
Mercury	0.56	mg/Kg	0.022	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	49	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
Silver	5.4	mg/Kg	0.05	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
[illegible]lium	110	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
Zinc	1800	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:18	HNL
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.07	pH units		SW 9045C		12/07/99 13:54	SKP
Total Solids	89.8	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	37	SW846 8082 PCB	12/07/99 18:19	12/08/99 12:55	DDC
Aroclor-1221	ND	ug/kg	37	SW846 8082 PCB	12/07/99 18:19	12/08/99 12:55	DDC
Aroclor-1232	ND	ug/kg	37	SW846 8082 PCB	12/07/99 18:19	12/08/99 12:55	DDC
Aroclor-1242	ND	ug/kg	37	SW846 8082 PCB	12/07/99 18:19	12/08/99 12:55	DDC
Aroclor-1248	57	ug/kg	37	SW846 8082 PCB	12/07/99 18:19	12/08/99 12:55	DDC
Aroclor-1254	ND	ug/kg	37	SW846 8082 PCB	12/07/99 18:19	12/08/99 12:55	DDC
Aroclor-1260	250	ug/kg	37	SW846 8082 PCB	12/07/99 18:19	12/08/99 12:55	DDC

Reported: 12/10/19[illegible]

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326004	**Matrix:**	Solid
Client Sample ID:	SB-1001	**Location:**	Boring 10; 1'BGS
Collected:	12/01/1999 16:40	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Gulizia

Project Manager, Michigan Division

Reported: 12/10/199

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3993326005	**Matrix:**	Solid
Client Sample ID:	SB-1301	**Location:**	Boring 13; 1'BGS
Collected:	12/02/1999 08:30	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analy
TOTAL METALS ANALYSIS							
Antimony	9.3	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/09/99 11:37	HNI
Arsenic	ND	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:23	HNI
Beryllium	0.30	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 17:[illegible]	NI
Cadmium	5.4	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 17:23	HNI
Chromium	38	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:23	HNI
Copper	590	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:23	HNI
Lead	4300	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 17:23	HNI
Mercury	0.90D	mg/Kg	0.11	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	71	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 17:23	HNI
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:23	HNI
Silver	4.4	mg/Kg	0.05	SW-846 6010	12/06/99 12:39	12/06/99 17:23	HNI
[illegible]llium	77	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:23	HNI
Zinc	3100	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 17:23	HNI
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.07	pH units		SW 9045C		12/07/99 13:5[illegible]	KP
Total Solids	89.0	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	56	SW846 8082 PCB	12/07/99 18:19	12/08/99 13:24	DD
Aroclor-1221	ND	ug/kg	56	SW846 8082 PCB	12/07/99 18:19	12/08/99 13:24	DD
Aroclor-1232	ND	ug/kg	56	SW846 8082 PCB	12/07/99 18:19	12/08/99 13:24	DD
Aroclor-1242	ND	ug/kg	56	SW846 8082 PCB	12/07/99 18:19	12/08/99 13:24	DD
Aroclor-1248	ND	ug/kg	56	SW846 8082 PCB	12/07/99 18:19	12/08/99 13:24	DD
Aroclor-1254	ND	ug/kg	56	SW846 8082 PCB	12/07/99 18:19	12/08/99 13:24	DD
Aroclor-1260	290	ug/kg	56	SW846 8082 PCB	12/07/99 18:19	12/08/99 13:24	DD

Reported: 12/10/1

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3993326005	**Matrix:**	Solid
Client Sample ID:	SB-1301	**Location:**	Boring 13; 1'BGS
Collected:	12/02/1999 08:30	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326006	Matrix:	Solid
Client Sample ID:	SB-1501	Location:	Boring 15; 1'BGS
Collected:	12/02/1999 08:45	Project:	S05-9911-803
Received:	12/03/1999 11:00	Sampled By:	PA

Test Description	Result	Unit	Reporting Limit	Method	Date/Time Prepared	Date/Time Analyzed	Analyst
TOTAL METALS ANALYSIS							
Antimony	14	mg/Kg	0.9	SW-846 6010	12/06/99 12:39	12/09/99 12:02	HNL
Arsenic	ND	mg/Kg	0.9	SW-846 6010	12/06/99 12:39	12/06/99 17:29	HNL
Beryllium	0.24	mg/Kg	0.09	SW-846 6010	12/06/99 12:39	12/06/99 17:29	[illegible]
Cadmium	13	mg/Kg	0.09	SW-846 6010	12/06/99 12:39	12/06/99 17:29	HNL
Chromium	77	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:29	HNL
Copper	990	mg/Kg	0.9	SW-846 6010	12/06/99 12:39	12/06/99 17:29	HNL
Lead	6800	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 17:29	HNL
Mercury	1.6D	mg/Kg	0.11	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	120	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 17:29	HNL
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:29	HNL
Silver	13	mg/Kg	0.05	SW-846 6010	12/06/99 12:39	12/06/99 17:29	HNL
[illegible]lium	310	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:29	HNL
Zinc	2400	mg/Kg	0.9	SW-846 6010	12/06/99 12:39	12/06/99 17:29	HNL
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.24	pH units		SW 9045C		12/07/99 13:54	[illegible]
Total Solids	90.1	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	37	SW846 8082 PCB	12/07/99 18:22	12/08/99 13:53	DDC
Aroclor-1221	ND	ug/kg	37	SW846 8082 PCB	12/07/99 18:22	12/08/99 13:53	DDC
Aroclor-1232	ND	ug/kg	37	SW846 8082 PCB	12/07/99 18:22	12/08/99 13:53	DDC
Aroclor-1242	ND	ug/kg	37	SW846 8082 PCB	12/07/99 18:22	12/08/99 13:53	DDC
Aroclor-1248	290	ug/kg	37	SW846 8082 PCB	12/07/99 18:22	12/08/99 13:53	DDC
Aroclor-1254	690 JM	ug/kg	37	SW846 8082 PCB	12/07/99 18:22	12/08/99 13:53	DDC
Aroclor-1260	470	ug/kg	37	SW846 8082 PCB	12/07/99 18:22	12/08/99 13:53	DDC

Reported: 12/10/19

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Legend
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326006	**Matrix:**	Solid
Client Sample ID:	SB-1501	**Location:**	Boring 15; 1'BGS
Collected:	12/02/1999 08:45	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Udya Sorizia

Project Manager, Michigan Division

Reported: 12/10/199

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3993326007	**Matrix:**	Solid
Client Sample ID:	SB-1801	**Location:**	Boring 18; 1'BGS
Collected:	12/02/1999 08:55	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analys
TOTAL METALS ANALYSIS							
Antimony	3.3 µM	mg/Kg	0.8	SW-846 6010	12/06/99 12:39	12/09/99 12:07	HNL
Arsenic	3.7 µM	mg/Kg	0.8	SW-846 6010	12/06/99 12:39	12/06/99 17:35	HNL
Beryllium	0.59	mg/Kg	0.08	SW-846 6010	12/06/99 12:39	12/06/99 17:35	JL
Cadmium	ND	mg/Kg	0.08	SW-846 6010	12/06/99 12:39	12/06/99 17:35	HNL
Chromium	18	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:35	HNL
Copper	1200	mg/Kg	0.8	SW-846 6010	12/06/99 12:39	12/06/99 17:35	HNL
Lead	2600	mg/Kg	0.4	SW-846 6010	12/06/99 12:39	12/06/99 17:35	HNL
Mercury	1.0D	mg/Kg	0.11	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	32	mg/Kg	0.4	SW-846 6010	12/06/99 12:39	12/06/99 17:35	HNL
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:35	HNL
Silver	3.9	mg/Kg	0.04	SW-846 6010	12/06/99 12:39	12/06/99 17:35	HNL
[illegible]lium	75	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:35	HNL
Zinc	4000	mg/Kg	0.8	SW-846 6010	12/06/99 12:39	12/06/99 17:35	HNL
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.37	pH units		SW 9045C		12/07/99 13:54	SKP
Total Solids	92.1	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:22	12/08/99 01:50	DDC
Aroclor-1221	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:22	12/08/99 01:50	DDC
Aroclor-1232	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:22	12/08/99 01:50	DDC
Aroclor-1242	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:22	12/08/99 01:50	DDC
Aroclor-1248	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:22	12/08/99 01:50	DDC
Aroclor-1254	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:22	12/08/99 01:50	DDC
Aroclor-1260	ND	ug/kg	36	SW846 8082 PCB	12/07/99 18:22	12/08/99 01:50	DDC

Reported: 12/10/19

Codes

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3993326007	**Matrix:**	Solid
Client Sample ID:	SB-1801	**Location:**	Boring 18; 1'BGS
Collected:	12/02/1999 08:55	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326008	Matrix:	Solid
Client Sample ID:	SB-2601	Location:	Boring 26; 1'BGS
Collected:	12/02/1999 11:15	Project:	S05-9911-803
Received:	12/03/1999 11:00	Sampled By:	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analys
TOTAL METALS ANALYSIS							
Antimony	43	mg/Kg	0.9	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
Arsenic	ND	mg/Kg	0.9	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
Beryllium	0.25	mg/Kg	0.09	SW-846 6010	12/06/99 12:39	12/06/99 17:5[illegible]	[illegible]L
Cadmium	13	mg/Kg	0.09	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
Chromium	110	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
Copper	970	mg/Kg	0.9	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
Lead	26000	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
Mercury	6.1 D	mg/Kg	0.23	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	130	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
S[illegible]er	10	mg/Kg	0.05	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
[illegible]lium	240	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
Zinc	5000	mg/Kg	0.9	SW-846 6010	12/06/99 12:39	12/06/99 17:58	HNL
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	6.35	pH units		SW 9045C		12/07/99 13:54	[illegible]P
Total Solids	87.4	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:21	DDC
Aroclor-1221	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:21	DDC
Aroclor-1232	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:21	DDC
Aroclor-1242	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:21	DDC
Aroclor-1248	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:21	DDC
Aroclor-1254	1500 JM	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:21	DDC
Aroclor-1260	810	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:21	DDC

Reported: 12/10/19[illegible]

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326008	**Matrix:**	Solid
Client Sample ID:	SB-2601	**Location:**	Boring 26; 1'BGS
Collected:	12/02/1999 11:15	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Gorin

Project Manager, Michigan Division

Reported: 12/10/199

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326009	**Matrix:**	Solid
Client Sample ID:	SB-3201	**Location:**	Boring 32; 1'BGS
Collected:	12/02/1999 11:30	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Anal
TOTAL METALS ANALYSIS							
Antimony	6.4 LM	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/09/99 12:13	HI
Arsenic	7.9	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:04	HI
Beryllium	0.38	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 18[illegible]	HI
Cadmium	2.0	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 18:04	HI
Chromium	68	mg/Kg	3	SW-846 6010	12/06/99 12:39	12/06/99 18:04	HI
Copper	880	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:04	HI
Lead	1800	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 18:04	HI
Mercury	0.83 D	mg/Kg	0.12	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	61	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 18:04	HI
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 18:04	HI
Silver	7.8	mg/Kg	0.05	SW-846 6010	12/06/99 12:39	12/06/99 18:04	HI
[illegible]allium	140	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 18:04	HI
Zinc	2700	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:04	HI
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 14:02	SK
pH	7.46	pH units		SW 9045C		12/07/99 14[illegible]	SK
Total Solids	84.7	%		SM18 2540G		12/06/99 07:30	SK
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	39	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:50	DI
Aroclor-1221	ND	ug/kg	39	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:50	DI
Aroclor-1232	ND	ug/kg	39	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:50	DI
Aroclor-1242	ND	ug/kg	39	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:50	DI
Aroclor-1248	100	ug/kg	39	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:50	DI
Aroclor-1254	410 LM	ug/kg	39	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:50	DI
Aroclor-1260	430	ug/kg	39	SW846 8082 PCB	12/07/99 18:22	12/08/99 14:50	DI

Reported: 12/10/

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

[illegible]ifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326009	**Matrix:**	Solid
Client Sample ID:	SB-3201	**Location:**	Boring 32; 1'BGS
Collected:	12/02/1999 11:30	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Udya Dizia

Project Manager / Michigan Division

Reported: 12/10/199

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326010	Matrix:	Solid
Client Sample ID:	SB-3501	Location:	Boring 35; 1'BGS
Collected:	12/02/1999 11:45	Project:	S05-9911-803
Received:	12/03/1999 11:00	Sampled By:	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analys
TOTAL METALS ANALYSIS							
Antimony	2.8 LM	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/09/99 12:18	HNL
Arsenic	ND	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
Beryllium	0.58	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
Cadmium	1.8	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
Chromium	40	mg/Kg	3	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
Copper	550	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
Lead	1800	mg/Kg	0.6	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
Mercury	0.90 D	mg/Kg	0.12	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	44	mg/Kg	0.6	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
Silver	4.9	mg/Kg	0.06	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
Thallium	100	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
Zinc	1800	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:10	HNL
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.44	pH units		SW 9045C		12/07/99 13:54	SKP
Total Solids	79.9	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:19	DDC
Aroclor-1221	ND	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:19	DDC
Aroclor-1232	ND	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:19	DDC
Aroclor-1242	ND	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:19	DDC
Aroclor-1248	100	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:19	DDC
Aroclor-1254	520 LM	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:19	DDC
Aroclor-1260	560	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:19	DDC

Reported: 12/10/19

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326010	**Matrix:**	Solid
Client Sample ID:	SB-3501	**Location:**	Boring 35; 1'BGS
Collected:	12/02/1999 11:45	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Gurria

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3993326011	**Matrix:**	Solid
Client Sample ID:	SB-3601	**Location:**	Boring 36; 1'BGS
Collected:	12/02/1999 12:00	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Date / Time Analyzed	Analyst
TOTAL METALS ANALYSIS							
Antimony	4.5 JM	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/09/99 12:24	HNL
Arsenic	2.6 JM	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:15	HNL
Beryllium	0.93	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 18:15	
Cadmium	3.0	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 18:15	HNL
Chromium	62	mg/Kg	3	SW-846 6010	12/06/99 12:39	12/06/99 18:15	HNL
Copper	650	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:15	HNL
Lead	2700	mg/Kg	0.6	SW-846 6010	12/06/99 12:39	12/06/99 18:15	HNL
Mercury	1.1 D	mg/Kg	0.13	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	77	mg/Kg	0.6	SW-846 6010	12/06/99 12:39	12/06/99 18:15	HNL
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 18:15	HNL
Silver	4.1	mg/Kg	0.06	SW-846 6010	12/06/99 12:39	12/06/99 18:15	HNL
Thallium	94	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 18:15	HNL
Zinc	1600	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:15	HNL
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.34	pH units		SW 9045C		12/07/99 13:54	
Total Solids	78.7	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:47	DDC
Aroclor-1221	ND	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:47	DDC
Aroclor-1232	ND	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:47	DDC
Aroclor-1242	ND	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:47	DDC
Aroclor-1248	ND	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:47	DDC
Aroclor-1254	ND	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:47	DDC
Aroclor-1260	480	ug/kg	42	SW846 8082 PCB	12/07/99 18:22	12/08/99 15:47	DDC

Reported: 12/10/199

Qualifiers

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326011	**Matrix:**	Solid
Client Sample ID:	SB-3601	**Location:**	Boring 36; 1'BGS
Collected:	12/02/1999 12:00	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Gorizia

Project Manager, Michigan Division

Reported: 12/10/199

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326012	**Matrix:**	Solid
Client Sample ID:	SB-4101	**Location:**	Boring 41; 1'BGS
Collected:	12/02/1999 13:45	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Date / Time Analyzed	Analyst
TOTAL METALS ANALYSIS							
Antimony	8.2	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/09/99 12:30	HNL
Arsenic	3.3 LM	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:21	HNL
Beryllium	0.57	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 18:21	
Cadmium	9.0	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 18:21	HNL
Chromium	61	mg/Kg	3	SW-846 6010	12/06/99 12:39	12/06/99 18:21	HNL
Copper	1400	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:21	HNL
Lead	7700	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 18:21	HNL
Mercury	3.1 D	mg/Kg	0.11	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	89	mg/Kg	0.5	SW-846 6010	12/06/99 12:39	12/06/99 18:21	HNL
Selenium	ND	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 18:21	HNL
Silver	8.3	mg/Kg	0.05	SW-846 6010	12/06/99 12:39	12/06/99 18:21	HNL
[illegible]	180	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 18:21	HNL
Zinc	4400	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:21	HNL
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.24	pH units		SW 9045C		12/07/99 13:54	
Total Solids	86.6	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 16:16	DDC
Aroclor-1221	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 16:16	DDC
Aroclor-1232	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 16:16	DDC
Aroclor-1242	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 16:16	DDC
Aroclor-1248	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 16:16	DDC
Aroclor-1254	ND	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 16:16	DDC
Aroclor-1260	220 LM	ug/kg	38	SW846 8082 PCB	12/07/99 18:22	12/08/99 16:16	DDC

Reported: 12/10/199

Qu[illegible]

Certification Numbers: WI #999999180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3993326012	**Matrix:**	Solid
Client Sample ID:	SB-4101	**Location:**	Boring 41; 1'BGS
Collected:	12/02/1999 13:45	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326013	Matrix:	Solid
Client Sample ID:	SB-4201	Location:	Boring 42; 1'BGS
Collected:	12/02/1999 14:00	Project:	S05-9911-803
Received:	12/03/1999 11:00	Sampled By:	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Date / Time Analyzed	Analys
TOTAL METALS ANALYSIS							
Antimony	33	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
Arsenic	19	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
Beryllium	0.65	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 18:2[illegible]	HNL
Cadmium	ND	mg/Kg	0.1	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
Chromium	22	mg/Kg	3	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
Copper	1000	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
Lead	6300	mg/Kg	0.6	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
Mercury	0.76D	mg/Kg	0.12	SW-846 7471	12/08/99 18:56	12/09/99 19:18	JL
Nickel	32	mg/Kg	0.6	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
Selenium	2.3JM	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
Silver	5.0	mg/Kg	0.06	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
[illegible]lium	92	mg/Kg	2	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
Zinc	1300	mg/Kg	1	SW-846 6010	12/06/99 12:39	12/06/99 18:26	HNL
PHYSICAL PROPERTY ANALYSIS							
Corrosivity pH Analysis	Non			SW 9045C		12/07/99 13:54	SKP
pH	7.23	pH units		SW 9045C		12/07/99 13:5[illegible]	[illegible]P
Total Solids	83.8	%		SM18 2540G		12/06/99 07:30	SKP
GC SEMIVOLATILE ORGANIC ANALYSIS							
Aroclor-1016	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:22	12/08/99 04:42	DDC
Aroclor-1221	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:22	12/08/99 04:42	DDC
Aroclor-1232	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:22	12/08/99 04:42	DDC
Aroclor-1242	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:22	12/08/99 04:42	DDC
Aroclor-1248	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:22	12/08/99 04:42	DDC
Aroclor-1254	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:22	12/08/99 04:42	DDC
Aroclor-1260	ND	ug/kg	40	SW846 8082 PCB	12/07/99 18:22	12/08/99 04:42	DDC

Reported: 12/10/19

Certification Numbers: WI 9999959180; MI 80021; AK UST 048; ND R-081; MD 266; IN C-MI-01

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326013	**Matrix:**	Solid
Client Sample ID:	SB-4201	**Location:**	Boring 42; 1'BGS
Collected:	12/02/1999 14:00	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326014	**Matrix:**	Solid
Client Sample ID:	SB-601	**Location:**	Boring 6;1'BGS
Collected:	12/01/1999 14:45	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 20:41	HNL
Barium	0.84	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 20:41	HNL
Cadmium	0.096	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 20:41	HNL
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 20:41	HNL
Lead	1.6	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 20:41	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 20:41	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 20:41	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Corizia

Project Manager, Michigan Division

Reported: 12/10/19

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Ecology and Environment, Inc.

Sample ID:	3993326015	**Matrix:**	Solid
Client Sample ID:	SB-2401	**Location:**	Boring 24; 1'BGS
Collected:	12/01/1999 16:00	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:03	HNL
Barium	0.78	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:03	HNL
Cadmium	0.080	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:03	HNL
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:03	HNL
Lead	16	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:03	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	0.028	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:03	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:03	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Mizra

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326016	**Matrix:**	Solid
Client Sample ID:	SB-401.5	**Location:**	Boring 4; 1.5'BGS
Collected:	12/01/1999 16:30	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:09	HNI
Barium	0.83	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:09	HNI
Cadmium	0.059	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:0[illegible]	NI
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:09	HNI
Lead	14	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:09	HNI
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:09	HNI
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:09	HNI

Respectfully submitted,
CT&E Environmental Services, Inc.

Ledya [illegible]

Project Manager, Michigan Division

Reported: 12/10/1

Certification Numbers: WI #9999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Qualifiers

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326017	**Matrix:**	Solid
Client Sample ID:	SB-1001	**Location:**	Boring 10; 1'BGS
Collected:	12/01/1999 16:40	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Time: Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:15	HNL
Barium	0.83	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:15	HNL
Cadmium	0.031	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:15	HNL
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:15	HNL
Lead	5.1	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:15	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:15	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:15	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Silvia

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326018	**Matrix:**	Solid
Client Sample ID:	SB-1301	**Location:**	Boring 13; 1'BGS
Collected:	12/02/1999 08:30	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Date / Time Analyzed	Analys
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:21	HNL
Barium	0.67	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:21	HNL
Cadmium	0.14	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:2[illegible]	JL
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:21	HNL
Lead	26	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:21	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:21	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:21	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Silizk

Project Manager, Michigan Division

Reported: 12/10/19

Qualifiers

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326019	**Matrix:**	Solid
Client Sample ID:	SB-1501	**Location:**	Boring 15; 1'BGS
Collected:	12/02/1999 08:45	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:27	HNL
Barium	1.5	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:27	HNL
Cadmium	0.099	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:27	HNL
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:27	HNL
Lead	9.4	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:27	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:27	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:27	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Ledya Silva

Project Manager, Michigan Division

Reported: 12/10/199

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3993326020	**Matrix:**	Solid
Client Sample ID:	SB-1801	**Location:**	Boring 18; 1'BGS
Collected:	12/02/1999 08:55	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analy
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:33	HNI
Barium	1.7	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:33	HNI
Cadmium	0.033	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:2[illegible]	NI
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:33	HNI
Lead	3.9	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:33	HNI
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	0.020 JM	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:33	HNI
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:33	HNI

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Odizia

Project Manager, Michigan Division

Reported: 12/10/1

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326021	**Matrix:**	Solid
Client Sample ID:	SB-2601	**Location:**	Boring 26; 1'BGS
Collected:	12/02/1999 11:15	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:39	HNL
Barium	0.81	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:39	HNL
Cadmium	0.34	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:39	HNL
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:39	HNL
Lead	330 D	mg/L	2	SW-846 6010 TCLP	12/06/99 14:53	12/09/99 14:40	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	0.053 JM	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:39	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 21:39	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Gizir

Project Manager, Michigan Division

Reported: 12/10/199

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

..fiers
ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3993326022	**Matrix:**	Solid
Client Sample ID:	SB-3201	**Location:**	Boring 32; 1'BGS
Collected:	12/02/1999 11:30	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	0.027 LM	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:04	HNL
Barium	1.7	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:04	HNL
Cadmium	0.059	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:04	HNL
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:04	HNL
Lead	5.5	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:04	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	0.020	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:04	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:04	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Sorizia

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326023	**Matrix:**	Solid
Client Sample ID:	SB-3501	**Location:**	Boring 35; 1'BGS
Collected:	12/02/1999 11:45	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:10	HNL
Barium	2.3	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:10	HNL
Cadmium	0.076	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:10	HNL
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:10	HNL
Lead	5.7	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:10	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:10	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:10	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Vidya Gupta

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326024	Matrix:	Solid
Client Sample ID:	SB-3601	Location:	Boring 36; 1'BGS
Collected:	12/02/1999 12:00	Project:	S05-9911-803
Received:	12/03/1999 11:00	Sampled By:	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Date / Time Analyzed	Analys
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:16	HNL
Barium	1.4	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:16	HNL
Cadmium	0.040	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:1[illegible]	JL
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:16	HNL
Lead	0.58	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:16	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:16	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:16	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Udya [illegible]

Project Manager, Michigan Division

Reported: 12/10/19

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326025	**Matrix:**	Solid
Client Sample ID:	SB-4101	**Location:**	Boring 41; 1'BGS
Collected:	12/02/1999 13:45	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time: Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:22	HNL
Barium	1.0	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:22	HNL
Cadmium	0.16	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:22	HNL
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:22	HNL
Lead	19	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:22	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:22	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:22	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Udeya Sharma

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3993326026	**Matrix:**	Solid
Client Sample ID:	SB-4201	**Location:**	Boring 42; 1'BGS
Collected:	12/02/1999 14:00	**Project:**	S05-9911-803
Received:	12/03/1999 11:00	**Sampled By:**	PA

Test Description	Result	Unit	Reporting Detection Limit	Method	Date / Time Prepared	Date / Time Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:28	HNL
Barium	1.0	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:28	HNL
Cadmium	0.027	mg/L	0.005	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:28	[illegible]
Chromium	ND	mg/L	0.05	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:28	HNL
Lead	3.8	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:28	HNL
Mercury	ND	mg/L	0.0002	SW-846 7470 TCLP	12/09/99 19:36	12/09/99 20:13	JL
Selenium	ND	mg/L	0.02	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:28	HNL
Silver	ND	mg/L	0.01	SW-846 6010 TCLP	12/06/99 14:53	12/08/99 22:28	HNL

Respectfully submitted,
CT&E Environmental Services, Inc.

Lidya Smith

Project Manager, Michigan Division

Reported: 12/10/199

Qualifiers

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01