LABELLA
Associates, P.C.

Engineering
Architecture
Environmental
Planning

REMEDIAL INVESTIGATION (RI) REPORT

VOLUME II: Data Usability Summary Reports (DUSRs)

15-ACRE PRAXAIR SITE
137 47TH STREET
NIAGARA FALLS, NEW YORK

Prepared for:

Covanta Niagara, L.P.
100 Energy Boulevard at 56th Street
Niagara Falls, New York 14304

March 2013

REMEDIAL INVESTIGATION OF 15-ACRE PRAXAIR SITE

137 47th STREET

NIAGARA FALLS, NEW YORK
RI REPORT VOLUME II
TABLE OF CONTENTS

SECTION 1

MAY 2012 SOIL SAMPLES-SDG 12:2132, 12:2150

DATA USABILITY
SUMMARY REPORT

COVANTA RECOVERY SITE

SOIL SAMPLES COLLECTED MAY 2012

SDG 12:2132, 12:2150
Volatile Organics, Semivolatile Organics
Pesticides, PCB, Metals

Prepared for:

LABELLA ASSOCIATES, P.C.
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SECTION 1.1

Volatiles

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Soil Samples
SDG: 12:2132 - 2150
Sampled May 2012

VOLATILE ORGANICS

TP-01-1’-3’	(12:2132-01)	TP-02-6”	(12:2132-02)
TP-18-1’-2’	(12:2132-03)	TP-18-2’-2.75’	(12:2132-04)
TP-15-6”-1.25’	(12:2132-05)	TP-14-2.5’-5.5’	(12:2132-06)
TP-10-4’-6’	(12:2132-07)	TP-20-1’-2’	(12:2132-08)
TP-22-1’-2.5’	(12:2132-09)	TP-22-1’2.5’	(12:2132-16)
TP-30-2.5’-4’	(12:2150-01)	TP-30-4’-5’	(12:2150-02)
TP-23-2.5’-3.5’	(12:2150-03)	TP-28-3.5’-4’	(12:2150-04)
TP-26-1.5’-2.5’	(12:2150-05)	TP-24-2.75’-3.5’	(12:2150-06)

DATA ASSESSMENT

A volatile organics data package containing analytical results for sixteen soil samples was received from Labella Associates, P.C. on 16Jul12. The ASP Category B deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8260, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol (ASP), September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP NO. HW-24, Rev. #2, August 2008, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B) was used as a technical reference.

Acetone should be interpreted as undetected in this group of samples. Acetone concentrations, when present, are assumed to represent laboratory artifacts.

The acetone and methylene chloride results reported from this project have been qualified as estimations due to poor calibration performance.

The results reported from TP-18-1′-2′, TP-15-6″-1.25′, TP-20-1′-2′, TP-22-1′-2.5′, TP-22-1′-2.5DUP and TP-26-1.5′-2.5′ have been qualified as estimations due to poor surrogate standard recoveries.

The TIC's reported from TP-14-2.5′-5.5′ and TP-30-2.5′-4′ have been flagged as presumptive identifications and estimated concentrations because mass spectra references were not provided to confirm these identifications.

CORRECTNESS AND USABILITY

It is noted that the laboratory did not consistently report analyte concentrations between the method detection limit and the reporting limit as present. The detection limits, as reported, are correct, but concentrations below this level may be present.

It is also noted that the laboratory included analytes that were not targeted by this program in its instrument calibrations. When detected in samples, these analytes were not reported on Form 1 because they were not targeted by this program. They were also not reported as TIC's because they were included in the instrument calibration.

Reported data should be considered technically defensible and completely usable in its present form. Results representing a usable estimation of the conditions at the time of sampling have been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 22 July 12

Sample History

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Acid preserved VOA samples must be analyzed within 12 days of VTSR, unpreserved samples within 5 days. The holding time for soils is 12 days.

This sample delivery group contained sixteen soil samples that were collected from the Covanta Recovery site between 14May12 and 16May12. Ten samples were collected on 14May12 and 15May12. They were shipped to the laboratory, via a laboratory courier on 15May12, arriving the next day. The final six samples were collected on 16May12. They were shipped to the laboratory on the day of collection and received on 17May12. Both shipments of samples arrived intact and properly chilled, with custody seals in place. Cooler temperatures of 1°C and 3°C were recorded at the time of sample receipt. The analysis of each sample was completed by 22May12, satisfying the ASP holding time limitations.

Blanks

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Two method blanks were analyzed with this group of samples. Although both of these blanks demonstrated acceptable chromatography, both contained traces of acetone. Similar artifacts were found throughout this group of samples. Acetone should be considered undetected in this group of samples. Detection limits equaling PQL or the reported concentration, which ever is larger, should be assumed.

MS Tuning

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of BFB was analyzed prior to each analytical sequence that included samples from this program. An Instrument Performance Check Form is present for each BFB evaluation. The BFB tunes associated with this group of samples satisfied the program acceptance criteria.

Calibrations

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration check standards verify instrument stability.

The initial instrument calibration was performed on 11May12. Standards of 1, 5, 20, 50, 100, 150 and 200 µg/l were included. This calibration incorporated a heated purge. With the exception of acetone and methylene chloride, each analyte targeted by this program produced the required levels of instrument response and demonstrated an acceptable degree of linearity. Although methylene chloride standards produced the required levels of response, they demonstrated poor linearity. Although errors might be expected in measurements of methylene chloride, it may be assumed that this analyte would be detected if present in samples. Because methylene chloride was not found in samples, data qualifications are not required.

Acetone also demonstrated poor linearity. The acetone concentrations found in this group of samples have been qualified as estimations based on this performance.

Calibration check standards were analyzed on 18May12 and 22May12, prior to each 12-hour period of instrument operation that included samples from this program. When compared to the initial calibrations, both checks demonstrated unacceptably large shifts in the response of acetone and methylene chloride. The acetone and methylene chloride results reported from this group of samples have been qualified as estimations based on this performance.

Surrogates

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Although Surrogate Summary Sheets were properly prepared, the laboratory applied its own acceptance criteria. When compared to the ASP requirements, unacceptably low recoveries were reported for the toluene-d8 additions to TP-18-1′-2′, TP-15-6″-1.25′, TP-20-1′-2′, TP-22-1′-2.5′, TP-22-1′-2.5DUP and TP-26-1.5′-2.5′. The results reported from these samples have been qualified as estimations due to this indication of negative bias.

Internal Standards

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to this criteria, acceptable performance was demonstrated by the internal standard additions to each program sample.

Matrix Spikes

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

TP-02-6" was selected for matrix spiking. The correct mixture of analytes was added to two portions of this sample. The recoveries reported for these additions demonstrated acceptable levels of measurement accuracy and precision.

Two spiked soil blanks (LCS) were also analyze with this group of samples. Both of these LCS produced acceptable analyte recoveries.

Duplicates

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates of TP-22-1'-2.5' were included in this delivery group. A trace of carbon disulfide was present in TP-22-1'-2.5' but absent in the duplicate. Acetone was present in both samples, but assumed to represent a laboratory artifact. Both samples were otherwise negative.

Reported Analytes

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations have been adjusted to reflect sample size and moisture content.

Although Tentatively Identified Compounds (TIC) were reported, mass spectra references were not provided to support the laboratory's identifications. Although most of these identifications appear to be appropriate, this cannot be confirmed without the missing spectra references. The TIC's reported from TP-14-2.5'-5.5' and TP-30-2.5'-4' have been qualified as "NJ" to indicate an estimated concentration and a presumptive identification.

It is noted that the laboratory did not consistently report analyte concentrations between the method detection limit and the reporting limit as present. The detection limits, as reported, are correct, but concentrations below this level may be present.

It is also noted that the laboratory included analytes that were not targeted by this program in its instrument calibrations. When detected in samples, these analytes were not reported on Form 1 because they were not targeted by this program. They were also not reported as TIC's because they were included in the instrument calibration.

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		BLANK ACETONE	CALIBRATE ACETONE	CALIBRATE METHCL	SUROGATES	CONFIRM TIC
TP-01-1′-3′	(12:2132-01)	119U	119UJ	8.63UJ		
TP-02-6″	(12:2132-02)	17.2U	17.2UJ	8.62UJ		
TP-18-1′-2′	(12:2132-03)	58.1U	58.1UJ	10.8UJ	ALL J/UJ	
TP-18-2′-2.75′	(12:2132-04)		21.8UJ	10.9UJ		
TP-15-6″-1.25′	(12:2132-05)	25.7U	25.7UJ	12.8UJ	ALL UJ	
TP-14-2.5′-5.5′	(12:2132-06)	27.6U	27.6UJ	10.7UJ		ALL NJ
TP-10-4′-6′	(12:2132-07)	58.2U	58.2UJ	11.8UJ		
TP-20-1′-2′	(12:2132-08)		22.6UJ	11.3UJ	ALL UJ	
TP-22-1′-2.5′	(12:2132-09)	30.4U	30.4UJ	11.6UJ	ALL J/UJ	
TP-22-1′2.5′	(12:2132-16)	20.0U	20.0UJ	10.0UJ	ALL UJ	
TP-30-2.5′-4′	(12:2150-01)	400U	400UJ	36.1UJ		ALL NJ
TP-30-4′-5′	(12:2150-02)	75.3U	75.3UJ	11.0UJ		
TP-23-2.5′-3.5′	(12:2150-03)	96.2J	96.2UJ	10.7UJ		
TP-28-3.5′-4′	(12:2150-04)	142U	142UJ	13.9UJ		
TP-26-1.5′-2.5′	(12:2150-05)	47.5U	47.5UJ	10.8UJ	ALL J/UJ	
TP-24-2.75′-3.5′	(12:2150-06)	63.3U	63.3UJ	11.9UJ		

SECTION 1.2

Semivolatiles

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.
300 Pearl Street, Suite 325
Buffalo, NY 14202

COVANTA RECOVERY SITE

Soil Samples
SDG: 12:2132 - 2150
Sampled May 2012

SEMIVOLATILE ORGANICS

TP-01-1′-3′	(12:2132-01)	TP-02-6″	(12:2132-02)
TP-18-1′-2′	(12:2132-03)	TP-18-2′-2.75′	(12:2132-04)
TP-15-6″-1.25′	(12:2132-05)	TP-14-2.5′-5.5′	(12:2132-06)
TP-10-4′-6′	(12:2132-07)	TP-20-1′-2′	(12:2132-08)
TP-22-1′-2.5′	(12:2132-09)	SS-1	(12:2132-10)
SS-2	(12:2132-11)	SS-3	(12:2132-12)
SS-4	(12:2132-13)	SS-5	(12:2132-14)
SS-6	(12:2132-15)	TP-22-1′2.5′DUP	(12:2132-16)
SS-1DUP	(12:2132-17)	TP-30-2.5′-4′	(12:2150-01)
TP-30-4′-5′	(12:2150-02)	TP-23-2.5′-3.5′	(12:2150-03)
TP-28-3.5′-4′	(12:2150-04)	TP-26-1.5′-2.5′	(12:2150-05)
TP-24-2.75′-3.5′	(12:2150-06)		

DATA ASSESSMENT

A semivolatile organics data package containing analytical results for twenty-three soil samples was received from Labella Associates, P.C. on 16Jul12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8270, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-22, Rev. #4, August 2008, Validating Semivolatile Organic Compounds by Gas Chromatography / Mass Spectrometry SW-846 Method 8270D was used as a technical reference.

The bis(2-ethylhexyl)phthalate concentrations from SS-4 and TP-22-1′-2.5′DUP, and the di-n-octylphthalate result from TP-18-1′2′ have been flagged as estimations because they may represent laboratory artifacts.

The 2-chloronaphthalene, indeno(1,2,3-cd)pyrene, atrazine and benzaldehyde results from this project; and the di-n-octylphthalate and caprolactam results from SS-4 and SS-1DUP have been qualified as estimations due to poor calibration performance.

The organic acids reported from TP-18-1′-2′, TP-14-2.5′-5.5′ and TP-30-2.5′-4′ have been qualified as estimations due to low surrogate standard recoveries.

The naphthalene results from SS-1 and SS-1DUP have been rejected due to a poor agreement between field split duplicate samples. The fluoranthene and phenanthrene results from SS-1 and SS-1DUP have been qualified as estimations.

The identifications of dibenz(a,h)anthracene in TP-14-2.5′-5.5′, SS-1, SS-2 and SS-1DUP were not conclusive based on the mass spectra references included in the raw data. Dibenz(a,h)-anthracene should be considered undetected in these samples.

The Tentatively Identified Compounds (TIC) reported from this project have been flagged as presumptive identifications and estimated concentrations because mass spectra references were not provided to confirm these identifications.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Data presenting a usable estimation of the conditions being measured has been flagged "J" or "UJ". Data felt to be unreliable has been identified with a single red line and flagged "R". Rejected data should not be included in data tables. Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: Date: 22 July 12

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained twenty-three soil samples that were collected from the Covanta Recovery site between 14May12 and 16May12. Seventeen samples were collected on 14May12 and 15May12. They were shipped to the laboratory, via a laboratory courier on 15May12, arriving the next day. The final six samples were collected on 16May12. They were shipped to the laboratory on the day of collection and received on 17May12. Both shipments of samples arrived intact and properly chilled, with custody seals in place. Cooler temperatures of 1°C and 3°C were recorded at the time of sample receipt.

Each program sample was extracted within six days of collection and five days from VTSR. Analyses were completed within four days of extraction. Both the ASP and SW-846 holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Three method blanks were analyzed with this group of samples. Each of these blanks produced acceptable chromatography and was free of targeted analyte contamination.

Although not present in the method blanks, bis(2-ethylhexyl)-phthalate (BIS(2ETHEX)PHTH) was detected in TP-22-1'-2.5'DUP and SS-4, and di-n-octylphthalate (DI-N-OCTPHTH) was found in TP-18-1'-2'. When present at low concentrations, phthalates are assumed to represent laboratory artifacts. The reported concentrations of both phthalates have been qualified as estimations in the affected sample reports. They could not be removed from the reports because similar artifacts were not present in the associated blanks.

MS TUNING

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of DFTPP was analyzed prior to each analytical sequence that contained samples from this program. An Instrument Performance Check Form is present for each DFTPP evaluation. The results reported for each DFTPP check satisfied the ASP requirements.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

Initial instrument calibrations were performed on 03May12 and 23May12. Standards of 10, 20, 50, 100, 150 and 200 ng/µl were included. Most of the analytes targeted by this program produced the required levels of instrument response and demonstrated an acceptable degree of linearity during both calibrations. Although 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol standards produced the required levels of instrument response during both calibrations, they demonstrated poor linearity. Similar performance was demonstrated by benzaldehyde on 03May12. Although errors might be expected in measurements of these analytes, it may be assumed that they would be detected if present in samples. Because 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol and benzaldehyde were not found in samples, data qualifications are not required.

2-Chloronaphthalene and indeno(1,2,3-cd)pyrene standards failed to produced the required minimum levels of instrument response during both calibrations. The 2-Chloronaphthalene (2-CLNAPH) and indeno(1,2,3-cd)pyrene (IND(123CD)PYR) results from this project have been qualified as estimations based on this performance.

Calibration verifications were performed on 18May12, 21May12, 22May12, 23May12 and 24May12, prior to each 12-hour period of instrument operation that included samples from this program. When compared to the initial calibrations, unacceptable shifts were observed in the response of atrazine and benzaldehyde (BENZALDE) during each calibration check. Additionally, unacceptable shifts were observed in the response of hexachlorocyclopentadiene on 22May12, and di-n-octylphthalate (DI-N-OCTPHTH) and caprolactam on 23May12. The results associated with this performance have been qualified as estimations in the associated samples. The affected samples are tabulated below.

ANALYTE	AFFECTED SAMPLES
Atrazine	All samples
Benzaldehyde	All samples
Hexachlorocyclopentadiene	NONE
Di-n-octylphthalate	SS-1DUP SS-4
Caprolactam	SS-1DUP SS-4

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Although Surrogate Summary Sheets were prepared, the laboratory evaluated surrogate performance based on its own in-house acceptance criteria. When compared to the ASP requirements, low recoveries were reported for the 2-fluorophenol and 2,4,6-tribromophenol additions to TP-18-1′-2′, TP-14-2.5′-5.5′ and TP-30-2.5′-4′. Based on this indication of negative bias, the acid fractions of TP-18-1′-2′, TP-14-2.5′-5.5′ and TP-30-2.5′-4′ have been qualified as estimations.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to these limits, acceptable performance was indicated for the internal standard additions to each program sample.

It is noted that a low response was reported for each of the internal standard additions to SS-3MS and SS-3MSD. This performance had no affect on reported data.

MATRIX SPIKES

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

TP-02-6″ and SS-3 were selected for matrix spiking. Two aliquots of both samples were spiked with eleven targeted analytes, including the nine additions required by ASP protocol. The recoveries reported from both MS/MSD pairs demonstrated acceptable levels of measurement accuracy and precision.

Three spiked soil blanks (LCS) were also analyzed with this project. The additions to each of these LCS were recovered successfully.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates of TP-22-1'-2.5' and SS-1 were included in this group of samples. With the exception of a trace of bis(2-ethylhexyl)phthalate, which is assumed to represent a laboratory artifact, the duplicates of TP-22-1'-2.5' produced negative results.

When the analyte concentrations obtained from both SS-1 and its field duplicate exceeded PQL, measurement precision was measured as Relative Percent Difference (%RPD)

	SS-1	DUPE	%RPD
Benzo(a)anthracene	15600	19000	-19.7%
Benzo(a)pyrene	21600	29000	-29.2%
Benzo(b)fluoranthene	26300	33600	-24.4%
Benzo(g,h,i)perylene	20000	24400	-19.8%
Benzo(k)fluoranthene	12700	17900	-34.0%
Chrysene	18900	21400	-12.4%
Fluoranthene	18400	28700	-43.7%
Indeno(1,2,3-cd)pyrene	23100	33100	-35.6%
Naphthalene	3670	17400	-130.3%
Phenanthrene	10700	22000	-69.1%
Pyrene	18100	26800	-38.8%

With the exception of fluoranthene, naphthalene and phenanthrene the concentrations determined from this pair of samples demonstrated an acceptable level of measurement precision. The naphthalene (NAPHENE) results from SS-1 and SS-1DUP must be considered unreliable based on this performance. They should not be included in data tables. The fluoranthene (FLUORANTH) and phenanthrene (PHENANTH) results from this pair of samples have been qualified as estimations.

SAMPLE INFORMATION

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations have been adjusted to reflect sample size and moisture content. Tentatively Identified Compounds (TIC) were reported.

The identifications of dibenz(a,h)anthracene in TP-14-2.5'-5.5', SS-1, SS-2 and SS-1DUP were not conclusive based on the mass spectra references included in the raw data. Dibenz(a,h)-anthracene (DIBENZ(AH)ANTH) should be interpreted as undetected in these samples.

It is also noted that a mass spectra reference was not provided to support the identification of di-n-octylphthalate in TP-18-1'-2'. This phthalate concentration has been previously addressed.

Although Tentatively Identified Compounds (TIC) were reported, mass spectra references were not provided to support the laboratory's identifications. Although most of these identifications appear to be appropriate, this cannot be confirmed without the missing spectra references. The TIC's reported from this group of samples have been qualified as "NJ" to indicate an estimated concentration and a presumptive identification.

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		CALIBRATE BENZALDE	CALIBRATE DI-N-OCTPHTH	CALIBRATE CAPROLACTAM	SURROGATES ACIDS*	DUPE NAPHLENE	DUPE FLUORANTH.
TP-01-1′-3′	(12:2132-01)	324UJ					
TP-02-6″	(12:2132-02)	302UJ					
TP-18-1′-2′	(12:2132-03)	339UJ			ALL 848UJ		
TP-18-2′-2.75′	(12:2132-04)	356UJ					
TP-15-6″-1.25′	(12:2132-05)	366UJ					
TP-14-2.5′-5.5′	(12:2132-06)	731UJ			ALL 1830UJ		
TP-10-4′-6′	(12:2132-07)	373UJ					
TP-20-1′-2′	(12:2132-08)	669UJ					
TP-22-1′-2.5′	(12:2132-09)	359UJ					
SS-1	(12:2132-10)	1620UJ				REJECT	18400J
SS-2	(12:2132-11)	366UJ					
SS-3	(12:2132-12)	324UJ					
SS-4	(12:2132-13)	385UJ	385UJ	385UJ			
SS-5	(12:2132-14)	368UJ					
SS-6	(12:2132-15)	355UJ					
TP-22-1′2.5′DUP	(12:2132-16)	359UJ					
SS-1DUP	(12:2132-17)	6520UJ	5620UJ	5620UJ		REJECT	33100J
TP-30-2.5′-4′	(12:2150-01)	540UJ			ALL 540UJ		
TP-30-4′-5′	(12:2150-02)	337UJ					
TP-23-2.5′-3.5′	(12:2150-03)	327UJ					
TP-28-3.5′-4′	(12:2150-04)	408UJ					
TP-26-1.5′-2.5′	(12:2150-05)	316UJ					
TP-24-2.75′-3.5′	(12:2150-06)	390UJ					

ACIDS = 4-chloro-3-methylphenol, 2-chlorophenol, 2,4-dichlorophenol, 2,4-dimethylphenol, 4,6-dinitro-2-methylphenol, 2-methylphenol, 3&4-methylphenol, pentachlorophenol, phenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, 2,3,4,6-tetrachlorophenol

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		BLANKS BIS(2ETHHEX)PHTH	BLANKS DI-N-OCTPHTH	CALIBRATE 2-CLNAPHTH	CALIBRATE IND(123CD)PYR	CALIBRATE ATRAZINE
TP-01-1′-3′	(12:2132-01)			324UJ	324UJ	324UJ
TP-02-6″	(12:2132-02)			302UJ	302UJ	302UJ
TP-18-1′-2′	(12:2132-03)		210J	339UJ	339UJ	339UJ
TP-18-2′-2.75′	(12:2132-04)			356UJ	356UJ	356UJ
TP-15-6″-1.25′	(12:2132-05)			366UJ	388J	366UJ
TP-14-2.5′-5.5′	(12:2132-06)			731UJ	2260J	731UJ
TP-10-4′-6′	(12:2132-07)			373UJ	373UJ	373UJ
TP-20-1′-2′	(12:2132-08)			669UJ	501J	669UJ
TP-22-1′-2.5′	(12:2132-09)			359UJ	359UJ	359UJ
SS-1	(12:2132-10)			1620UJ	23100J	1620UJ
SS-2	(12:2132-11)			366UJ	1540J	366UJ
SS-3	(12:2132-12)			324UJ	677J	324UJ
SS-4	(12:2132-13)	464J		385UJ	647J	385UJ
SS-5	(12:2132-14)			368UJ	236J	368UJ
SS-6	(12:2132-15)			355UJ	296J	355UJ
TP-22-1′-2.5′DUP	(12:2132-16)	231J		359UJ	359UJ	359UJ
SS-1DUP	(12:2132-17)			6520UJ	33100J	6520UJ
TP-30-2.5′-4′	(12:2150-01)			540UJ	540UJ	540UJ
TP-30-4′-5′	(12:2150-02)			337UJ	337UJ	337UJ
TP-23-2.5′-3.5′	(12:2150-03)			327UJ	327UJ	327UJ
TP-28-3.5′-4′	(12:2150-04)			408UJ	408UJ	408UJ
TP-26-1.5′-2.5′	(12:2150-05)			316UJ	316UJ	316UJ
TP-24-2.75′-3.5′	(12:2150-06)			390UJ	390UJ	390UJ

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		DUPES	SPECTRA ID	MS ID
		PHENANTH	DIBENZ(AH)ANTH	TIC
TP-01-1′-3′	(12:2132-01)			ALL NJ
TP-02-6″	(12:2132-02)			ALL NJ
TP-18-1′-2′	(12:2132-03)			
TP-18-2′-2.75′	(12:2132-04)			
TP-15-6″-1.25′	(12:2132-05)			ALL NJ
TP-14-2.5′-5.5′	(12:2132-06)		731U	ALL NJ
TP-10-4′-6′	(12:2132-07)			
TP-20-1′-2′	(12:2132-08)			ALL NJ
TP-22-1′-2.5′	(12:2132-09)			ALL NJ
SS-1	(12:2132-10)	10700J	1620U	ALL NJ
SS-2	(12:2132-11)		366U	ALL NJ
SS-3	(12:2132-12)			ALL NJ
SS-4	(12:2132-13)			ALL NJ
SS-5	(12:2132-14)			ALL NJ
SS-6	(12:2132-15)			ALL NJ
TP-22-1′2.5′DUP	(12:2132-16)			ALL NJ
SS-1DUP	(12:2132-17)	22000J	6520U	ALL NJ
TP-30-2.5′-4′	(12:2150-01)			ALL NJ
TP-30-4′-5′	(12:2150-02)			
TP-23-2.5′-3.5′	(12:2150-03)			ALL NJ
TP-28-3.5′-4′	(12:2150-04)			ALL NJ
TP-26-1.5′-2.5′	(12:2150-05)			ALL NJ
TP-24-2.75′-3.5′	(12:2150-06)			ALL NJ

SECTION 1.3

Pesticides

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Soil Samples
SDG: 12:2132 - 2150
Sampled May 2012

PESTICIDES

SS-1	(12:2132-10)	SS-2	(12:2132-11)
SS-3	(12:2132-12)	SS-4	(12:2132-13)
SS-5	(12:2132-14)	SS-6	(12:2132-15)
SS-1DUP	(12:2132-17)	TP-30-2.5′-4′	(12:2150-01)
TP-30-4′-5′	(12:2150-02)	TP-23-2.5′-3.5′	(12:2150-03)
TP-28-3.5′-4′	(12:2150-04)	TP-26-1.5′-2.5′	(12:2150-05)
TP-24-2.75′-3.5′	(12:2150-06)		

DATA ASSESSMENT

A Pesticide data package containing analytical results for thirteen soil samples was received from Labella Associates on 16Jul12. The ASP Category B deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8081, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-44, Rev. #1, October 2006, Validating Pesticide Compounds by Gas Chromatography SW-846 Method 8081B was used as a technical reference.

The positive pesticide results from this project have been qualified as estimations because the calculations could not be duplicated.

The 4,4′-DDE concentration from SS-2 and the 4,4′-DDD result from SS-6 have been qualified as estimations due to poor peak resolution.

The Endrin Ketone concentration from SS-1 and the 4,4′-DDT result from SS-1DUP have been qualified as estimations due to differences observed in field split duplicate samples.

Analyte concentrations throughout this report have been qualified as J, NJ or Reject, based to the level of agreement between results from two different chromatographic columns.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Data presenting a usable estimation of the conditions being measured has been flagged "J". Data felt to be unreliable has been identified with a single red line and flagged "R". Rejected data should not be included in data tables. Estimated data should be used with caution. A detailed discussion of the review process follows.

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained thirteen soil samples that were collected from the Covanta Recovery site on 15May12 and 16May12. Seven samples were collected on 15May12. They were shipped to the laboratory, via a laboratory courier, arriving the next day. The final six samples were collected on 16May12. They were shipped to the laboratory on the day of collection and received on 17May12. Both shipments of samples arrived intact and properly chilled, with custody seals in place. Cooler temperatures of 1°C and 3°C were recorded at the time of sample receipt.

The samples collected on 15May12 were digested on 20May12. The 16May12 samples were digested on 23May12. Although the samples collected on 16May12 were held for six days prior to extraction, data has been left unqualified. Although the ASP holding time limitation was exceeded by one day, the SW-846 limitation of seven days between collection and analysis was satisfied. Analyses were completed within two days of extraction.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Two pesticide method blanks were extracted and analyzed with this group of samples. Both of these blanks demonstrated acceptable chromatography and were free of targeted analyte contamination.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibrations for single component pesticides were performed on 28Mar12 and 24Mar12 using Pesticide Mixture AB. Standards containing 0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ng/µl of each single component pesticide were included in both calibrations. A 0.4 ng/µl standard was added on 24May12. Both calibrations were performed on two chromatographic columns, RTX-CLP and RTX-CLP2.

The results produced by these calibrations could not be verified. The laboratory's integration system was calibrated using a least-squares plot that incorporated an internal standard. The laboratory could not provide the calculation. Because the results of the calibration, and the samples analyzed following it could not be verified, the positive pesticide results from this group of samples have been qualified as estimations. It is noted that the results reported by laboratory could be approximated, but not duplicated, by using either a calculated relative response factor or a linear regression of the calibration standards.

The calibration for Toxaphene was performed on 07May12 using five representative chromatographic peaks at a concentration of 0.10 ng/µl.

A degradation check standard was analyzed prior to both calibrations and prior to each analysis sequence that included samples from this program. Each of these checks indicated excellent column performance and a clean injection system.

Although the laboratory did not calculate the resolution between analyte peaks, a visual inspection of the calibration files determined that the resolution between a-Chlordane and 4,4'-DDE and between Endrin and 4,4'-DDD did not satisfy the ASP requirement of 80% on either column. The 4,4'-DDE concentration from SS-2 and 4,4'-DDD result from SS-6 have been qualified as estimations based on this performance.

The analysis of samples was preceded by a mid-range Pesticide Mixture AB standard. The laboratory did not perform additional checks after every ten samples and at the end of each run as required by the method. The recoveries reported for these standards, as reported by the laboratory, satisfied the program acceptance criteria.

Although retention time windows were defined during both initial calibrations, all of the retention times observed during the 21May12 calibration check failed to fall within the established windows. This performance, however, had little effect on reported data because the retention time of each analyte detected in this group of samples fell within windows constructed from the preceding calibration check standard.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Standard Summary Sheets were properly prepared for two surrogates, tetrachloro-m-xylene (TCmX) and decachlorobiphenyl (DCBP), which were added to every program sample. When compared to the ASP requirements, high recoveries were reported for the DCBP additions to SS-1 and SS-3MS. This performance, however, warrants no concern. Acceptable recoveries were reported for TCmX. Data qualifications are not required.

MATRIX SPIKES / MATRIX SPIKE DUPLICATES / MATRIX SPIKED BLANKS

Matrix spiking refers to the addition of known analyte concentrations to a sample prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

SS-3 was selected for matrix spiking. Two aliquots of this sample were spiked as required by ASP protocol. The recoveries reported for these additions demonstrated acceptable levels of measurement accuracy and precision.

Two spiked soil blanks (LCS) were also analyzed with this group of samples. Both of these LCS produced acceptable analyte recoveries.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates of SS-1 were included in this group of samples. Endrin ketone (7.73mg/kg) was detected in SS-1. 4,4'-DDT (8.14mg/kg) was found in the field duplicate. These concentrations have been qualified as estimations because they were only found in one of the samples. Both samples were otherwise clean.

ANALYTE IDENTIFICATIONS

Analytes must be detected at similar concentrations on two different chromatography columns to be considered present. The quality of the identification is based on the percent difference (%D) between this pair of measurements. The laboratory, however, reported the Relative Percent Difference (%RPD) in the raw data. The laboratory's results have been edited where the correction affects the interpretation of data. Data qualifications based on these checks is tabulated below.

SAMPLE	DATA QUALIFICATIONS	
SS-1	Gamma-Chlordane	REJECT
SS-2	4,4'-DDE	REJECT
	Heptachlor Epoxide	5.36J
ss-4	Alpha-BHC	14.1J
	Beta-BHC	8.04J
	Delta-BHC	REJECT
	Gamma-BHC	5.52J
	Dieldrin	3.08NJ
	Endosulfan I	74.4NJ
	Endosulfan II	9.65J
	Heptachlor Epoxide	9.19J
SS-5	4,4'-DDT	REJECT
SS-6	Gamma-BHC	1.95J
	4,4'-DDD	11.3NJ
	4,4'-DDT	3.01NJ
	Endosulfan I	14.1NJ
	Endosulfan Sulfate	4.04J
SS-1DUP	Endrin Aldehyde	REJECT
TP-26-1.5'-2.5'	Delta-BHC	2.81J
	Endosulfan II	REJECT

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		CALIBRATE	RESOLUTION 4,4′-DDE	RESOLUTION 4,4′-DDD	DUPE ENDRIN KETONE	DUPES 4,4′-DDT	CONF ID G-CHLORDANE
SS-1	(12:2132-10)	ALL POS J			7.73J		REJECT
SS-2	(12:2132-11)	ALL POS J	19.3J				
SS-3	(12:2132-12)	ALL POS J					
SS-4	(12:2132-13)	ALL POS J					
SS-5	(12:2132-14)	ALL POS J					
SS-6	(12:2132-15)	ALL POS J		11.3J			
SS-1DUP	(12:2132-17)	ALL POS J				8.14J	
TP-30-2.5′-4′	(12:2150-01)						
TP-30-4′-5′	(12:2150-02)						
TP-23-2.5′-3.5′	(12:2150-03)						
TP-28-3.5′-4′	(12:2150-04)						
TP-26-1.5′-2.5′	(12:2150-05)	ALL POS J					
TP-24-2.75′-3.5′	(12:2150-06)						

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		CONF ID 4,4'DDE	CONF ID HEPT EPOX	CONF ID A-BHC	CONF ID B-BHC	CONF ID D-BHC	CONF ID G-BHC	CONF ID DIELDRIN
SS-1	(12:2132-10)							
SS-2	(12:2132-11)	REJECT	5.36J					
SS-3	(12:2132-12)							
SS-4	(12:2132-13)		9.19J	14.1J	8.04J	REJECT	5.52J	3.08NJ
SS-5	(12:2132-14)							
SS-6	(12:2132-15)						1.95J	
SS-1DUP	(12:2132-17)							
TP-30-2.5'-4'	(12:2150-01)							
TP-30-4'-5'	(12:2150-02)							
TP-23-2.5'-3.5'	(12:2150-03)							
TP-28-3.5'-4'	(12:2150-04)							
TP-26-1.5'-2.5'	(12:2150-05)					2.81J		
TP-24-2.75'-3.5'	(12:2150-06)							

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		CONFIRM ID ENDOSULFAN I	CONFIRM ID ENDOSULFAN II	CONF ID 4,4′DDT	CONF ID 4,4′DDD	CONFIRM ID ENDOSULFAN SO4
SS-1	(12:2132-10)					
SS-2	(12:2132-11)					
SS-3	(12:2132-12)					
SS-4	(12:2132-13)	74.4NJ	9.65J			
SS-5	(12:2132-14)			REJECT		
SS-6	(12:2132-15)	14.1NJ		3.01NJ	11.3NJ	4.04J
SS-1DUP	(12:2132-17)					
TP-30-2.5′-4′	(12:2150-01)					
TP-30-4′-5′	(12:2150-02)					
TP-23-2.5′-3.5′	(12:2150-03)					
TP-28-3.5′-4′	(12:2150-04)					
TP-26-1.5′-2.5′	(12:2150-05)		REJECT			
TP-24-2.75′-3.5′	(12:2150-06)					

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		CONFIRM ID ENDRIN ALDEHYDE
SS-1	(12:2132-10)	
SS-2	(12:2132-11)	
SS-3	(12:2132-12)	
SS-4	(12:2132-13)	
SS-5	(12:2132-14)	
SS-6	(12:2132-15)	
SS-1DUP	(12:2132-17)	REJECT
TP-30-2.5′-4′	(12:2150-01)	
TP-30-4′-5′	(12:2150-02)	
TP-23-2.5′-3.5′	(12:2150-03)	
TP-28-3.5′-4′	(12:2150-04)	
TP-26-1.5′-2.5′	(12:2150-05)	
TP-24-2.75′-3.5′	(12:2150-06)	

SECTION 1.4

PCBs

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Soil Samples
SDG: 12:2132 - 2150
Sampled May 2012

PCB

TP-01-1'-3'	(12:2132-01)	TP-02-6"	(12:2132-02)
TP-18-1'-2'	(12:2132-03)	TP-18-2'-2.75'	(12:2132-04)
TP-15-6"-1.25'	(12:2132-05)	TP-14-2.5'-5.5'	(12:2132-06)
TP-10-4'-6'	(12:2132-07)	TP-20-1'-2'	(12:2132-08)
TP-22-1'-2.5'	(12:2132-09)	SS-1	(12:2132-10)
SS-2	(12:2132-11)	SS-3	(12:2132-12)
SS-4	(12:2132-13)	SS-5	(12:2132-14)
SS-6	(12:2132-15)	TP-22-1'2.5'DUP	(12:2132-16)
SS-1DUP	(12:2132-17)		

DATA ASSESSMENT

A PCB data package containing analytical results for seventeen soil samples was received from Labella Associates, P.C. on 16Jul12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8082, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-45, Rev. #1, October 2006, Validating PCB Compounds by Gas Chromatography SW-846 Method 8082A) was used as a technical reference.

The concentrations of AR1254 found in this group of samples have been qualified as estimations due to poor calibration performance.

The AR-1254 concentrations from SS-1 and TP-22-1'2.5'DUP have been qualified as estimations due to poor agreement between field split duplicate samples.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Data presenting a usable estimation of the conditions being measured has been flagged "J". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 22 JUL 12

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained seventeen soil samples that were collected from the Covanta Recovery site on 14May12 and 15May12. The entire group of samples was shipped to the laboratory, via a laboratory courier, on 15May12. When the shipment arrived the next day, the cooler of samples was found to be intact and properly chilled, with custody seals in place. A cooler temperature of 1°C was recorded at the time of sample receipt.

The samples in this delivery group were extracted on 20May12 and analyzed on 22May12 and 23May12. Both the ASP and the SW-846 holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

One PCB method blank was extracted and analyzed with this group of samples. This method blank demonstrated acceptable chromatography and were free of targeted analyte contamination.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration for PCB was performed on 21May12. Standards containing 0.05, 0.10, 0.25, 0.50, 0.75 and 1.00 ng/µl of AR1016 and AR1260 were included. Calibration curves were constructed for three representative peaks of each of these Aroclors. Each of these calibrations demonstrated an acceptable level of linearity.

Single point (1.0 ng/µl) calibrations were performed for three representative peaks of AR1221, AR1232, AR1242, AR1248, AR1254, AR1262 and AR1268.

It is noted that the laboratory only calibrated one analytical system. Confirmational analyses were not performed, as required by the method.

Continuing calibration check standards of AR1016/AR1260 preceded the analysis of program samples on 22May12 and 23May12, and ended the analysis sequence on 23May12. A calibration check was not performed at the end of the 22May12 sequence. Although a method requirement, this omission is not considered serious because acceptable performance was reported for the first calibration check on 23May12.

AR-1254 was detected in TP-02-6″, SS-1, TP-22-1′-2.5DUP and SS-2. A five point calibration was not performed for AR-1254 following these detections. Additionally, a confirmational identification was on provided for SS-2. The positive PCB results reported from this project have been qualified as estimations due to these omissions.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Standard Summary Sheets were properly prepared for two surrogates, tetrachloro-m-xylene (TCmX) and decachlorobiphenyl (DCBP), that were added to every program sample. When compared to the ASP requirements a low recovery was reported for the TCmX addition to SS-1DUP (29.1%). This performance, however, warrants no concern. An acceptable recovery of DCBP was reported. The remaining surrogate additions to this group of samples satisfied the ASP acceptance criteria.

MATRIX SPIKES / MATRIX SPIKE DUPLICATES / MATRIX SPIKED BLANKS

Matrix spiking refers to the addition of known analyte concentrations to a sample prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

TP-02-6″ and SS-3 were selected for matrix spiking. Two aliquots of both samples were spiked with AR-1254. The recoveries reported for these additions demonstrated acceptable levels of measurement accuracy and precision.

Two spiked soil blanks (LCS) were prepared with additions of AR-1254. Both LCS produced acceptable analyte recoveries.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates of TP-22-1'-2.5' and SS-1 were analyzed with this group of samples. AR-1254 was detected in SS-1 and TP-22-1'-2.5'DUP. The duplicated analyses, however, were negative. Both positive results have been qualified as estimations based on this performance.

REPORTED ANALYTES

AR-1254 was also detected in TP-10-4'-6' and TP-22-1'-2.5' at concentrations of 0.012 mg/kg and 0.008 mg/kg, respectively. These concentrations were not reported because they were below the laboratory's reporting limit.

DATA QUALIFICATIONS

COVANTA RECOVERY SITE

Sampled May 2012

		CALIBRATE AR-1254	FIELD DUPLICATES AR-1254
TP-01-1′-3′	(12:2132-01)		
TP-02-6″	(12:2132-02)	0.0195J	
TP-18-1′-2′	(12:2132-03)		
TP-18-2′-2.75′	(12:2132-04)		
TP-15-6″-1.25′	(12:2132-05)		
TP-14-2.5′-5.5′	(12:2132-06)		
TP-10-4′-6′	(12:2132-07)		
TP-20-1′-2′	(12:2132-08)		
TP-22-1′-2.5′	(12:2132-09)		
SS-1	(12:2132-10)	0.0381J	0.0381J
SS-2	(12:2132-11)	0.493J	
SS-3	(12:2132-12)		
SS-4	(12:2132-13)		
SS-5	(12:2132-14)		
SS-6	(12:2132-15)		
TP-22-1′2.5′DUP	(12:2132-16)	0.0516J	0.0516J
SS-1DUP	(12:2132-17)		

SECTION 1.5

Metals

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Soil Samples
SDG: 12:2132 - 2150
Sampled May 2012

METALS

TP-01-1′-3′	(12:2132-01)	TP-02-6″	(12:2132-02)
TP-18-1′-2′	(12:2132-03)	TP-18-2′-2.75′	(12:2132-04)
TP-15-6″-1.25′	(12:2132-05)	TP-14-2.5′-5.5′	(12:2132-06)
TP-10-4′-6′	(12:2132-07)	TP-20-1′-2′	(12:2132-08)
TP-22-1′-2.5′	(12:2132-09)	SS-1	(12:2132-10)
SS-2	(12:2132-11)	SS-3	(12:2132-12)
SS-4	(12:2132-13)	SS-5	(12:2132-14)
SS-6	(12:2132-15)	TP-22-1′2.5′DUP	(12:2132-16)
SS-1DUP	(12:2132-17)	TP-30-2.5′-4′	(12:2150-01)
TP-30-4′-5′	(12:2150-02)	TP-23-2.5′-3.5′	(12:2150-03)
TP-28-3.5′-4′	(12:2150-04)	TP-26-1.5′-2.5′	(12:2150-05)
TP-24-2.75′-3.5′	(12:2150-06)		

DATA ASSESSMENT

An inorganics data package containing analytical results for twenty-three soil samples was received from Labella Associates, P.C. on 16Jul12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Methods 6010 and 7471 addressed Target Analyte List metals. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-2, Rev. 13, Sep. 2005, Evaluation of Metals Data for the Contract Laboratory Program) was used as a technical reference.

The antimony, arsenic, barium, chromium, cobalt, lead, magnesium, mercury, nickel, thallium and zinc results from this group of samples have been qualified as estimations due to unacceptable matrix spike recoveries. The chromium result from SS-3 and the mercury results from SS-3 and TP-02-6" have been rejected.

With two exceptions, the cadmium, chromium, cobalt, copper, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, vanadium and zinc results from this project have been qualified as estimations due to large differences between laboratory and field split duplicate samples. The potassium concentrations reported from SS-1 and SS-1DUP have been rejected.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results representing a usable estimation of the conditions at the time of sampling have been flagged "J" or "UJ". Data felt to be unreliable has been identified with a single red line and flagged "R". Rejected data should not be included in data tables. Estimated data should be used with caution. A detailed discussion of the review process follows.

It is noted that the laboratory analyzed interference check standards at the beginning of each ICP sequence, but not at the end of the run as required by ASP protocol. CRDL and serial dilution samples were omitted. The laboratory should be warned of such omissions. They are required elements of an ASP data package. Data has been evaluated based on the information that was provided.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B Baldwin Date: 22 July 12
James B. Baldwin

SAMPLE HISTORY

Sample holding times are calculated between the Verified Time of Sample Receipt (VTSR) and the time of analysis. Mercury samples must be analyzed within 26 days of receipt, the remaining metals within 180 days.

This sample delivery group contained twenty-three soil samples that were collected from the Covanta Recovery site between 14May12 and 16May12. Seventeen samples were collected on 14May12 and 15May12. They were shipped to the laboratory, via a laboratory courier on 15May12, arriving the next day. The final six samples were collected were on 16May12. They were shipped to the laboratory on the day of collection and received on 17May12. Both shipments of samples arrived intact and properly chilled, with custody seals in place. Cooler temperatures of 1°C and 3°C were recorded at the time of sample receipt.

The samples were digested for ICP metals analyses on 17May12 and 21May12, and for mercury analyses on 18May12 and 22May12. Analyses were completed for ICP metals by 22May12 and for mercury by 23May12. The ASP and SW-846 holding time limitations were satisfied.

CALIBRATIONS

Calibration curves are constructed, using certified materials, to define the linear range of each analytical instrument. Beyond this range, measurements cannot be made with confidence. The calibration curve is immediately tested by analyzing an initial calibration verification standard (ICV). Continuing verifications (CCV) must bracket each group of up to ten samples. ICV and CCV recoveries must meet established criteria.

Each instrument calibration was immediately verified by the analysis of an ICV standard. Continuing calibration checks were made following each group of 10 samples. The calibration checks associated with this group of samples demonstrated acceptable levels of instrument performance and stability.

CONTRACT REQUIED DETECTION LIMIT STANARDS (CRDL)

To verify instrument linearity near CRDL, an ICP standard at a concentration of twice CRDL (CRI) is analyzed at the beginning and end of each analytical sequence. A standard equaling CRDL (CRA) must be included in each atomic adsorption sequence. CRDL standards must produce recoveries between 70% and 130%.

CRDL standards were not analyzed.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Preparation blanks are carried through the digestion process with each group of samples to evaluate general laboratory technique. Calibration blanks are run periodically to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

An initial blank (ICB) was analyzed following the calibration in each analytical sequence. Additional blanks were analyzed after every ten samples (CCB) and at the end of each sequence. Two preparation blanks were digested and analyzed with this group of samples. Both laboratory prepared blanks were free of targeted analyte contamination exceeding PQL.

INTERFERENCE CHECK SAMPLE (ICS)

ICS standards are analyzed at the beginning and end of each ICP analysis sequence to verify background and inter-element correction factors. The recoveries of specified analytes are measured in the presence of interfering concentrations of aluminum, calcium, magnesium and iron.

An interference check standard, ICSAB, was analyzed at the beginning of each analytical sequence. An ICSAB standard was not run, however, at the end of each ICP sequence as required by ASP protocol. The laboratory should be warned of such omissions.

The ICS performance associated with the analytes targeted by this program satisfied the ASP acceptance criteria.

PREDIGESTION SPIKE

The recovery of spike concentrations added to samples prior to digestion and analysis demonstrates measurement bias caused by sample matrix effects. Predigestion spikes must be recovered within control limits of 75% - 125%.

TP-02-6" and SS-3 were selected for matrix spiking. The required targeted analytes were added to a portion of each of these samples. The recoveries reported for these additions included unacceptable results for antimony (74.6%,68.9%), arsenic (52.9%), barium (158%), chromium (0%,72.7%), cobalt (72.2%,72.6%), lead (42.2%), magnesium (42.2%), mercury (0%,0%), nickel (72.1%), thallium (30.0%,177%)and zinc (55.0%). Based on this performance the antimony, arsenic, barium, chromium, cobalt, lead, magnesium, mercury, nickel, thallium and zinc results from this group of samples have been qualified as estimations. The chromium results from SS-3 and the mercury results from SS-3 and TP-02-6" have been rejected.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Laboratory split duplicates of TP-02-6" and SS-3 were analyzed with this project. The duplicates of SS-3 demonstrated unacceptably large differences in measurements of cadmium (80%), chromium (69%), lead (69%), nickel (21%), selenium (27%) and zinc (38%). TP-02-6" demonstrated poor precision in measurements of arsenic (34%) and magnesium (42%).

Field split duplicates of TP-22-1'-2.5 and SS-1 were also analyzed with this delivery group. TP-22-1'-2.5' demonstrated poor precision in measurements of vanadium (77%). SS-1 produced large differences in measurements of cobalt (44%), copper (53%), manganese (58%), mercury (42%), potassium (176%), selenium (90%), silver (54%) and sodium (58%).

With two exceptions, the cadmium, chromium, cobalt, copper, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, vanadium and zinc results from this project have been qualified as estimations. The potassium concentrations reported from SS-1 and SS-1DUP have been rejected.

LABORATORY CONTROL STANDARD

Laboratory control samples are prepared by adding analytes to clean sand or reagent water. Analyte concentrations are then determined without interferences caused by sample matrix effects.

Two pairs of soil spiked blanks (LCS) samples were digested and analyzed this delivery group. These samples produced excellent analyte recoveries and demonstrated acceptable levels of measurement precision. This performance would indicated that the problems observed with spiked and duplicate samples were probably caused by an interfering sample matrix.

SERIAL DILUTION SAMPLE

Possible matrix effects are verified by the process of serial dilutions. Samples are diluted 1:5 to reduce matrix contributions that might bias measurements. The original sample result, and the corrected concentration of the diluted sample are compared. Sample data is qualified if the original concentrations are not recovered within 10%. Analytes with initial concentrations below 50 times IDL are not considered.

Serial dilution samples were not included in this delivery group.

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		SPIKES ANTIMONY	SPIKES ARSENIC	SPIKES BARIUM	SPIKES CHROMIUM	SPIKES COBALT	SPIKE LEAD
TP-01-1′-3′	(12:2132-01)	6.78UJ	7.40J	79.6J	102J	11.5J	60.9J
TP-02-6″	(12:2132-02)	5.88UJ	26.1J	1350J	285J	53.7J	722J
TP-18-1′-2′	(12:2132-03)	8.46J	74.6J	163J	1230J	22.4J	65.5J
TP-18-2′-2.75′	(12:2132-04)	6.39UJ	5.77J	51.5J	28.3J	6.48J	6.45J
TP-15-6″-1.25′	(12:2132-05)	7.34UJ	10.5J	495J	823J	18.9J	157J
TP-14-2.5′-5.5′	(12:2132-06)	4.91J	9.36J	126J	2230J	226J	156J
TP-10-4′-6′	(12:2132-07)	6.63UJ	5.18J	59.4J	51.2J	8.77J	9.83J
TP-20-1′-2′	(12:2132-08)	5.95UJ	7.38J	491J	1320J	3.99J	24.2J
TP-22-1′-2.5′	(12:2132-09)	7.57UJ	3.85J	2210J	83.8J	22.5J	35.5J
SS-1	(12:2132-10)	5.83UJ	36.2J	918J	214J	34.5J	253J
SS-2	(12:2132-11)	6.41UJ	10.2J	646J	426J	70.5J	124J
SS-3	(12:2132-12)	6.42UJ	1.07UJ	2140J	REJECT	86.4J	185J
SS-4	(12:2132-13)	7.91UJ	10.7J	936J	441J	147J	197J
SS-5	(12:2132-14)	5.78J	6.71J	156J	63.7J	5.62UJ	95.4J
SS-6	(12:2132-15)	6.71UJ	39.2J	348J	321J	23.0J	102J
TP-22-1′2.5′DUP	(12:2132-16)	6.67UJ	4.38J	2400J	95.5J	25.5J	35.6J
SS-1DUP	(12:2132-17)	6.60UJ	51.6J	1560J	270J	54.0J	228J
TP-30-2.5′-4′	(12:2150-01)	10.9UJ	22.2J	89.3J	109J	10.9J	8.46J
TP-30-4′-5′	(12:2150-02)	6.53UJ	4.07J	43.6J	10.5J	4.69J	4.13J
TP-23-2.5′-3.5′	(12:2150-03)	6.92UJ	1.73J	42.3J	8.95J	3.12J	2.85J
TP-28-3.5′-4′	(12:2150-04)	7.69UJ	7.28J	150J	102J	4.37J	113J
TP-26-1.5′-2.5′	(12:2150-05)	5.88UJ	8.55J	173J	1570J	15.9J	196J
TP-24-2.75′-3.5′	(12:2150-06)	7.93UJ	4.44J	81.6J	38.9J	5.78J	22.0J

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		SPIKES MAGNESIUM	SPIKE MERCURY	SPIKES NICKEL	SPIKES THALLIUM	SPIKE ZINC	DUPES CADMIUM
TP-01-1′-3′	(12:2132-01)	5200J	0.0765J	22.0J	2.82UJ	90.0J	0.819J
TP-02-6″	(12:2132-02)	689J	REJECT	136J	2.45UJ	35.5J	0.695J
TP-18-1′-2′	(12:2132-03)	31300J	0.0054J	45.9J	2.71UJ	31.2J	1.17J
TP-18-2′-2.75′	(12:2132-04)	2710J	0.0339J	17.0J	2.66UJ	46.7J	0.809J
TP-15-6″-1.25′	(12:2132-05)	10800J	0.0091UJ	40.8J	3.05UJ	121J	0.655J
TP-14-2.5′-5.5′	(12:2132-06)	30400J	0.0057J	63.1J	2.82UJ	148J	2.00J
TP-10-4′-6′	(12:2132-07)	3670J	0.0218J	20.8J	2.77UJ	63.1J	0.884J
TP-20-1′-2′	(12:2132-08)	30400J	0.0085UJ	24.9J	2.48UJ	33.5J	0.602J
TP-22-1′-2.5′	(12:2132-09)	57400J	0.0084UJ	75.8J	3.16UJ	43.0J	0.795J
SS-1	(12:2132-10)	44400J	0.0424J	65.6J	2.42UJ	326J	1.91J
SS-2	(12:2132-11)	18800J	0.0324J	110J	2.67UJ	153J	1.49J
SS-3	(12:2132-12)	19300J	REJECT	105J	2.67UJ	236J	3.10J
SS-4	(12:2132-13)	4680J	0.702J	231J	3.30UJ	286J	2.36J
SS-5	(12:2132-14)	75100J	0.225J	19.8J	2.81UJ	316J	2.92J
SS-6	(12:2132-15)	7880J	0.580J	50.7J	2.80UJ	188J	1.72J
TP-22-1′2.5′DUP	(12:2132-16)	48900J	0.0101uJ	71.1J	2.77UJ	43.4J	0.840J
SS-1DUP	(12:2132-17)	32000J	0.0650J	83.2J	2.75UJ	300J	2.13J
TP-30-2.5′-4′	(12:2150-01)	9210J	0.0184J	21.6J	4.55UJ	34.8J	0.910UJ
TP-30-4′-5′	(12:2150-02)	12600J	0.0093J	14.3J	2.72UJ	39.0J	0.643J
TP-23-2.5′-3.5′	(12:2150-03)	1250J	0.0167J	5.81J	2.89UJ	27.2J	0.577UJ
TP-28-3.5′-4′	(12:2150-04)	4110J	0.0638J	17.9J	3.21UJ	143J	0.738J
TP-26-1.5′-2.5′	(12:2150-05)	40500J	0.0082UJ	48.1J	2.45UJ	170J	1.54J
TP-24-2.75′-3.5′	(12:2150-06)	3900J	0.0283J	16.3J	3.30UJ	69.1J	0.725J

DATA QUALIFICATIONS

COVANTA RECOVERY SITE

Sampled May 2012

		DUPES CHROMIUM	DUPES COBALT	DUPES COPPER	DUPES LEAD	DUPES MAGNESIUM	DUPES MANGANESE	DUPES MERCURY
TP-01-1'-3'	(12:2132-01)	102J	11.5J	20.7J	60.9J	5200J	915J	0.0756J
TP-02-6"	(12:2132-02)	285J	53.7J	62.3J	722J	689J	343000J	
TP-18-1'-2'	(12:2132-03)	1230J	22.4J	23.3J	65.5J	31300J	927J	0.0054J
TP-18-2'-2.75'	(12:2132-04)	28.3J	6.48J	12.4J	6.45J	2710J	170J	0.0339J
TP-15-6"-1.25'	(12:2132-05)	823J	18.9J	68.4J	157J	10800J	10500J	0.0091UJ
TP-14-2.5'-5.5'	(12:2132-06)	2230J	226J	1400J	156J	30400J	3420J	0.0057J
TP-10-4'-6'	(12:2132-07)	51.2J	8.77J	13.6J	9.83J	3670J	522J	0.0218J
TP-20-1'-2'	(12:2132-08)	1320J	3.99J	41.2J	24.2J	30400J	1790J	0.0085UJ
TP-22-1'-2.5'	(12:2132-09)	83.8J	22.5J	44.4J	35.5J	57400J	108000J	0.0084UJ
SS-1	(12:2132-10)	214J	34.5J	28.8J	253J	44400J	34000J	0.0424J
SS-2	(12:2132-11)	426J	70.5J	84.9J	124J	18800J	25400J	0.0324J
SS-3	(12:2132-12)		86.4J	68.9J	185J	19300J	107000J	
SS-4	(12:2132-13)	441J	147J	92.3J	197J	4680J	56600J	0.702J
SS-5	(12:2132-14)	63.7J	5.62UJ	62.5J	95.4J	75100J	4390J	0.225J
SS-6	(12:2132-15)	321J	23.0J	70.9J	102J	7880J	9070J	0.580J
TP-22-1'2.5'DUP	(12:2132-16)	95.5J	25.5J	40.6J	35.6J	48900J	131000J	0.0101UJ
SS-1DUP	(12:2132-17)	270J	54.0J	49.6J	228J	32000J	61700J	0.0650J
TP-30-2.5'-4'	(12:2150-01)	109J	10.9J	21.8J	8.46J	9210J	536J	0.0184J
TP-30-4'-5'	(12:2150-02)	10.5J	4.69J	12.6J	4.13J	12600J	432J	0.0093J
TP-23-2.5'-3.5'	(12:2150-03)	8.95J	3.12J	2.49J	2.85J	1250J	51.7J	0.0167J
TP-28-3.5'-4'	(12:2150-04)	102J	4.37J	250J	113J	4110J	279J	0.0638J
TP-26-1.5'-2.5'	(12:2150-05)	1570J	15.9J	82.9J	196J	40500J	6370J	0.0082UJ
TP-24-2.75'-3.5'	(12:2150-06)	38.9J	5.78J	11.3J	22.0J	3900J	338J	0.0283J

DATA QUALIFICATIONS

COVANTA RECOVERY SITE

Sampled May 2012

		DUPES NICKEL	DUPES POTASSIUM	DUPES SELENIUM	DUPES SILVER	DUPES SODIUM	DUPES VANADIUM	DUPES ZINC
TP-01-1′-3′	(12:2132-01)	22.0J	1200J	1.13UJ	1.13UJ	351J	25.4J	90.0J
TP-02-6″	(12:2132-02)	136J	1720J	127J	57.5J	1040J	104J	35.5J
TP-18-1′-2′	(12:2132-03)	45.9J	643J	1.08UJ	1.08UJ	228J	142J	31.2J
TP-18-2′-2.75′	(12:2132-04)	17.0J	865J	1.06UJ	1.06UJ	266UJ	22.6J	46.7J
TP-15-6″-1.25′	(12:2132-05)	40.8J	1040J	2.02J	1.68J	336J	62.9J	121J
TP-14-2.5′-5.5′	(12:2132-06)	63.1J	367J	1.13UJ	1.13UJ	6050J	53.2J	148J
TP-10-4′-6′	(12:2132-07)	20.8J	1120J	1.11UJ	1.11UJ	159J	23.5J	63.1J
TP-20-1′-2′	(12:2132-08)	24.9J	1160J	0.992UJ	0.992UJ	293J	25.1J	33.5J
TP-22-1′-2.5′	(12:2132-09)	75.8J	1720J	32.7J	17.7J	2570J	60.5J	43.0J
SS-1	(12:2132-10)	65.6J	REJECT	6.26J	7.69J	954J	82.6J	326J
SS-2	(12:2132-11)	110J	1440J	4.39J	5.19J	579J	316J	153J
SS-3	(12:2132-12)	105J	1620J	26.0J	21.0J	1340J	281J	236J
SS-4	(12:2132-13)	231J	1060J	19.8J	11.5J	545J	358J	286J
SS-5	(12:2132-14)	19.8J	1470J	1.12UJ	2.24J	495J	45.5J	316J
SS-6	(12:2132-15)	50.7J	1660J	1.09J	2.23J	375J	127J	188J
TP-22-1′2.5′DUP	(12:2132-16)	71.1J	1700J	36.1J	20.7J	2270J	136J	43.4J
SS-1DUP	(12:2132-17)	83.2J	REJECT	16.6J	13.3J	1730J	96.8J	300J
TP-30-2.5′-4′	(12:2150-01)	21.6J	455UJ	1.82UJ	1.82UJ	791J	11.2J	34.8J
TP-30-4′-5′	(12:2150-02)	14.3J	865J	1.09UJ	1.09UJ	308J	16.5J	39.0J
TP-23-2.5′-3.5′	(12:2150-03)	5.81J	534J	1.15UJ	1.15UJ	289UJ	14.8J	27.2J
TP-28-3.5′-4′	(12:2150-04)	17.9J	1520J	7.38J	1.28UJ	193J	23.7J	143J
TP-26-1.5′-2.5′	(12:2150-05)	48.1J	867J	0.979UJ	1.17J	1180J	140J	170J
TP-24-2.75′-3.5′	(12:2150-06)	16.3J	1220J	1.32UJ	1.32UJ	213J	24.9J	69.1J

SECTION 2

MAY 2012 SOIL SAMPLES-SDG 12:2186, 12:2251

DATA USABILITY
SUMMARY REPORT

COVANTA RECOVERY SITE

SOIL SAMPLES COLLECTED MAY 2012

SDG 12:2186, 12:2251
Volatile Organics, Semivolatile Organics
PCB, Metals

Prepared for:

LABELLA ASSOCIATES, P.C.
Olympic Towers
300 Pearl Street, Suite 325
Buffalo, NY 14202

Prepared by:

DATAVAL, Inc.
518 Hooper Rd., PMB 283
Endwell, NY 13760

SECTION 2.1

Volatiles

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Soil Samples
SDG: 12:2186 - 2251
Sampled May 2012

VOLATILE ORGANICS

GP-03-5’ (12:2186-01)
GP-03-7’ (12:2186-02)
GP-05-5’ (12:2186-03)
GP-06-5’ (12:2186-04)
GP-07-2’ (12:2186-05)
GP-07-6’ (12:2186-06)
GP-09-1’-2’ (12:2186-07)
GP-11-4’-5’ (12:2186-08)
GP-14-7’ (12:2186-09)
GP-16-3’ (12:2186-10)
GP-15-5’-6’ (12:2186-11)
GP-15-7.5’ (12:2186-12)
GP-18-2’-4’ (12:2186-13)
GP-22-6’ (12:2186-14)
GP-02-3.5’-4’ (12:2186-15)
GP-05-5’DUP (12:2186-16)
Trip Blank (12:2186-17
C4R-MW-01-6’-8’ (12:2251-01)
C4R-MW-02-2’-6’ (12:2251-02)
C4R-MW-03-6’-10’ (12:2251-03)
C4R-MW-05-4’-10’ (12:2251-04)
C4R-MW-06-4’-10’ (12:2251-05)
C4R-MW-05-4’-10’DUP (12:2251-06)

DATA ASSESSMENT

A volatile organics data package containing analytical results for twenty-two soil samples and a trip blank was received from Labella Associates, P.C. on 27Jul12. The ASP Category B deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8260, addressed STARS and Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol (ASP), September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP NO. HW-24, Rev. #2, August 2008, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B) was used as a technical reference.

Acetone should be interpreted as undetected in this group of samples. Acetone concentrations, when present, are assumed to represent laboratory artifacts.

The acetone and methylene chloride results reported from this project have been qualified as estimations due to poor calibration performance. The trichloroethene results from C4R-MW-01-6′-8′, C4R-MW-02-2′-6′, C4R-MW-03-6′-10′, C4R-MW-05-4′-10′, C4R-MW-06-4′-10′ and C4R-MW-05-4′-10′DUP have been similarly qualified.

The positive results reported from C4R-MW-01-6′-8′ and C4R-MW-05-4′-10′DUP, and all of the results from GP-03-7′ and GP-02-3.5′-4′ have been qualified as estimations due to unacceptable surrogate standard recoveries.

The n-butylbenzene and naphthalene results from GP-03-7′, GP-18-2′-4′ and GP-02-3.5′-4′ have been qualified as estimations due to poor internal standard performance.

The chlorobenzene results from C4R-MW-01-6′-8′, C4R-MW-02-2′-6′, C4R-MW-03-6′-10′, C4R-MW-05-4′-10′, C4R-MW-06-4′-10′ and C4R-MW-05-4′-10′DUP have been qualified as estimations due to low matrix spike recoveries.

The TIC's reported from GP-16-3′ and C4R-MW-05-4′-10′ have been flagged as presumptive identifications and estimated concentrations because mass spectra references were not provided to confirm these identifications.

The identifications of sec-butylbenzene (S-BUTBENZ) in GP-09-1′-2′; o-xylene in GP-03-7′; ethylbenzene (ETHBENZ) and o-xylene in GP-18-2′-4′; and n-butylbenzene (N-BUTBENZ), 1,2,4-trimethylbenzene (124TMB), m+p-xylene and o-xylene in GP-02-3.5′-4′ were not conclusive based on the mass spectra references included in the raw data. These analytes should be interpreted as undetected in the affected samples.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results representing a usable estimation of the conditions at the time of sampling have been flagged "J" or "UJ". Data felt to be unreliable has been identified with a single red line and flagged "R". Rejected data should not be included in data tables. Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B Baldwin Date: 02 Aug 12
James B. Baldwin

Sample History

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Acid preserved VOA samples must be analyzed within 12 days of VTSR, unpreserved samples within 5 days. The holding time for soils is 12 days.

This sample delivery group contained twenty-two soil samples and a trip blank that were collected from the Covanta Recovery site between 17May12 and 23May12. Sixteen samples were collected on 17May12 and 18May12, and were delivered to the laboratory, with a trip blank, on 21May12. The final six samples were collected on 21May12 and 23May12, and were delivered on 25May12. Both shipments of samples were received intact and packed with ice. Cooler temperatures of 2°C were recorded at the time of receipt. The custody documentation also indicated that the second shipment was received with custody seals intact. The analysis of each sample was completed within eight days of VTSR and within twelve days of collection. The ASP and SW-846 holding time limitations were satisfied.

It is noted that although CP-51 analyses were requested, STARS list analytes were reported.

Blanks

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Four method blanks were analyzed with this group of samples. Although both STARS list blanks demonstrated acceptable chromatography and were free of targeted analyte contamination, both TCL blanks contained traces of acetone. Similar artifacts were found in GP-16-3', C4R-MW-01-6'-8' and C4R-MW-02-2'-6'. Acetone should be considered undetected in these samples. Detection limits equaling PQL or the reported concentration, which ever is larger, should be assumed.

MS Tuning

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of BFB was analyzed prior to each analytical sequence that included samples from this program. An Instrument Performance Check Form is present for each BFB evaluation. The BFB tunes associated with this group of samples satisfied the program acceptance criteria.

Calibrations

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration check standards verify instrument stability.

Initial instrument calibrations were performed on 11May12 and 31May12. Standards of 1, 5, 20, 50, 100, 150 and 200 µg/l were included. Both calibrations incorporated a heated purge. With the exception of acetone and methylene chloride, the standards of each analyte targeted by this program demonstrated an acceptable degree of linearity during both calibrations. Although methylene chloride standards produced the required levels of response, they demonstrated poor linearity. Although errors might be expected in measurements of methylene chloride, it may be assumed that this analyte would be detected if present in samples. Because methylene chloride was not found in samples, data qualifications are not required.

Acetone also demonstrated poor linearity. The acetone concentrations found in this group of samples have been qualified as estimations based on this performance.

During the calibration on 31May12 trichloroethene standards failed to produce the required levels of instrument response. The trichloroethene results reported from C4R-MW-01-6′-8′, C4R-MW-02-2′-6′, C4R-MW-03-6′-10′, C4R-MW-05-4′-10′, C4R-MW-06-4′-10′ and C4R-MW-05-4′-10′DUP have been qualified as estimations based on this performance.

Calibration check standards were analyzed on 24May12, 25May12, 29May12 and 01Jun12, prior to each 12-hour period of instrument operation that included samples from this program. When compared to the initial calibrations, each of these checks demonstrated unacceptably large shifts in the response of acetone and methylene chloride. The acetone and methylene chloride (METH CL) results reported from this group of samples have been qualified as estimations based on this performance.

The calibration check on 01June12 also produced an unacceptably low trichloroethene response. The trichloroethene (TCE) results from C4R-MW-01-6′-8′, C4R-MW-02-2′-6′, C4R-MW-03-6′-10′, C4R-MW-05-4′-10′, C4R-MW-06-4′-10′ and C4R-MW-05-4′-10′DUP have been qualified as estimations based on this performance.

Surrogates

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Although Surrogate Summary Sheets were properly prepared, the laboratory applied its own acceptance criteria. When compared to the ASP requirements, unacceptably low recoveries were reported for the 1,2-dichloroethane-d4 addition to GP-03-7′ and for the toluene-d8 and 4-bromofluorobenzene additions to GP-02-3.5′-4′. The results reported from GP-03-7′ and GP-02-3.5′-4′ have been qualified as estimations based on these indications of negative bias.

Unacceptably high recoveries were reported for the 1,2-dichloroethane-d4 spikes to C4R-MW-01-6′-8′, C4R-MW-02-2′-6′, C4R-MW-06-4′-10′ and C4R-MW-05-4′-10′DUP. The positive results reported from C4R-MW-01-6′-8′ and C4R-MW-05-4′-10′DUP have been qualified as estimations due to these indications of positive bias. The remaining affected samples produced negative results.

Internal Standards

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to this criteria, an unacceptably low response to 1,4-dichlorobenzene-d4 was reported from GP-03-7′, GP-18-2′-4′ and GP-02-3.5′-4′. The n-butylbenzene and naphthalene results from these samples have been qualified as estimations.

Matrix Spikes

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

GP-11-4′-5′ and C4R-MW-06-4′-10′ were selected for matrix spiking. The correct mixture of analytes was added to two portions of both samples. The recoveries reported from GP-11-4′-5′ demonstrated acceptable levels of measurement accuracy and precision. C4R-MW-06-4′-10′ produced low recoveries of chlorobenzene (59%,58%). The chlorobenzene (CLBENZ) results reported from C4R-MW-01-6′-8′, C4R-MW-02-2′-6′, C4R-MW-03-6′-10′, C4R-MW-05-4′-10′, C4R-MW-06-4′-10′ and C4R-MW-05-4′-10′DUP have been qualified as estimations based on these indications of negative bias.

Five spiked blanks (LCS) were also analyze with this group of samples. Each of these LCS produced acceptable analyte recoveries.

Duplicates

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates of GP-05-5′ and C4R-MW-05-4′-10′ were included in this delivery group. Traces of sec-butylbenzene and isopropyltoluene were found in GP-05-5′DUP but not GP-05-5′. Similar traces of chloroform were detected in both samples of C4R-MW-05-4′-10′. Both duplicate pairs demonstrated acceptable levels of measurement precision.

Reported Analytes

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument print-outs. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations have been adjusted to reflect sample size and moisture content.

Although Tentatively Identified Compounds (TIC) were reported, mass spectra references were not provided to support the laboratory's identifications. Although most of these identifications appear to be appropriate, this cannot be confirmed without the missing spectra references. The TIC's reported from GP-16-3′ and C4R-MW-05-4′-10′ have been qualified as "NJ" to indicate an estimated concentration and a presumptive identification.

It is noted that the identifications of sec-butylbenzene (S-BUTBENZ) in GP-09-1′-2′; o-xylene in GP-03-7′; ethylbenzene (ETHBENZ) and o-xylene in GP-18-2′-4′; and n-butylbenzene (N-BUTBENZ), 1,2,4-trimethylbenzene (124TMB), m+p-xylene and o-xylene in GP-02-3.5′-4′ were not conclusive based on the mass spectra references included in the raw data. These analytes should be interpreted as undetected in the affected samples.

SUMMARY OF QUALIFIED DATA

SAMPLED: May 2012

COVANTA RECOVERY SITE

		BLANK ACETONE	CALIBRATE ACETONE	CALIBRATE METH CL	CALIBRATE TCE	SURROGATES	INT STD IS3
GP-03-5′	(12:2186-01)						
GP-03-7′	(12:2186-02)					ALL J/UJ	ALL J/UJ
GP-05-5′	(12:2186-03)						
GP-06-5′	(12:2186-04)						
GP-07-2′	(12:2186-05)						
GP-07-6′	(12:2186-06)						
GP-09-1′-2′	(12:2186-07)						
GP-11-4′-5′	(12:2186-08)						
GP-14-7′	(12:2186-09)						
GP-16-3′	(12:2186-10)	378U	378UJ	189UJ			
GP-15-5′-6′	(12:2186-11)						
GP-15-7.5′	(12:2186-12)						
GP-18-2′-4′	(12:2186-13)						ALL J/UJ
GP-22-6′	(12:2186-14)						
GP-02-3.5′-4′	(12:2186-15)					ALL J/UJ	ALL UJ
GP-05-5′ DUP	(12:2186-16)						
Trip Blank	(12:2186-17)						
C4R-MW-01-6′-8′	(12:2251-01)	53.5U	53.5UJ	12.0UJ	4.78UJ	ALL POS J	
C4R-MW-02-2′-6′	(12:2251-02)	34.4U	34.4UJ	9.18UJ	3.67UJ		
C4R-MW-03-6′-10′	(12:2251-03)		21.0UJ	10.5UJ	4.20UJ		
C4R-MW-05-4′-10′	(12:2251-04)		18.0UJ	9.01UJ	3.60UJ		
C4R-MW-06-4′-10′	(12:2251-05)		20.6UJ	10.3UJ	4.12UJ		
C4R-MW-05-4′-10′ DUP	(12:2251-06)		22.0UJ	11.0UJ	4.40UJ	ALL POS J	

IS3 = n-butylbenzene, naphthalene

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		SPIKES CLBENZ	SPECTRA TIC	MS ID S-BUTBENZ	MS ID O-XYLENE	MS ID ETHBENZ	MS ID N-BUTBENZ
GP-03-5′	(12:2186-01)						
GP-03-7′	(12:2186-02)				4.14UJ		
GP-05-5′	(12:2186-03)						
GP-06-5′	(12:2186-04)						
GP-07-2′	(12:2186-05)						
GP-07-6′	(12:2186-06)						
GP-09-1′-2′	(12:2186-07)			4.10U			
GP-11-4′-5′	(12:2186-08)						
GP-14-7′	(12:2186-09)						
GP-16-3′	(12:2186-10)		ALL NJ				
GP-15-5′-6′	(12:2186-11)						
GP-15-7.5′	(12:2186-12)						
GP-18-2′-4′	(12:2186-13)				12.4U	12.4U	
GP-22-6′	(12:2186-14)						
GP-02-3.5′-4′	(12:2186-15)				4.26UJ		4.26UJ
GP-05-5′DUP	(12:2186-16)						
Trip Blank	(12:2186-17)						
C4R-MW-01-6′-8′	(12:2251-01)	4.78UJ					
C4R-MW-02-2′-6′	(12:2251-02)	3.67UJ					
C4R-MW-03-6′-10′	(12:2251-03)	4.20UJ					
C4R-MW-05-4′-10′	(12:2251-04)	3.60UJ	ALL NJ				
C4R-MW-06-4′-10′	(12:2251-05)	4.12UJ					
C4R-MW-05-4′-10′DUP	(12:2251-06)	4.40UJ					

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		MS ID 124-TMB	MS ID M+P-XYLENE
GP-03-5′	(12:2186-01)		
GP-03-7′	(12:2186-02)		
GP-05-5′	(12:2186-03)		
GP-06-5′	(12:2186-04)		
GP-07-2′	(12:2186-05)		
GP-07-6′	(12:2186-06)		
GP-09-1′-2′	(12:2186-07)		
GP-11-4′-5′	(12:2186-08)		
GP-14-7′	(12:2186-09)		
GP-16-3′	(12:2186-10)		
GP-15-5′-6′	(12:2186-11)		
GP-15-7.5′	(12:2186-12)		
GP-18-2′-4′	(12:2186-13)		
GP-22-6′	(12:2186-14)		
GP-02-3.5′-4′	(12:2186-15)	4.26UJ	4.26UJ
GP-05-5′DUP	(12:2186-16)		
Trip Blank	(12:2186-17)		
C4R-MW-01-6′-8′	(12:2251-01)		
C4R-MW-02-2′-6′	(12:2251-02)		
C4R-MW-03-6′-10′	(12:2251-03)		
C4R-MW-05-4′-10′	(12:2251-04)		
C4R-MW-06-4′-10′	(12:2251-05)		
C4R-MW-05-4′-10′DUP	(12:2251-06)		

SECTION 2.2

Semivolatiles

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Soil Samples
SDG: 12:2186 - 2251
Sampled May 2012

SEMIVOLATILE ORGANICS

GP-03-5′ (12:2186-01)
GP-03-7′ (12:2186-02)
GP-05-5′ (12:2186-03)
GP-06-5′ (12:2186-04)
GP-07-2′ (12:2186-05)
GP-07-6′ (12:2186-06)
GP-09-1′-2′ (12:2186-07)
GP-11-4′-5′ (12:2186-08)
GP-14-7′ (12:2186-09)
GP-16-3′ (12:2186-10)
GP-15-5′-6′ (12:2186-11)
GP-15-7.5′ (12:2186-12)
GP-18-2′-4′ (12:2186-13)
GP-22-6′ (12:2186-14)
GP-02-3.5′-4′ (12:2186-15)
GP-05-5′DUP (12:2186-16)
C4R-MW-01-6′-8′ (12:2251-01)
C4R-MW-02-2′-6′ (12:2251-02)
C4R-MW-03-6′-10′ (12:2251-03)
C4R-MW-05-4′-10′ (12:2251-04)
C4R-MW-06-4′-10′ (12:2251-05)
C4R-MW-05-4′-10′DUP (12:2251-06)

DATA ASSESSMENT

A semivolatile organics data package containing analytical results for twenty-two soil samples was received from Labella Associates, P.C. on 27Jul12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8270, addressed Target Compound List and STARS list analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-22, Rev. #4, August 2008, Validating Semivolatile Organic Compounds by Gas Chromatography / Mass Spectrometry SW-846 Method 8270D was used as a technical reference.

A TIC eluting at 17.94 minutes has been removed from the reports of C4R-MW-01-6′-8′, C4R-MW-02-2′-6′, C4R-MW-03-6′-10′, C4R-MW-05-4′-10′, C4R-MW-06-4′-10′ and C4R-MW-05-4′-10′DUP because it is assumed to represent a laboratory artifact.

The indeno(1,2,3-cd)pyrene results from each program sample and the 2-chloronaphthalene, atrazine and benzaldehyde results from C4R-MW-01-6′-8′, C4R-MW-02-2′-6′, C4R-MW-03-6′-10′, C4R-MW-05-4′-10′, C4R-MW-06-4′-10′ and C4R-MW-05-4′-10′DUP have been qualified as estimations due to poor calibration performance.

The identifications of acenaphthene in GP-03-7′ and anthracene in GP-15-5′-6′ and GP-18-2′-4′ were not conclusive based on the mass spectra references included in the raw data. Acenaphthene and anthracene should be interpreted as undetected in the affected samples.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Data presenting a usable estimation of the conditions being measured has been flagged "J" or "UJ". Data felt to be unreliable has been identified with a single red line and flagged "R". Rejected data should not be included in data tables. Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 02 Aug 12

SAMPLE HISTORY
Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained twenty-two soil samples that were collected from the Covanta Recovery site between 17May12 and 23May12. Sixteen samples were collected on 17May12 and 18May12, and were delivered to the laboratory on 21May12. The final six samples were collected on 21May12 and 23May12, and were delivered on 25May12. Both shipments of samples were received intact and packed with ice. Cooler temperatures of 2°C were recorded at the time of receipt. The custody documentation also indicated that the second shipment was received with custody seals intact. The samples received on 21May12 were extracted on 24May12 and 25May12, and were analyzed on 26May12. The samples received on 25May12 were extracted on 31May12 and analyzed on 02Jun12. The ASP and SW-846 holding time limitations were satisfied.

It is noted that although CP-51 analyses were requested, STARS list analytes were reported.

BLANKS
Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Two STARS list blanks and a TCL blank were analyzed with this group of samples. Both STARS blanks produced acceptable chromatography and were free of targeted analyte contamination. Although the TCL blank was free of targeted analyte contamination, a TIC eluting at 17.94 minutes was reported. Similar artifacts have been removed from the report forms of C4R-MW-01-6'-8', C4R-MW-02-2'-6', C4R-MW-03-6'-10', C4R-MW-05-4'-10', C4R-MW-06-4'-10' and C4R-MW-05-4'-10'DUP.

MS TUNING
Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of DFTPP was analyzed prior to each analytical sequence that contained samples from this program. An Instrument Performance Check Form is present for each DFTPP evaluation. The results reported for each DFTPP check satisfied the ASP requirements.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration was performed on 23May12. Standards of 10, 20, 50, 100, 150 and 200 ng/µl were included. Most of the analytes targeted by this program produced the required levels of instrument response and demonstrated an acceptable degree of linearity during this calibration. Although 2,4-dinitrophenol standards produced the required levels of instrument response, they demonstrated poor linearity. Although errors might be expected in measurements of 2,4-dinitrophenol, it may be assumed that this analyte would be detected if present in samples. Because 2,4-dinitrophenol was not found in samples, data qualifications are not required.

2-Chloronaphthalene and indeno(1,2,3-cd)pyrene standards failed to produced the required minimum levels of instrument response during the initial instrument calibration. The indeno(1,2,3-cd)pyrene (IND(123CD)PYR) results from this project have been qualified as estimations based on this performance. The 2-chloronaphthalene (2-CLNAPH) results from C4R-MW-01-6′-8′, C4R-MW-02-2′-6′, C4R-MW-03-6′-10′, C4R-MW-05-4′-10′, C4R-MW-06-4′-10′ and C4R-MW-05-4′-10′DUP have been similarly qualified.

Calibration verifications were performed on 24May12, 25May12, 26May12 and 01Jun12, prior to each 12-hour period of instrument operation that included samples from this program. When compared to the initial calibration, unacceptable shifts were observed in the response of atrazine and benzaldehyde (BENZALDE) during each calibration check. Additionally, unacceptable shifts were observed in the response of 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol on 25May12, and 2,4-dinitrophenol, hexachloro-cyclopentadiene and caprolactam on 26May12. Due to differences in the analyte lists, only the atrazine and benzaldehyde results from C4R-MW-01-6′-8′, C4R-MW-02-2′-6′, C4R-MW-03-6′-10′, C4R-MW-05-4′-10′, C4R-MW-06-4′-10′ and C4R-MW-05-4′-10′DUP require data qualifications.

It is noted that a low response was reported for 2-chloronaphthalene and indeno(1,2,3-cd)pyrene during each calibration check. 2-Chloronaphthalene and indeno(1,2,3-cd)pyrene results have been previously qualified for poor calibration performance.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Although Surrogate Summary Sheets were prepared, the laboratory evaluated surrogate performance based on its own in-house acceptance criteria. When compared to the ASP requirements, an acceptable recovery was reported for each of the surrogate additions to this group of samples.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to these limits, acceptable performance was indicated for the internal standard additions to each program sample.

MATRIX SPIKES

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

GP-11-4′-5′ and C4R-MW-06-4′-10′ were selected for matrix spiking. Two aliquots of both samples were spiked with eleven targeted analytes, including the nine additions required by ASP protocol. The recoveries reported from both MS/MSD pairs demonstrated acceptable levels of measurement accuracy and precision.

Four spiked blanks (LCS) were also analyzed with this project. The additions to each of these LCS were recovered successfully.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates of GP-05-5′ and C4R-MW-05-4′-10′ were included in this group of samples. Both duplicate pairs produced negative results.

SAMPLE INFORMATION

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations have been adjusted to reflect sample size and moisture content. Tentatively Identified

Compounds (TIC) were reported.

The identifications of acenaphthene in GP-03-7′ and anthracene in GP-15-5′-6′ and GP-18-2′-4′ were not conclusive based on the mass spectra references included in the raw data. Acenaphthene and anthracene should be interpreted as undetected in the affected samples.

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		BLANK TIC	CALIBRATE IND(123CD)PYR	CALIBRATE 2-CLNAPH	CALIBRATE ATRAZINE	CALIBRATE BENZALDE	MS ID ACENAPH
GP-03-5′	(12:2186-01)		354UJ				
GP-03-7′	(12:2186-02)		337UJ				337U
GP-05-5′	(12:2186-03)		360UJ				
GP-06-5′	(12:2186-04)		335UJ				
GP-07-2′	(12:2186-05)		3310UJ				
GP-07-6′	(12:2186-06)		349UJ				
GP-09-1′-2′	(12:2186-07)		341UJ				
GP-11-4′-5′	(12:2186-08)		339UJ				
GP-14-7′	(12:2186-09)		345UJ				
GP-16-3′	(12:2186-10)		332UJ				
GP-15-5′-6′	(12:2186-11)		345UJ				
GP-15-7.5′	(12:2186-12)		342UJ				
GP-18-2′-4′	(12:2186-13)		364UJ				
GP-22-6′	(12:2186-14)		344UJ				
GP-02-3.5′-4′	(12:2186-15)		343UJ				
GP-05-5′DUP	(12:2186-16)		337UJ				
C4R-MW-01-6′-8′	(12:2251-01)	REMOVE	358UJ	358UJ	358UJ	358UJ	
C4R-MW-02-2′-6′	(12:2251-02)	REMOVE	345UJ	345UJ	345UJ	345UJ	
C4R-MW-03-6′-10′	(12:2251-03)	REMOVE	354UJ	354UJ	354UJ	354UJ	
C4R-MW-05-4′-10′	(12:2251-04)	REMOVE	358UJ	358UJ	358UJ	358UJ	
C4R-MW-06-4′-10′	(12:2251-05)	REMOVE	345UJ	346UJ	346UJ	346UJ	
C4R-MW-05-4′-10′DUP	(12:2251-06)	REMOVE	362UJ	362UJ	362UJ	362UJ	

SUMMARY OF QUALIFIED DATA

CONTRA RECOVERY SITE

SAMPLED: May 2012

		MS ID ANTHRACENE
GP-03-5′	(12:2186-01)	
GP-03-7′	(12:2186-02)	
GP-05-5′	(12:2186-03)	
GP-06-5′	(12:2186-04)	
GP-07-2′	(12:2186-05)	
GP-07-6′	(12:2186-06)	
GP-09-1′-2′	(12:2186-07)	
GP-11-4′-5′	(12:2186-08)	
GP-14-7′	(12:2186-09)	
GP-16-3′	(12:2186-10)	
GP-15-5′-6′	(12:2186-11)	345U
GP-15-7.5′	(12:2186-12)	
GP-18-2′-4′	(12:2186-13)	364U
GP-22-6′	(12:2186-14)	
GP-02-3.5′-4′	(12:2186-15)	
GP-05-5′DUP	(12:2186-16)	
Trip Blank	(12:2186-17)	
C4R-MW-01-6′-8′	(12:2251-01)	
C4R-MW-02-2′-6′	(12:2251-02)	
C4R-MW-03-6′-10′	(12:2251-03)	
C4R-MW-05-4′-10′	(12:2251-04)	
C4R-MW-06-4′-10′	(12:2251-05)	
C4R-MW-05-4′-10′DUP	(12:2251-06)	

SECTION 2.3

PCBs

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Soil Samples
SDG: 12:2186 - 2251
Sampled May 2012

PCB

GP-07-2′	(12:2186-05)	GP-07-6′	(12:2186-06)
C4R-MW-01-6′-8′	(12:2251-01)	C4R-MW-02-2′-6′	(12:2251-02)
C4R-MW-03-6′-10′	(12:2251-03)	C4R-MW-05-4′-10′	(12:2251-04)
C4R-MW-06-4′-10′	(12:2251-05)	C4R-MW-05-4′-10′DUP	(12:2251-06)

DATA ASSESSMENT

A PCB data package containing analytical results for eight soil samples was received from Labella Associates, P.C. on 27Jul12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8082, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-45, Rev. #1, October 2006, Validating PCB Compounds by Gas Chromatography SW-846 Method 8082A) was used as a technical reference.

CORRECTNESS AND USABILITY

Reported data should be considered complete, technically defensible, completely usable, and without qualifications in its present form. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B Baldwin
James B. Baldwin

Date: 02AUG12

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained eight soil samples that were collected from the Covanta Recovery site on between 17May12 and 23May12. Two samples were collected on 17May12 and were delivered to the laboratory on 21May12. The final six samples were collected on 21May12 and 23May12, and were delivered on 25May12. Both shipments of samples were received intact and packed with ice. Cooler temperatures of 2°C were recorded at the time of receipt. The custody documentation also indicated that the second shipment was received with custody seals intact. The samples received on 21May12 were extracted on 23May12 and analyzed on 24May12. The samples received on 25May12 were extracted and analyzed on 31May12 The ASP and SW-846 holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Three PCB method blanks was extracted and analyzed with this group of samples. Each of these blanks demonstrated acceptable chromatography and was free of targeted analyte contamination.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration for PCB was performed on 21May12. Standards containing 0.05, 0.10, 0.25, 0.50, 0.75 and 1.00 ng/µl of AR1016 and AR1260 were included. Calibration curves were constructed for three representative peaks of both of these

Aroclors. Each of these calibrations demonstrated an acceptable degree of linearity. Single point (1.0 ng/µl) calibrations were performed for three representative peaks of AR1221, AR1232, AR1242, AR1248, AR1254, AR1262 and AR1268.

It is noted that the laboratory only calibrated one analytical system. Although confirmational analyses are a method requirement, this omission is not considered a problem because each program sample produced a negative result.

Continuing calibration check standards of AR1016/AR1260 bracketed the analysis of program samples on 23May12, 24May12 and 31May12. Each of these calibration checks satisfied the ASP acceptance criteria. It is noted that the final CCV on 31May12 produced a recovery that differed from the target concentration by 15.9%. This result satisfied the ASP requirement for a CCV at the end of an analytical sequence. Data qualifications are not required.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Standard Summary Sheets were properly prepared for two surrogates, tetrachloro-m-xylene (TCmX) and decachlorobiphenyl (DCBP), that were added to every program sample. When compared to the ASP requirements each surrogate addition to this group of samples was recovered successfully.

MATRIX SPIKES / MATRIX SPIKE DUPLICATES / MATRIX SPIKED BLANKS

Matrix spiking refers to the addition of known analyte concentrations to a sample prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

C4R-MW-06-4′-10′ was selected for matrix spiking. Two aliquots of this sample were spiked with AR-1016 and AR-1260. The recoveries reported for these additions demonstrated acceptable levels of measurement accuracy and precision.

Three spiked blanks (LCS) were prepared with additions of AR-1016 and AR-1260. Each of these LCS produced acceptable analyte recoveries.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates of C4R-MW-05-4′-10′ were analyzed with this delivery group. Both of these samples produced negative PCB results.

DATA QUALIFICATIONS

COVANTA RECOVERY SITE

Sampled May 2012

GP-07-2′	(12:2186-05)
GP-07-6′	(12:2186-06)
C4R-MW-01-6′-8′	(12:2251-01)
C4R-MW-02-2′-6′	(12:2251-02)
C4R-MW-03-6′-10′	(12:2251-03)
C4R-MW-05-4′-10′	(12:2251-04)
C4R-MW-06-4′-10′	(12:2251-05)
C4R-MW-05-4′-10′DUP	(12:2251-06)

SECTION 2.4

Metals

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Soil Samples
SDG: 12:2186 - 2251
Sampled May 2012

METALS

C4R-MW-01-6′-8′	(12:2251-01)	C4R-MW-02-2′-6′	(12:2251-02)
C4R-MW-03-6′-10′	(12:2251-03)	C4R-MW-05-4′-10′	(12:2251-04)
C4R-MW-06-4′-10′	(12:2251-05)	C4R-MW-05-4′-10′DUP	(12:2251-06)

DATA ASSESSMENT

An inorganics data package containing analytical results for six soil samples was received from Labella Associates, P.C. on 27Jul12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Methods 6010 and 7471 addressed Target Analyte List metals. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-2, Rev. 13, Sep. 2005, Evaluation of Metals Data for the Contract Laboratory Program) was used as a technical reference.

The antimony and potassium results from this group of samples have been qualified as estimations due to unacceptable matrix spike recoveries.

The arsenic, lead, cobalt and manganese results from this project have been qualified as estimations due to large differences between laboratory and field split duplicate samples.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results representing a usable estimation of the conditions at the time of sampling have been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

It is noted that the laboratory analyzed interference check standards at the beginning of each ICP sequence, but not at the end of the run as required by ASP protocol. CRDL and serial dilution samples were omitted. The laboratory should be warned of such omissions. They are required elements of an ASP data package. Data has been evaluated based on the information that was provided.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B Baldwin Date: 02Aug12
James B. Baldwin

SAMPLE HISTORY

Sample holding times are calculated between the Verified Time of Sample Receipt (VTSR) and the time of analysis. Mercury samples must be analyzed within 26 days of receipt, the remaining metals within 180 days.

This sample delivery group contained six soil samples that were collected from the Covanta Recovery site on 21May12 and 23May12 and delivered to the laboratory on 25May12. The sample shipment arrived intact and properly chilled, with custody seals in place. A cooler temperature of 2°C was recorded in the laboratory at the time of sample receipt.

The samples were digested for ICP metals analyses on 30May12 and for mercury on 29May12. Analyses were completed for ICP metals by 04Jun12 and for mercury by 30May12. The ASP and SW-846 holding time limitations were satisfied.

CALIBRATIONS

Calibration curves are constructed, using certified materials, to define the linear range of each analytical instrument. Beyond this range, measurements cannot be made with confidence. The calibration curve is immediately tested by analyzing an initial calibration verification standard (ICV). Continuing verifications (CCV) must bracket each group of up to ten samples. ICV and CCV recoveries must meet established criteria.

Each instrument calibration was immediately verified by the analysis of an ICV standard. Continuing calibration checks were made following each group of 10 samples. The calibration checks associated with this group of samples demonstrated acceptable levels of instrument performance and stability.

CONTRACT REQUIED DETECTION LIMIT STANARDS (CRDL)

To verify instrument linearity near CRDL, an ICP standard at a concentration of twice CRDL (CRI) is analyzed at the beginning and end of each analytical sequence. A standard equaling CRDL (CRA) must be included in each atomic adsorption sequence. CRDL standards must produce recoveries between 70% and 130%.

CRDL standards were not analyzed.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Preparation blanks are carried through the digestion process with each group of samples to evaluate general laboratory technique. Calibration blanks are run periodically to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

An initial blank (ICB) was analyzed following the calibration in each analytical sequence. Additional blanks were analyzed after every ten samples (CCB) and at the end of each sequence. Two preparation blanks were digested and analyzed with this group of samples. Both laboratory prepared blanks were free of targeted analyte contamination exceeding PQL.

INTERFERENCE CHECK SAMPLE (ICS)

ICS standards are analyzed at the beginning and end of each ICP analysis sequence to verify background and inter-element correction factors. The recoveries of specified analytes are measured in the presence of interfering concentrations of aluminum, calcium, magnesium and iron.

An interference check standard, ICSAB, was analyzed at the beginning of each analytical sequence. An ICSAB standard was not run, however, at the end of each ICP sequence as required by ASP protocol. The laboratory should be warned of such omissions.

The ICS performance associated with the analytes targeted by this program satisfied the ASP acceptance criteria.

PREDIGESTION SPIKE

The recovery of spike concentrations added to samples prior to digestion and analysis demonstrates measurement bias caused by sample matrix effects. Predigestion spikes must be recovered within control limits of 75% - 125%.

C4R-MW-06-4′-10′ was selected for matrix spiking. The required targeted analytes were added to a portion of this sample. The recoveries reported for these additions included unacceptable results for antimony (60%) and potassium (129%). Based on this performance the antimony and potassium results from this group of samples have been qualified as estimations.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Laboratory split duplicates of C4R-06-4′-10′ were analyzed with this project. The duplicates of this sample demonstrated unacceptably large differences in measurements of arsenic (28%) and lead (25%).

Field split duplicates of C4R-MW-05-4′-10′ were also analyzed with this delivery group. C4R-MW-05-4′-10′ demonstrated poor precision in measurements of cobalt (58%) and manganese (67%).

	C4R-MW-05-4'-10'	DUPE	%RPD
Aluminum	20300	19400	4.5%
Antimony	U	U	<PQL
Arsenic	6.23	8.16	-26.8%
Barium	127	129	-1.6%
Beryllium	0.943	0.902	4.4%
Cadmium	1.14	1.14	0.0%
Calcium	43000	46000	-6.7%
Chromium	27.4	25.6	6.8%
Cobalt	11.1	20.2	-58.1%
Copper	21.4	20.2	5.8%
Iron	31200	29900	4.3%
Lead	5.86	6.57	-11.4%
Magnesium	12300	14600	-17.1%
Manganese	526	1060	-67.3%
Mercury	0.0106	0.0098	7.8%
Nickel	30.6	33.6	-9.3%
Potassium	4650	4950	-6.3%
Selenium	U	U	<PQL
Silver	U	U	<PQL
Sodium	278	311	-11.2%
Thallium	U	U	<PQL
Vanadium	39.4	37.8	4.1%
Zinc	66.3	64	3.5%

The arsenic, lead, cobalt and manganese results from this project have been qualified as estimations due to these indications of poor measurement precision.

LABORATORY CONTROL STANDARD

Laboratory control samples are prepared by adding analytes to clean sand or reagent water. Analyte concentrations are then determined without interferences caused by sample matrix effects.

One pair of soil spiked blanks (LCS) were digested and analyzed with this delivery group. These samples produced excellent analyte recoveries and demonstrated acceptable levels of measurement precision.

SERIAL DILUTION SAMPLE

Possible matrix effects are verified by the process of serial dilutions. Samples are diluted 1:5 to reduce matrix contributions that might bias measurements. The original sample result, and the corrected concentration of the diluted sample are compared. Sample data is qualified if the original concentrations are not recovered within 10%. Analytes with initial concentrations below 50 times IDL are not considered.

Serial dilution samples were not included in this delivery group.

DATA QUALIFICATIONS

COVANTA RECOVERY SITE

Sampled May 2012

		SPIKES ANTIMONY	SPIKE POTASSIUM	DUPE ARSENIC	DUPES LEAD	DUPES MANGANESE	DUPES COBALT
C4R-MW-01-6′-8′	(12:2251-01)	7.35UJ	3860J	5.91J	4.47J	675J	10.2J
C4R-MW-02-2′-6′	(12:2251-02)	6.82UJ	931J	3.08J	3.72J	128J	4.72J
C4R-MW-03-6′-10′	(12:2251-03)	6.83UJ	4230J	7.24J	5.62J	675J	8.48J
C4R-MW-05-4′-10′	(12:2251-04)	7.28UJ	4650J	6.23J	5.86J	526J	11.1J
C4R-MW-06-4′-10′	(12:2251-05)	6.93UJ	3480J	3.28J	6.00J	540J	8.80J
C4R-MW-05-4′-10′DUP	(12:2251-06)	6.93UJ	4950J	8.16J	6.57J	1060J	20.2J

SECTION 3

MAY 2012 AQUEOUS SAMPLES-SDG 12:2285-2308

DATA USABILITY
SUMMARY REPORT

COVANTA RECOVERY SITE

AQUEOUS SAMPLES COLLECTED MAY 2012

SDG 12:2285, 12:2308
Volatile Organics, Semivolatile Organics
PCB, Metals

Prepared for:

LABELLA ASSOCIATES, P.C.
Olympic Towers
300 Pearl Street, Suite 325
Buffalo, NY 14202

Prepared by:

DATAVAL, Inc.
518 Hooper Rd., PMB 283
Endwell, NY 13760

SECTION 3.1

Volatiles

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.
300 Pearl Street, Suite 325
Buffalo, NY 14202

COVANTA RECOVERY SITE
Aqueous Samples
SDG: 12:2285 - 2308
Sampled May 2012

VOLATILE ORGANICS

C4R-MW-02	(12:2285-01)	C4R-MW-03	(12:2285-02)
C4R-MW-05	(12:2285-03)	C4R-MW-06	(12:2285-04)
C4R-MW-06DUP	(12:2285-05)	TRIP BLANK	(12:2285-06)
GP-MW-01	(12:2285-07)	GP-MW-02	(12:2285-08)
GP-MW-03	(12:2285-09)	GP-MW-02DUP	(12:2285-10)
MW-A4-1	(12:2308-01)	C4R-MW-01	(12:2308-02)
MW-A19-1	(12:2308-03)		

DATA ASSESSMENT

A volatile organics data package containing analytical results for twelve aqueous samples and a trip blank was received from Labella Associates, P.C. on 09Aug12. The ASP Category B deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8260, addressed STARS and Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol (ASP), September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP NO. HW-24, Rev. #2, August 2008, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B) was used as a technical reference.

With the exception of the concentration reported from C4R-MW-01, acetone should be interpreted as undetected in this group of samples. Acetone concentrations, when present, are assumed to represent laboratory artifacts. The result from C4R-MW-01 has been qualified as an estimation.

The positive acetone results reported from this project have been qualified as estimations due to poor calibration performance. The trichloroethene result from each sample has been similarly qualified.

The positive results from C4R-MW-05, C4R-MW-06, C4R-MW-06DUP, GP-MW-01 and GP-MW-03 have been qualified as estimations due to high surrogate standard recoveries.

The identification of n-butylbenzene in GP-MW-03 was not conclusive, based on the mass spectra reference included in the raw data. N-butylbenzene should be interpreted as undetected in this sample.

The TIC's reported from MW-A19-1 have been edited, where necessary, to provide more appropriate identifications.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results representing a usable estimation of the conditions at the time of sampling have been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 16 Aug 12

Sample History

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Acid preserved VOA samples must be analyzed within 12 days of VTSR, unpreserved samples within 5 days. The holding time for soils is 12 days.

This sample delivery group contained twelve aqueous samples and a trip blank that were collected from the Covanta Recovery site between 29May12 and 31May12. Nine samples were collected on 29May12 and 30May12, and were delivered to the laboratory, with a trip blank, on 30May12. The final three samples were collected on 31May12 and were delivered to the laboratory the same afternoon. Both shipments of samples were received intact and packed with ice. Cooler temperatures of 1°C and 6°C were recorded by the laboratory on 30May12. Although a cooler temperature of 7°C was recorded on 31May12 data has been left unqualified because the samples were packed with ice. The custody documentation also indicated that the initial shipment was received with custody seals intact. Custody seals were not necessary on 31May12 because the cooler was hand carried to the laboratory.

The initial group of samples was analyzed on 31May12 and 01Jun12. The final three samples were analyzed on 06Jun12. Although the analysis of MW-A4-1, C4R-MW-01 and MW-A19-1 exceeded the ASP holding time limitation by one day, the SW-846 requirement was satisfied. Data has been left unqualified.

Blanks

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Three method blanks and a trip blank were analyzed with this group of samples. Although these blanks demonstrated acceptable chromatography, two method blanks contained traces of 1,2,3-trichlorobenzene and trichlorofluoromethane. The presence of this contamination warrants no concern. Similar artifacts were not found in this group of smaples.

The trip blank contained 5.55 µg/l of acetone. Similar artifacts were found throughout this group of samples. When present in samples, acetone should be interpreted as undetected. A detection limit equaling PQL or the reported concentration, whichever is greater, should be assumed. It is noted that the acetone concentration from C4R-MW-01 has been flagged as an estimation because of its magnitude.

MS Tuning
Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of BFB was analyzed prior to each analytical sequence that included samples from this program. An Instrument Performance Check Form is present for each BFB evaluation. The BFB tunes associated with this group of samples satisfied the program acceptance criteria.

Calibrations
Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration check standards verify instrument stability.

Initial instrument calibrations were performed on 31May12 and 05Jun12. Standards of 1, 5, 20, 50, 100, 150 and 200 µg/l were included. With the exception of acetone, methylene chloride and trichloroethene, the standards of each analyte targeted by this program produced the required levels of instrument response and demonstrated an acceptable degree of linearity during both calibrations. Although methylene chloride standards produced the required levels of response, they demonstrated poor linearity. Although errors might be expected in measurements of methylene chloride, it may be assumed that this analyte would be detected if present in samples. Because methylene chloride was not found in samples, data qualifications are not required.

Acetone also demonstrated poor linearity during both calibrations. The acetone concentrations found in this group of samples have been qualified as estimations based on this performance.

Trichloroethene standards failed to produce the required levels of instrument response during both calibrations. The trichloroethene results from this project have been qualified as estimations due to poor calibration performance.

Calibration check standards were analyzed on 31May12, 01Jun12 and 06Jun12, prior to each 12-hour period of instrument operation that included samples from this program. When compared to the initial instrument calibrations, unacceptably large shifts were observed in the response of acetone. Additionally, a low response was again reported for trichloroethene on 01Jun12 and 06Jun12. This acetone and trichloroethene performance does not necessitate data qualifications because the affected results have been previously qualified due to poor calibration performance.

Surrogates
Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to

analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Although Surrogate Summary Sheets were properly prepared, the laboratory applied its own acceptance criteria. When compared to the ASP requirements, unacceptably high recoveries were reported for the 1,2-dichloroethane-d4 additions to C4R-MW-03, C4R-MW-05, C4R-MW-06, C4R-MW-06DUP, GP-MW-01 and GP-MW-03. The positive results from C4R-MW-05, C4R-MW-06, C4R-MW-06DUP, GP-MW-01 and GP-MW-03 have been qualified as estimations based on this performance.

Internal Standards

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to this criteria, acceptable performance was demonstrated by each internal standard addition to this group of samples.

Matrix Spikes

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

GP-MW-01 and MW-A4-1 were selected for matrix spiking. The correct mixture of analytes was added to two portions of both samples. The recoveries reported for these spikes demonstrated acceptable levels of measurement precision and accuracy.

Three spiked blanks (LCS) were also analyze with this group of samples. Each of these LCS produced acceptable analyte recoveries.

Duplicates

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates of C4R-MW-06 and GP-MW-02 were included in this delivery group. The duplicates of C4R-MW-06 contained similar concentrations of benzene, 2-butanone, carbon disulfide and toluene. The duplicates of GP-MW-02 produced negative results. Both duplicate pairs demonstrated acceptable levels of measurement precision.

Reported Analytes

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument print-outs. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. TIC's were reported.

It is noted that the identification of n-butylbenzene (N-BUTBENZ) in GP-MW-03 was not conclusive based on the mass spectra reference included in the raw data. This analyte should be interpreted as undetected in the affected sample.

The Tentatively Identified Compounds (TIC) reported from MW-A19-1 have been edited where necessary to provide more appropriate identifications.

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		BLANK ACETONE	CALIBRATE ACETONE	CALIBRATE TCE	SURROGATES	SPECTRA ID N-BUTBENZ	MS ID TIC
C4R-MW-02	12:2285-01)	16.4U	16.4UJ	2.0UJ			
C4R-MW-03	(12:2285-02)	30.0U	30.0UJ	2.0UJ			
C4R-MW-05	(12:2285-03)	15.0U	15.0UJ	2.0UJ	ALL POS J		
C4R-MW-06	(12:2285-04)	44.7U	44.7UJ	2.0UJ	ALL POS J		
C4R-MW-06DUP	(12:2285-05)	44.3U	44.3UJ	2.0UJ	ALL POS J		
GP-MW-01	(12:2285-07)				ALL POS J		
GP-MW-02	(12:2285-08)						
GP-MW-03	(12:2285-09)				ALL POS J	2.0U	
GP-MW-02DUP	(12:2285-10)						
MW-A4-1	(12:2308-01)			2.0UJ			
C4R-MW-01	(12:2308-02)	164J	164J	2.0UJ			
MW-A19-1	(12:2308-03)	27.0U	27.0UJ	2.0UJ			EDIT

SECTION 3.2

Semivolatiles

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Aqueous Samples
SDG: 12:2285 - 2308
Sampled May 2012

SEMIVOLATILE ORGANICS

C4R-MW-02	(12:2285-01)	C4R-MW-03	(12:2285-02)
C4R-MW-05	(12:2285-03)	C4R-MW-06	(12:2285-04)
C4R-MW-06DUP	(12:2285-05)	GP-MW-01	(12:2285-07)
GP-MW-02	(12:2285-08)	GP-MW-03	(12:2285-09)
GP-MW-02DUP	(12:2285-10)	MW-A4-1	(12:2308-01)
C4R-MW-01	(12:2308-02)	MW-A19-1	(12:2308-03)

DATA ASSESSMENT

A semivolatile organics data package containing analytical results for twelve aqueous samples was received from Labella Associates, P.C. on 09Aug12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8270, addressed Target Compound List and STARS list analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol (ASP), September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-22, Rev. #4, August 2008, Validating Semivolatile Organic Compounds by Gas Chromatography / Mass Spectrometry SW-846 Method 8270D was used as a technical reference.

A TIC eluting at 17.94 minutes (triphenylphosphine oxide) has been removed from the reports of C4R-MW-02, C4R-MW-03, C4R-MW-05, C4R-MW-06 and C4R-MW-06DUP because it is assumed to represent a laboratory artifact.

The indeno(1,2,3-cd)pyrene, 2-chloronaphthalene and atrazine results from this project have been qualified as estimations due to poor calibration performance.

The results reported from GP-MW-02 have been qualified as estimations due to low internal standard recoveries.

The 4-nitrophenol results from this project have been qualified as estimations due to low matrix spike recoveries. It is noted that the result from MW-4A-1 has been left unqualified.

Where necessary, the TIC's reported from this project have been edited to provide more appropriate identifications.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Data presenting a usable estimation of the conditions being measured has been flagged "J" or "UJ". Data felt to be unreliable has been identified with a single red line and flagged "R". Rejected data should not be included in data tables. Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B Baldwin Date: 16 Aug 12
James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained twelve aqueous samples that were collected from the Covanta Recovery site between 29May12 and 31May12. Nine samples were collected on 29May12 and 30May12, and were delivered to the laboratory, with a trip blank, on 30May12. The final three samples were collected on 31May12 and delivered to same afternoon. Both shipments of samples were received intact and packed with ice. Cooler temperatures of 1°C and 6°C were recorded by the laboratory on 30May12. Although a cooler temperature of 7°C was recorded on 31May12 data has been left unqualified because the cooler did contain ice. The custody documentation also indicated that the initial shipment was received with custody seals intact. Custody seals were not necessary on 31May12 because the cooler was hand carried to the laboratory.

The initial group of samples was extracted on 31May12 and analyzed on 01Jun12. The second group was extracted and analyzed on 06Jun12. Although the second group was held in the laboratory one day beyond the ASP holding time limitation, data has been left unqualified. The SW-846 holding time limitation between collection and extraction was satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Two method blanks were analyzed with this group of samples. Although both blanks produced acceptable chromatography and were free of targeted analyte contamination, one contained a trace of triphenylphosphine oxide (TPPO) which was reported as a Tentatively Identified Compound (TIC). Similar artifacts were reported from C4R-MW-02, C4R-MW-03, C4R-MW-05, C4R-MW-06 and C4R-MW-06DUP. They have been removed from the affected sample reports.

MS TUNING

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of DFTPP was analyzed prior to each analytical sequence that contained samples from this program. An Instrument Performance Check Form is present for each DFTPP evaluation. The results reported for each DFTPP check satisfied the ASP requirements.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration was performed on 23May12. Standards of 10, 20, 50, 100, 150 and 200 ng/µl were included. Most of the analytes targeted by this program produced the required levels of instrument response and demonstrated an acceptable degree of linearity during this calibration. Although 2,4-dinitrophenol and 4,6-dinitro-2-phenol standards produced the required levels of instrument response, they demonstrated poor linearity. Although errors might be expected in measurements of 2,4-dinitrophenol and 4,6-dinitro-2-phenol, it may be assumed that these analytes would be detected if present in samples. Because they were not found in samples, data qualifications are not required.

2-Chloronaphthalene and indeno(1,2,3-cd)pyrene standards failed to produced the required minimum levels of instrument response during the initial instrument calibration. The indeno(1,2,3-cd)pyrene (IND(123CD)PYR) and 2-chloronaphthalene (2-CLNAPH) results from this project have been qualified as estimations based on this performance.

Calibration verifications were performed on 01Jun12 and 06Jun12, prior to each 12-hour period of instrument operation that included samples from this program. When compared to the initial calibration, unacceptable shifts were observed in the response of atrazine during both calibration checks. The atrazine results from this group of samples have been qualified as estimations based on this performance.

It is noted that a low response was reported for 2-chloronaphthalene and indeno(1,2,3-cd)pyrene during each calibration check. 2-Chloronaphthalene and indeno(1,2,3-cd)pyrene results have been previously qualified for poor calibration performance.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Although Surrogate Summary Sheets were prepared, the laboratory evaluated surrogate performance based on its own in-house acceptance criteria. When compared to the ASP requirements, an acceptable recovery was reported for each of the surrogate additions to this group of samples.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to these limits, acceptable performance was indicated for the internal standard additions to every program sample except GP-MW-02DUP. The results reported from GP-MW-02DUP have been qualified as estimations based on this performance.

MATRIX SPIKES

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

GP-MW-01 and MW-A4-1 were selected for matrix spiking. Two aliquots of both samples were spiked with eleven targeted analytes, including the nine additions required by ASP protocol. With the exception of 4-nitrophenol, the recoveries reported from both MS/MSD pairs demonstrated acceptable levels of measurement accuracy and precision. The 4-nitrophenol additions to GP-MW-01 were completely unrecovered (0%,0%). With the exception of MW-A4-1, the 4-nitrophenol (4-NITPHEN) results from this group of samples have been qualified as estimations. The MW-4A-1 result has been left unqualified.

Two spiked blanks (LCS) were also analyzed with this project. The additions to both of these LCS were recovered successfully.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates of GP-MW-02 and C4R-MW-06 were included in this group of samples. Both duplicate pairs produced negative results.

SAMPLE INFORMATION

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Tentatively Identified Compounds (TIC) were reported.

Where necessary, the TIC's reported from this project have been edited to provide more appropriate identifications.

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: May 2012

		BLANK TIC PPO	CALIBRATE IND(123CD)PYR	CALIBRATE 2-CLNAPH	CALIBRATE ATRAZINE	INT STD	SPIKES 4-NITPHEN	MS ID TIC
C4R-MW-02	(12:2285-01)	REMOVE	10UJ	10UJ	10UJ		25UJ	EDIT
C4R-MW-03	(12:2285-02)	REMOVE	10UJ	10UJ	10UJ		25UJ	EDIT
C4R-MW-05	(12:2285-03)	REMOVE	10UJ	10UJ	10UJ		25UJ	EDIT
C4R-MW-06	(12:2285-04)	REMOVE	10UJ	10UJ	10UJ		25UJ	
C4R-MW-06DUP	(12:2285-05)	REMOVE	10UJ	10UJ	10UJ		25UJ	EDIT
GP-MW-01	(12:2285-07)		10UJ					
GP-MW-02	(12:2285-08)		10UJ			ALL UJ		
GP-MW-03	(12:2285-09)		10UJ					
GP-MW-02DUP	(12:2285-10)		10UJ					
MW-A4-1	(12:2308-01)		10UJ	10UJ	10UJ			
C4R-MW-01	(12:2308-02)		10UJ	10UJ	10UJ		25UJ	EDIT
MW-A19-1	(12:2308-03)		10UJ	10UJ	10UJ		25UJ	EDIT

SECTION 3.3

PCBs

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Aqueous Samples
SDG: 12:2285 - 2308
Sampled May 2012

PCB

C4R-MW-02	(12:2285-01)	C4R-MW-03	(12:2285-02)
C4R-MW-05	(12:2285-03)	C4R-MW-06	(12:2285-04)
C4R-MW-06DUP	(12:2285-05)	MW-A4-1	(12:2308-01)
C4R-MW-01	(12:2308-02)	MW-A19-1	(12:2308-03)

DATA ASSESSMENT

A PCB data package containing analytical results for eight aqueous samples was received from Labella Associates, P.C. on 09Aug12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8082, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol (ASP), September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-45, Rev. #1, October 2006, Validating PCB Compounds by Gas Chromatography SW-846 Method 8082A) was used as a technical reference.

CORRECTNESS AND USABILITY

Reported data should be considered complete, technically defensible, completely usable, and without qualifications in its present form. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 16 Aug 12

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained eight aqueous samples that were collected from the Covanta Recovery site on 29May12 and 31May12. Five samples were collected on 29May12 and delivered to the laboratory on 30May12. The final three samples were collected on 31May12 and delivered the same afternoon. Both shipments of samples were received intact and packed with ice. Cooler temperatures of 1°C and 6°C were recorded by the laboratory on 30May12. Although a cooler temperature of 7°C was recorded on 31May12 data has been left unqualified because the cooler did contain ice. The custody documentation also indicated that the initial shipment was received with custody seals intact. Custody seals were not necessary on 31May12 because the cooler was hand carried to the laboratory.

The initial group of samples was extracted on 04Jun12 and analyzed on 05Jun12. The final three samples were extracted and analyzed on 05Jun12. The ASP holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Two PCB method blanks was extracted and analyzed with this group of samples. Each of these blanks demonstrated acceptable chromatography and was free of targeted analyte contamination.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained eight aqueous samples that were collected from the Contra Recovery site on 29May12 and 31May12. Five samples were collected on 29May12 and delivered to the laboratory on 30May12. The final three samples were collected on 31May12 and delivered the same afternoon. Both shipments of samples were received intact and packed with ice. Cooler temperatures of 1°C and 6°C were recorded by the laboratory on 30May12. Although a cooler temperature of 7°C was recorded on 31May12 data has been left unqualified because the cooler did contain ice. The custody documentation also indicated that the initial shipment was received with custody seals intact. Custody seals were not necessary on 31May12 because the cooler was hand carried to the laboratory.

The initial group of samples was extracted on 04Jun12 and analyzed on 05Jun12. The final three samples were extracted and analyzed on 05Jun12. The ASP holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Two PCB method blanks was extracted and analyzed with this group of samples. Each of these blanks demonstrated acceptable chromatography and was free of targeted analyte contamination.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration for PCB was performed on 05Jun12. Standards containing 0.05, 0.10, 0.20, 0.50, 0.75, 1.00 and 2.00 ng/µl of AR1016 and AR1260 were included. Calibration curves were constructed for three representative peaks of both of these Aroclors. Each of these calibrations demonstrated an acceptable degree of linearity. Single point (1.0 ng/µl) calibrations were performed for three representative peaks of AR1221, AR1232, AR1242, AR1248, AR1254, AR1262 and AR1268.

It is noted that the laboratory only calibrated one analytical system. Although confirmational analyses are a method requirement, this omission is not considered a problem because each program sample produced a negative result.

Continuing calibration check standards of AR1016/AR1260 bracketed the analysis of program samples on 01Jun12 and 05Jun12. Each of these calibration checks produced analyte recoveries that satisfied the ASP acceptance criteria. Retention times were stable.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Standard Summary Sheets were properly prepared for two surrogates, tetrachloro-m-xylene (TCmX) and decachlorobiphenyl (DCBP), that were added to every program sample. When compared to the ASP requirements each surrogate addition to this group of samples was recovered successfully.

MATRIX SPIKES / MATRIX SPIKE DUPLICATES / MATRIX SPIKED BLANKS

Matrix spiking refers to the addition of known analyte concentrations to a sample prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

MW-A4-1 was selected for matrix spiking. Two aliquots of this sample were spiked with AR-1262. The recoveries reported for these additions demonstrated acceptable levels of measurement accuracy and precision.

Two spiked blanks (LCS) were analyzed with this project. One was prepared with an addition of AR-1254, the second with AR-1262. Both LCS produced acceptable recoveries.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates of C4R-MW-06 were analyzed with this delivery group. Both of these samples produced negative PCB results.

DATA QUALIFICATIONS

COVANTA RECOVERY SITE

Sampled May 2012

C4R-MW-02	(12:2285-01)
C4R-MW-03	(12:2285-02)
C4R-MW-05	(12:2285-03)
C4R-MW-06	(12:2285-04)
C4R-MW-06DUP	(12:2285-05)
MW-A4-1	(12:2308-01)
C4R-MW-01	(12:2308-02)
MW-A19-1	(12:2308-03)

SECTION 3.4

Metals

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.
300 Pearl Street, Suite 325
Buffalo, NY 14202

COVANTA RECOVERY SITE
Aqueous Samples
SDG: 12:2285 - 2308
Sampled May 2012

METALS

C4R-MW-02	(12:2285-01)	C4R-MW-03	(12:2285-02)
C4R-MW-05	(12:2285-03)	C4R-MW-06	(12:2285-04)
C4R-MW-06DUP	(12:2285-05)	MW-A4-1	(12:2308-01)
C4R-MW-01	(12:2308-02)	MW-A19-1	(12:2308-03)

DATA ASSESSMENT

An inorganics data package containing analytical results for eight aqueous samples was received from Labella Associates, P.C. on 09Aug12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Methods 6010 and 7471 addressed Target Analyte List metals. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol (ASP), September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-2, Rev. 13, Sep. 2005, Evaluation of Metals Data for the Contract Laboratory Program) was used as a technical reference.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible, completely usable, and without qualifications in its present form. A detailed discussion of the review process follows.

It is noted that the laboratory analyzed interference check standards at the beginning of each ICP sequence, but not at the end of the run as required by ASP protocol. CRDL and serial dilution samples were omitted. The laboratory should be warned of such omissions. They are required elements of an ASP data package. Data has been evaluated based on the information that was provided.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 16Aug12
James B. Baldwin

SAMPLE HISTORY

Sample holding times are calculated between the Verified Time of Sample Receipt (VTSR) and the time of analysis. Mercury samples must be analyzed within 26 days of receipt, the remaining metals within 180 days.

This sample delivery group contained eight aqueous samples that were collected from the Covanta Recovery site on 29May12 and 31May12. Five samples were collected on 29May12 and delivered to the laboratory on 30May12. The final three samples were collected on 31May12 and delivered the same afternoon. Both shipments of samples were received intact and packed with ice. Cooler temperatures of 1°C and 6°C were recorded by the laboratory on 30May12. Although a cooler temperature of 7°C was recorded on 31May12 data has been left unqualified because the cooler did contain ice. The custody documentation also indicated that the initial shipment was received with custody seals intact. Custody seals were not necessary on 31May12 because the cooler was hand carried to the laboratory.

The samples were digested for ICP metals on 31May12 and 01Jun12, and analyzed on 01Jun12 and 04Jun12. The samples were digested for mercury on 31May12 and 04Jun12 and analyzed on 01Jun12 and 05Jun12. The ASP holding time limitations were satisfied.

CALIBRATIONS

Calibration curves are constructed, using certified materials, to define the linear range of each analytical instrument. Beyond this range, measurements cannot be made with confidence. The calibration curve is immediately tested by analyzing an initial calibration verification standard (ICV). Continuing verifications (CCV) must bracket each group of up to ten samples. ICV and CCV recoveries must meet established criteria.

Each instrument calibration was immediately verified by the analysis of an ICV standard. Continuing calibration checks were made following each group of 10 samples. The calibration checks associated with this group of samples demonstrated acceptable levels of instrument performance and stability.

It is noted that one cobalt CCV did produce an elevated recovery of 112%. This indication of slight positive bias warrants no concern. Cobalt was not detected in MW-A4-1, C4R-MW-01 and MW-A19-1, the only associated samples.

CONTRACT REQUIED DETECTION LIMIT STANARDS (CRDL)

To verify instrument linearity near CRDL, an ICP standard at a concentration of twice CRDL (CRI) is analyzed at the beginning and end of each analytical sequence. A standard equaling CRDL (CRA) must be included in each atomic adsorption sequence. CRDL standards must produce recoveries between 70% and 130%.

CRDL standards were not analyzed.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Preparation blanks are carried through the digestion process with each group of samples to evaluate general laboratory technique. Calibration blanks are run periodically to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

An initial blank (ICB) was analyzed following the calibration in each analytical sequence. Additional blanks were analyzed after every ten samples (CCB) and at the end of each sequence. Two preparation blanks were digested and analyzed with this group of samples. Both laboratory prepared blanks were free of targeted analyte contamination exceeding PQL.

INTERFERENCE CHECK SAMPLE (ICS)

ICS standards are analyzed at the beginning and end of each ICP analysis sequence to verify background and inter-element correction factors. The recoveries of specified analytes are measured in the presence of interfering concentrations of aluminum, calcium, magnesium and iron.

An interference check standard, ICSAB, was analyzed at the beginning of each analytical sequence. An ICSAB standard was not run, however, at the end of each ICP sequence as required by ASP protocol. The laboratory should be warned of such omissions.

The ICS performance associated with the analytes targeted by this program satisfied the ASP acceptance criteria.

PREDIGESTION SPIKE

The recovery of spike concentrations added to samples prior to digestion and analysis demonstrates measurement bias caused by sample matrix effects. Predigestion spikes must be recovered within control limits of 75% - 125%.

MW-A4-1 was selected for matrix spiking. The required targeted analytes were added to an aliquot of this sample. The recoveries reported for these additions demonstrated an acceptable level of measurement accuracy.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Laboratory split duplicates of MW-A4-1 were analyzed with this project. The duplicates of this sample demonstrated an acceptable level of measurement precision.

Field split duplicates of C4R-MW-06 were also analyzed with this delivery group. The results reported from this pair of samples differed by less than 2%.

LABORATORY CONTROL STANDARD

Laboratory control samples are prepared by adding analytes to clean sand or reagent water. Analyte concentrations are then determined without interferences caused by sample matrix effects.

Two pairs of aqueous spiked blanks (LCS) were digested and analyzed with this delivery group. These samples produced excellent analyte recoveries and demonstrated acceptable levels of measurement precision.

SERIAL DILUTION SAMPLE

Possible matrix effects are verified by the process of serial dilutions. Samples are diluted 1:5 to reduce matrix contributions that might bias measurements. The original sample result, and the corrected concentration of the diluted sample are compared. Sample data is qualified if the original concentrations are not recovered within 10%. Analytes with initial concentrations below 50 times IDL are not considered.

Serial dilution samples were not included in this delivery group.

DATA QUALIFICATIONS

COVANTA RECOVERY SITE

Sampled May 2012

C4R-MW-02	(12:2285-01)
C4R-MW-03	(12:2285-02)
C4R-MW-05	(12:2285-03)
C4R-MW-06	(12:2285-04)
C4R-MW-06DUP	(12:2285-05)
MW-A4-1	(12:2308-01)
C4R-MW-01	(12:2308-02)
MW-A19-1	(12:2308-03)

SECTION 4

JUNE 2012 AQUEOUS SAMPLES-SDG 12:2354

DATA USABILITY SUMMARY REPORT

COVANTA RECOVERY SITE

AQUEOUS SAMPLES COLLECTED JUNE 2012

SDG 12:2354

Volatile Organics, Semivolatile Organics
Pesticides, PCB, Metals

Prepared for:

LABELLA ASSOCIATES, P.C.
Olympic Towers
300 Pearl Street, Suite 325
Buffalo, NY 14202

Prepared by:

DATAVAL, Inc.
518 Hooper Rd., PMB 283
Endwell, NY 13760

SECTION 4.1

Volatiles

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.
300 Pearl Street, Suite 325
Buffalo, NY 14202

COVANTA RECOVERY SITE
Aqueous Samples
SDG: 12:2354
Sampled June 2012

VOLATILE ORGANICS

C4R-MH-01 (12:2354-1) C4R-MH-03 (12:2354-2)
C4R-MH-02 (12:2354-3) TRIP BLANK (12:2354-4)

DATA ASSESSMENT

A volatile organics data package containing analytical results for three aqueous samples and a trip blank was received from Labella Associates, P.C. on 09Aug12. The ASP Category B deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8260, addressed STARS and Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol (ASP), September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP NO. HW-24, Rev. #2, August 2008, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B) was used as a technical reference.

The trichloroethene results reported from this project have been qualified as estimations due to poor calibration performance.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results representing a usable estimation of the conditions at the time of sampling have been flagged "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 15AUG12

Sample History

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Acid preserved VOA samples must be analyzed within 12 days of VTSR, unpreserved samples within 5 days. The holding time for soils is 12 days.

This sample delivery group contained three aqueous samples and a trip blank that were collected from the Covanta Recovery site on 04Jun12. The samples were packaged with a trip blank and delivered to the laboratory on 05Jun12. The sample cooler arrived intact and properly chilled, with a custody seal in place.

Although sample preservation was not documented in the field, or verified at the time of analysis, each sample was analyzed within the holding time limitation of an unpreserved sample. The ASP requirements were satisfied.

Blanks

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

One method blank and a trip blank were analyzed with this group of samples. Both blanks demonstrated acceptable chromatography and were free of targeted analyte contamination.

MS Tuning

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of BFB was analyzed prior to each analytical sequence that included samples from this program. An Instrument Performance Check Form is present for each BFB evaluation. The BFB tunes associated with this group of samples satisfied the program acceptance criteria.

Calibrations

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration check standards verify instrument stability.

The initial instrument calibration was performed on 05Jun12. Standards of 1, 5, 20, 50, 100, 150 and 200 µg/l were included.

With the exception of acetone, methylene chloride and trichloroethene, the standards of each analyte targeted by this program produced the required levels of instrument response and demonstrated an acceptable degree of linearity during this calibration. Although acetone and methylene chloride standards produced the required levels of response, they demonstrated poor linearity. Although errors might be expected in measurements of these analytes, it may be assumed that they analyte would be detected if present in samples. Because acetone and methylene chloride were not found in samples, data qualifications are not required.

Trichloroethene standards failed to produce the required minimum levels of instrument response. The trichloroethene results from this group of samples have been qualified as estimations based on this performance.

A calibration check standard was analyzed on 07Jun12, prior to the 12-hour period of instrument operation that included samples from this program. When compared to the initial calibration, this check demonstrated an acceptable level of instrument stability. It is noted that trichloroethene again produced a low response during this check. Because trichloroethene results have been previously qualified due to poor calibration performance, data qualifications are not required.

Surrogates

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Although Surrogate Summary Sheets were properly prepared, the laboratory applied its own acceptance criteria. When compared to the ASP requirements, elevated recoveries were reported for the 1,2-dichloroethane-d4 additions to C4R-MH-03 and C4R-MH-02. These indications of positive bias, however, warrant no concern. Both affected samples produced negative results.

Internal Standards

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to this criteria, acceptable performance was reported for the internal standard additions to this group of samples.

Matrix Spikes

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

Matrix spiked samples were not prepared with this group of samples.

One spiked blank (LCS) was analyze with this delivery group. This LCS produced acceptable analyte recoveries.

Duplicates

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates were not included in this delivery group.

Reported Analytes

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. TIC’s were not found in this group of samples.

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: June 2012

	CALIBRATE TCE
C4R-MH-01 (12:2354-1)	2.0UJ
C4R-MH-03 (12:2354-2)	2.0UJ
C4R-MH-02 (12:2354-3)	2.0UJ

SECTION 4.2

Semivolatiles

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.
300 Pearl Street, Suite 325
Buffalo, NY 14202

COVANTA RECOVERY SITE
Aqueous Samples
SDG: 12:2354
Sampled June 2012

SEMIVOLATILE ORGANICS

C4R-MH-01 (12:2354-1) C4R-MH-03 (12:2354-2)
C4R-MH-02 (12:2354-3)

DATA ASSESSMENT

A semivolatile organics data package containing analytical results for three aqueous samples was received from Labella Associates, P.C. on 09Aug12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8270, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-22, Rev. #4, August 2008, Validating Semivolatile Organic Compounds by Gas Chromatography / Mass Spectrometry SW-846 Method 8270D was used as a technical reference.

The indeno(1,2,3-cd)pyrene, 2-chloronaphthalene and atrazine results from this project have been qualified as estimations due to poor calibration performance.

One of the TIC's reported from C4R-MH-02 has been edited to provide a more appropriate identification.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Data presenting a usable estimation of the conditions being measured has been flagged "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 15 AUG 12

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained three aqueous samples that were collected from the Covanta Recovery site on 04Jun12. The samples were packaged with a trip blank and delivered to the laboratory on 05Jun12. The sample cooler arrived intact and properly chilled, with a custody seal in place. A cooler temperature of 3°C was recorded at the time of receipt. This group of samples was extracted and analyzed on 06Jun12. The ASP holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

One method blank was analyzed with this group of samples. This blank produced acceptable chromatography and was free of targeted analyte contamination.

MS TUNING

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of DFTPP was analyzed prior to each analytical sequence that contained samples from this program. An Instrument Performance Check Form is present for each DFTPP evaluation. The results reported for each DFTPP check satisfied the ASP requirements.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration was performed on 23May12. Standards of 10, 20, 50, 100, 150 and 200 ng/µl were included. Most of the analytes targeted by this program produced the required levels of instrument response and demonstrated an acceptable degree of linearity during this calibration. Although 2,4-dinitrophenol and 4,6-dinitro-2-phenol standards produced the required levels of instrument response, they demonstrated poor linearity. Although errors might be expected in measurements of 2,4-dinitrophenol and 4,6-dinitro-2-phenol, it may be assumed that these analytes would be detected if present in samples. Because they were not found in samples, data qualifications are not required.

2-Chloronaphthalene and indeno(1,2,3-cd)pyrene standards failed to produced the required minimum levels of instrument response during the initial instrument calibration. The indeno(1,2,3-cd)pyrene (IND(123CD)PYR) and 2-chloronaphthalene (2-CLNAPH) results from this project have been qualified as estimations based on this performance.

A calibration verification was performed on 06Jun12, prior to the 12-hour period of instrument operation that included samples from this program. When compared to the initial calibration, an unacceptable shift was observed in the response of atrazine. The atrazine results from this group of samples have been qualified as estimations based on this performance.

It is noted that a low response was reported for 2-chloronaphthalene and indeno(1,2,3-cd)pyrene during the calibration check. 2-Chloronaphthalene and indeno(1,2,3-cd)pyrene results have been previously qualified for poor calibration performance.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Although Surrogate Summary Sheets were prepared, the laboratory evaluated surrogate performance based on its own in-house acceptance criteria. When compared to the ASP requirements, an acceptable recovery was reported for each of the surrogate additions to this group of samples.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to these limits, acceptable performance was indicated for the internal standard additions to each program sample.

MATRIX SPIKES

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

Matrix spiked samples were not prepared with this delivery group.

One spiked blank (LCS) was analyzed with this project. The additions to this LCS were recovered successfully.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates were not included in this delivery group.

SAMPLE INFORMATION

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations have been adjusted to reflect sample size. Tentatively Identified Compounds (TIC) were reported.

One of the TIC's reported from C4R-MH-02 has been edited to provide a more appropriate identification.

SUMMARY OF QUALIFIED DATA

COVANTA RECOVERY SITE

SAMPLED: June 2012

	CALIBRATE IND(123CD)PYR	CALIBRATE 2-CLNAPH	CALIBRATE ATRAZINE	MS ID TIC
C4R-MH-01 (12:2354-1)	10UJ	10UJ	10UJ	
C4R-MH-03 (12:2354-2)	10UJ	10UJ	10UJ	
C4R-MH-02 (12:2354-3)	10UJ	10UJ	10UJ	EDIT

SECTION 4.3

Pesticides

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Aqueous Samples
SDG: 12:2354
Sampled June 2012

PESTICIDES

C4R-MH-01 (12:2354-1) C4R-MH-03 (12:2354-2)
C4R-MH-02 (12:2354-3)

DATA ASSESSMENT

A Pesticide data package containing analytical results for three aqueous samples was received from Labella Associates on 09Aug12. The ASP Category B deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8081, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-44, Rev. #1, October 2006, Validating Pesticide Compounds by Gas Chromatography SW-846 Method 8081B was used as a technical reference.

The pesticide results from this group of samples have been qualified as estimations because the analytical sequence was not terminated with a calibration check standard.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Data presenting a usable estimation of the conditions being measured has been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 15AUG12

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained three aqueous samples that were collected from the Covanta Recovery site on 04Jun12. The samples were packaged with a trip blank and delivered to the laboratory on 05Jun12. The sample cooler arrived intact and properly chilled, with a custody seal in place. A cooler temperature of 3°C was recorded at the time of receipt. This group of samples was extracted on 05Jun12 and analyzed on 06Jun12. The ASP holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

One pesticide method blank was extracted and analyzed with this group of samples. This blank demonstrated acceptable chromatography and was free of targeted analyte contamination.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration for single component pesticides was performed on 24May12 using Pesticide Mixture AB. Standards containing 0.005, 0.01, 0.02, 0.05, 0.10, 0.20 and 0.40 ng/µl of each single component pesticide were included. The calibration was performed on two chromatographic columns, RTX-CLP and RTX-CLP2.

The results produced by this calibration could not be verified. The laboratory's integration system was calibrated using a least-squares plot that incorporated an internal standard. The laboratory could not provide the calculation. Because the results of the calibration, and the samples analyzed following it could not be verified, the positive pesticide results from this group of samples have been qualified as estimations. It is noted that the results reported by laboratory could be approximated, but not duplicated, by using either a calculated relative response factor or a linear regression of the calibration standards.

A single point calibration for Toxaphene was performed on 05Jun12 and 06Jun12 using five representative chromatographic peaks at a concentration of 0.50 mg/l.

A degradation check standard was analyzed prior to the initial calibration and prior to each analysis sequence that included samples from this program. Each of these checks indicated excellent column performance and a clean injection system.

Although the laboratory did not calculate the resolution between analyte peaks, a visual inspection of the calibration files determined that the resolution between a-Chlordane and 4,4'-DDE and between Endrin and 4,4'-DDD did not satisfy the ASP requirement of 80% on either column. However, a-BHC and d-BHC, the only analytes found in this delivery group, were completely resolved on both chromatographic columns.

The analysis of samples was preceded by a mid-range Pesticide Mixture AB standard. The laboratory did not perform an additional check following the analysis of program samples. The results reported from this group of samples have been qualified as estimations due to this omission.

Although retention time windows were defined during the initial calibration, the retention times observed during the 06Jun12 calibration check failed to fall within the established windows. This performance, however, had no effect on reported data. The retention time of each analyte detected in this group of samples fell within windows constructed from the preceding calibration check standard.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Standard Summary Sheets were properly prepared for two surrogates, tetrachloro-m-xylene (TCmX) and decachlorobiphenyl (DCBP), which were added to every program sample. When compared to the ASP requirements, acceptable recoveries were reported for the surrogate additions to this group of samples.

MATRIX SPIKES / MATRIX SPIKE DUPLICATES / MATRIX SPIKED BLANKS

Matrix spiking refers to the addition of known analyte concentrations to a sample prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

Matrix spiked samples were not included in this delivery group.

One spiked blank (LCS) was analyzed with this group of samples. This LCS produced acceptable analyte recoveries.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates were not included in this group of smaples.

ANALYTE IDENTIFICATIONS

Analytes must be detected at similar concentrations on two different chromatography columns to be considered present. The quality of the identification is based on the percent difference (%D) between this pair of measurements.

A-BHC and d-BHC were detected in C4R-MH-02. The measurements of these analytes from two columns differed by 7% and 4%, respectively. Acceptable measurement performance was demonstrated.

DATA QUALIFICATIONS

COVANTA RECOVERY SITE SAMPLED: June 2012

	CALIBRATE	CALIBRATE a-BHC	CALIBRATE d-BHC
C4R-MH-01 (12:2354-1)	ALL UJ		
C4R-MH-2 (12:2354-2)	ALL UJ		
C4R-MH-03 (12:2354-3)	ALL J/UJ	0.111J	0.109J

SECTION 4.4

PCBs

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Aqueous Samples
SDG: 12:2354
Sampled June 2012

PCB

C4R-MH-01 (12:2354-1) C4R-MH-03 (12:2354-2)
C4R-MH-02 (12:2354-3)

DATA ASSESSMENT

A PCB data package containing analytical results for three aqueous samples was received from Labella Associates, P.C. on 09Aug12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8082, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-45, Rev. #1, October 2006, Validating PCB Compounds by Gas Chromatography SW-846 Method 8082A) was used as a technical reference.

CORRECTNESS AND USABILITY

Reported data should be considered complete, technically defensible, completely usable, and without qualifications in its present form. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B Baldwin Date: 15AUG12
James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Aqueous sample extractions must be completed within 5 days of receipt. Soils must be extracted within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained three aqueous samples that were collected from the Covanta Recovery site on 04Jun12. The samples were packaged with a trip blank and delivered to the laboratory on 05Jun12. The sample cooler arrived intact and properly chilled, with a custody seal in place. A cooler temperature of 3°C was recorded at the time of receipt. This group of samples was extracted and analyzed on 05Jun12. The ASP holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

One PCB method blank was extracted and analyzed with this group of samples. This blank demonstrated acceptable chromatography and was free of targeted analyte contamination.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration for PCB was performed on 04Jun12. Standards containing 0.05, 0.10, 0.25, 0.50, 0.75, 1.00 and 2.00 ng/µl of AR1016 and AR1260 were included. Calibration curves were constructed for three representative peaks of both of these Aroclors. Each of these calibrations demonstrated an acceptable degree of linearity. Single point (1.0 ng/µl) calibrations were performed for three representative peaks of AR1221, AR1232, AR1242, AR1248, AR1254, AR1262 and AR1268.

It is noted that the laboratory only calibrated one analytical system. Although confirmational analyses are a method requirement, this omission is not considered a problem because each program sample produced a negative result.

Continuing calibration check standards of AR1016/AR1260 bracketed the analysis of program samples on 05Jun12. Each of these calibration checks produced analyte recoveries that satisfied the ASP acceptance criteria. Retention times were stable.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Standard Summary Sheets were properly prepared for two surrogates, tetrachloro-m-xylene (TCmX) and decachlorobiphenyl (DCBP), that were added to every program sample. When compared to the ASP requirements, each surrogate addition to this group of samples was recovered successfully.

MATRIX SPIKES / MATRIX SPIKE DUPLICATES / MATRIX SPIKED BLANKS

Matrix spiking refers to the addition of known analyte concentrations to a sample prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

Matrix spiked samples were not included in this group of samples.

One spiked blank (LCS) was analyzed with this project. This LCS produced an acceptable recovery of AR-1262.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Field split duplicates were not included in this group of samples.

DATA QUALIFICATIONS

COVANTA RECOVERY SITE

Sampled June 2012

C4R-MH-01 (12:2354-1)
C4R-MH-03 (12:2354-2)
C4R-MH-02 (12:2354-3)

SECTION 4.5

Metals

DATA USABILITY SUMMARY REPORT

for

LABELLA ASSOCIATES, P.C.

300 Pearl Street, Suite 325

Buffalo, NY 14202

COVANTA RECOVERY SITE
Aqueous Samples
SDG: 12:2354
Sampled June 2012

METALS

C4R-MH-01 (12:2354-1) C4R-MH-03 (12:2354-2)
C4R-MH-02 (12:2354-3)

DATA ASSESSMENT

An inorganics data package containing analytical results for three aqueous samples was received from Labella Associates, P.C. on 09Aug12. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Covanta Recovery site, were identified by Chain of Custody documents and traceable through the work of Paradigm Environmental Services, the laboratory contracted for analysis. Analyses, performed according to SW-846 Methods 6010 and 7471 addressed Target Analyte List metals. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-2, Rev. 13, Sep. 2005, Evaluation of Metals Data for the Contract Laboratory Program) was used as a technical reference.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible, completely usable, and without qualifications in its present form. A detailed discussion of the review process follows.

It is noted that the laboratory analyzed interference check standards at the beginning of each ICP sequence, but not at the end of the run as required by ASP protocol. CRDL and serial dilution samples were omitted. The laboratory should be warned of such omissions. They are required elements of an ASP data package. Data has been evaluated based on the information that was provided.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 15AUG-12
James B. Baldwin

SAMPLE HISTORY

Sample holding times are calculated between the Verified Time of Sample Receipt (VTSR) and the time of analysis. Mercury samples must be analyzed within 26 days of receipt, the remaining metals within 180 days.

This sample delivery group contained three aqueous samples that were collected from the Covanta Recovery site on 04Jun12. The samples were packaged with a trip blank and delivered to the laboratory on 05Jun12. The sample cooler arrived intact and properly chilled, with a custody seal in place. A cooler temperature of 3°C was recorded at the time of receipt. This group of samples was digested for ICP metals and mercury on 06Jun12. Mercury determinations were performed on 07Jun12. ICP analyses were completed on 08Jun12. The ASP holding time limitations were satisfied.

CALIBRATIONS

Calibration curves are constructed, using certified materials, to define the linear range of each analytical instrument. Beyond this range, measurements cannot be made with confidence. The calibration curve is immediately tested by analyzing an initial calibration verification standard (ICV). Continuing verifications (CCV) must bracket each group of up to ten samples. ICV and CCV recoveries must meet established criteria.

Each instrument calibration was immediately verified by the analysis of an ICV standard. Continuing calibration checks were made following each group of 10 samples. The calibration checks associated with this group of samples demonstrated acceptable levels of instrument performance and stability.

CONTRACT REQUIED DETECTION LIMIT STANARDS (CRDL)

To verify instrument linearity near CRDL, an ICP standard at a concentration of twice CRDL (CRI) is analyzed at the beginning and end of each analytical sequence. A standard equaling CRDL (CRA) must be included in each atomic adsorption sequence. CRDL standards must produce recoveries between 70% and 130%.

CRDL standards were not analyzed.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Preparation blanks are carried through the digestion process with each group of samples to evaluate general laboratory technique. Calibration blanks are run periodically to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

An initial blank (ICB) was analyzed following the calibration in each analytical sequence. Additional blanks were analyzed after every ten samples (CCB) and at the end of each sequence. Two preparation blanks were digested and analyzed with this group of samples. Both laboratory prepared blanks were free of targeted analyte contamination exceeding PQL.

INTERFERENCE CHECK SAMPLE (ICS)

ICS standards are analyzed at the beginning and end of each ICP analysis sequence to verify background and inter-element correction factors. The recoveries of specified analytes are measured in the presence of interfering concentrations of aluminum, calcium, magnesium and iron.

An interference check standard, ICSAB, was analyzed at the beginning of each analytical sequence. An ICSAB standard was not run, however, at the end of each ICP sequence as required by ASP protocol. The laboratory should be warned of such omissions.

The ICS performance associated with the analytes targeted by this program satisfied the ASP acceptance criteria.

PREDIGESTION SPIKE

The recovery of spike concentrations added to samples prior to digestion and analysis demonstrates measurement bias caused by sample matrix effects. Predigestion spikes must be recovered within control limits of 75% - 125%.

Matrix spiked samples were not included in this delivery group.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. The results produced by this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

A laboratory spiked blank (LCS) was analyzed in duplicate as a measurement of laboratory precision. The results reported from this pair of samples were in close agreement.

Field split duplicates were not included in this group of samples.

LABORATORY CONTROL STANDARD

Laboratory control samples are prepared by adding analytes to clean sand or reagent water. Analyte concentrations are then determined without interferences caused by sample matrix effects.

A pair of aqueous spiked blanks (LCS) were digested and analyzed with this delivery group. These samples produced excellent analyte recoveries and demonstrated acceptable levels of measurement precision.

SERIAL DILUTION SAMPLE

Possible matrix effects are verified by the process of serial dilutions. Samples are diluted 1:5 to reduce matrix contributions that might bias measurements. The original sample result, and the corrected concentration of the diluted sample are compared. Sample data is qualified if the original concentrations are not recovered within 10%. Analytes with initial concentrations below 50 times IDL are not considered.

Serial dilution samples were not included in this delivery group.

DATA QUALIFICATIONS

COVANTA RECOVERY SITE Sampled June 2012

C4R-MH-01 (12:2354-1)
C4R-MH-03 (12:2354-2)
C4R-MH-02 (12:2354-3)