
Appendix E - TCLP Results



Antech Ltd.

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April 7, 1997

Ms. Martha Fleming
Environmental Strategies Corporation
4 Penn Center West
Suite 315
Pittsburgh, PA 15276

Reissued Report
Water/Soil Characterization
Project #483804; AlTech; Watervliet
Antech Ltd. Project No. 96-5413

Dear Ms. Fleming:

Enclosed is the reissued report for the above-referenced project. Please refer to the Case Narrative, Section IV. Reissue Comments, for an explanation of the reissue. If you have any questions, please call me.

Sincerely,

Edward V. Forrai
Laboratory Director

EVF:aeb

Enclosures

ANTECH LTD.
CASE NARRATIVE

I. PROJECT LOGIN INFORMATION:

A: PROJECT NUMBERS:

ANTECH LTD.: 96-5413
CLIENT: Project #483804

B: SAMPLE IDENTIFICATIONS:

Antech ID	Client ID
9611-1574	WAT-SS-SWMU-11-S01-03
9611-1575	WAT-SS-SWMU-11-S02-03
9611-1576	WAT-SS-SWMU-11-S03-03
9611-1577	WAT-SS-SWMU-11-S04-03
9611-1578	WAT-SS-SWMU-11-S05-03
9611-1579	WAT-SS-SWMU-11-S06-03
9611-1580	WAT-SS-SWMU-11-S07-03
9611-1581	WAT-SS-SWMU-11-S07-03 D
9611-1582	WAT-SS-SWMU-8-S01-03
9611-1582A	WAT-SS-SWMU-8-S01-03 #4 Sieve
9611-1583	WAT-SS-SWMU-8-S02-03
9611-1583A	WAT-SS-SWMU-8-S02-03 #4 Sieve
9611-1584	WAT-SS-SWMU-8-S03-03
9611-1584A	WAT-SS-SWMU-8-S03-03 #4 Sieve
9611-1585	WAT-SS-SWMU-8-S04-03
9611-1585A	WAT-SS-SWMU-8-S04-03 #4 Sieve
9611-1586	WAT-SS-SWMU-8-S05-03
9611-1586A	WAT-SS-SWMU-8-S05-03 #4 Sieve
9611-1587	WAT-SS-SWMU-8-S06-03
9611-1587A	WAT-SS-SWMU-8-S06-03 #4 Sieve
9611-1588	WAT-SS-SWMU-8-S07-03
9611-1588A	WAT-SS-SWMU-8-S07-03 #4 Sieve
9611-1589	WAT-SS-SWMU-8-S05-03 D
9611-1589A	WAT-SS-SWMU-8-S05-03 D #4 Siev
9611-1590	WAT-SS-SWMU-8-S05-03 Dup/MS
9611-1590A	WAT-SS-SWMU-8-S05-03 Dup #4 Si
9611-1591	WAT-SS-SWMU-8-S05-03 Spk/MSD
9611-1591A	WAT-SS-SWMU-8-S05-03 Spk #4 Si
9611-1592A	WAT-SS-T14-S01-03 #4 Sieve
9611-1593A	WAT-SS-T14-S02-03 #4 Sieve
9611-1594A	WAT-SS-T14-S03-03 #4 Sieve
9611-1595A	WAT-SS-T14-S04-03 #4 Sieve
9611-1596A	WAT-SS-T14-S04D-03 #4 Sieve
9611-1597A	WAT-SS-T14-S05-03 #4 Sieve
9611-1598A	WAT-SS-T14-S06-03 #4 Sieve
9611-1600	WAT-SB-TP14-10-0304
9611-1600A	WAT-SB-TP14-10-0304 #4 Sieve
9611-1601	WAT-SB-TP14-10-0809

ANTECH LTD.
CASE NARRATIVE

(Continued)

9611-1601A WAT-SB-TP14-10-0809 #4 Sieve
9611-1602 WAT-SB-TP14-10-0809 Dup/MS
9611-1602A WAT-SB-TP14-10-0809 Dup #4 Sie
9611-1603 WAT-SB-TP14-10-0809 Spk/MSD
9611-1603A WAT-SB-TP14-10-0809 Spk #4 Sie
9611-1604 WAT-SS-EB-02
9611-1605 WAT-TB-1113

C: SHIPPING/RECEIVING COMMENTS:

All soil results are on a dry weight basis.

II. PREPARATION/ANALYSIS COMMENTS:

A: GENERAL CHEMISTRY:

None

B: METALS:

Some elements have little or no matrix spike recoveries and some duplicates are outside criteria. Matrix interferences and/or non homogeneous samples are probable reasons.

C: ORGANICS:

1. VOLATILES:

None

2. SEMIVOLATILES:

The MS/MSD results reported for 9611-1602 and 9611-1603 are based on dry weight values.

3. PESTICIDES/PCBS:

None

4. 8015:

Samples 9611-1574 through 9611-1581 have elevated detection limits due to matrix interference.

III. GENERAL COMMENTS:

Trailing zeroes and decimal places appearing on the data should not be interpreted as precision of the analytical procedure, but rather as a result of reporting format.

Please refer to the enclosed TCLP Regulatory Levels table for appropriate regulatory levels and hazardous waste numbers.

ANTECH LTD.
CASE NARRATIVE

(Continued)

IV. REISSUE COMMENTS:

Table 13 has been issued to include TCLP arsenic, cadmium and chromium. Please add this table to those previously issued.

Table 13
General Data Table
Environmental Strategies Corporation
Antech Ltd. Project No. 96-5413
Soil Characterization; Project #483804
AlTech; Watervliet

Page 1 of 2

Parameter	Analytical Method	Units	Sample Identification			
			9611-1592A WAT-SS- T14-S01-03 #4 Sieve (11/13/96)	9611-1593A WAT-SS- T14-S02-03 #4 Sieve (11/13/96)	9611-1594A WAT-SS- T14-S03-03 #4 Sieve (11/13/96)	9611-1595A WAT-SS- T14-S04-03 #4 Sieve (11/13/96)
TCLP(1) Metals:						
Arsenic (TCLP)	6010(2)	mg/l	<0.10	<0.10	<0.10	<0.10
Cadmium (TCLP)	6010(2)	mg/l	<0.10	0.13	<0.10	0.13
Chromium (TCLP)	6010(2)	mg/l	<0.10	<0.10	<0.10	<0.10

See footnotes at end of table.

Table 13
(Continued)

Parameter	Analytical Method	Units	Sample Identification			
			9611-1596A WAT-SS- T14-S04D-03 #4 Sieve (11/13/96)	9611-1597A WAT-SS- T14-S05-03 #4 Sieve (11/13/96)	9611-1598A WAT-SS- T14-S06-03 #4 Sieve (11/13/96)	9611-1606 Method Blank (11/14/96)
TCLP(1) Metals:						
Arsenic (TCLP)	6010(2)	mg/l	<0.10	<0.10	<0.10	<0.10
Cadmium (TCLP)	6010(2)	mg/l	0.13	<0.10	<0.10	<0.10
Chromium (TCLP)	6010(2)	mg/l	<0.10	<0.10	<0.10	<0.10

(1) TCLP = Toxicity Characteristic Leaching Procedure.

(2) U.S. Environmental Protection Agency, 1987, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.



Antech Ltd.

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May 23, 1997

Ms. Martha Fleming
Environmental Strategies Corporation
4 Penn Center West
Suite 315
Pittsburgh, PA 15276

Soil Characterization
AL Tech Specialty Steel; TCLP Metals; Watervliet, NY
Antech Ltd. Project No. 97-1401

Dear Ms. Fleming:

Enclosed are analytical results for samples submitted by Environmental Strategies Corporation. Samples were received on November 14, 1996 and logged in for analysis on April 9, 1997.

Appropriate U.S. Environmental Protection Agency methods were used and are indicated accordingly on the data tables. Appropriate quality assurance/quality control analyses were performed in accordance with Antech Ltd.'s Statement of Qualifications. If you have any questions, please call me.

Sincerely,

Edward V. Forrai
Executive Vice President

EVF:aeb

Enclosures

ANTECH LTD.
CASE NARRATIVE

I. PROJECT LOGIN INFORMATION:

A: PROJECT NUMBERS:

ANTECH LTD.: 97-1401

CLIENT: AL Tech Specialty Steel; TCLP Metals

B: SAMPLE IDENTIFICATIONS:

Antech ID Client ID

9704-0748	WAT-SS-SWMU-8-S01-03	#4	Sieve
9704-0749	WAT-SS-SWMU-8-S02-03	#4	Sieve
9704-0750	WAT-SS-SWMU-8-S03-03	#4	Sieve
9704-0751	WAT-SS-SWMU-8-S04-03	#4	Sieve
9704-0752	WAT-SS-SWMU-8-S05-03	#4	Sieve
9704-0753	WAT-SS-SWMU-8-S06-03	#4	Sieve
9704-0754	WAT-SS-SWMU-8-S07-03	#4	Sieve
9704-0755	WAT-SS-SWMU-8-S05-03	#4	Dup

C: SHIPPING/RECEIVING COMMENTS:

None

II. PREPARATION/ANALYSIS COMMENTS:

A: METALS:

None

III. GENERAL COMMENTS:

Trailing zeroes and decimal places appearing on the data should not be interpreted as precision of the analytical procedure, but rather as a result of reporting format.

Please refer to the enclosed TCLP Regulatory Levels table for appropriate regulatory levels and hazardous waste numbers.

Table 1
General Data Table
Environmental Strategies Corporation
Antech Ltd. Project No. 97-1401
Soil Characterization; AL Tech Specialty Steel; TCLP Metals
Watervliet, NY

Parameter	Analytical Method	Units	Sample Identification		
			9704-0748 WAT-SS-SWMU-8- S01-03 #4 Sieve (11/13/96)	9704-0749 WAT-SS-SWMU-8- S02-03 #4 Sieve (11/13/96)	9704-0750 WAT-SS-SWMU-8- S03-03 #4 Sieve (11/13/96)
TCLP(1) Metals:					
Silver (TCLP)	6010 (2)	mg/l	<0.10	<0.10	<0.10
Aluminum (TCLP)	6010 (2)	mg/l	<10	<10	<10
Arsenic (TCLP)	6010 (2)	mg/l	<0.10	<0.10	<0.10
Barium (TCLP)	6010 (2)	mg/l	<10	<10	<10
Beryllium (TCLP)	6010 (2)	mg/l	<0.10	<0.10	<0.10
Cadmium (TCLP)	6010 (2)	mg/l	0.18	3.1	0.59
Cobalt (TCLP)	6010 (2)	mg/l	<1.0	<1.0	<1.0
Chromium (TCLP)	6010 (2)	mg/l	<0.10	0.46	0.92
Copper (TCLP)	6010 (2)	mg/l	<1.0	<1.0	<1.0
Iron (TCLP)	6010 (2)	mg/l	<10	<10	<10
Magnesium (TCLP)	6010 (2)	mg/l	11	11	56
Manganese (TCLP)	6010 (2)	mg/l	5.3	43	40
Molybdenum (TCLP)	6010 (2)	mg/l	<1.0	<1.0	1.3
Nickel (TCLP)	6010 (2)	mg/l	0.14	0.92	1.2
Lead (TCLP)	6010 (2)	mg/l	<0.10	<0.10	<0.10
Selenium (TCLP)	7740 (2)	mg/l	<0.10	<0.10	<0.10
Vanadium (TCLP)	6010 (2)	mg/l	<1.0	<1.0	<1.0
Zinc (TCLP)	6010 (2)	mg/l	3.7	140	5.1
TCLP Extraction Fluid Data:					
Extraction Fluid	1311 (2)	-	No.1	No.1	No.1
pH with Deionized Water		pH units	10.13	9.47	9.95
pH After Addition of 1 Normal HCL		pH units	1.24	1.87	1.36
pH of TCLP Extract		pH units	5.89	5.45	6.49
Amount of Sample Extracted		g	7.00	7.00	7.00

See footnotes at end of table.

Table 1
(Continued)

Parameter	Analytical Method	Units	Sample Identification		
			9704-0751 WAT-SS-SWMU-8- S04-03 #4 Sieve (11/13/96)	9704-0752 WAT-SS-SWMU-8- S05-03 #4 Sieve (11/13/96)	9704-0753 WAT-SS-SWMU-8- S06-03 #4 Sieve (11/13/96)
TCLP(1) Metals:					
Silver (TCLP)	6010 (2)	mg/l	<0.10	<0.10	<0.10
Aluminum (TCLP)	6010 (2)	mg/l	<10	<10	<10
Arsenic (TCLP)	6010 (2)	mg/l	<0.10	<0.10	<0.10
Barium (TCLP)	6010 (2)	mg/l	<10	<10	<10
Beryllium (TCLP)	6010 (2)	mg/l	<0.10	<0.10	<0.10
Cadmium (TCLP)	6010 (2)	mg/l	<0.10	0.13	0.14
Cobalt (TCLP)	6010 (2)	mg/l	<1.0	<1.0	<1.0
Chromium (TCLP)	6010 (2)	mg/l	<0.10	0.13	0.10
Copper (TCLP)	6010 (2)	mg/l	<1.0	<1.0	<1.0
Iron (TCLP)	6010 (2)	mg/l	<10	<10	<10
Magnesium (TCLP)	6010 (2)	mg/l	75	34	22
Manganese (TCLP)	6010 (2)	mg/l	11	3.7	4.1
Molybdenum (TCLP)	6010 (2)	mg/l	<1.0	<1.0	<1.0
Nickel (TCLP)	6010 (2)	mg/l	1.0	0.36	0.46
Lead (TCLP)	6010 (2)	mg/l	<0.10	<0.10	<0.10
Selenium (TCLP)	7740 (2)	mg/l	<0.10	<0.10	<0.10
Vanadium (TCLP)	6010 (2)	mg/l	<1.0	<1.0	<1.0
Zinc (TCLP)	6010 (2)	mg/l	4.2	17	3.6
TCLP Extraction Fluid Data:					
Extraction Fluid	1311 (2)	-	No.2	No.1	No.1
pH with Deionized Water		pH units	11.90	10.40	10.23
pH After Addition of 1 Normal HCL		pH units	6.96	1.02	1.32
pH of TCLP Extract		pH units	6.10	5.29	5.50
Amount of Sample Extracted		g	7.00	7.00	7.00

See footnotes at end of table.

Table 1
(Continued)

Parameter	Analytical Method	Units	Sample Identification	
			9704-0754 WAT-SS-SWMU-8- S07-03 #4 Sieve (11/13/96)	9704-0755 WAT-SS-SWMU-8- S05-03 #4 Dup (11/13/96)
TCLP(1) Metals:				
Silver (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Aluminum (TCLP)	6010 (2)	mg/l	<10	<10
Arsenic (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Barium (TCLP)	6010 (2)	mg/l	<10	<10
Beryllium (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Cadmium (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Cobalt (TCLP)	6010 (2)	mg/l	<1.0	<1.0
Chromium (TCLP)	6010 (2)	mg/l	0.47	<0.10
Copper (TCLP)	6010 (2)	mg/l	<1.0	<1.0
Iron (TCLP)	6010 (2)	mg/l	<10	<10
Magnesium (TCLP)	6010 (2)	mg/l	54	<10
Manganese (TCLP)	6010 (2)	mg/l	21	<1.0
Molybdenum (TCLP)	6010 (2)	mg/l	<1.0	<1.0
Nickel (TCLP)	6010 (2)	mg/l	6.0	<0.10
Lead (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Selenium (TCLP)	7740 (2)	mg/l	<0.10	<0.10
Vanadium (TCLP)	6010 (2)	mg/l	<1.0	<1.0
Zinc (TCLP)	6010 (2)	mg/l	4.2	1.1
TCLP Extraction Fluid Data:				
Extraction Fluid	1311 (2)	-	No.2	No.1
pH with Deionized Water		pH units	10.87	10.51
pH After Addition of 1 Normal HCL		pH units	5.34	1.75
pH of TCLP Extract		pH units	4.54	5.63
Amount of Sample Extracted		g	7.00	5.00

See footnotes at end of table.

Tab 1
(Continued)

Parameter	Analytical Method	Units	Sample Identification	
			9704-0756 Method Blank (11/13/96)	9704-0756A Method Blank (11/13/96)
TCLP(1) Metals:				
Silver (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Aluminum (TCLP)	6010 (2)	mg/l	<10	<10
Arsenic (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Barium (TCLP)	6010 (2)	mg/l	<10	<10
Beryllium (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Cadmium (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Cobalt (TCLP)	6010 (2)	mg/l	<1.0	<1.0
Chromium (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Copper (TCLP)	6010 (2)	mg/l	<1.0	<1.0
Iron (TCLP)	6010 (2)	mg/l	<10	<10
Magnesium (TCLP)	6010 (2)	mg/l	<10	<10
Manganese (TCLP)	6010 (2)	mg/l	<1.0	<1.0
Molybdenum (TCLP)	6010 (2)	mg/l	<1.0	<1.0
Nickel (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Lead (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Selenium (TCLP)	7740 (2)	mg/l	<0.10	<0.10
Vanadium (TCLP)	6010 (2)	mg/l	<1.0	<1.0
Zinc (TCLP)	6010 (2)	mg/l	<1.0	<1.0
TCLP Extraction Fluid Data:				
Extraction Fluid	1311 (2)	-	No.1	No.2
pH with Deionized Water		pH units	NAP ⁽³⁾	NAP
pH After Addition of 1 Normal HCL		pH units	NAP	NAP
pH of TCLP Extract		pH units	4.88	2.93
Amount of Sample Extracted		g	NAP	NAP

(1) TCLP = Toxicity Characteristic Leaching Procedure.

(2) U.S. Environmental Protection Agency, 1987, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

(3) NAP = Not applicable.

Toxicity Characteristic Leaching Procedure (TCLP)
Regulatory Levels

Contaminant	Regulatory Level (mg/l)	USEPA Hazardous Waste Number
Arsenic	5.0	D004
Barium	100.0	D005
Cadmium	1.0	D006
Chromium	5.0	D007
Lead	5.0	D008
Mercury	0.2	D009
Selenium	1.0	D010
Silver	5.0	D011



Antech Ltd.

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April 14, 1997

Ms. Martha Fleming
Environmental Strategies Corporation
4 Penn Center West
Suite 315
Pittsburgh, PA 15276

Reissued Report
Soil Characterization
483804; Task No. 7,9,10; AlTech; Watervliet
Antech Ltd. Project No. 97-1851

Dear Ms. Fleming:

Enclosed is the reissued report for the above-referenced project. Please refer to the Case Narrative, Section IV. Reissue Comments, for an explanation of the reissue. If you have any questions, please call me.

Sincerely,

Edward V. Forrai
Executive Vice President

EVF:aeb

Enclosures

ANTECH LTD.
CASE NARRATIVE

I. PROJECT LOGIN INFORMATION:

A: PROJECT NUMBERS:

ANTECH LTD.: 97-1851
CLIENT: 483804; Task No. 7,9,10

B: SAMPLE IDENTIFICATIONS:

Antech ID	Client ID	Antech ID	Client ID
9705-0781	WAT-SB-E1-0204 #4 Sieve	9705-0782	WAT-SB-E3-0507 #4 Sieve

C: SHIPPING/RECEIVING COMMENTS:

None

II. PREPARATION/ANALYSIS COMMENTS:

A: METALS:

None

III. GENERAL COMMENTS:

Trailing zeroes and decimal places appearing on the data should not be interpreted as precision of the analytical procedure, but rather as a result of reporting format.
Please refer to the enclosed TCLP Regulatory Levels table for appropriate regulatory levels and hazardous waste numbers.

IV. REISSUE COMMENTS:

Added Pb-TCLP results to sample 9705-0782, WAT-SB-E#-0507, at client request.

Table 1
General Data Table
Environmental Strategies Corporation
Antech Ltd. Project No. 97-1851
Soil Characterization; 483804; Task No. 7,9,10
AlTech; Watervliet

Parameter	Analytical Method	Units	Sample Identification	
			9705-0781 WAT-SB-E1- 0204 #4 Sieve (11/6/96)	9705-0783 Method Blank (5/8/97)
TCLP ⁽¹⁾ Metals:				
Chromium (TCLP)	6010 ⁽²⁾	mg/l	<0.10	<0.10
Lead (TCLP)	6010 ⁽²⁾	mg/l	<0.10	<0.10
TCLP Extraction Fluid Data:				
Extraction Fluid	1311 ⁽²⁾	-	No.1	No.1
pH with Deionized Water		pH units	6.46	NAP ⁽³⁾
pH After Addition of 1 Normal HCL		pH units	1.59	NAP
pH of TCLP Extract		pH units	4.48	4.90
Amount of Sample Extracted		g	3.50	NAP

(1) TCLP = Toxicity Characteristic Leaching Procedure.

(2) U.S. Environmental Protection Agency, 1987, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

(3) NAP = Not applicable.

Table 2
General Data Table
Environmental Strategies Corporation
Antech Ltd. Project No. 97-1851
Soil Characterization, 483804; Task No. 7,9,10
AlTech; Watervliet

Parameter	Analytical Method	Units	Sample Identification	
			9705-0782 WAT-SB-E3- 0507 #4 Sieve (11/6/96)	9705-0783 Method Blank (5/8/97)
TCLP(1) Metal:				
Chromium (TCLP)	6010 (2)	mg/l	<0.10	<0.10
Lead (TCLP)	6010 (2)	mg/l	<0.10	<0.10
TCLP Extraction Fluid Data:				
Extraction Fluid	1311 (2)	-	No.1	No.1
pH with Deionized Water		pH units	9.25	NAP (3)
pH After Addition of 1 Normal HCL		pH units	1.57	NAP
pH of TCLP Extract		pH units	4.33	4.90
Amount of Sample Extracted		g	5.00	NAP

(1) TCLP = Toxicity Characteristic Leaching Procedure.

(2) U.S. Environmental Protection Agency, 1987, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

(3) NAP = Not applicable.

Toxicity Characteristic Leaching Procedure (TCLP)
Regulatory Levels

Contaminant	Regulatory Level (mg/l)	USEPA Hazardous Waste Number
Chromium	5.0	D007
Lead	5.0	D008