

# Limited Subsurface Investigation

**14 North Division Street  
Auburn, New York**

---

---

*CHA Project Number: 25810*

***Prepared for:***

*The City of Auburn  
24 South Street  
Auburn, NY 13021*

***Prepared by:***



*441 South Salina St  
Syracuse, New York 13202  
Phone: (315) 471-3920*

October 7, 2013

**TABLE OF CONTENTS**

1.0 INTRODUCTION ..... 1

2.0 FIELD ACTIVITIES ..... 2

3.0 FINDINGS & CONCLUSIONS ..... 3

    3.1 Surface Soil Sampling..... 3

    3.2 Analytical Results ..... 3

    3.3 Data Validation and Usability..... 6

    3.4 Conclusions..... 6

4.0 RESOURCE SUMMARY ..... 7

**LIST OF TABLES**

Table 1: Analytical Results- Detected Compounds Only ..... 4

**LIST OF FIGURES**

Figure 1 Test Pit Location Plan

**LIST OF APPENDICES**

Appendix A Field Logs

Appendix B Laboratory Data Package

Appendix C Data Validation Reports

---

## LIST OF ACRONYMS & ABBREVIATIONS

ACM	Asbestos Containing Material
AECC	Asbestos & Environmental Consulting Corporation
BGS	Below Ground Surface
CHA	CHA Consulting Inc.
ELAP	Environmental Laboratory Approval Program
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
NYSDEC	New York State Department of Environmental Conservation
PCB	Polychlorinated Biphenyls
PID	Photoionization Detector
PPM	Parts Per Million
QAPP	Quality Assurance Project Plan
REC	Recognized Environmental Condition
SAP	Sampling and Analysis Plan
SCO	Soil Cleanup Objective
SVOC	Semi-Volatile Organic Compound
VOC	Volatile Organic Compound

## 1.0 INTRODUCTION

The Property consists of a 2.3 acre parcel (Tax ID 115.50-2-56) with an address of 14 North Division Street in the City of Auburn, Cayuga County, New York. The site is comprised of vacant commercial land adjacent to the Owasco River, as well as portions of the Owasco River. The site is surrounded by a mix of commercial and residential development. The Property is currently a vacant lot on the Owasco River. The site slopes towards the Owasco River, with some steep slopes adjacent to the river.

According to a Phase I Environmental Site Assessment (ESA) of the Property (CHA, March 2012), the Property was historically occupied by a portion of the Nye and Wait carpet manufacturing company. This past industrial use of the site was identified as a recognized environmental condition (REC) in the Phase I ESA and as a result, a subsurface investigation of the Property was recommended. The Phase I ESA also identified the presence of demolition debris on the Property, which was apparently associated with the demolition of the site buildings. As a result, the Phase I ESA noted the potential for asbestos and lead paint within the rubble, but the debris was not considered an REC.

## 2.0 FIELD ACTIVITIES

As specified in the November 25, 2012 Sampling and Analysis Plan (SAP), prepared by Asbestos & Environmental Consulting Corporation (AECC), a limited subsurface investigation was completed on the Property on May 21, 2013. Based on budget constraints and the proposed use of this Property for trail facilities, the City of Auburn elected to proceed with a limited sampling plan to investigate the former developed footprint for the industrial operation on the site. During the course of the limited subsurface investigation, a CHA Consulting, Inc. (CHA) scientist collected six (6) surface soil samples from the Property at the locations shown on Figure 1. While the SAP indicated that sampling locations were shown on an included figure, no proposed locations were actually depicted on the figure. Therefore, soil samples were collected within the developed footprint of the Property at locations determined in the field. As specified in the SAP, no additional sampling activities (e.g., borings, test pits, groundwater monitoring wells) were conducted during the limited subsurface investigation.

Each surface soil sample was collected from the 0 to 6 inch depth interval. Soils were screened continuously for visual, olfactory, and photoionic evidence of contamination using a Minirae 3000 photoionization detector (PID). Observations including soil descriptions, texture, color, and PID readings were documented by the field scientist in field logs. Copies of the field notes are provided in Appendix A.

Each soil sample was submitted to Chemtech laboratories located in Mountainside, New Jersey (New York State Laboratory Certification No. 20012) for laboratory analysis of for analysis of volatile organic compounds (VOCs) via EPA method 8260, semi-volatile organic compounds (SVOCs) via EPA method 8270, metals via EPA method 6010, mercury via EPA method 7471, and polychlorinated biphenyls (PCBs) via EPA method 8082.

## 3.0 FINDINGS & CONCLUSIONS

### 3.1 SURFACE SOIL SAMPLING

During the surface soil sampling activities, site soils were primarily fine to medium sand with silt mixed with topsoil. Copies of the field logs are included in Appendix A.

No visual, olfactory, or photoionic evidence of soil contamination was identified in any of the surface soil sampling locations.

Surficial construction and demolition debris, as well as concrete foundations were noted on the Property. In addition, an approximate three (3) foot long section of transite pipe, a suspected asbestos containing material (ACM), was observed on the slope towards the Owasco River, near sample location SS-201. No samples of this observed material were collected as part of the limited subsurface investigation.

### 3.2 ANALYTICAL RESULTS

Table 1 summarizes the soil results (detected parameters only) as compared to the New York State Department of Environmental Conservation's (NYSDEC's) Part 375 Unrestricted Soil Cleanup Objectives (SCOs). As shown in Table 1, SVOCs and/or metals exceeded the Unrestricted SCOs in each of the surface soil samples.

Two metals, lead (86.3 mg/kg) and mercury (0.5 mg/kg) were detected in surface soil sample SS-201 at concentrations exceeding the Unrestricted SCOs of 63 and 0.18 mg/kg, respectively.

Lead, selenium and mercury were detected in surface soil samples SS-202 and SS-203 at concentrations exceeding the Unrestricted SCOs.

Four metals (lead, selenium, zinc and mercury) and seven SVOCs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene] were detected in surface soil sample SS-204 at concentrations exceeding the Unrestricted SCOs.

Zinc was detected at a concentration of 135 mg/kg in surface soil sample SS-205 which slightly exceeds the Unrestricted SCO of 109 mg/kg.

Four metals (copper, lead, zinc and mercury) and seven SVOCs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene] were detected in surface soil sample SS-206 at concentrations exceeding the Unrestricted SCOs.

The analytical data report is included in Appendix B.

**Table 1: Analytical Results- Detected Compounds Only**

Parameter	Part 375 Unrestricted SCO	Unit	Location	SS-201	SS-202	SS-203	SS-204	SS-205	SS-206
			Date	5/21/2013	5/21/2013	5/21/2013	5/21/2013	5/21/2013	5/21/2013
<b>SW6010B</b>									
Aluminum (Fume Or Dust)		mg/kg		3950 EJ	4380 EJ	4830 EJ	6260 EJ	3590 EJ	3630 EJ
Arsenic	13	mg/kg		3.91	5.14	4.11	4.53	2.5	4.3 EJ
Barium	350	mg/kg		48.5 EJ	51.6 EJ	108 EJ	210 EJ	45.5 EJ	59.1
Beryllium	7.2	mg/kg		1.25	1.48	1.47	1.68	0.87	1.18
Cadmium	2.5	mg/kg		0.05 J	0.32	ND	0.57	0.23	0.76 EJ
Calcium		mg/kg		64800 EJ	44400 EJ	40800 EJ	62800 EJ	61500 EJ	38100 EJ
Chromium		mg/kg		5.54 EJ	8.5 EJ	10.1 EJ	17.2 EJ	8.42 EJ	23.6
Cobalt		mg/kg		6.38	7.98	6.96	15.6	4.71	7.07 EJ
Copper	50	mg/kg		20.5 EJ	31.6 EJ	27.6 EJ	39.4 EJ	16 EJ	51.6
Iron		mg/kg		12900	15900	15000	17000	10700	13900
Lead	63	mg/kg		86.3	68.7	92	122	44.4	134 EJ
Magnesium		mg/kg		14200 EJ	14100 EJ	11900 EJ	13700 EJ	21600 EJ	10800 EJ
Manganese	1600	mg/kg		292 EJ	274 EJ	273 EJ	346 EJ	251 EJ	240
Nickel	30	mg/kg		16.3	26.9	19.9	26.1	11.5	25.1 EJ
Potassium		mg/kg		675 EJ	779 EJ	750 EJ	874 EJ	724 EJ	715
Selenium	3.9	mg/kg		3.46	4.14	4.03	4.5	2.6	3.88 NJ
Silver	2	mg/kg		ND	ND	0.27 NJ	ND	ND	0.29 J
Sodium		mg/kg		20 J	3.04 J	5.29 J	197	40.7 J	18.1 U
Thallium		mg/kg		0.25 J	0.58 J	0.22 J	ND	0.18 J	ND
Vanadium (Fume Or Dust)		mg/kg		7.2 EJ	9.83 EJ	8.75 EJ	14.9 EJ	7.28 EJ	10.4
Zinc	109	mg/kg		78.1	105	105	236	135	268
<b>SW7471A</b>									
Mercury	0.18	mg/kg		0.5	0.21	0.43	0.221	0.082	0.594 D
<b>SW8082</b>									
Aroclor 1254	1000	ug/kg		ND	ND	ND	230 J	ND	110 J
<b>SW8260C</b>									
Methylene Chloride	50	ug/kg		ND	3 J	ND	3.6 J	ND	3.4 J
Trichlorofluoromethane				ND	ND	ND	11.9	ND	ND

Notes: ND- Not Detected, D- Dilution, R- rejected data, J- estimated concentration, E- indicates the reported value is estimated because of the presence of interference, U- undetected, N- presumptive evidence of a compound

**Table 1: Analytical Results- Detected Compounds Only (cont.)**

Parameter	Part 375 Unrestricted SCO	Unit	Location	SS-201	SS-202	SS-203	SS-204	SS-205	SS-206
			Date	5/21/2013	5/21/2013	5/21/2013	5/21/2013	5/21/2013	5/21/2013
<b>SW8270D</b>									
Acenaphthene	20000	ug/kg	ND	ND	ND	700 J	ND	340 J	
Acenaphthylene	100000	ug/kg	ND	ND	ND	370 J	ND	260 J	
Anthracene	100000	ug/kg	ND	ND	160 J	2600 J	180 J	870 J	
Benzo(a)Anthracene	1000	ug/kg	ND	350 J	540 J	6800 JD	520 J	2800 J	
Benzo(a)Pyrene	1000	ug/kg	ND	310 J	500 J	5700 JD	440 J	2200 J	
Benzo(b)Fluoranthene	1000	ug/kg	170 J	420 J	640 J	7900 JD	630 J	2800 J	
Benzo(G,H,I)Perylene	100000	ug/kg	ND	200 J	300 J	2900 J	280 J	1300 J	
Benzo(k)Fluoranthene	800	ug/kg	ND	ND	240 J	1900 J	220 J	940 J	
Bis(2-Ethylhexyl) Phthalate		ug/kg	ND	410 J	ND	ND	ND	290 J	
Butyl Benzyl Phthalate		ug/kg	ND	ND	ND	ND	ND	2700 J	
Carbazole		ug/kg	ND	ND	ND	1300 J	ND	530 J	
Chrysene	1000	ug/kg	ND	330 J	490 J	5500 JU	450 J	2300 J	
Dibenzo(A,H)Anthracene	330	ug/kg	ND	ND	ND	920 J	ND	480 J	
Dibenzofuran	7000	ug/kg	ND	ND	ND	400 J	ND	ND	
Dimethylphthalate		ug/kg	ND	ND	ND	420 J	430 J	470 J	
Di-N-Octyl Phthalate		ug/kg	ND	220 J	ND	440 J	280 J	270 J	
Fluoranthene	100000	ug/kg	270 J	700 J	1000 J	15800 JD	1100 J	6900 DJ	
Fluorene	30000	ug/kg	ND	ND	ND	790 J	ND	270 J	
Indeno(1,2,3-Cd)Pyrene	500	ug/kg	ND	ND	260 J	2800 J	250 J	1300 J	
Naphthalene	12000	ug/kg	ND	ND	ND	240 UJ	ND	ND	
Phenanthrene	100000	ug/kg	ND	310 J	540 J	9600 JD	600 J	3200 J	
Pyrene	100000	ug/kg	210 J	570 J	930 J	12100 JD	830 J	5200 DJ	

Notes: ND- Not Detected, D- Dilution, R- rejected data, J- estimated concentration, E- concentration exceeds the calibrated range of the instrument for that specific analysis, U- undetected, N- presumptive evidence of a compound

### 3.3 DATA VALIDATION AND USABILITY

Upon receipt of analytical results, data validation and usability was evaluated by Nancy Potak located in Greensboro, Vermont. All data was identified as usable with the exception of the following items:

- 2,4-Dinitrophenol, an SVOC which was not detected within any of the soil samples, was flagged with the “R” qualifier and technically rejected due to the relative response factor of this compound (0.048) being less than the 0.050 quality control limit.
- Several non-target compounds were detected in the method blanks. When these compounds were detected in a sample, the data was flagged with the “R” qualifier and technically rejected.
- SVOCs (including 4,6-dinitro-2-methylphenol, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, carbazole, chrysene, fluoranthene, fluorine, hexachlorocyclopentadiene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene) which had recoveries less than 10% in the matrix spike/matrix spike duplicate samples were flagged with the “R” qualifier and technically rejected when the compounds were not detected in a sample.

The above items account for less than ten percent (10%) of the collected data and therefore the data as a whole is considered usable per the QAPP and SAP. Data technically rejected will not be used to evaluate site conditions. The data validation reports are included in Appendix C.

### 3.4 CONCLUSIONS

Several SVOCs and metals, including mercury, were detected in each of the six (6) surface soil samples collected on the Property at concentrations exceeding the Unrestricted SCOs, the standard specified in the SAP.

CHA understands that the end use for the Property has not been identified. Given this uncertainty, CHA recommends that once an end use has been determined that the Phase II data be re-evaluated. Part 375 Unrestricted SCOs, which are the most stringent criteria, were used for comparison as specified in the SAP. However, a more applicable SCO may be applied dependent on the future use and subsequent soil exposure.

## 4.0 RESOURCE SUMMARY

In compiling the report summarizing this investigation, the following resources were utilized.

- *Phase I ESA 14 North Division Street*, prepared by CHA Inc., March 12, 2012
- *Auburn Brownfield Investigation Grant Limited Phase II Environmental Site Assessment Sampling and Analysis Plan. Site Location: 14 North Division Street, Auburn, New York 13021* Prepared by Asbestos & Environmental Consulting Corporation, November 25, 2012
- *Auburn EPA Brownfield Assessment Grant Program Generic QAPP*. Prepared by Asbestos & Environmental Consulting Corporation, April 9, 2013

**FIGURE 1**



SOURCE: NYS Orthos Online



FIGURE 1  
Sampling Location Plan  
14 North Division Street  
CITY OF AUBURN  
COUNTY OF CAYUGA, STATE OF NEW YORK

MAP NOT TO SCALE

DATE: July 2013

**APPENDIX A**

**FIELD LOGS**

## Surface Soil Sampling Field Notes

**Property Address:** 14 North Division Street, Auburn, NY  
**CHA Project Number:** 25810  
**Date:** 5/21/2013  
**CHA Field Inspector:** K. Flood



Soil Sample #	PID Reading	Sample Depth	Sample Time	Description/Notes
SS-201	0 ppm	0-6 inches	1500	fmc sand and silt with organics, light brown, moist. No evidence of contamination.
SS-202	0 ppm	0-6 inches	1505	fmc sand and silt with organics, light brown, moist. No evidence of contamination.
SS-203	0 ppm	0-6 inches	1510	Topsoil with Organics, some fmc sand and silt, dark brown, moist. No evidence of contamination. CHA-3 collected here.
SS-204	0 ppm	0-6 inches	1520	Topsoil with Organics, some fmc sand and silt, medium brown, moist. No evidence of contamination. MS/MSD collected here
SS-205	0 ppm	0-6 inches	1530	Topsoil with Organics, some fmc sand and silt, trace wood, dark brown, moist. No evidence of contamination. Located north of an exposed historic foundation.
SS-206	0 ppm	0-6 inches	1535	Topsoil with Organics, some fmc sand and silt, light brown, moist. No evidence of contamination. Located south of an exposed historic foundation.

All samples analyzed for VOCs, SVOCs, PCBs, Metals and Mercury

**APPENDIX B**

**LABORATORY DATA PACKAGE**

*(Included on Disc)*

**APPENDIX C**

**DATA VALIDATION REPORT**

**DATA USABILITY SUMMARY REPORT**  
**14 North Division Street, Auburn, NY**

**Soil and Water Volatile Organic Analyses by Method SW846 8260B**

**Samples Collected: May 21, 2013**

**Samples Received at Chemtech on May 22, 2013**

**Sample Delivery Group: E2323**

**Laboratory Reference Numbers:**

<b>Lab Sample ID</b>	<b>Field Sample ID</b>	<b>Matrix</b>
E2323-01	TRIPBLANK	Water
E2323-02	EB-3	Water
E2323-03	CHA-3	Soil
E2323-04	SS-201	Soil
E2323-05	SS-202	Soil
E2323-06	SS-203	Soil
E2323-07	SS-204	Soil
E2323-08	E2323-07MS	Soil
E2323-09	E2323-07MSD	Soil
E2323-10	SS-205	Soil
E2323-11	SS-206	Soil

Soil and water samples were validated for analyses of volatile organics by the US EPA Region II data validation SOP (HW-24, Revision 2, 2008). Data were reviewed for usability according to the following criteria:

- \* - Data Completeness
- \* - GC/MS Tuning
- \* - Holding Times
- Calibrations
- \* - Laboratory Blanks
- \* - Trip Blank
- \* - Surrogate Compound Recoveries
- \* - Internal Standard Recoveries
- Matrix Spike / Matrix Spike Duplicate
- Laboratory Control Samples
- \* - Compound Identification
- \* - Compound Quantitation

\* - Indicates that all criteria were met for this parameter.

#### **DATA VALIDATION SUMMARY**

The problems with the laboratory control samples, calibrations and matrix spike should be noted.

These are discussed in detail below.

## Holding Times

All samples were analyzed within 14 days of collection.

## Tunes

No problems were detected with the tunes associated with the samples of this delivery group.

## Surrogate Compound Recoveries

All surrogate compound recoveries were within the quality assurance limits.

## Calibrations

All of the %RSDs in the 5/17 soil initial calibration were less than 20% with the exceptions of acetone (32%) and 2-butanone (28%).

This initial calibration was associated with the analyses of the following soil samples:

E2323-03	CHA-3
E2323-04	SS-201
E2323-06	SS-203
E2323-10	SS-205
E2323-11	SS-206

None of these compounds were detected in any of the samples and the high %RSDs do not affect the use of the data.

All of the percent differences in the 5/22 continuing calibration were less than 20% with the following exceptions:

<b>Compound</b>	<b>% Rec.</b>
1,2,3-TRICHLOROBENZENE	60%
1,2,4-TRICHLOROBENZENE	38%
1,2-DICHLOROPROPANE	25%
BENZENE	23%
METHYL ACETATE	22%
METHYL ETHYL KETONE (2-BUTANONE)	22%
TRICHLOROFLUOROMETHANE	28%

This continuing calibration was associated with the analyses of the following soil samples:

E2323-03	CHA-3
E2323-04	SS-201
E2323-06	SS-203
E2323-10	SS-205
E2323-11	SS-206

All of the percent differences in the continuing calibration associated with the water samples were less than 20% with the exceptions of acetone (40%), cyclohexane (21%) and 2-butanone (24%)

The data for these compounds were flagged with the "J" qualifier and are estimated values.

All of the relative response factors (rrfs) were greater than 0.05.

### Matrix Spike

The laboratory's in-house QC limits noted on their summary forms were often wider than the 70% - 130% Region 2 limits. The data were validated on the basis of the Region 2 limits. The RPD of the matrix spike and matrix spike duplicate was 30% during the validation.

Soil sample E2323-07 / SS-204 was used for the soil matrix spike and matrix spike duplicate. Many of the recoveries were outside of the required limits:

<b>Compound</b>	<b>MS % Rec.</b>	<b>MSD % Rec.</b>
1,1-DICHLOROETHANE	135%	135%
1,2-DICHLOROPROPANE	131%	
2-HEXANONE	134%	
ACETONE	138%	
BROMOCHLOROMETHANE	129%	
CHLOROETHANE	139%	139%
CHLOROMETHANE	139%	
METHYL ACETATE	279%	254%
2-BUTANONE	166%	144%
4-METHYL-2-PENTANONE	145%	131%
TRICHLOROFLUOROMETHANE	148%	144%
VINYL CHLORIDE	136%	138%

None of these compounds were detected in any of the samples and undetected data were not affected by high matrix spike recoveries.

### Laboratory Control Sample

The laboratory's in-house QC limits noted on their summary forms were often wider than the 70% - 130% Region 2 limits. The data were validated on the basis of the Region 2 limits.

All of the laboratory control samples were within the 70% - 130% limits in the 5/22/13 LCS with the following exceptions:

<b>Compound</b>	<b>% Rec.</b>
ACETONE	160%
2-BUTANONE	170%
4-METHYL-2-PENTANONE	140%

This laboratory control sample was associated with the analyses of the following soil samples:

E2323-03	CHA-3
E2323-04	SS-201
E2323-06	SS-203
E2323-10	SS-205
E2323-11	SS-206

All of the laboratory control samples were within the 70% - 130% limits in the 5/23/13 LCS with the following exceptions:

<b>Compound</b>	<b>%D</b>
ACETONE	150%
1,2-DIBROMO-3-CHLOROPROPANE	131%

This laboratory control sample was associated with the analyses of the following soil samples:

E2323-05	SS-202
E2323-07	SS-204

None of these compounds were detected in any of the samples and undetected data were not affected by high laboratory control sample recoveries.

#### **Method Blanks**

No compounds were detected in any of the method blanks.

#### **Trip Blank**

No compounds were detected in the trip blank.

#### **Internal Standard Areas and Retention Times**

The areas and retention times of all internal standards were within the required quality control limits.

#### **Sample Results**

No other problems were detected with any of the samples.





ACETONE	8.2	J	8.18	40%	J	J
BENZENE		U			U	U
BROMOCHLOROMETHANE		U			U	U
BROMODICHLOROMETHANE		U			U	U
BROMOFORM		U			U	U
BROMOMETHANE		U			U	U
CARBON DISULFIDE		U			U	U
CARBON TETRACHLORIDE		U			U	U
CHLOROBENZENE		U			U	U
CHLOROETHANE		U			U	U
CHLOROFORM		U			U	U
CHLOROMETHANE		U			U	U
CIS-1,2-DICHLOROETHYLENE		U			U	U
CIS-1,3-DICHLOROPROPENE		U			U	U
CYCLOHEXANE		U		21%	UJ	UJ
DIBROMOCHLOROMETHANE		U			U	U
DICHLORODIFLUOROMETHANE		U			U	U
ETHYLBENZENE		U			U	U
ISOPROPYLBENZENE (CUMENE)		U			U	U
M,P-XYLENE (SUM OF ISOMERS)		U			U	U
METHYL ACETATE		U			U	U
METHYL ETHYL KETONE (2-BUTANONE)		U		24%	UJ	UJ
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)		U			U	U
METHYLCYCLOHEXANE		U			U	U
METHYLENE CHLORIDE		U			U	U
O-XYLENE (1,2-DIMETHYLBENZENE)		U			U	U
STYRENE		U			U	U
TERT-BUTYL METHYL ETHER		U			U	U
TETRACHLOROETHYLENE(PCE)		U			U	U
TOLUENE		U			U	U
TRANS-1,2-DICHLOROETHENE		U			U	U
TRANS-1,3-DICHLOROPROPENE		U			U	U
TRICHLOROETHYLENE (TCE)		U			U	U
TRICHLOROFLUOROMETHANE		U			U	U
VINYL CHLORIDE		U			U	U





2-HEXANONE	U	134%			U	U
ACETONE	UQ	138%	160%	32%	U	U
BENZENE	U			23%	UJ	UJ
BROMOCHLOROMETHANE	U	129%			U	U
BROMODICHLOROMETHANE	U				U	U
BROMOFORM	U				U	U
BROMOMETHANE	U				U	U
CARBON DISULFIDE	U				U	U
CARBON TETRACHLORIDE	U				U	U
CHLOROBENZENE	U				U	U
CHLOROETHANE	U	139%			U	U
CHLOROFORM	U				U	U
CHLOROMETHANE	U	139%			U	U
CIS-1,2-DICHLOROETHYLENE	U				U	U
CIS-1,3-DICHLOROPROPENE	U				U	U
CYCLOHEXANE	U				U	U
DIBROMOCHLOROMETHANE	U				U	U
DICHLORODIFLUOROMETHANE	U				U	U
ETHYLBENZENE	U				U	U
ISOPROPYLBENZENE (CUMENE)	U				U	U
M,P-XYLENE (SUM OF ISOMERS)	U				U	U
METHYL ACETATE	U	279%		22%	UJ	UJ
METHYL ETHYL KETONE (2-BUTANONE)	UQ	166%	170%	28%	22%	UJ
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UQ	145%	140%			U
METHYLCYCLOHEXANE	U				U	U
METHYLENE CHLORIDE	U				U	U
O-XYLENE (1,2-DIMETHYLBENZENE)	U				U	U
STYRENE	U				U	U
TERT-BUTYL METHYL ETHER	U				U	U
TETRACHLOROETHYLENE(PCE)	U				U	U
TOLUENE	U				U	U
TRANS-1,2-DICHLOROETHENE	U				U	U
TRANS-1,3-DICHLOROPROPENE	U				U	U
TRICHLOROETHYLENE (TCE)	U				U	U
TRICHLOROFLUOROMETHANE	U	148%		28%	UJ	UJ
VINYL CHLORIDE	U	136%			U	U





1,4-DIOXANE (P-DIOXANE)	U				U	U
2-HEXANONE	U	134%			U	U
ACETONE	UQ	138%	160%	32%	U	U
BENZENE	U			23%	UJ	UJ
BROMOCHLOROMETHANE	U	129%			U	U
BROMODICHLOROMETHANE	U				U	U
BROMOFORM	U				U	U
BROMOMETHANE	U				U	U
CARBON DISULFIDE	U				U	U
CARBON TETRACHLORIDE	U				U	U
CHLOROBENZENE	U				U	U
CHLOROETHANE	U	139%			U	U
CHLOROFORM	U				U	U
CHLOROMETHANE	U	139%			U	U
CIS-1,2-DICHLOROETHYLENE	U				U	U
CIS-1,3-DICHLOROPROPENE	U				U	U
CYCLOHEXANE	U				U	U
DIBROMOCHLOROMETHANE	U				U	U
DICHLORODIFLUOROMETHANE	U				U	U
ETHYLBENZENE	U				U	U
ISOPROPYLBENZENE (CUMENE)	U				U	U
M,P-XYLENE (SUM OF ISOMERS)	U				U	U
METHYL ACETATE	U	279%		22%	UJ	UJ
METHYL ETHYL KETONE (2-BUTANONE)	UQ	166%	170%	28%	22%	UJ
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UQ	145%	140%			U
METHYLCYCLOHEXANE	U				U	U
METHYLENE CHLORIDE	U				U	U
O-XYLENE (1,2-DIMETHYLBENZENE)	U				U	U
STYRENE	U				U	U
TERT-BUTYL METHYL ETHER	U				U	U
TETRACHLOROETHYLENE(PCE)	U				U	U
TOLUENE	U				U	U
TRANS-1,2-DICHLOROETHENE	U				U	U
TRANS-1,3-DICHLOROPROPENE	U				U	U
TRICHLOROETHYLENE (TCE)	U				U	U
TRICHLOROFUOROMETHANE	U	148%		28%		U
VINYL CHLORIDE	U	136%				U





1,4-DIOXANE (P-DIOXANE)	U				U	U
2-HEXANONE	U	134%			U	U
ACETONE	UQ	138%	160%	32%	U	U
BENZENE	U			23%	U	U
BROMOCHLOROMETHANE	U	129%			U	U
BROMODICHLOROMETHANE	U				U	U
BROMOFORM	U				U	U
BROMOMETHANE	U				U	U
CARBON DISULFIDE	U				U	U
CARBON TETRACHLORIDE	U				U	U
CHLOROBENZENE	U				U	U
CHLOROETHANE	U	139%			U	U
CHLOROFORM	U				U	U
CHLOROMETHANE	U	139%			U	U
CIS-1,2-DICHLOROETHYLENE	U				U	U
CIS-1,3-DICHLOROPROPENE	U				U	U
CYCLOHEXANE	U				U	U
DIBROMOCHLOROMETHANE	U				U	U
DICHLORODIFLUOROMETHANE	U				U	U
ETHYLBENZENE	U				U	U
ISOPROPYLBENZENE (CUMENE)	U				U	U
M,P-XYLENE (SUM OF ISOMERS)	U				U	U
METHYL ACETATE	U	279%		22%	UJ	UJ
METHYL ETHYL KETONE (2-BUTANONE)	UQ	166%	170%	28%	22%	UJ
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UQ	145%	140%			U
METHYLCYCLOHEXANE	U				U	U
METHYLENE CHLORIDE	U				U	U
O-XYLENE (1,2-DIMETHYLBENZENE)	U				U	U
STYRENE	U				U	U
TERT-BUTYL METHYL ETHER	U				U	U
TETRACHLOROETHYLENE(PCE)	U				U	U
TOLUENE	U				U	U
TRANS-1,2-DICHLOROETHENE	U				U	U
TRANS-1,3-DICHLOROPROPENE	U				U	U
TRICHLOROETHYLENE (TCE)	U				U	U
TRICHLOROFUOROMETHANE	U	148%		28%		UJ
VINYL CHLORIDE	U	136%				U



ETHYLBENZENE		U						U	U		
ISOPROPYLBENZENE (CUMENE)		U						U	U		
M,P-XYLENE (SUM OF ISOMERS)		U						U	U		
METHYL ACETATE		U				279%		22%	UJ	UJ	
METHYL ETHYL KETONE (2-BUTANONE)		UQ				166%	170%	28%	22%	UJ	UJ
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)		UQ				145%	140%			U	U
METHYLCYCLOHEXANE		U								U	U
METHYLENE CHLORIDE	3.4	J		3.418675658						J	J
O-XYLENE (1,2-DIMETHYLBENZENE)		U								U	U
STYRENE		U								U	U
TERT-BUTYL METHYL ETHER		U								U	U
TETRACHLOROETHYLENE(PCE)		U								U	U
TOLUENE		U								U	U
TRANS-1,2-DICHLOROETHENE		U								U	U
TRANS-1,3-DICHLOROPROPENE		U								U	U
TRICHLOROETHYLENE (TCE)		U								U	U
TRICHLOROFUOROMETHANE		U				148%		28%		UJ	UJ
VINYL CHLORIDE		U				136%				U	U

**SUMMARY OF THE ANALYTICAL DATA VALIDATION**  
**14 North Division Street, Auburn, NY**

**Soil and Water Semivolatile Organic Analyses by Method SW846 8260B**

**Samples Collected: May 21, 2013**

**Samples Received at Chemtech on May 22, 2013**

**Sample Delivery Group: E2323**

**Laboratory Reference Numbers:**

<b>Lab Sample ID</b>	<b>Field Sample ID</b>	<b>Matrix</b>
E2323-02	EB-3	Water
E2323-03	CHA-3	Soil
E2323-04	SS-201	Soil
E2323-05	SS-202	Soil
E2323-06	SS-203	Soil
E2323-07	SS-204	Soil
E2323-07 DL	SS-204 DL	Soil
E2323-08	E2323-07MS	Soil
E2323-09	E2323-07MSD	Soil
E2323-10	SS-205	Soil
E2323-11	SS-206	Soil
E2323-11 DL	SS-206 DL	Soil

Soil and water samples were validated for analyses of semivolatile organics by the US EPA Region II data validation SOP (HW-22, Revision 3). Data were reviewed for usability according to the following criteria:

- \* - Data Completeness
- \* - GC/MS Tuning
- \* - Holding Times
  - Calibrations
  - Laboratory Blanks
  - Laboratory Control Sample
  - Surrogate Compound Recoveries
- \* - Internal Standard Recoveries
  - Matrix Spike / Matrix Spike Duplicate
  - Field Blank
- \* - Compound Identification
- \* - Compound Quantitation

\* - Indicates that all criteria were met for this parameter.

#### **DATA VALIDATION SUMMARY**

The problems with the surrogate recoveries, calibrations, blanks and extensive problems with the matrix spike recoveries should be noted.

These are discussed in detail below.

## Holding Times

All samples were extracted (14 days) and analyzed (40 days) within the contractual and technical times required by the US EPA Region II protocols.

## Tunes

No problems were detected with any of the tunes associated with the samples of this delivery group.

## Surrogate Recoveries

The recoveries of three surrogates in the matrix spike of sample E2323-07 / SS-204 were less than the quality control limits.

This did not directly affect the data since the surrogate recoveries in sample E2323-07 / SS-204 were within the required limits.

## Matrix Spike / Matrix Spike Duplicate

Sample E2323-07 / SS-204 was used as the matrix spike and matrix spike duplicate.

All of the recoveries and RPDs were within the required limits with the following exceptions:

<b>Compound</b>	<b>MS % Rec.</b>	<b>MSD % Rec.</b>	<b>RPD</b>
1,1-Biphenyl		39%	68%
1,2,4,5-Tetrachlorobenzene		35%	72%
2,2-oxybis(1-Chloropropane)		34%	67%
2,3,4,6-Tetrachlorophenol		34%	67%
2,4,5-Trichlorophenol		31%	75%
2,4,6-Trichlorophenol		34%	67%
2,4-Dichlorophenol		35%	77%
2,4-Dimethylphenol		36%	69%
2,4-Dinitrophenol		8%	55%
2,4-Dinitrotoluene		19%	93%
2,6-Dinitrotoluene		21%	83%
2-Chloronaphthalene		35%	72%
2-Chlorophenol		33%	69%
2-Methylnaphthalene		36%	75%
2-Methylphenol		31%	68%
2-Nitroaniline		37%	67%
2-Nitrophenol			85%
3,3-Dichlorobenzidine			58%
3+4-Methylphenols		36%	62%
3-Nitroaniline			69%
4,6-Dinitro-2-methylphenol		0%	
4-Bromophenyl-phenylether		37%	72%
4-Chloro-3-methylphenol		28%	77%
4-Chloroaniline			62%
4-Chlorophenyl-phenylether		31%	68%

4-Nitroaniline		31%	82%
4-Nitrophenol			86%
Acenaphthene		15%	139%
Acenaphthylene		44%	39%
Acetophenone		38%	64%
Anthracene	26%	-26%	
Atrazine		34%	60%
Benzaldehyde			72%
Benzo(a)anthracene		-63%	
Benzo(a)pyrene	32%	-42%	1480%
Benzo(b)fluoranthene	-116%	-84%	32%
Benzo(g,h,i)perylene		-16%	373%
Benzo(k)fluoranthene	142%	-16%	251%
bis(2-Chloroethoxy)methane		36%	69%
bis(2-Chloroethyl)ether		31%	68%
Bis(2-ethylhexyl)phthalate			41%
Butylbenzylphthalate		38%	75%
Caprolactam			76%
Carbazole		5%	166%
Chrysene	32%	-116%	353%
Dibenzo(a,h)anthracene		15%	82%
Dibenzofuran		23%	110%
Diethylphthalate		33%	77%
Dimethylphthalate		16%	118%
Di-n-butylphthalate		41%	57%
Di-n-octyl phthalate		18%	109%
Fluoranthene	-126%	-189%	40%
Fluorene		8%	161%
Hexachlorobenzene		42%	61%
Hexachlorobutadiene		36%	69%
Hexachlorocyclopentadiene		0%	
Hexachloroethane		23%	77%
Indeno(1,2,3-cd)pyrene		-21%	600%
Isophorone		27%	65%
Naphthalene		29%	85%
Nitrobenzene		23%	76%
n-Nitroso-di-n-propylamine		31%	61%
n-Nitrosodiphenylamine		41%	69%
Phenanthrene	-47%	-153%	106%
Phenol		33%	55%
Pyrene	5%	-184%	211%

Undetected compounds with recoveries of less than 10% were flagged with the "R" qualifier and are technically rejected.

Compounds with recoveries greater than 10% and less than the quality control limit were flagged with the "J" qualifier and are estimated values.

Compounds with high RPDs and recoveries within the quality control limit were only flagged with the "J" qualifier if they were detected in a sample.

### Laboratory Control Samples

The recoveries of 2-methylphenol (97%), 3&4 methylphenols (98%) and hexachlorocyclopentadiene (140%) were above the quality control limits.

None of these compounds were detected in the sample and the high recoveries do not affect the use of the data.

The recoveries of 2-nitrophenol (118%), 4,6-dinitro-2-methylphenol (124%), benzo(b)fluoranthene (106%), hexachlorocyclopentadiene (133%) and phenol (106%) were above the quality control limits.

All of these compounds were previously qualified for low spike recoveries and the high LCS recoveries do not additionally affect the data.

### Calibrations

The %RSDs of all compounds in the water initial calibration were less than 15% with the exceptions of benzaldehyde (18%), 4,6-dinitro-2-methylphenol (37%) and 2,4-dinitrophenol (33%). This initial calibration was associated with all of the samples.

4,6-Dinitro-2-methylphenol and benzaldehyde were not detected in any of the samples and the high percent RSD does not affect the use of the data

The relative response factor of 2,4-dinitrophenol (0.048) was less than the 0.050 quality control limit. This compound was not detected in any of the samples and the data were flagged with the "R" qualifier and technically rejected.

The %Ds of all compounds in the 5/25 (10:41) continuing calibration associated with the water sample were less than 20% with the following exceptions:

Compound	%D
1,2,4,5-TETRACHLOROBENZENE	22%
2,3,4,6-TETRACHLOROPHENOL	25%
2,4-DINITROPHENOL	38%
2,4-DINITROTOLUENE	32%
2,6-DINITROTOLUENE	27%
2-NITROPHENOL	22%
4,6-DINITRO-2-METHYLPHENOL	76%
HEXACHLOROBENZENE	21%

The %Ds of all compounds in the 5/25 (23:29) continuing calibration were less than 20% with the following exceptions:

Compound	%D
2,4-DINITROPHENOL	40%
2,4-DINITROTOLUENE	24%
2,6-DINITROTOLUENE	28%
4,6-DINITRO-2-METHYLPHENOL	68%

This continuing calibration was associated with the analyses of the following samples:

E2323-03	CHA-3
E2323-04	SS-201
E2323-05	SS-202
E2323-06	SS-203
E2323-07	SS-204
E2323-10	SS-205

The %Ds of all compounds in the 5/30 continuing calibration were less than 20% with the following exceptions:

<b>Compound</b>	<b>%D</b>
2,3,4,6-TETRACHLOROPHENOL	23%
2,4-DINITROPHENOL	65%
2,4-DINITROTOLUENE	36%
2,6-DINITROTOLUENE	22%
2-NITROPHENOL	30%
4,6-DINITRO-2-METHYLPHENOL	63%
4-NITROANILINE	24%
HEXACHLOROCYCLOPENTADIENE	29%
HEXACHLOROETHANE	29%

This continuing calibration was associated with the analyses of the following samples:

E2323-07 DL	SS-204 DL
E2323-11	SS-206
E2323-11 DL	SS-206 DL

Compounds in the continuing calibrations with percent differences greater than 20% were flagged with the "J" qualifier and are estimated values.

### **Method Blanks**

No target compounds were detected in either of the method blanks.

Several non-target compounds were detected.

When these were detected in a sample, they were flagged with the "R" qualifier and technically rejected.

### **Field Blank**

A field blank was not analyzed with this sample delivery group.

### **Internal Standard Areas and Retention Times**

All internal standard recoveries and retention times were within the required limits.

### **Sample Results**

No problems were found with the results of any of the samples of this delivery group.



Butylbenzylphthalate	U		U	U
Caprolactam	U		U	U
Carbazole	U		U	U
Chrysene	U		U	U
Dibenzo(a,h)anthracene	U		U	U
Dibenzofuran	U		U	U
Diethylphthalate	U		U	U
Dimethylphthalate	U		U	U
Di-n-butylphthalate	U		U	U
Di-n-octyl phthalate	U		U	U
Fluoranthene	U		U	U
Fluorene	U		U	U
Hexachlorobenzene	U	21%	UJ	UJ
Hexachlorobutadiene	U		U	U
Hexachlorocyclopentadiene	UQ	140%	U	U
Hexachloroethane	U		U	U
Indeno(1,2,3-cd)pyrene	U		U	U
Isophorone	U		U	U
Naphthalene	U		U	U
Nitrobenzene	U		U	U
n-Nitroso-di-n-propylamine	U		U	U
n-Nitrosodiphenylamine	U		U	U
Pentachlorophenol	U		U	U
Phenanthrene	U		U	U
Phenol	U		U	U
Pyrene	U		U	U

CHA-3 E2323-03	Compound	Lab ug/kg	Lab Qual.	DV Conc.	MB	Surr	MS	LCS	IC	CC	IS	DV Qual.	Comb. Qual.
<b>30 g</b>  <b>%S =</b> <b>83.8</b>	1,1-Biphenyl		U				39%					UJ	UJ
	1,2,4,5-Tetrachlorobenzene		U				35%					UJ	UJ
	2,2-oxybis(1-Chloropropane)		U				34%					UJ	UJ
	2,3,4,6-Tetrachlorophenol		U				34%					UJ	UJ
	2,4,5-Trichlorophenol		U				31%					UJ	UJ
	2,4,6-Trichlorophenol		U				34%					UJ	UJ
	2,4-Dichlorophenol		U				35%					UJ	UJ
	2,4-Dimethylphenol		U				36%					UJ	UJ
	2,4-Dinitrophenol		U				8%			40%		R	R
	2,4-Dinitrotoluene		U				19%			24%		UJ	UJ
	2,6-Dinitrotoluene		U				21%			28%		UJ	UJ
	2-Chloronaphthalene		U				35%					UJ	UJ
	2-Chlorophenol		U				33%					UJ	UJ
	2-Methylnaphthalene		U				36%					UJ	UJ
	2-Methylphenol		U				31%					UJ	UJ
	2-Nitroaniline		U				37%					UJ	UJ
	2-Nitrophenol		UQ				RPD	118%				U	U
	3,3-Dichlorobenzidine		U				RPD					U	U
	3+4-Methylphenols		U				36%					UJ	UJ
	3-Nitroaniline		U				RPD					U	U
	4,6-Dinitro-2-methylphenol		UQ				0%	124%			68%	R	R
	4-Bromophenyl-phenylether		U				37%					UJ	UJ
	4-Chloro-3-methylphenol		U				28%					UJ	UJ
	4-Chloroaniline		U				62%					U	U
	4-Chlorophenyl-phenylether		U				31%					UJ	UJ
	4-Nitroaniline		U				31%					UJ	UJ
	4-Nitrophenol		U				86%					U	U
	Acenaphthene		U				15%					UJ	UJ
	Acenaphthylene		U				44%					UJ	UJ
	Acetophenone		U				38%					UJ	UJ
Anthracene		U				-26%					R	R	
Atrazine		U				34%					UJ	UJ	
Benzaldehyde		U				RPD					U	U	
Benzo(a)anthracene	380	J		379		-63%					J	J	
Benzo(a)pyrene	330	J		x		-42%					J	J	
Benzo(b)fluoranthene	460	Q		x		-84%	106%				J	J	
Benzo(g,h,i)perylene	200	J		x		-16%					J	J	
Benzo(k)fluoranthene		U				-16%					R	R	
bis(2-Chloroethoxy)methane		U				36%					UJ	UJ	
bis(2-Chloroethyl)ether		U				31%					UJ	UJ	
Bis(2-ethylhexyl)phthalate		U				RPD					U	U	

Butylbenzylphthalate		U		38%		UJ	UJ
Caprolactam		U		RPD		U	U
Carbazole		U		5%		R	R
Chrysene	350	J	x	-116%		J	J
Dibenzo(a,h)anthracene		U		15%		UJ	UJ
Dibenzofuran		U		23%		UJ	UJ
Diethylphthalate		U		33%		UJ	UJ
Dimethylphthalate		U		16%		UJ	UJ
Di-n-butylphthalate		U		41%		UJ	UJ
Di-n-octyl phthalate		U		18%		UJ	UJ
Fluoranthene	680		x	-189%		J	J
Fluorene		U		8%		R	R
Hexachlorobenzene		U		42%		UJ	UJ
Hexachlorobutadiene		U		36%		UJ	UJ
Hexachlorocyclopentadiene		UQ		0%	133%	R	R
Hexachloroethane		U		23%		UJ	UJ
Indeno(1,2,3-cd)pyrene	180	J	x	-21%		J	J
Isophorone		U		27%		UJ	UJ
Naphthalene		U		29%		UJ	UJ
Nitrobenzene		U		23%		UJ	UJ
n-Nitroso-di-n-propylamine		U		31%		UJ	UJ
n-Nitrosodiphenylamine		U		41%		UJ	UJ
Pentachlorophenol		U				U	U
Phenanthrene	350	J	x	-153%		J	J
Phenol		UQ		33%	106%	UJ	UJ
Pyrene	640		x	-184%		J	J

SS-201		Lab	DV								DV	Comb.
E2323-04	Compound	ug/kg Qual.	Conc.	MB	Surr	MS	LCS	IC	CC	IS	Qual.	Qual.
	1,1-Biphenyl	U				39%					UJ	UJ
	1,2,4,5-Tetrachlorobenzene	U				35%					UJ	UJ
30.08 g	2,2-oxybis(1-Chloropropane)	U				34%					UJ	UJ
	2,3,4,6-Tetrachlorophenol	U				34%					UJ	UJ
%S =	2,4,5-Trichlorophenol	U				31%					UJ	UJ
86.9	2,4,6-Trichlorophenol	U				34%					UJ	UJ
	2,4-Dichlorophenol	U				35%					UJ	UJ
	2,4-Dimethylphenol	U				36%					UJ	UJ
	2,4-Dinitrophenol	U				8%			40%		R	R
	2,4-Dinitrotoluene	U				19%			24%		UJ	UJ
	2,6-Dinitrotoluene	U				21%			28%		UJ	UJ
	2-Chloronaphthalene	U				35%					UJ	UJ
	2-Chlorophenol	U				33%					UJ	UJ
	2-Methylnaphthalene	U				36%					UJ	UJ
	2-Methylphenol	U				31%					UJ	UJ
	2-Nitroaniline	U				37%					UJ	UJ
	2-Nitrophenol	UQ				RPD	118%				U	U
	3,3-Dichlorobenzidine	U				RPD					U	U
	3+4-Methylphenols	U				36%					UJ	UJ
	3-Nitroaniline	U				RPD					U	U
	4,6-Dinitro-2-methylphenol	UQ				0%	124%		68%		R	R
	4-Bromophenyl-phenylether	U				37%					UJ	UJ
	4-Chloro-3-methylphenol	U				28%					UJ	UJ
	4-Chloroaniline	U				62%					U	U
	4-Chlorophenyl-phenylether	U				31%					UJ	UJ
	4-Nitroaniline	U				31%					UJ	UJ
	4-Nitrophenol	U				86%					U	U
	Acenaphthene	U				15%					UJ	UJ
	Acenaphthylene	U				44%					UJ	UJ
	Acetophenone	U				38%					UJ	UJ
	Anthracene	U				-26%					R	R
	Atrazine	U				34%					UJ	UJ
	Benzaldehyde	U				RPD					U	U
	Benzo(a)anthracene	U				-63%					R	R
	Benzo(a)pyrene	U				-42%					R	R
	Benzo(b)fluoranthene	170 JQ	x			-84%	106%				J	J
	Benzo(g,h,i)perylene	U				-16%					R	R
	Benzo(k)fluoranthene	U				-16%					R	R
	bis(2-Chloroethoxy)methane	U				36%					UJ	UJ
	bis(2-Chloroethyl)ether	U				31%					UJ	UJ
	Bis(2-ethylhexyl)phthalate	U				RPD					U	U

Butylbenzylphthalate		U		38%		UJ	UJ
Caprolactam		U		RPD		U	U
Carbazole		U		5%		R	R
Chrysene		U		-116%		R	R
Dibenzo(a,h)anthracene		U		15%		UJ	UJ
Dibenzofuran		U		23%		UJ	UJ
Diethylphthalate		U		33%		UJ	UJ
Dimethylphthalate		U		16%		UJ	UJ
Di-n-butylphthalate		U		41%		UJ	UJ
Di-n-octyl phthalate		U		18%		UJ	UJ
Fluoranthene	270	J	268	-189%		J	J
Fluorene		U		8%		R	R
Hexachlorobenzene		U		42%		UJ	UJ
Hexachlorobutadiene		U		36%		UJ	UJ
Hexachlorocyclopentadiene		UQ		0%	133%	R	R
Hexachloroethane		U		23%		UJ	UJ
Indeno(1,2,3-cd)pyrene		U		-21%		R	R
Isophorone		U		27%		UJ	UJ
Naphthalene		U		29%		UJ	UJ
Nitrobenzene		U		23%		UJ	UJ
n-Nitroso-di-n-propylamine		U		31%		UJ	UJ
n-Nitrosodiphenylamine		U		41%		UJ	UJ
Pentachlorophenol		U				U	U
Phenanthrene		U		-153%		R	R
Phenol		UQ		33%	106%	UJ	UJ
Pyrene	210	J	x	-184%		J	J

SS-202		Lab	DV								DV	Comb.	
E2323-05	Compound	ug/kg	Qual.	Conc.	MB	Surr	MS	LCS	IC	CC	IS	Qual.	Qual.
	1,1-Biphenyl		U				39%					UJ	UJ
	1,2,4,5-Tetrachlorobenzene		U				35%					UJ	UJ
30.02 g	2,2-oxybis(1-Chloropropane)		U				34%					UJ	UJ
	2,3,4,6-Tetrachlorophenol		U				34%					UJ	UJ
%S =	2,4,5-Trichlorophenol		U				31%					UJ	UJ
83.5	2,4,6-Trichlorophenol		U				34%					UJ	UJ
	2,4-Dichlorophenol		U				35%					UJ	UJ
	2,4-Dimethylphenol		U				36%					UJ	UJ
	2,4-Dinitrophenol		U				8%			40%		R	R
	2,4-Dinitrotoluene		U				19%			24%		UJ	UJ
	2,6-Dinitrotoluene		U				21%			28%		UJ	UJ
	2-Chloronaphthalene		U				35%					UJ	UJ
	2-Chlorophenol		U				33%					UJ	UJ
	2-Methylnaphthalene		U				36%					UJ	UJ
	2-Methylphenol		U				31%					UJ	UJ
	2-Nitroaniline		U				37%					UJ	UJ
	2-Nitrophenol		UQ				RPD	118%				U	U
	3,3-Dichlorobenzidine		U				RPD					U	U
	3+4-Methylphenols		U				36%					UJ	UJ
	3-Nitroaniline		U				RPD					U	U
	4,6-Dinitro-2-methylphenol		UQ				0%	124%		68%		R	R
	4-Bromophenyl-phenylether		U				37%					UJ	UJ
	4-Chloro-3-methylphenol		U				28%					UJ	UJ
	4-Chloroaniline		U				62%					U	U
	4-Chlorophenyl-phenylether		U				31%					UJ	UJ
	4-Nitroaniline		U				31%					UJ	UJ
	4-Nitrophenol		U				86%					U	U
	Acenaphthene		U				15%					UJ	UJ
	Acenaphthylene		U				44%					UJ	UJ
	Acetophenone		U				38%					UJ	UJ
	Anthracene		U				-26%					R	R
	Atrazine		U				34%					UJ	UJ
	Benzaldehyde		U				RPD					U	U
	Benzo(a)anthracene	350	J	x			-63%					J	J
	Benzo(a)pyrene	310	J	x			-42%					J	J
	Benzo(b)fluoranthene	420	Q	x			-84%	106%				J	J
	Benzo(g,h,i)perylene	200	J	195			-16%					J	J
	Benzo(k)fluoranthene		U				-16%					R	R
	bis(2-Chloroethoxy)methane		U				36%					UJ	UJ
	bis(2-Chloroethyl)ether		U				31%					UJ	UJ
	Bis(2-ethylhexyl)phthalate	410		x			RPD					J	J

Butylbenzylphthalate		U		38%		UJ	UJ
Caprolactam		U		RPD		U	U
Carbazole		U		5%		R	R
Chrysene	330	J	x	-116%		J	J
Dibenzo(a,h)anthracene		U		15%		UJ	UJ
Dibenzofuran		U		23%		UJ	UJ
Diethylphthalate		U		33%		UJ	UJ
Dimethylphthalate		U		16%		UJ	UJ
Di-n-butylphthalate		U		41%		UJ	UJ
Di-n-octyl phthalate	220	J	x	18%		J	J
Fluoranthene	700		x	-189%		J	J
Fluorene		U		8%		R	R
Hexachlorobenzene		U		42%		UJ	UJ
Hexachlorobutadiene		U		36%		UJ	UJ
Hexachlorocyclopentadiene		UQ		0%	133%	R	R
Hexachloroethane		U		23%		UJ	UJ
Indeno(1,2,3-cd)pyrene		U		-21%		R	R
Isophorone		U		27%		UJ	UJ
Naphthalene		U		29%		UJ	UJ
Nitrobenzene		U		23%		UJ	UJ
n-Nitroso-di-n-propylamine		U		31%		UJ	UJ
n-Nitrosodiphenylamine		U		41%		UJ	UJ
Pentachlorophenol		U				U	U
Phenanthrene	310	J	x	-153%		J	J
Phenol		UQ		33%	106%	UJ	UJ
Pyrene	570		x	-184%		J	J

SS-203		Lab	DV								DV	Comb.	
E2323-06	Compound	ug/kg	Qual.	Conc.	MB	Surr	MS	LCS	IC	CC	IS	Qual.	Qual.
	1,1-Biphenyl		U				39%					UJ	UJ
	1,2,4,5-Tetrachlorobenzene		U				35%					UJ	UJ
30.06 G	2,2-oxybis(1-Chloropropane)		U				34%					UJ	UJ
	2,3,4,6-Tetrachlorophenol		U				34%					UJ	UJ
	2,4,5-Trichlorophenol		U				31%					UJ	UJ
%S =	2,4,6-Trichlorophenol		U				34%					UJ	UJ
84.8	2,4-Dichlorophenol		U				35%					UJ	UJ
	2,4-Dimethylphenol		U				36%					UJ	UJ
	2,4-Dinitrophenol		U				8%			40%		R	R
	2,4-Dinitrotoluene		U				19%			24%		UJ	UJ
	2,6-Dinitrotoluene		U				21%			28%		UJ	UJ
	2-Chloronaphthalene		U				35%					UJ	UJ
	2-Chlorophenol		U				33%					UJ	UJ
	2-Methylnaphthalene		U				36%					UJ	UJ
	2-Methylphenol		U				31%					UJ	UJ
	2-Nitroaniline		U				37%					UJ	UJ
	2-Nitrophenol		UQ				RPD	118%				U	U
	3,3-Dichlorobenzidine		U				RPD					U	U
	3+4-Methylphenols		U				36%					UJ	UJ
	3-Nitroaniline		U				RPD					U	U
	4,6-Dinitro-2-methylphenol		UQ				0%	124%		68%		R	R
	4-Bromophenyl-phenylether		U				37%					UJ	UJ
	4-Chloro-3-methylphenol		U				28%					UJ	UJ
	4-Chloroaniline		U				62%					U	U
	4-Chlorophenyl-phenylether		U				31%					UJ	UJ
	4-Nitroaniline		U				31%					UJ	UJ
	4-Nitrophenol		U				86%					U	U
	Acenaphthene		U				15%					UJ	UJ
	Acenaphthylene		U				44%					UJ	UJ
	Acetophenone		U				38%					UJ	UJ
	Anthracene	160	J	x			-26%					J	J
	Atrazine		U				34%					UJ	UJ
	Benzaldehyde		U				RPD					U	U
	Benzo(a)anthracene	540		x			-63%					J	J
	Benzo(a)pyrene	500		x			-42%					J	J
	Benzo(b)fluoranthene	640	Q	x			-84%	106%				J	J
	Benzo(g,h,i)perylene	300	J	x			-16%					J	J
	Benzo(k)fluoranthene	240	J	x			-16%					J	J
	bis(2-Chloroethoxy)methane		U				36%					UJ	UJ
	bis(2-Chloroethyl)ether		U				31%					UJ	UJ
	Bis(2-ethylhexyl)phthalate		U				RPD					U	U

%S = 84.8	Butylbenzylphthalate		U		38%		UJ	UJ	
	Caprolactam		U		RPD		U	U	
	Carbazole		U		5%		R	R	
	Chrysene	490		492		-116%	J	J	
	Dibenzo(a,h)anthracene		U			15%	UJ	UJ	
	Dibenzofuran		U			23%	UJ	UJ	
	Diethylphthalate		U			33%	UJ	UJ	
	Dimethylphthalate		U			16%	UJ	UJ	
	Di-n-butylphthalate		U			41%	UJ	UJ	
	Di-n-octyl phthalate		U			18%	UJ	UJ	
	Fluoranthene	1000		x		-189%	J	J	
	Fluorene		U			8%	R	R	
	Hexachlorobenzene		U			42%	UJ	UJ	
	Hexachlorobutadiene		U			36%	UJ	UJ	
	Hexachlorocyclopentadiene		UQ			0%	133%	R	R
	Hexachloroethane		U			23%	UJ	UJ	
	Indeno(1,2,3-cd)pyrene	260	J	x		-21%	J	J	
	Isophorone		U			27%	UJ	UJ	
	Naphthalene		U			29%	UJ	UJ	
	Nitrobenzene		U			23%	UJ	UJ	
	n-Nitroso-di-n-propylamine		U			31%	UJ	UJ	
	n-Nitrosodiphenylamine		U			41%	UJ	UJ	
	Pentachlorophenol		U				U	U	
	Phenanthrene	540		x		-153%	J	J	
	Phenol		UQ			33%	106%	UJ	UJ
	Pyrene	930		x		-184%	J	J	

SS-204		Lab	DV								DV	Comb.	
E2323-07	Compound	ug/kg	Qual.	Conc.	MB	Surr	MS	LCS	IC	CC	IS	Qual.	Qual.
	1,1-Biphenyl		U				39%					UJ	UJ
	1,2,4,5-Tetrachlorobenzene		U				35%					UJ	UJ
30.04 g	2,2-oxybis(1-Chloropropane)		U				34%					UJ	UJ
	2,3,4,6-Tetrachlorophenol		U				34%					UJ	UJ
	2,4,5-Trichlorophenol		U				31%					UJ	UJ
%S =	2,4,6-Trichlorophenol		U				34%					UJ	UJ
86.5	2,4-Dichlorophenol		U				35%					UJ	UJ
	2,4-Dimethylphenol		U				36%					UJ	UJ
	2,4-Dinitrophenol		U				8%			40%		R	R
	2,4-Dinitrotoluene		U				19%			24%		UJ	UJ
	2,6-Dinitrotoluene		U				21%			28%		UJ	UJ
	2-Chloronaphthalene		U				35%					UJ	UJ
	2-Chlorophenol		U				33%					UJ	UJ
	2-Methylnaphthalene		U				36%					UJ	UJ
	2-Methylphenol		U				31%					UJ	UJ
	2-Nitroaniline		U				37%					UJ	UJ
	2-Nitrophenol		UQ				RPD	118%				U	U
	3,3-Dichlorobenzidine		U				RPD					U	U
	3+4-Methylphenols		U				36%					UJ	UJ
	3-Nitroaniline		U				RPD					U	U
	4,6-Dinitro-2-methylphenol		UQ				0%	124%		68%		R	R
	4-Bromophenyl-phenylether		U				37%					UJ	UJ
	4-Chloro-3-methylphenol		U				28%					UJ	UJ
	4-Chloroaniline		U				62%					U	U
	4-Chlorophenyl-phenylether		U				31%					UJ	UJ
	4-Nitroaniline		U				31%					UJ	UJ
	4-Nitrophenol		U				86%					U	U
	Acenaphthene	700		x			15%					J	J
	Acenaphthylene	370	J	x			44%					J	J
	Acetophenone		U				38%					UJ	UJ
	Anthracene	2600		x			-26%					J	J
	Atrazine		U				34%					UJ	UJ
	Benzaldehyde		U				RPD					U	U
	Benzo(a)anthracene	4900	E	x			-63%					E	E
	Benzo(a)pyrene	3900	E	x			-42%					E	E
	Benzo(b)fluoranthene	5700	EQ	x			-84%	106%				E	E
	Benzo(g,h,i)perylene	2900		x			-16%					J	J
	Benzo(k)fluoranthene	1900		x			-16%					J	J
	bis(2-Chloroethoxy)methane		U				36%					UJ	UJ
	bis(2-Chloroethyl)ether		U				31%					UJ	UJ
	Bis(2-ethylhexyl)phthalate		U				RPD					U	U

Butylbenzylphthalate		U		38%		UJ	UJ
Caprolactam		U		RPD		U	U
Carbazole	1300		1326	5%		J	J
Chrysene	4700	E	x	-116%		E	E
Dibenzo(a,h)anthracene	920		x	15%		J	J
Dibenzofuran	400		x	23%		J	J
Diethylphthalate		U		33%		UJ	UJ
Dimethylphthalate	420		x	16%		J	J
Di-n-butylphthalate		U		41%		UJ	UJ
Di-n-octyl phthalate	440		x	18%		J	J
Fluoranthene	10100	E	x	-189%		E	E
Fluorene	790		x	8%		J	J
Hexachlorobenzene		U		42%		UJ	UJ
Hexachlorobutadiene		U		36%		UJ	UJ
Hexachlorocyclopentadiene		UQ		0%	133%	R	R
Hexachloroethane		U		23%		UJ	UJ
Indeno(1,2,3-cd)pyrene	2800		x	-21%		J	J
Isophorone		U		27%		UJ	UJ
Naphthalene	240	J	x	29%		UJ	UJ
Nitrobenzene		U		23%		UJ	UJ
n-Nitroso-di-n-propylamine		U		31%		UJ	UJ
n-Nitrosodiphenylamine		U		41%		UJ	UJ
Pentachlorophenol		U				U	U
Phenanthrene	7500	E	x	-153%		E	E
Phenol		UQ		33%	106%	UJ	UJ
Pyrene	8100	E	x	-184%		E	E

SS-204 DL E2323-07 DL	Compound	ug/kg	Lab Qual.	DV Conc.	MB Surr	MS	LCS	IC	CC	IS	DV Qual.	Comb. Qual.
	1,1-Biphenyl		UD			39%					UDJ	UDJ
	1,2,4,5-Tetrachlorobenzene		UD			35%					UDJ	UDJ
10X	2,2-oxybis(1-Chloropropane)		UD			34%					UDJ	UDJ
	2,3,4,6-Tetrachlorophenol		UD			34%			23%		UDJ	UDJ
	2,4,5-Trichlorophenol		UD			31%					UDJ	UDJ
30.04 g	2,4,6-Trichlorophenol		UD			34%					UDJ	UDJ
	2,4-Dichlorophenol		UD			35%					UDJ	UDJ
	2,4-Dimethylphenol		UD			36%					UDJ	UDJ
%S =	2,4-Dinitrophenol		UD			8%			65%		R	R
86.5	2,4-Dinitrotoluene		UD			19%			65%		UDJ	UDJ
	2,6-Dinitrotoluene		UD			21%			22%		UDJ	UDJ
	2-Chloronaphthalene		UD			35%					UDJ	UDJ
	2-Chlorophenol		UD			33%					UDJ	UDJ
	2-Methylnaphthalene		UD			36%					UDJ	UDJ
	2-Methylphenol		UD			31%					UDJ	UDJ
	2-Nitroaniline		UD			37%					UDJ	UDJ
	2-Nitrophenol		UDQ			RPD	118%		30%		UDJ	UDJ
	3,3-Dichlorobenzidine		UD			RPD					UD	UD
	3+4-Methylphenols		UD			36%					UDJ	UDJ
	3-Nitroaniline		UD			RPD					UD	UD
	4,6-Dinitro-2-methylphenol		UDQ			0%	124%		63%		R	R
	4-Bromophenyl-phenylether		UD			37%					UDJ	UDJ
	4-Chloro-3-methylphenol		UD			28%					UDJ	UDJ
	4-Chloroaniline		UD			62%					UD	UD
	4-Chlorophenyl-phenylether		UD			31%					UDJ	UDJ
	4-Nitroaniline		UD			31%			24%		UDJ	UDJ
	4-Nitrophenol		UD			86%					UD	UD
	Acenaphthene		UD			15%					UDJ	UDJ
	Acenaphthylene		UD			44%					UDJ	UDJ
	Acetophenone		UD			38%					UDJ	UDJ
	Anthracene	3000	JD	x		-26%					JD	JD
	Atrazine		UD			34%					UDJ	UDJ
	Benzaldehyde		UD			RPD					UD	UD
	Benzo(a)anthracene	6800	D	x		-63%					JD	JD
	Benzo(a)pyrene	5700	D	x		-42%					JD	JD
	Benzo(b)fluoranthene	7900	DQ	x		-84%	106%				JD	JD
	Benzo(g,h,i)perylene	3900	D	x		-16%					JD	JD
	Benzo(k)fluoranthene	2100	JD	x		-16%					JD	JD
	bis(2-Chloroethoxy)methane		UD			36%					UDJ	UDJ
	bis(2-Chloroethyl)ether		UD			31%					UDJ	UDJ
	Bis(2-ethylhexyl)phthalate		UD			RPD					UD	UD

Butylbenzylphthalate		UD			38%			UDJ	UDJ
Caprolactam		UD			RPD			UD	UD
Carbazole	1600	JD	x		5%			JD	JD
Chrysene	5500	D	x		-116%			JU	JU
Dibenzo(a,h)anthracene		UD			15%			UDJ	UDJ
Dibenzofuran		UD			23%			UDJ	UDJ
Diethylphthalate		UD			33%			UDJ	UDJ
Dimethylphthalate		UD			16%			UDJ	UDJ
Di-n-butylphthalate		UD			41%			UDJ	UDJ
Di-n-octyl phthalate		UD			18%			UDJ	UDJ
Fluoranthene	15800	D	1576		-189%			JD	JD
Fluorene		UD			8%			R	R
Hexachlorobenzene		UD			42%			UDJ	UDJ
Hexachlorobutadiene		UD			36%			UDJ	UDJ
Hexachlorocyclopentadiene		UDQ			0%	133%	29%	R	R
Hexachloroethane		UD			23%		29%	UDJ	UDJ
Indeno(1,2,3-cd)pyrene	3400	JD	x		-21%			JD	JD
Isophorone		UD			27%			UDJ	UDJ
Naphthalene		UD			29%			UDJ	UDJ
Nitrobenzene		UD			23%			UDJ	UDJ
n-Nitroso-di-n-propylamine		UD			31%			UDJ	UDJ
n-Nitrosodiphenylamine		UD			41%			UDJ	UDJ
Pentachlorophenol		UD						UD	UD
Phenanthrene	9600	D	x		-153%			JD	JD
Phenol		UDQ			33%	106%		UDJ	UDJ
Pyrene	12100	D	x		-184%			JD	JD

SS-205		Lab	DV								DV	Comb.
E2323-10	Compound	ug/kg Qual.	Conc.	MB	Surr	MS	LCS	IC	CC	IS	Qual.	Qual.
	1,1-Biphenyl		U			39%					UJ	UJ
	1,2,4,5-Tetrachlorobenzene		U			35%					UJ	UJ
30.06 g	2,2-oxybis(1-Chloropropane)		U			34%					UJ	UJ
	2,3,4,6-Tetrachlorophenol		U			34%					UJ	UJ
	2,4,5-Trichlorophenol		U			31%					UJ	UJ
%S =	2,4,6-Trichlorophenol		U			34%					UJ	UJ
80.6	2,4-Dichlorophenol		U			35%					UJ	UJ
	2,4-Dimethylphenol		U			36%					UJ	UJ
	2,4-Dinitrophenol		U			8%			40%		R	R
	2,4-Dinitrotoluene		U			19%			24%		UJ	UJ
	2,6-Dinitrotoluene		U			21%			28%		UJ	UJ
	2-Chloronaphthalene		U			35%					UJ	UJ
	2-Chlorophenol		U			33%					UJ	UJ
	2-Methylnaphthalene		U			36%					UJ	UJ
	2-Methylphenol		U			31%					UJ	UJ
	2-Nitroaniline		U			37%					UJ	UJ
	2-Nitrophenol	UQ				RPD	118%				U	U
	3,3-Dichlorobenzidine		U			RPD					U	U
	3+4-Methylphenols		U			36%					UJ	UJ
	3-Nitroaniline		U			RPD					U	U
	4,6-Dinitro-2-methylphenol	UQ				0%	124%		68%		R	R
	4-Bromophenyl-phenylether		U			37%					UJ	UJ
	4-Chloro-3-methylphenol		U			28%					UJ	UJ
	4-Chloroaniline		U			62%					U	U
	4-Chlorophenyl-phenylether		U			31%					UJ	UJ
	4-Nitroaniline		U			31%					UJ	UJ
	4-Nitrophenol		U			86%					U	U
	Acenaphthene		U			15%					UJ	UJ
	Acenaphthylene		U			44%					UJ	UJ
	Acetophenone		U			38%					UJ	UJ
	Anthracene	180	J	x		-26%					J	J
	Atrazine		U			34%					UJ	UJ
	Benzaldehyde		U			RPD					U	U
	Benzo(a)anthracene	520		x		-63%					J	J
	Benzo(a)pyrene	440		x		-42%					J	J
	Benzo(b)fluoranthene	630	Q	x		-84%	106%				J	J
	Benzo(g,h,i)perylene	280	J	x		-16%					J	J
	Benzo(k)fluoranthene	220	J	x		-16%					J	J
	bis(2-Chloroethoxy)methane		U			36%					UJ	UJ
	bis(2-Chloroethyl)ether		U			31%					UJ	UJ
	Bis(2-ethylhexyl)phthalate		U			RPD					U	U

Butylbenzylphthalate		U		38%		UJ	UJ
Caprolactam		U		RPD		U	U
Carbazole		U		5%		R	R
Chrysene	450		x	-116%		J	J
Dibenzo(a,h)anthracene		U		15%		UJ	UJ
Dibenzofuran		U		23%		UJ	UJ
Diethylphthalate		U		33%		UJ	UJ
Dimethylphthalate	430		x	16%		J	J
Di-n-butylphthalate		U		41%		UJ	UJ
Di-n-octyl phthalate	280	J	x	18%		J	J
Fluoranthene	1100		x	-189%		J	J
Fluorene		U		8%		R	R
Hexachlorobenzene		U		42%		UJ	UJ
Hexachlorobutadiene		U		36%		UJ	UJ
Hexachlorocyclopentadiene		UQ		0%	133%	R	R
Hexachloroethane		U		23%		UJ	UJ
Indeno(1,2,3-cd)pyrene	250	J	x	-21%		J	J
Isophorone		U		27%		UJ	UJ
Naphthalene		U		29%		UJ	UJ
Nitrobenzene		U		23%		UJ	UJ
n-Nitroso-di-n-propylamine		U		31%		UJ	UJ
n-Nitrosodiphenylamine		U		41%		UJ	UJ
Pentachlorophenol		U				U	U
Phenanthrene	600		605	-153%		J	J
Phenol		UQ		33%	106%	UJ	UJ
Pyrene	830		x	-184%		J	J

SS-206		Lab	DV								DV	Comb.	
E2323-11	Compound	ug/kg	Qual.	Conc.	MB	Surr	MS	LCS	IC	CC	IS	Qual.	Qual.
	1,1-Biphenyl		U				39%					UJ	UJ
	1,2,4,5-Tetrachlorobenzene		U				35%					UJ	UJ
<b>30.04</b>	2,2-oxybis(1-Chloropropane)		U				34%					UJ	UJ
	2,3,4,6-Tetrachlorophenol		U				34%			23%		UJ	UJ
<b>%S =</b>	2,4,5-Trichlorophenol		U				31%					UJ	UJ
<b>80.1</b>	2,4,6-Trichlorophenol		U				34%					UJ	UJ
	2,4-Dichlorophenol		U				35%					UJ	UJ
	2,4-Dimethylphenol		U				36%					UJ	UJ
	2,4-Dinitrophenol		U				8%			65%		R	R
	2,4-Dinitrotoluene		U				19%			65%		UJ	UJ
	2,6-Dinitrotoluene		U				21%			22%		UJ	UJ
	2-Chloronaphthalene		U				35%					UJ	UJ
	2-Chlorophenol		U				33%					UJ	UJ
	2-Methylnaphthalene		U				36%					UJ	UJ
	2-Methylphenol		U				31%					UJ	UJ
	2-Nitroaniline		U				37%					UJ	UJ
	2-Nitrophenol		UQ				RPD	118%		30%		UJ	UJ
	3,3-Dichlorobenzidine		U				RPD					U	U
	3+4-Methylphenols		U				36%					UJ	UJ
	3-Nitroaniline		U				RPD					U	U
	4,6-Dinitro-2-methylphenol		UQ				0%	124%		63%		R	R
	4-Bromophenyl-phenylether		U				37%					UJ	UJ
	4-Chloro-3-methylphenol		U				28%					UJ	UJ
	4-Chloroaniline		U				62%					U	U
	4-Chlorophenyl-phenylether		U				31%					UJ	UJ
	4-Nitroaniline		U				31%			24%		UJ	UJ
	4-Nitrophenol		U				86%					U	U
	Acenaphthene	340	J	x			15%					J	J
	Acenaphthylene	260	J	x			44%					J	J
	Acetophenone		U				38%					UJ	UJ
	Anthracene	870		x			-26%					J	J
	Atrazine		U				34%					UJ	UJ
	Benzaldehyde		U				RPD					U	U
	Benzo(a)anthracene	2800		x			-63%					J	J
	Benzo(a)pyrene	2200		x			-42%					J	J
	Benzo(b)fluoranthene	2800	Q	x			-84%	106%				J	J
	Benzo(g,h,i)perylene	1300		x			-16%					J	J
	Benzo(k)fluoranthene	940		x			-16%					J	J
	bis(2-Chloroethoxy)methane		U				36%					UJ	UJ
	bis(2-Chloroethyl)ether		U				31%					UJ	UJ
	Bis(2-ethylhexyl)phthalate	290	J	x			RPD					J	J

Butylbenzylphthalate	2700		x	38%			J	J
Caprolactam		U		RPD			U	U
Carbazole	530		x	5%			J	J
Chrysene	2300		2347	-116%			J	J
Dibenzo(a,h)anthracene	480		x	15%			J	J
Dibenzofuran		U		23%			UJ	UJ
Diethylphthalate		U		33%			UJ	UJ
Dimethylphthalate	470		x	16%			J	J
Di-n-butylphthalate		U		41%			UJ	UJ
Di-n-octyl phthalate	270	J	x	18%			J	J
Fluoranthene	5000	E	x	-189%			E	E
Fluorene	270	J	x	8%			J	J
Hexachlorobenzene		U		42%			UJ	UJ
Hexachlorobutadiene		U		36%			UJ	UJ
Hexachlorocyclopentadiene		UQ		0%	133%	29%	R	R
Hexachloroethane		U		23%		29%	UJ	UJ
Indeno(1,2,3-cd)pyrene	1300		x	-21%			J	J
Isophorone		U		27%			UJ	UJ
Naphthalene		U		29%			UJ	UJ
Nitrobenzene		U		23%			UJ	UJ
n-Nitroso-di-n-propylamine		U		31%			UJ	UJ
n-Nitrosodiphenylamine		U		41%			UJ	UJ
Pentachlorophenol		U					U	U
Phenanthrene	3200		x	-153%			J	J
Phenol		UQ		33%	106%		UJ	UJ
Pyrene	4700	E	x	-184%			E	E

SS-206 DL		Lab	DV								DV	Comb.
E2323-11 DL	Compound	ug/kg Qual.	Conc.	MB	Surr	MS	LCS	IC	CC	IS	Qual.	Qual.
	1,1-Biphenyl	UD				39%					UDJ	UDJ
10x	1,2,4,5-Tetrachlorobenzene	UD				35%					UDJ	UDJ
	2,2-oxybis(1-Chloropropane)	UD				34%					UDJ	UDJ
	2,3,4,6-Tetrachlorophenol	UD				34%			23%		UDJ	UDJ
	2,4,5-Trichlorophenol	UD				31%					UDJ	UDJ
30.04	2,4,6-Trichlorophenol	UD				34%					UDJ	UDJ
	2,4-Dichlorophenol	UD				35%					UDJ	UDJ
%S =	2,4-Dimethylphenol	UD				36%					UDJ	UDJ
80.1	2,4-Dinitrophenol	UD				8%			65%		R	R
	2,4-Dinitrotoluene	UD				19%			65%		UDJ	UDJ
	2,6-Dinitrotoluene	UD				21%			22%		UDJ	UDJ
	2-Chloronaphthalene	UD				35%					UDJ	UDJ
	2-Chlorophenol	UD				33%					UDJ	UDJ
	2-Methylnaphthalene	UD				36%					UDJ	UDJ
	2-Methylphenol	UD				31%					UDJ	UDJ
	2-Nitroaniline	UD				37%					UDJ	UDJ
	2-Nitrophenol	UDQ				RPD	118%		30%		UDJ	UDJ
	3,3-Dichlorobenzidine	UD				RPD					UD	UD
	3+4-Methylphenols	UD				36%					UDJ	UDJ
	3-Nitroaniline	UD				RPD					UD	UD
	4,6-Dinitro-2-methylphenol	UDQ				0%	124%		63%		R	R
	4-Bromophenyl-phenylether	UD				37%					UDJ	UDJ
	4-Chloro-3-methylphenol	UD				28%					UDJ	UDJ
	4-Chloroaniline	UD				62%					UD	UD
	4-Chlorophenyl-phenylether	UD				31%					UDJ	UDJ
	4-Nitroaniline	UD				31%			24%		UDJ	UDJ
	4-Nitrophenol	UD				86%					UD	UD
	Acenaphthene	UD				15%					UDJ	UDJ
	Acenaphthylene	UD				44%					UDJ	UDJ
	Acetophenone	UD				38%					UDJ	UDJ
	Anthracene	UD				-26%					R	R
	Atrazine	UD				34%					UDJ	UDJ
	Benzaldehyde	UD				RPD					UD	UD
	Benzo(a)anthracene	2900 JD	x			-63%					JD	JD
	Benzo(a)pyrene	2400 JD	x			-42%					JD	JD
	Benzo(b)fluoranthene	3500 JDQ	x			-84%	106%				JD	JD
	Benzo(g,h,i)perylene	UD				-16%					R	R
	Benzo(k)fluoranthene	UD				-16%					R	R
	bis(2-Chloroethoxy)methane	UD				36%					UDJ	UDJ
	bis(2-Chloroethyl)ether	UD				31%					UDJ	UDJ
	Bis(2-ethylhexyl)phthalate	UD				RPD					UD	UD

Butylbenzylphthalate	2900	JD	2918	38%			JD	JD
Caprolactam		UD		RPD			UD	UD
Carbazole		UD		5%			R	R
Chrysene	2400	JD	x	-116%			JD	JD
Dibenzo(a,h)anthracene		UD		15%			UDJ	UDJ
Dibenzofuran		UD		23%			UDJ	UDJ
Diethylphthalate		UD		33%			UDJ	UDJ
Dimethylphthalate		UD		16%			UDJ	UDJ
Di-n-butylphthalate		UD		41%			UDJ	UDJ
Di-n-octyl phthalate		UD		18%			UDJ	UDJ
Fluoranthene	6900	D	x	-189%			DJ	DJ
Fluorene		UD		8%			R	R
Hexachlorobenzene		UD		42%			UDJ	UDJ
Hexachlorobutadiene		UD		36%			UDJ	UDJ
Hexachlorocyclopentadiene		UDQ		0%	133%	29%	R	R
Hexachloroethane		UD		23%		29%	UDJ	UDJ
Indeno(1,2,3-cd)pyrene		UD		-21%			R	R
Isophorone		UD		27%			UDJ	UDJ
Naphthalene		UD		29%			UDJ	UDJ
Nitrobenzene		UD		23%			UDJ	UDJ
n-Nitroso-di-n-propylamine		UD		31%			UDJ	UDJ
n-Nitrosodiphenylamine		UD		41%			UDJ	UDJ
Pentachlorophenol		UD					UD	UD
Phenanthrene	3900	JD	x	-153%			JD	JD
Phenol		UDQ		33%	106%		UDJ	UDJ
Pyrene	5200	D	x	-184%			DJ	DJ

**SUMMARY OF THE ANALYTICAL DATA VALIDATION**  
**14 North Division Street, Auburn, NY**

**Soil & Water PCB Analyses**

**Samples Collected: May 21, 2013**

**Samples Received at Chemtech on May 22, 2013**

**Sample Delivery Group: E2323**

**Laboratory Reference Numbers:**

<b>Lab Sample ID</b>	<b>Field Sample ID</b>	<b>Matrix</b>
E2323-02	EB-3	Water
E2323-03	CHA-3	Soil
E2323-04	SS-201	Soil
E2323-05	SS-202	Soil
E2323-06	SS-203	Soil
E2323-07	SS-204	Soil
E2323-08	E2323-07MS	Soil
E2323-09	E2323-07MSD	Soil
E2323-10	SS-205	Soil
E2323-11	SS-206	Soil

Soil and water samples were validated for analyses of PCBs by the US EPA Region II data validation SOP (HW-45, Revision 1). Data were reviewed for usability according to the following criteria:

- \* - Data Completeness
- \* - Holding Times
- \* - Laboratory Blanks
  - Field Blanks
  - Surrogate Recoveries
- \* - Surrogate Retention Times
  - Matrix Spike / Matrix Spike Duplicate
- \* - Laboratory Control Sample
  - Calibrations
- \* - Method Blanks
- \* - Performance Evaluation Mixtures
  - Florisil Cartridge Check
  - GPC Calibration
- \* - Compound Identification

\* - Indicates that all criteria were met for this parameter.

**DATA VALIDATION SUMMARY**

The problems with the matrix spike recovery should be noted. These are described in detail below.

Form IX for a florisil cleanup was not included in the data package.

**Holding Times**

All extractions and analyses were performed within the required holding times.

**Surrogate Recoveries**

The DCB-2 recoveries in sample E2323-06 / SS-203 (50%) and E2323-11 / SS-206 (57%) were less than the 60% quality control limit.

The NYS DEC ASP protocols allow one surrogate in each fraction to be less than the quality control limits (as long as the recovery is greater than 10%).

The data were not required to be qualified for the low surrogate recoveries.

**Matrix Spike**

Sample E2323-07 / SS-204 was used for the matrix spike and matrix spike duplicate.

The recoveries of AR1260 (187% & 178%) were above the 130% quality control limit.

Aroclor 1254 was detected in samples SS-204 / E2323-07 (230 ug/kg) and SS-206 / E2323-11 (110 ug/kg).

The data for these Aroclors were flagged with the "J" qualifier and are estimated values.

**Laboratory Control Samples**

All recoveries were within the quality control limits used for the validation.

**Initial Calibrations**

All percent RSDs for PCB 1016 and PCB 1260 were less than 20%.

**Continuing Calibrations**

All but two of the percent differences in the continuing calibrations were less than the 20% quality control limit.

The average of all of the percent differences of the individual peaks for each Aroclor were less than 20%.

The data were not qualified for the high percent differences.

**Florisil Cartridge Check**

Form IX for a florisil cleanup was not included in the data package.

**GPC Calibration**

A GPC cleanup was not performed on these samples.

**Method Blanks**

No problems were detected with any of the method blanks.

**Calibration Blanks**

No problems were detected with the calibration blanks associated with this sample delivery group.

**Field Blank**

A field blank was not analyzed with this sample delivery group.

**Sample Results**

The data were qualified on the basis of the percent difference of the concentrations on the two columns:

<b><u>% Difference</u></b>	<b>Qualifier</b>
0 - 25%	None
25 - 70%	"J"
70 - 100%	"JN"
> 100%	"R"
100 - 200% (Interference detected)	"JN"
> 50% (Value is < CRQL)	"U"

No problems were detected with the sample data.

**EB-3**

E2323-02

	ug/kg	Lab	DV											DV	Comb.
		Qual.	Conc.	HT	MB	TB	Surr	MS	LCS	IC	CC	Qual.	Qual.		
Aroclor-1016		U												U	U
Aroclor-1221		U												U	U
Aroclor-1232		U												U	U
Aroclor-1242		U												U	U
Aroclor-1248		U												U	U
Aroclor-1254		U												U	U
Aroclor-1260		U												U	U

**CHA-3**

E2323-03

	ug/kg	Lab	DV											DV	Comb.
		Qual.	Conc.	HT	MB	TB	Surr	MS	LCS	IC	CC	Qual.	Qual.		
Aroclor-1016		U												U	U
Aroclor-1221		U												U	U
Aroclor-1232		U												U	U
Aroclor-1242		U												U	U
Aroclor-1248		U												U	U
Aroclor-1254		U												U	U
Aroclor-1260		U												U	U

**SS-201**

E2323-04

	ug/kg	Lab	DV											DV	Comb.
		Qual.	Conc.	HT	MB	TB	Surr	MS	LCS	IC	CC	Qual.	Qual.		
Aroclor-1016		U												U	U
Aroclor-1221		U												U	U
Aroclor-1232		U												U	U
Aroclor-1242		U												U	U
Aroclor-1248		U												U	U
Aroclor-1254		U												U	U
Aroclor-1260		U												U	U

**SS-202**

E2323-05

	ug/kg	Lab	DV											DV	Comb.
		Qual.	Conc.	HT	MB	TB	Surr	MS	LCS	IC	CC	Qual.	Qual.		
Aroclor-1016		U												U	U
Aroclor-1221		U												U	U
Aroclor-1232		U												U	U
Aroclor-1242		U												U	U
Aroclor-1248		U												U	U
Aroclor-1254		U												U	U
Aroclor-1260		U												U	U

SS-203 E2323-06	ug/kg	Lab	DV											DV	Comb.
		Qual.	Conc.	HT	MB	TB	Surr	MS	LCS	IC	CC	Qual.	Qual.		
Aroclor-1016		U												U	U
Aroclor-1221		U												U	U
Aroclor-1232		U												U	U
Aroclor-1242		U												U	U
Aroclor-1248		U												U	U
Aroclor-1254		U												U	U
Aroclor-1260		U												U	U

SS-204 E2323-07	ug/kg	Lab	DV											DV	Comb.
		Qual.	Conc.	HT	MB	TB	Surr	MS	LCS	IC	CC	Qual.	Qual.		
Aroclor-1016		U												U	U
Aroclor-1221		U												U	U
Aroclor-1232		U												U	U
Aroclor-1242		U												U	U
Aroclor-1248		U												U	U
Aroclor-1254	230													J	J
Aroclor-1260		U												U	U

SS-205 E2323-10	ug/kg	Lab	DV											DV	Comb.
		Qual.	Conc.	HT	MB	TB	Surr	MS	LCS	IC	CC	Qual.	Qual.		
Aroclor-1016		U												U	U
Aroclor-1221		U												U	U
Aroclor-1232		U												U	U
Aroclor-1242		U												U	U
Aroclor-1248		U												U	U
Aroclor-1254		U												U	U
Aroclor-1260		U												U	U

SS-206 E2323-11	ug/kg	Lab	DV											DV	Comb.
		Qual.	Conc.	HT	MB	TB	Surr	MS	LCS	IC	CC	Qual.	Qual.		
Aroclor-1016		U												U	U
Aroclor-1221		U												U	U
Aroclor-1232		U												U	U
Aroclor-1242		U												U	U
Aroclor-1248		U												U	U
Aroclor-1254	110													J	J
Aroclor-1260		U												U	U

**SUMMARY OF THE ANALYTICAL DATA VALIDATION**  
**14 North Division Street, Auburn, NY**

**Soil & Water Total Metals**

**Samples Collected: May 21, 2013**

**Samples Received at Chemtech on May 22, 2013**

**Sample Delivery Group: E2323**

**Laboratory Reference Numbers:**

<b>Lab Sample ID</b>	<b>Field Sample ID</b>	<b>Matrix</b>
E2323-02	EB-3	Water
E2323-03	CHA-3	Soil
E2323-04	SS-201	Soil
E2323-05	SS-202	Soil
E2323-06	SS-203	Soil
E2323-07	SS-204	Soil
E2323-08	E2323-07MS	Soil
E2323-09	E2323-07MSD	Soil
E2323-10	SS-205	Soil
E2323-11	SS-206	Soil

Soil and water samples were validated for inorganic analyses by the US EPA Region II data validation SOP (HW-2, Revision 13). Data were reviewed for usability according to the following criteria:

- \* - Holding Times
- \* - Calibration Verification
- \* - CRDL Standard
- \* - Laboratory Control Sample
  - Serial Dilution
- \* - Calibration Blanks
  - Field Blank
  - Preparation Blanks
  - Matrix Spike
- \* - Duplicate Analyses
- \* - ICP Interference Check Sample
- \* - Detection Limit Results
- \* - Linear Range
- \* - Sample Results

\* - Indicates that all criteria were met for this parameter.

**Data Validation Summary**

The problems with the matrix spike and serial dilutions should be noted. These are described in detail below.

No other problems were detected that would affect the use of the data.

## Holding Times

All samples were analyzed within the required holding times.

## CRDL Standards

All of the CRDL standards were within the 70% - 130% quality control limits.

## Initial and Continuing Calibrations

No problems were found with any of the initial or continuing calibrations.

## Preparation Blank

No compounds were detected in the one preparation blank associated with the digestions of these samples at concentrations above the CRDL. Several analytes were found in the preparation blank at concentrations between the CRDL and instrument detection limit. These very low concentrations are not required to be noted in the data validation summary table.

## Calibration Blanks

Several analytes were found in the continuing calibration blanks at concentrations between the CRDL and instrument detection limit. These very low concentrations are not required to be noted in the data validation summary table and do not affect the end use of the data.

## Field Blank

A field blank was not collected with this sample delivery group.

## ICP Interference Check Sample

All of the ICP Interference Check Sample recoveries were within the required limits.

## Matrix Spike Recovery

Sample E2323-07 / SS-204 was used as the matrix spike and matrix spike duplicate.

All recoveries were within the 75% - 125% quality control used for the validation with the following exceptions:

<b>Analyte</b>	<b>MS % Rec</b>	<b>MSD % Rec.</b>
ANTIMONY	18%	18%
SELENIUM	74%	73%
SILVER	46%	49%

The data for antimony, silver and selenium were flagged with the "J" qualifier and are estimated values.

### Duplicate Analysis

Sample E2323-07 / SS-204 was used for the matrix duplicate.

All RPDs which could be accurately calculated were less than 20%.

### Laboratory Control Sample

No problems were detected with the recoveries of the LCS standards.

### Serial Dilutions

Sample E2323-07 / SS-204 was used for the serial dilution.

The "E" qualifier was not added to the FORM I's or EDDs as required by the NYS DEC ASP program. These were added during the validation.

The percent differences were calculated during the data validation:

<b>Analyte</b>	<b>MDL</b>	<b>50X MDL</b>	<b>Initial Concentration</b>	<b>% D</b>
ALUMINUM	6.5	325	62305	13%
ARSENIC	4.2	210	45.05	34%
BARIUM	4	200	2092	14%
BERYLLIUM	0.7	35	16.68	41%
CADMIUM	0.5	25	5.67	58%
CALCIUM	31.8	1,590	624900	23%
CHROMIUM	1.1	55	171	24%
COPPER	2	100	391	28%
MAGNESIUM	32.5	1,625	136510	20%
MANGANESE	1.7	85	3441	27%
POTASSIUM	38.8	1,940	8693	14%
SELENIUM	4.8	240	44.78	39%
SODIUM	13.9	695	1963	21%
VANADIUM	6.4	320	147	21%

The analytes noted in red were flagged with the "EJ" qualifier in the data validation summary table and in the NYS EDD.

The data for these analytes are estimated values.

### Instrument Detection Limit

No problems were found with the instrument detection limits.

### ICP Linear Ranges

No problems were detected with the linear ranges.

### Sample Results

No problems were detected with any of the data.

EB-3 E2323-02	Conc.	Lab Qual	DV Conc	FB	CRDL	CC	MS	Dup.	Ser. Dil.	SD Qual	DV Qual	Comb. Qual
ALUMINUM		U									U	U
ANTIMONY		U									U	U
ARSENIC		U									U	U
BARIUM		U									U	U
BERYLLIUM		U									U	U
CADMIUM		U									U	U
CALCIUM	155	J									J	J
CHROMIUM, TOTAL	0.59	J									J	J
COBALT		U									U	U
COPPER		U									U	U
IRON	15.8	J									J	J
LEAD		U									U	U
MAGNESIUM	68.3	J									J	J
MANGANESE	3.44	J									J	J
NICKEL		U									U	U
POTASSIUM	77.2	J									J	J
SELENIUM		U									U	U
SILVER		U									U	U
SODIUM	60.6	J									J	J
THALLIUM		U									U	U
VANADIUM		U									U	U
ZINC	5.42	J									J	J

CHA-3 E2323-03	Conc.	Lab Qual	DV Conc	FB	CRDL	CC	MS	Dup.	Ser. Dil.	SD Qual	DV Qual	Comb. Qual
ALUMINUM	5090								13%	E	EJ	EJ
ANTIMONY		UN					18%				UNJ	UNJ
ARSENIC	3.14											
BARIUM	49.6								14%	E	EJ	EJ
BERYLLIUM	1.3											
CADMIUM		U									U	U
CALCIUM	42800								23%	E	EJ	EJ
CHROMIUM, TOTAL	11								24%	E	EJ	EJ
COBALT	6.32											
COPPER	24.8								28%	E	EJ	EJ
IRON	14100											
LEAD	112											
MAGNESIUM	17700								20%	E	EJ	EJ
MANGANESE	244								27%	E	EJ	EJ
NICKEL	20.4											
POTASSIUM	786								14%	E	EJ	EJ
SELENIUM	3.46						73%					
SILVER	0.23	JN					46%				JN	JN
SODIUM	14.1	J									J	J
THALLIUM	0.41	J									J	J
VANADIUM	8.33								21%	E	EJ	EJ
ZINC	96.1											

SS-201 E2323-04	Conc.	Lab Qual	DV Conc	FB	CRDL	CC	MS	Dup.	Ser. Dil.	SD Qual	DV Qual	Comb. Qual
ALUMINUM	3950								13%	E	EJ	EJ
ANTIMONY		UN					18%				UNJ	UNJ
ARSENIC	3.91											
BARIUM	48.5								14%	E	EJ	EJ
BERYLLIUM	1.25											
CADMIUM	0.05	J									J	J
CALCIUM	64800								23%	E	EJ	EJ
CHROMIUM, TOTAL	5.54								24%	E	EJ	EJ
COBALT	6.38											
COPPER	20.5								28%	E	EJ	EJ
IRON	12900											
LEAD	86.3											
MAGNESIUM	14200								20%	E	EJ	EJ
MANGANESE	292								27%	E	EJ	EJ
NICKEL	16.3											
POTASSIUM	675								14%	E	EJ	EJ
SELENIUM	3.46						73%					
SILVER		UN					46%				UNJ	UNJ
SODIUM	20	J									J	J
THALLIUM	0.25	J									J	J
VANADIUM	7.2								21%	E	EJ	EJ
ZINC	78.1											

SS-202 E2323-05	Conc.	Lab Qual	DV Conc	FB	CRDL	CC	MS	Dup.	Ser. Dil.	SD Qual	DV Qual	Comb. Qual
ALUMINUM	4380								13%	E	EJ	EJ
ANTIMONY		UN					18%				UNJ	UNJ
ARSENIC	5.14											
BARIUM	51.6								14%	E	EJ	EJ
BERYLLIUM	1.48											
CADMIUM	0.32											
CALCIUM	44400								23%	E	EJ	EJ
CHROMIUM, TOTAL	8.5								24%	E	EJ	EJ
COBALT	7.98											
COPPER	31.6								28%	E	EJ	EJ
IRON	15900											
LEAD	68.7											
MAGNESIUM	14100								20%	E	EJ	EJ
MANGANESE	274								27%	E	EJ	EJ
NICKEL	26.9											
POTASSIUM	779								14%	E	EJ	EJ
SELENIUM	4.14						73%					
SILVER		UN					46%				UNJ	UNJ
SODIUM	3.04	J									J	J
THALLIUM	0.58	J									J	J
VANADIUM	9.83								21%	E	EJ	EJ
ZINC	105											

SS-203 E2323-06	Conc.	Lab Qual	DV Conc	FB	CRDL	CC	MS	Dup.	Ser. Dil.	SD Qual	DV Qual	Comb. Qual
ALUMINUM	4830								13%	E	EJ	EJ
ANTIMONY		UN					18%				UNJ	UNJ
ARSENIC	4.11											
BARIUM	108								14%	E	EJ	EJ
BERYLLIUM	1.47											
CADMIUM		U									U	U
CALCIUM	40800								23%	E	EJ	EJ
CHROMIUM, TOTAL	10.1								24%	E	EJ	EJ
COBALT	6.96											
COPPER	27.6								28%	E	EJ	EJ
IRON	15000											
LEAD	92											
MAGNESIUM	11900								20%	E	EJ	EJ
MANGANESE	273								27%	E	EJ	EJ
NICKEL	19.9											
POTASSIUM	750								14%	E	EJ	EJ
SELENIUM	4.03						73%					
SILVER	0.27	N					46%				NJ	NJ
SODIUM	5.29	J									J	J
THALLIUM	0.22	J									J	J
VANADIUM	8.75								21%	E	EJ	EJ
ZINC	105											

SS-204 E2323-07	Conc.	Lab Qual	DV Conc	FB	CRDL	CC	MS	Dup.	Ser. Dil.	SD Qual	DV Qual	Comb. Qual
ALUMINUM	6260								13%	E	EJ	EJ
ANTIMONY		UN					18%				UNJ	UNJ
ARSENIC	4.53											
BARIUM	210								14%	E	EJ	EJ
BERYLLIUM	1.68											
CADMIUM	0.57											
CALCIUM	62800								23%	E	EJ	EJ
CHROMIUM, TOTAL	17.2								24%	E	EJ	EJ
COBALT	15.6											
COPPER	39.4								28%	E	EJ	EJ
IRON	17000											
LEAD	122											
MAGNESIUM	13700								20%	E	EJ	EJ
MANGANESE	346								27%	E	EJ	EJ
NICKEL	26.1											
POTASSIUM	874								14%	E	EJ	EJ
SELENIUM	4.5						73%					
SILVER		UN					46%				UNJ	UNJ
SODIUM	197											
THALLIUM		U									U	U
VANADIUM	14.9								21%	E	EJ	EJ
ZINC	236											

SS-205 E2323-10	Conc.	Lab Qual	DV Conc	FB	CRDL	CC	MS	Dup.	Ser. Dil.	SD Qual	DV Qual	Comb. Qual
ALUMINUM	3590								13%	E	EJ	EJ
ANTIMONY		UN					18%				UNJ	UNJ
ARSENIC	2.5											
BARIUM	45.5								14%	E	EJ	EJ
BERYLLIUM	0.87											
CADMIUM	0.23											
CALCIUM	61500								23%	E	EJ	EJ
CHROMIUM, TOTAL	8.42								24%	E	EJ	EJ
COBALT	4.71											
COPPER	16								28%	E	EJ	EJ
IRON	10700											
LEAD	44.4											
MAGNESIUM	21600								20%	E	EJ	EJ
MANGANESE	251								27%	E	EJ	EJ
NICKEL	11.5											
POTASSIUM	724								14%	E	EJ	EJ
SELENIUM	2.6						73%					
SILVER		UN					46%				UNJ	UNJ
SODIUM	40.7	J									J	J
THALLIUM	0.18	J									J	J
VANADIUM	7.28								21%	E	EJ	EJ
ZINC	135											

SS-206 E2323-11	Conc.	Lab Qual	DV Conc	FB	CRDL	CC	MS	Dup.	Ser. Dil.	SD Qual	DV Qual	Comb. Qual
ALUMINUM	3630								13%	E	EJ	EJ
ANTIMONY		UN					18%				UNJ	UNJ
ARSENIC	4.3											
BARIUM	59.1								14%	E	EJ	EJ
BERYLLIUM	1.18											
CADMIUM	0.76											
CALCIUM	38100								23%	E	EJ	EJ
CHROMIUM, TOTAL	23.6								24%	E	EJ	EJ
COBALT	7.07											
COPPER	51.6								28%	E	EJ	EJ
IRON	13900											
LEAD	134											
MAGNESIUM	10800								20%	E	EJ	EJ
MANGANESE	240								27%	E	EJ	EJ
NICKEL	25.1											
POTASSIUM	715								14%	E	EJ	EJ
SELENIUM	3.88						73%					
SILVER	0.29	N					46%				NJ	NJ
SODIUM	18.1	J									J	J
THALLIUM		U									U	U
VANADIUM	10.4								21%	E	EJ	EJ
ZINC	268											

**CHIA**

