Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year – Final Report

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Executive Summary

In 1991, Laidlaw Environmental Services Inc. initiated an annual Biomonitoring Program near their hazardous waste landfill and liquid-injection incinerator (the Lambton Facility) located on Lot 9, Concession 10, St. Clair Township in Lambton County, Ontario. The Lambton Facility is a hazardous waste management complex which includes a high temperature incinerator and a secure landfill and is currently owned and operated by Clean Harbors Canada Inc. (Clean Harbors).

The Biomonitoring Program is one of the Lambton Facility's ongoing monitoring programs, which are required under condition 9 of the Facility's Environmental Compliance Approval No. A031806 dated September 5, 1997, and as amended. The Biomonitoring Program provides an indication of trends, through time, in the concentration of analytes in several environmental media at a network of test Sites located within approximately 1.5 km of the Lambton Facility boundary. The locations of test Sites were selected based on wind directions at the Lambton Facility. In 2015, the test Sites were evaluated based on a wind rose (**Figure 2 of Appendix A**) generated using meteorological data collected from the Lambton Facility from July 2014 to June 2015. The wind rose indicated that the dominant wind direction came from the south and southwest and blew to a lesser degree from the north and west. Sites N2, N4 and N5 in the north and Sites E1, E2, E5 in the east of the Lambton Facility were situated in the maximum deposition areas to the north and east of the Lambton incinerator. Site E6 was established within the Lambton Facility perimeter, east of the incinerator. Sites S2 and S4 were situated to the south of the Lambton Facility to cover potential deposition areas due to the wind blowing to a lesser degree from the north of the Lambton incinerator. Sites W2 and W4 were situated in locations opposite from the predominant wind directions. In the 2019 Field Year, a new Site E7 was added to the northeast of the Lambton Facility based on dominant wind direction towards the northeast of the incinerator. Subsequently, in the 2021 Field Year, Site S8 located on the facility and south of the Lambton Facility incinerator stack, was added to cover southern deposition areas within the Lambton Facility. In addition, due to construction in the Lambton Facility, Site E6 was found to be destroyed in the 2021 Field Year.

The annual Biomonitoring Program includes the collection of samples from up to four environmental media (soil, drainage ditch sediment, natural vegetation, and agricultural crops) from each Site which are submitted to the analytical laboratory to determine the concentration of selected metals, pesticides, chlorinated phenols, and dioxins and furans. For the 2021 Field Year, a total of 12 test Sites were monitored.

The review and comparison of the 2021 data relative to the upper control limits (UL21)[1] for each Site and on a Site-wide basis was completed for inorganic analytes present in soil, sediment, natural grasses, soybean, sugar beet, winter wheat and field corn samples collected at the sites. The concentrations of 18 inorganic analytes (14 Group 1[2] analytes (i.e., boron, calcium, chloride, cobalt, iron, magnesium, manganese, molybdenum, phosphorus, silicon, sodium, strontium, sulfur and titanium) and four Group 2 analytes[3] (i.e., aluminum, arsenic, lead and mercury)) exceeded their respective Site-specific UL21 while a single Group 1 analyte (i.e., iron) and a single Group 2 analyte (i.e., aluminum) exceeded the Site-wide UL21.

Within the 14 Group 1 analytes which exceeded the Site-specific UL21, the concentration of one Group 1 analyte (i.e., phosphorus) in soil collected in 2021 exceeded the Ontario Typical Range for Rural Parkland Soil (OTR_{98}) (Ministry of Environment, Conservation and Parks (MECP), 2011). The concentration of one Group 1 analyte (i.e., magnesium) in soil exceeded the rural Upper Limit of Normal (ULN) (MECP, 1989), whereas concentrations of four Group 1 analytes (i.e., iron, manganese, molybdenum, and sulfur) in natural grasses exceeded the rural ULN. No criteria were available for comparison of UL21 exceedances identified in crops. The exceedances of the Group 1 analytes do not warrant additional investigation at this time.

Within the four Group 2 analytes which exceeded their respective Site-specific UL21, the concentration of a single analyte (i.e., arsenic) in sediment exceeded the Ontario Regulation (O. Reg) 153/04 Table 1 Site Condition Standards (SCS) (MECP, 2011) and the Provincial Sediment Quality Guidelines (PSQG) (MECP, 2008). The exceedances of the Group 2 analytes do not warrant additional investigation at this time.

Fluoride analysis was added to the Biomonitoring Program in the 2018 Field Year. The fluoride concentrations measured in soil were less than the OTR_{98}. The fluoride analytical method for vegetation samples was changed in 2021 to a similar method used by the MECP for fluoride in their historical maple leaf sampling program which results in a reported detection limit (RDL[4]) lower than the ULN. The fluoride concentration in natural grasses at Site W2 was greater than the ULN. Monitoring should continue using the new analytical method in vegetation.

Cyanide and antimony were added to the Biomonitoring Program in the 2021 Field Year for a three-year trial period. Antimony concentrations were below the applicable guidelines while cyanide concentrations in soil exceeded the Ontario Table 1 SCS. Monitoring should continue for the remainder of the trial period to determine if these analytes should be added to the Biomonitoring Program.

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[1] The Upper Control Limits (UL) is the mean concentration of the analyte plus three standard deviations of the sample population. Site-specific and Site-wide UL21 values were calculated using data collected from 1991-2020.
[2] Group 1 Analytes are ubiquitous or required nutrients in the environment and are not expected to have harmful effects on plant, human and animal health from chemical toxicity.
[3] Group 2 Analytes are known to have toxicological effects.
[4] The low concentration at which laboratory analyses will consistently detect the analytes when present.

Group 3 organic analytes[5] were not detected at concentrations representative of concern for ecological health during the 2021 Field Year. There were no exceedances for organics when compared to the site-specific and site-wide UL21s. Reported detection limits greater than the UL21 were disregarded.

Organochlorine pesticides (OCP) analytes were measured at concentrations greater than their applicable RDL. However, detected concentrations of OCPs were less than their respective guidelines, where available for comparison. There are no standards available for OCP comparison of vegetation. Monitoring should continue but no additional investigation is proposed.

The concentrations of polychlorinated biphenyls (PCBs) were measured greater than their applicable RDLs. Detected concentrations of PCBs were below their respective guidelines, where available for comparison. There are no standards available for PCBs comparison of vegetation. Monitoring should continue but no additional investigation is proposed.

Pentachlorophenols (PCPs) were not identified at concentrations greater than their respective RDLs. Monitoring should continue but no additional investigation is proposed.

Individual compounds of dioxins and furans (PCDD/DF) were reported in soil at concentrations greater than the OTR_{98}, however, concentrations of total PCDD/DF (lower bound PCDD/DF toxic equivalent quantities (TEQ) and upper bound PCDD/DF TEQ) in soil were reported below the Table 1 SCS in the 2021 Field Year. No criteria were available for comparison of PCDD/DF concentrations in natural grasses. Monitoring should continue but no additional investigation is proposed.

Site-specific inorganic trends were evaluated, and 86 statistically significant ($p<0.003$) linear regressions were identified. Of the 86 statistically significant ($p<0.003$) linear regressions, 30 showed decreasing trends and 56 showed increasing trends. Approximately 11% of the analytes with increasing trends had measured concentrations greater than their applicable guidelines.

The statements made in the Technical Summary are subject to the same limitations included in the Limitations **Section 5.0** and are to be read in conjunction with the remainder of this report.

[5] Organic analytes with reported toxicity that are produced when certain waste streams are incinerated. These organic analytes are documented to accumulate in the environment.

Abbreviations

ANOVA	Analysis of Variance
CALA	Canadian Association for Laboratory Accreditation Inc.
CEC	Cation Exchange Capacity
ECA	Environmental Compliance Approval
FC	Field Corn
GLP	Good Laboratory Practice
H^+	Hydrogen Ion
ISO	International Organization for Standardization
LL	Lower Control Limit
MDL	Method Detection Limit
meq	Milliequivalent
MECP	Ministry of the Environment, Conservation and Parks (formerly the Ministry of the Environment and Climate Change)
NG	Natural Grasses
OCDD	Octachlorodibenzodioxin
OCP	Organochlorinated Pesticide
OM	Organic Matter
OECD	Organization for Economic Cooperation and Development
OTR_{98}	Ontario Typical Range
PCB	Polychlorinated Biphenyls
PCDD	Polychlorodibenzo-p-Dioxin
PCDF	Polychlorodibenzo-Furan
PCP	Pentachlorophenol
pH	-log[H+]
pg	Picograms
ppm	Parts per Million

PSQG	Provincial Sediment Quality Guidelines
QA/QC	Quality Assurance/Quality Control
RDFN	Raw Data File Notebook
RDL	Reporting Detection Limit
RPD	Relative Percent Difference
SCC	Standards Council of Canada
SCS	Site Condition Standard
SD	Sediment
SB	Soybean
SS	Soil
Stantec	Stantec Consulting Ltd.
SWEDAC	Swedish Board for Accreditation and Conformity Assessment
TEF	Toxic Equivalency Factor
TEQ	Toxicity Equivalents
UL	Upper Control Limit
ULN	Upper Limit of Normal
US EPA	United States Environmental Protection Agency
WHO	World Health Organization
WW	Winter Wheat

1.0 INTRODUCTION

In 1991, Laidlaw Environmental Services Inc. initiated an annual Biomonitoring Program near their hazardous waste landfill and liquid-injection incinerator (the Lambton Facility) located on lot 9, concession 10, St. Clair Township in Lambton County, Ontario. The Lambton Facility is a hazardous waste management complex which includes a high temperature incinerator and a secure landfill and is currently owned and operated by Clean Harbors Canada Inc. (Clean Harbors). The Biomonitoring Program continues as one of the facility's ongoing monitoring programs required under condition 9 of its Environmental Compliance Approval (ECA No. A031806) dated September 5, 1997, and as amended. The Biomonitoring Program establishes baseline levels of selected chemicals in environmental media (soil, drainage ditch sediment, natural vegetation, and agricultural crops) at selected locations (Sites) within approximately 1.5 kilometres of the Lambton Facility and provides an indication of trends, through time, in the concentration of analytes of the sampled media.

Biomonitoring is used to monitor the concentration, or presence/absence, of selected chemicals in environmental media associated with a facility or operation. The use of biological monitors allows changes in the concentration of chemicals in environmental media to be tracked over time. This is particularly important if changes in the concentration of one or more chemicals indicate an upward trend such that unacceptable threshold concentrations may be approached or exceeded.

Stantec Consulting Limited (Stantec) carried out the Biomonitoring Program for the 2021 Field Year and compared these data to accumulated biomonitoring data. Analytical testing of the 2021 media samples was undertaken by ALS Laboratories.

1.1 OBJECTIVES

The overall purpose of the Biomonitoring Program is to document through time the concentrations of selected analytes in environmental media (soil, sediment, natural vegetation, and agricultural crops) in the vicinity of the Lambton Facility and evaluate if concentrations are changing relative to baseline or benchmark data.

The specific objectives of the program include:

1. Determine the concentrations of selected chemicals in environmental media at select Sites within approximately 1.5 km of the Lambton Facility and compare with past Biomonitoring Program year's analyte concentrations and relevant published guidelines.

2. Identify trends in chemical concentration over time for environmental media at Sites within approximately 1.5 km of the Lambton Facility, which, along with the results of other monitoring programs, may be used to determine the need for mitigative action on facility outputs or to direct potential remediation in the areas surrounding the Site.

3. Gather information (e.g., crop growth, sediment fertility and characterization[6] data) from the Sites that could be used to assist in the assessment of impacts if upset conditions (e.g., potential release of chemicals) were to occur at the Lambton Facility.

1.2 RATIONALE FOR PROGRAM APPROACH

The rationale for the selection of chemicals analyzed, environmental media sampled, test Site locations and the frequency of sampling for the Biomonitoring Program is summarized in the text below**.**

1.2.1 Selection of Chemicals for Analysis

The Biomonitoring Program monitors the concentrations of selected analytes at select locations within approximately 1.5 km of the Lambton Facility. Initially, the program was designed to address concerns identified in human health/environmental risk assessments conducted during previous environmental assessments (Laidlaw Environmental Services Inc., 1991; Laidlaw Environmental Services Inc., 1996). The selection of analytes was based on the results of the above-mentioned risk assessments.

The types of information considered when selecting the analytes included the nature of the Lambton Facility operations as a hazardous waste management facility, sources of potential release of chemicals, results of environmental monitoring in the Lambton County area, the types and composition of wastes to be incinerated or buried in the landfill Site and the toxicity of the chemicals in the wastes. The list of analytes required by the Ministry of Environment, Conservation and Parks (MECP) to monitor is provided in **Table 1** and in the design and operation manual which is an attachment to operating ECA No. A031806. An exception to this list of analytes is antimony and cyanide, which were added to the 2021 Field Year Biomonitoring Program on a trial basis for three years. This was done based on Stantec's response to comments by Neegan Burnside Ltd on their review of the 2019 Annual Landfill Report. In the response letter dated June 4, 2021 (Stantec, 2021b), Stantec referenced a risk assessment conducted by Intrinsik (Intrinsik, 2014) which predicted surface soil concentrations of antimony and cyanide to exceed the typical Ontario background concentrations based on deposition modelling of facility emissions. To understand concentrations in the field, antimony and cyanide were added to the Biomonitoring Program this year. If concentrations of the two analytes in soil are found to be lower than the Ontario background for three years (Field Years 2021, 2022 and 2023), then no further evaluation will be required.

[6] The influence of soil and sediment characterization/fertility is discussed in **Section 2.2** and **Appendix B**.

Table 1: List of Analytes, by Group, Monitored during the 2021 Biomonitoring Program, Lambton Facility

GROUP 1 ANALYTES		
Antimony[7]	Cyanide[8]	Potassium
Barium	Fluoride[8]	Silicon
Beryllium	Iron	Silver
Boron	Magnesium	Sodium
Calcium	Manganese	Strontium
Chloride	Molybdenum	Sulfur
Chromium	Nickel	Titanium
Cobalt	Phosphorus	Zirconium
GROUP 2 ANALYTES		
Aluminum	Copper	Thallium
Arsenic	Lead	Vanadium
Cadmium	Mercury	Zinc
GROUP 3 ANALYTES		
Organochlorine Pesticides (OCPs)		
Aldrin	p,p' DDD	Endrin
a-BHC	p,p' DDE	Endrin Aldehyde
b-BHC	p,p' DDT	Heptachlor
g-BHC (Lindane)	Dieldrin	Heptachlor Epoxide
d-BHC	a Endosulfan	Methoxychlor
a-Chlordane	b Endosulfan	Mirex
g Chlordane	Endosulfan Sulphate	
Total Polychlorinated Biphenyls (PCB)		
Pentachlorophenol (PCP)		
Furans and Dioxins (PCDD/DF)		
Total Tetrachlorodibenzofurans (T4CDF)	Total Tetrachlorodibenzo-p-dioxins (T4CDD)	
Total Pentachlorodibenzofurans (T5CDF)	Total Pentachlorodibenzo-p-dioxins (T5CDD)	
Total Hexachlorodibenzofurans (T6CDF)	Total Hexachlorodibenzo-p-dioxins (T6CDD)	
Total Heptachlorodibenzofurans (T7CDF)	Total Heptachlorodibenzo-p-dioxins (T7CDD)	
Octachlorodibenzofuran (8CDF)	Octochlorodibenzo-p-dioxin (8CDD)	

[7] The monitoring of antimony and cyanide was added to the Biomonitoring Program in the 2021 Field Year on a 3-year trial basis as per letter dated June 4, 2021 (Stantec, 2021b). These analytes are not required by the MECP.
[8] The monitoring of fluoride was added to the Biomonitoring Program in the 2018 Field Year as per the MECP approved changes.

Based on toxicity information in the scientific literature and on public perception of chemicals the analytes were grouped into three categories (**Table 1**):

Group 1: Inorganic analytes representing the lowest potential threat to livestock or to the consuming public that eats crops from the area. At the time of establishing the Biomonitoring Program in 1991, reports of toxic effects in either humans or livestock were not identified in the literature for exposures to the analyte at concentrations considered 'typical' in the environment.

Group 2: Inorganic analytes reported or theorized in the literature to have toxic effects on environmental receptors. However, at the time of establishing the Biomonitoring Program these analytes were not considered to be toxic contaminants that occur on a widespread or common basis.

Group 3: Organic analytes with reported toxicity that are produced when certain waste streams are incinerated. These organic analytes are documented to accumulate in the environment.

1.2.2 Selection of Environmental Media for Analysis

Several media were considered for inclusion in the Biomonitoring Program. These include soil, grass from hay or pastured fields, grain and oilseed crops, corn silage, sediment from drainage ditches and maple leaves. Prior to the 2018 Field Year, maple leaves were collected and reported outside of the Biomonitoring Program, as part of a voluntary program called the Maple Leaf Sampling Program that Clean Harbors engaged in. The findings from the Maple Leaf Sampling Program indicated that there was no significant difference between the concentrations measured in the maple leaves adjacent to the Clean Harbors facility in comparison with the randomly selected control sites. As a result, the maple leaf program provided no benefit to the core Biomonitoring Program. In 2018, the MECP approved Clean Harbors to discontinue the maple leaf program. Consideration was also given to the typical practices used during crop production and the species of plants that grow as part of the natural vegetation surrounding the facility. For example, soybean, field corn and winter wheat rotations and natural grasses are more prevalent in the vicinity of the Lambton Facility than other agricultural crops and natural vegetation. The environmental media being tested for Group 1, 2 and 3 analytes are provided in

Table 2.

Table 2: List of Analytes, by Group and Environmental Matrix, Monitored during the 2021 Biomonitoring Program, Lambton Facility

Group	Environmental Media			
	Soil (SS)	Drainage Ditch Sediment (SD)	Natural Grasses (NG)	Agricultural Crop (e.g., Winter Wheat - WW, Soybean - SB, and Field Corn - FC)
1	All analytes	All analytes	All analytes	All analytes
2	All analytes	All analytes	All analytes	All analytes
3 [A]	OCP PCB PCDD/DF	OCP PCB	OCP PCB PCDD/DF	OCP PCB PCP PCDD/DF

Note(s):

[A] OCP/PCB/PCP samples analyzed on a three-year cycle. Year 1, all samples will be submitted for analysis. Years 2 and 3, two samples per environmental media will be submitted for analytical testing: The Site with highest historical concentration and a randomly selected control site. Should concentrations of PCB, PCP or OCP be detected at concentrations greater than 50% of the applicable guidelines, the remaining samples will be submitted for analysis. The 2021 Field Year is Year 2 within the three-year cycle.

1.2.3 Selection of Test Sites

When the Biomonitoring Program was established in 1991, test Site selection was based mainly on projections of the location of contaminants that could be dispersed by the facility's on-Site liquid waste incinerator and that could have potential impacts on the surrounding environment. In order to include potential emissions from the facility (i.e., to include fugitive and dust emissions from the landfill and other on-Site activities), the Site selection criteria were modified. Specifically, these modifications resulted in the selection of test Sites that were spaced at approximately equal distances, and located to the north, south, east, and west of the Lambton Facility (**Figure 1** of **Appendix A**). The selection of Sites was based on criteria that would allow long-term, representative sampling of the media of interest. Existing test Site information (e.g., years in program and location relative to the facility) is provided in **Section 0**.

In 2017, based on the recommendations by Stantec, Clean Harbors requested MECP to approve a number of modifications to the Clean Harbors Biomonitoring Program. The changes included an addition of a test Site based on a review of wind directions, the removal of a test Site based on sufficient coverage to the south, and the relocation of an existing test Site to accommodate the expansion of the landfill. In 2018, the MECP approved the following changes in test Sites for the Biomonitoring Program:

- The addition of a new Site (i.e., E7) downwind from the Facility (i.e., northeast) approved based on a review of the predominant wind direction. This Site was added in the 2019 Field Year.
- The removal of Site S5 from the Biomonitoring Program. Sufficient coverage to the south of the Facility is provided by remaining sites.

- The removal of Site S3 and replacement by the addition of Site S7. Site S3 was previously removed during the construction of an access road that supported construction activities for the landfill expansion. The new Site S7 was located to the east of its original location as Site S3.

Ongoing construction activities at the Facility due to the landfill expansion and construction related to stormwater management at the Facility resulted in the subsequent destruction of the new Site S7 in 2019 as well as Site S1 in 2020. Site S7 was replaced by Site S8 during the 2021 Field Year. In addition, Site E6 was found to be destroyed during the 2021 Field Year; it will be replaced by a new site in the 2022 Field Year.

1.2.4 Frequency of Sampling

The frequency of sampling was based on the outcomes from the first six years (1991-1996) of the Biomonitoring Program.

The content of emissions released from the Lambton Facility between 1991 and 1996 varied. As such, sampling less frequently than annually could result in an incomplete understanding of changes in the concentrations of analytes in environmental media over time. Hence, annual sampling events were continued.

In 2018, the MECP approved a proposed modification to the Clean Harbors Biomonitoring Program where the frequency of analysis of select organic analytes (PCBs, PCP and OCPs) was reduced. Concentrations of these parameters were shown to be relatively consistent for over 20 years and there were few concentrations measured above the RDL since 1991. Samples will continue to be collected from available sites on an annual basis, but analytical frequency will change to a three-year cycle. In Year 1 all samples will be submitted for analysis. In Years 2 and 3 only one sample from the site that historically has the highest concentrations and one sample from the control site will be submitted for analysis. If PCB, PCP or OCP are detected at concentrations which exceed 50% of the applicable guidelines in the sample from the site that historically has the highest concentrations, the samples from the other sites can be submitted for analysis. However, if these analytes are not detected in the site that historically has the highest concentrations, it is assumed that the other sites will not have detected concentrations greater than applicable guidelines. The 2021 Field Year is Year 2 within this cycle.

1.3 SCOPE OF WORK

The scope of work documented in this report includes the following tasks:

1. Install new Site S8 within the Lambton Facility, south of the incinerator to replace the previously removed Site S7.

2. Collect samples of natural grasses, soil, sediment, and agricultural crops during the appropriate time of year using the standardized sampling techniques outlined in the Revised Biomonitoring Sampling Program (Stantec, 2018) and as amended and filed in the Raw Data File Notebook.

3. Send samples to analytical testing facility for sample processing and analysis.

4. Conduct quality assurance and quality control on the analytical data received from the laboratory.

5. Review and compare 2021 Field Year data to the UL21 for each Site and on a Site-wide basis. Results with concentrations greater than the UL21 (referred to as exceedances) have been reviewed and reported herein.

6. Review and compare the exceedances (inorganic analytes) or detections (organic analytes) in the 2021 Field Year data to applicable guidelines relevant for various media.

7. Generate site-specific inorganic trendlines using applicable data up to 2021 Field Year.

8. Follow up on recommendations identified in the 2021 Annual Landfill Report (Clean Harbors, 2022).

9. Provide recommendations regarding further investigation or issues to consider during future Biomonitoring Program events.

2.0 MATERIALS AND METHODS

The sampling and reporting cycles; location and management of test Sites; and methods used to characterize, collect, analyze, and statistically analyze the data are summarized below. The field protocol for the 2021 Biomonitoring Program and field phase test records from the 2021 Field Year are included within the Raw Data File Notebook (RDFN) (Stantec, 2021a). The field protocol for the Biomonitoring Program describes the methods used during the field and analytical phases of the program.

Table 3 details the sampling and reporting cycles of the Clean Harbors Biomonitoring Program and has been updated to reflect MECP approved changes to the Biomonitoring Program. More details regarding the MECP approved changes are provided in **Appendix G**.

Table 3: Sampling and Reporting Cycles, Biomonitoring Program, Lambton Facility

Task	Timing	2018 Report	2019 Report	2020 Report	2021 Report	2022 Report
		2017 Field Year	2018 Field Year	2019 Field Year	2020 Field Year	2021 Field Year
Changes in Biomonitoring Sites						
Sites added	As required			E7[D]		S8[D]
Sites removed						E6
Sampling Task						
Collect biomonitoring chemistry samples at all Sites	annual	X	X	X	X	X
Collect sediment fertility & characterization samples at select Sites	3 yr cycle*	X			X	
Collect soil fertility & characterization samples at all Sites	6 yr cycle*	X		D		D
Analysis Task						
Laboratory analysis of inorganics and PCDD/DF	annual	X	X	X	X	X
Laboratory analysis of PCB, PCP and OCP at all Sites (Year 1[A])	3 yr cycle [A,B]	X			X	
Laboratory analysis of PCB, PCP and OCP at select Sites (Years 2 and 3[B])			X	X[D]		X[D]

Task	Timing	2018 Report	2019 Report	2020 Report	2021 Report	2022 Report
		2017 Field Year	2018 Field Year	2019 Field Year	2020 Field Year	2021 Field Year
Reporting Task						
Compare annual findings with control chart upper limits	annual	X[C]	X	X	X[C]	X
Compare annual findings with available government guidelines	annual	X	X	X	X	X
Follow up on identified issues if any	annual	X	X	X	X	X
Update control chart limits used for annual comparisons	3 yr cycle	X (UL18, LL18)			X (UL21, LL21)	
Update inorganic Site-specific trends	3 yr cycle		X			X
Update inorganic Site-wide trends	3 yr cycle			X		
Update organic Site-specific/Site-wide trends	6 yr cycle			X		

Note(s):

[A] Year 1, all samples will be submitted for analysis. 2018 Field Year was considered Year 1 of the first 3-year cycle. 2020 Field Year was considered Year 1 of the second 3-year cycle.

[B] Years 2 and 3, two samples per environmental media will be submitted for analytical testing: The Site with highest historical concentration and a randomly selected control site. Should concentrations of PCB, PCP or OCP be detected at concentrations greater than 50% of the applicable guidelines, the remaining samples will be submitted for analysis.

[C] Although control charts are updated this year, the current year's data is compared to the previous control chart limits (i.e., 2020 Field Year data is compared to the UL18).

[D] Site E7 was added to the Biomonitoring Program in the 2019 Field Year. Soil at this Site was analyzed for fertility and characterization in the 2020 Field Year. Site S8 was added to the Biomonitoring Program in the 2021 Field Year, and soil at this Site was analyzed for fertility and characterization. Samples from Site S8 were analyzed for PCB, PCP and OCP.

* Recommend collecting sediment fertility and characterization samples at all applicable Sites every four years and soil fertility and characterization samples every eight years.

2.1 LOCATION AND MANAGEMENT OF TEST SITES

The lands surrounding the Facility are predominantly agricultural, used for the production of crops. General descriptions of the test Sites are provided in **Table 4**. Additional detail about the location of each test site is not provided in order to respect landowner confidentiality. A diagram of the facility and the relative locations of the existing test sites is provided in **Figure 1** of **Appendix A**. Site S8, which was previously proposed as a replacement to Site S7 (destroyed), was installed within the facility during the 2021 Field Year. On-facility Site E6 was observed to be under a newly created landfill cell during the 2021 field program and is considered destroyed. A replacement site is proposed to be installed within the vicinity of the destroyed Site E6 during the 2022 Field Year.

Of the 12 Sites included in the 2021 Field Year, ten Sites have been managed under a crop rotation that included soybean, sugar beet, winter wheat and field corn. The remaining two sites (S8 and N5) are within the Clean Harbors facility and do not follow any cultural practices. In 2021, five of the 12 Sites were cultivated with field corn (E1, E5, E7, N2 and S2), two Sites were cultivated with winter wheat (S4 and W4), two Sites cultivated with soybean (W2 and N4), and another Site cultivated with sugar beet (E2).

Table 4: Name and Location of Test Sites, Biomonitoring Program, Lambton Facility

Site	Years in Program	Location Relative to the Facility
N2	1991-present	North: located in an agricultural field approx. 700 m from the property boundary
N4	2001-present	North: located in an agricultural field approx. 400 m from the property boundary
N5	2002-present	North: located on a naturally landscaped, but previously disturbed, area at the northern property boundary
E1	1991-present	East: located in an agricultural field approx. 0.1 km from the property boundary
E2	1991-present	East: located in an agricultural field approx. 2.0 km from the property boundary
E5	1992-present	East: located in an agricultural field approx. 0.25 km from the property boundary
E6	2000-2020	East: located under a newly filled waste cell at the property
E7	2019-present	East: located in an agricultural field approx. 0.7 km from the property boundary
S1[1]	1991-2020	South: located in an agricultural field approx. 0.2 km from the property boundary
S2	1991-present	South: located in an agricultural field approx. 0.4 km from the property boundary
S3	1991-2015	South: located on the cap of a previously filled waste cell at the property
S4[2]	1991-present	South: located in an agricultural field approx. 2.4 km from the property boundary
S5	1995-2017	South: located in an agricultural field approx. 0.8 km from the property boundary
S7	2016-2018	South: located on the cap of a previously filled waste cell at the property
S8	2021	South: located on the cap of a previously filled waste cell at the property
W2	1991-present	West: located in an agricultural field approx. 0.1 km from the property boundary
W4	1997-present	West: located in an agricultural field approx. 1.4 km from the property boundary

Note(s):

[1] The drainage ditch at S1 was moved to a location next to a gravel road (2004-2008) and in 2009 was moved back to its original location north of the agricultural field. In 2020, Site S1 was destroyed during construction activities at the site.

[2] Only sediment monitored from 1991-1992; all media in 1993–present.

Typical tillage systems for agricultural practice in this area disturb approximately 15 cm of soil depth, although no-till management systems, which disturb approximately 5 cm of soil depth in 30% of the soil surface, have gained in popularity. Based on the cultural practices surveys[9] completed by the land managers (farmers) responsible for crop cultivation at the various test sites, Sites N2, N4, and S4 were managed using a no-till system in 2021. Sites E1, E2, E5, E7 and S2 were tilled using a cultivator machinery to a 2-inch depth during the month of April 2021. No response was received from farmers of farms at Sites W2, and W4 at the time of reporting.

Site S8 was located on clay-capped waste cells and Site N5 was on a previously disturbed, but naturally re-vegetated area. The two Sites were maintained with a grass cover within the perimeter of the Lambton Facility. The soil was not tilled at the Sites within the facility boundary and was therefore considered undisturbed relative to typical agricultural tillage practices.

2.1.1 Addition of Site S8

Site S8 was added to the biomonitoring program to replace Site S7 which was destroyed during the expansion of the landfill in 2019. The location of Site S8 on previously capped landfill, west of destroyed Site S7, was selected based on a review of literature and wind direction blowing to a lesser degree from north to south (Clean Harbors, 2022). While test sites in the south (S2 and S4) of the Lambton Facility already existed to cover potential deposition areas south of the Lambton Facility, these sites were approximately 0.4 km and 2.4 km south of the Lambton Facility boundary, with the destruction of Site S7 no test site remained within close proximity of the Lambton Facility incinerator. Thus, in discussion with Clean Harbors, Site S8 was established approximately 0.28 km southwest of the incinerator stack, within the Clean Harbors Facility boundary on a recently completed landfill cap (**Figure 1** of **Appendix A**). This location is anticipated to remain undisturbed from future construction activities.

A ball marker for Site S8 was installed at a depth of approximately 0.3 m below ground surface. Soil and natural grass were sampled from limited grass cover in the north and east of the ball marker location. As Site S8 is located on the landfill which slopes down towards the Lambton Facility's west retention pond, sediment samples for Site S8 were also collected at the eastern bank of the retention pond during the 2021 Field Year. Given that Site S8 is situated on a clay-capped waste cell within the Clean Harbors Facility, no agricultural activities take place.

[9] Cultural Practice Surveys are sent out to land managers of record for cropped test Sites following the conclusion of the sampling program to gather information on field management practices. Completed Cultural Practice Surveys are on file in the RDFN.

2.2 CHARACTERIZATION OF TEST SITES

Every year, the plants are characterized based on the type of agricultural crop, growth stage, plant stand and presence of pests and/or diseases. The field data is on file in the 2021 RDFN (Stantec, 2021a). Sediment sampling for fertility and characterization (concentrations of nutrients, organic matter (OM), pH, cation exchange capacity (CEC) and texture) is completed on a three-year cycle and was last completed in the 2020 Field Year. Soil characterization and fertility sampling (concentrations of nutrients, OM, pH, CEC, and texture) occurs on a six-year cycle and was last completed in the 2017 Field Year. However, given that Site S8 was installed in the 2021 Field Year, fertility and characterization samples of soil and sediment were collected from this site during the field year. The characterization of sediment and soil is further discussed in **Appendix B**.

All the test Sites, except three (N5, E2 and W2), were located in areas free of known anomalies that could influence the results (e.g., dusty, gravel roads or other potential emission sources). Site W2 and the drainage ditch for Site E2 were located relatively close to gravel roads. Site N5 was located at the northern boundary of the facility and adjacent to a paved road (Petrolia Line) with constant truck and local traffic. Other potential sources of emissions (e.g., chemical plants, refineries) exist approximately nine kilometres west and southwest of the Lambton Facility. Emissions from these sources may have affected the results obtained from Sites S4 and W4 in the Biomonitoring Program due to their greater distance from the Lambton Facility.

Given the distance of Sites W4, S4 and E2 from the Lambton Facility, (approximately 1.4 km, 2.4 km, and 1.75 km, respectively), it is likely that data collected from these Sites are more influenced by activities unrelated to the Lambton Facility rather than activities related to the Lambton facility.

2.3 COLLECTION OF SAMPLES FOR CHEMICAL ANALYSES

Samples of soil, drainage ditch sediment, natural grasses and agricultural crop were collected as per the methods outlined in the Revised Biomonitoring Sampling Program (Stantec, 2018). Soil and natural grasses samples were collected from 12 Sites in 2021. Agricultural crops were sampled at 10 of the 12 Sites[10]. Samples of drainage ditch sediment were collected from test Sites where drainage ditches were present (i.e., N2, N5, S4, S8 and E2).

Since the samples were analyzed to determine the concentration of organic chemicals, sampling equipment was cleaned according to a strict regimen designed to prevent sample contamination. Documentation of the chain of custody of the samples was maintained.

A photo log is provided in **Appendix D**.

[10] The two remaining Sites (i.e., S8, N5) are not managed under a crop rotation.

2.4 ANALYTICAL PROCEDURES

The samples for chemical analysis from the 2021 Field Year were submitted to ALS Laboratories for the list of Group 1, 2 and 3 analytes identified in **Table 1**.

Analysis of Group 3 analytes such as PCB, PCP and OCP occur on a three-year cycle, as described in **Section 1.2.4**. The selection of sites for the analysis of PCB, PCP and OCP in the 2021 Field Year was completed for one sample from the Site that historically had the highest concentrations (i.e., the worst-case scenario) and one sample from a randomly selected control site.

In the 2020 Field Year, there were no organic exceedances observed in any media, with the exception of PCDD/DF concentrations exceeding in soil at three sites – E1, N5 and W4. Site N5 had the highest PCDD/DF toxic equivalency (TEQ) in soil in 2020 Field Year; therefore, Site N5 was selected as the worst-case site to be analyzed for PCB, PCP and OCP in available media at the site for the 2021 Field Year. Since N5 is an on-facility site, the available media included soil, sediment, and natural grasses (no crops). To select the worst cast site for crops (field corn, winter wheat, soybean, and sugar beet), Site E1 was observed to have the second highest PCDD/DF TEQ concentrations in soil during the 2020 Field Year. Thus, Site E1 was selected as the worst-case site to be analyzed for PCB, PCP and OCP in field corn for the 2021 Field Year. The third highest concentration of PCDD/DF TEQ in soil was observed at Site W4 in the 2020 Field Year; therefore, this site was selected as the worst-case site to be analyzed for PCB, PCP and OCP in winter wheat for the 2021 Field Year. Soybeans at Site N4 and sugar beets at Site E2 were submitted for analysis of PCB, PCP and OCP.

As mentioned above, a control site for each media was randomly selected during the 2021 Field Year. The randomly selected control sites were chosen to correspond to the parent samples of the field duplicates, where the field duplicates were selected using a random site generator spreadsheet. These sites included Site S4 for winter wheat and sediment, Site E7 for field corn, and Site W2 for soil, natural grasses and soybean.

The metals analysis for soil, sediment and unwashed tissue were conducted by the ALS Vancouver laboratory. Chloride in unwashed tissue was analyzed by ALS Edmonton, whereas fluoride in unwashed tissue was analyzed by ALS Burlington. In order to meet DLs required for the biomonitoring program, the silicon analyses in vegetation and in soil/sediment were conducted by the ALS Lulea, Sweden laboratory.

Analysis for cyanide, added on a trial basis in the 2021 Field Year, for soil and sediment samples was conducted by ALS Waterloo. Cyanide analysis was not completed in unwashed tissue as ALS was not able to conduct this analysis. Given that the addition of cyanide on a trial basis was to evaluate if soil concentrations were above background, the lack of vegetation analysis was not considered limiting for the trial.

The newly added antimony analysis on a trial basis in soil, sediment and unwashed tissue was analyzed by ALS Vancouver. The organics analysis was conducted by ALS Burlington, with the exception of PCB analysis which was conducted by ALS Vancouver.

2.5 QUALITY ASSURANCE/QUALITY CONTROL

A quality assurance/quality control (QA/QC) program, based on principles embodied in the United States Environmental Protection Agency (US EPA) Good Laboratory Practices (GLP) standards (US EPA, 1989) and the Organization for Economic Cooperation and Development (OECD) principles of good laboratory practice (OECD, 1981), was used during the field phase of the Biomonitoring Program.

All quantification used internal standardization. Appropriate QA/QC measures were followed including the preparation and analysis of method blanks, analytical duplicates, matrix spikes and proper calibration of instruments according to protocols.

The analytical phase of the program relied on verification by the laboratory that government and industry standards were being met at the time of sample analysis. The ALS Laboratories in Vancouver, British Columbia, in Burlington and Waterloo, Ontario, and in Edmonton, Alberta that were responsible for the analytical phase of the Biomonitoring Program, are accredited by the Standards Council of Canada (SCC) in cooperation with the Canadian Association for Laboratory Accreditation Inc. (CALA). The ALS laboratory in Lulea, Sweden, which conducted the analysis of silicon in vegetation and soil/sediment, is accredited by the Swedish Board for Accreditation and Conformity Assessment (SWEDAC), which is based on the same standards on which the Canadian ALS is accredited (International Organization for Standardization (ISO) 17025). Accreditation by SWEDAC is accepted in Canada (ALS, 2009). An Analytical Data Summary Package is provided by ALS and provides detailed documentation of the actual procedures used during laboratory phase of the 2021 Biomonitoring Program and is on file with Stantec.

The RDFN and the Analytical Data Summary Package provide detailed documentation of the actual procedures used during the field and laboratory phases of the Biomonitoring Program.

The data quality objective established for this sampling program was to produce data that were representative, reproducible, complete, and suitable for comparison with the results of previous analyses within the Biomonitoring Program and the applicable standards.

To assess whether quality standards associated with the field program were achieved, a QA/QC program was included as a component of the sampling program. Seven blind field duplicates were collected and submitted for laboratory analysis to evaluate both laboratory precision and field sampling and handling procedures.

The formula used to determine the relative percent difference (RPD) from the mean between two concentrations, the original (a) and the duplicate (b), is provided below:

$$RPD\ (\%) = \ 100\ x\ \frac{(a-b)}{(a+b)/2}$$

The applicable limit of the RPD is 40% for soil and sediment samples and 60% for tissue samples. Field duplicates were considered acceptable if the RPD met the applicable limit set by the laboratory. The RPD could not be calculated if either of the concentrations were less than five times the method detection limit (MDL).

Two field blanks and two rinsate blanks were also submitted to the testing laboratory to evaluate if proper sample handling practices were followed in the field during the 2021 Field Year. Trip blanks were requested from ALS Laboratories but were not received for the biomonitoring program. Interpretation of analytical results for the blank samples is provided in **Section 3.2**.

2.6 STATISTICAL ANALYSIS AND INTERPRETATION OF THE DATA

The following describes the methods and conventions that were used during the statistical analysis and interpretation of the data obtained during the 2021 Field Year of the Biomonitoring Program.

The analytical data obtained during the 2021 Field Year are compared to applicable guidelines, where available. Soil analytical data are preferentially compared to the soil O. Reg. 153/04 Table 1 Site Condition Standards[11] (SCS) (MECP, 2011). Where soil SCS are unavailable, the soil analytical data are compared to the rural parkland Ontario Typical Range (OTR) (MECP, 2011) (MECP, 1993), or the soil Upper Limit of Normal (ULN) (MECP, 1989). Sediment analytical data are preferentially compared to the sediment O. Reg. 153/04 Table 1 SCS. Where sediment SCS are unavailable, the sediment analytical data are compared to the Provincial Sediment Quality Guidelines (PSQG) (MECP, 2008). Natural grasses analytical data are compared to the ULN (MECP, 1989). There are no guidelines available for agricultural crops (i.e., soybeans, field corn and winter wheat).

The statistical conventions used in the statistical analysis include:

- The use of actual values of the Reporting Detection Limits (RDLs, reported by the analytical laboratory) to represent the concentrations of those analytes that were not detected in the samples. Equipment used by the analytical laboratory produced measurements of analytes in environmental media at high levels of reliability within certain limits. The "low" limit is often referred to as the MDL which represents the concentration below which reliable measurement of an individual analyte cannot be made by laboratory equipment. MDLs may vary between media, analytes, years and, as with dioxins and furans, between samples. The RDL is the concentration at which individual analyses will consistently detect the analytes when present. The RDL must be equal or greater than the MDL. The actual concentrations below the MDL or RDL are not known. Therefore, the value of the RDL was arbitrarily used for statistical treatment of those samples where the concentration of the analyte was not detected greater than its RDL. This is viewed as a “worst case” estimate of the concentration of the analyte.

[11] O.Reg.153/04 Soil, Ground Water and Sediment Standards for use Under Part XV.1 of the *Environmental Protection Act.*

- Assessment of normality prior to statistical analysis. For the data up to and including 2021, the normality of analytical datasets was assessed on a Site-wide basis for each analyte-matrix pair by comparing histograms of both the log-transformed and untransformed dataset. In all cases, log-transformation improved the normality of the plotted data. Therefore, statistical analyses in the current report were performed assuming an underlying lognormal distribution. Reported results (e.g., regression values, upper limits, and lower limits) have been back transformed to the original scale for final reporting.
- Assessment of appropriate start date prior to statistical analysis. As noted in prior reports, RDLs have shifted since 1991 for certain analyte-matrix pairs due to changes in analytical methods. In most cases, RDLs have decreased because of increased sensitivity of the analytical method. However, in other cases, RDLs have increased, generally as a trade-off for greater sensitivity for other analytes. For analyte-matrix pairs that have large proportions of non-detect data, these changes in RDL can have major impacts on statistical results for analyses that consider all data collected throughout the Biomonitoring Program (e.g., linear regressions and calculations of upper and lower limits). Therefore, prior to analyses carried out in the present report, analytical data were reviewed for each analyte-matrix pair on a Site-wide basis to determine the appropriate start date for statistical analyses. This review is discussed in detail in Error! Reference source not found.. Statistical analyses (e.g., linear regression and calculation of upper and lower limits) in this report and future reports will rely on the analyte-matrix specific start dates indicated in Error! Reference source not found. unless future analysis indicates that a more recent start date is appropriate. Historical data will be retained for historical comparison purposes only.
- Missing data were accounted for within the statistical analysis and were left blank within each data set.
- In order to compare the toxicity of different samples with different congener profiles, toxic equivalency factors (TEFs) have been developed that standardize “dioxin-like” substances to a TEQ amount of 2,3,7,8-TCDD, the most toxic congener.
- Duplicate samples were relied on to assess analytical and/or sampling variability as discussed in Section 2.5. To avoid overrepresentation of individual samples, further statistical analysis (e.g., linear regression and calculations of upper and lower limits) excluded duplicate results and relied only on ‘parent’ sample results (when available).

2.6.1 Development and Interpretation of Control Charts

Industry has used control charts for many years as a useful tool that graphically monitors the performance of industrial processes. Control charts allow for identification of outlying values and temporal trends that may be developing in the data (King, 1982). Depending on the results, follow-up action may be warranted.

Two critical components of a control chart are the UL and LL. In industrial process control charts, these limits are chosen such that almost all data points will fall between them as long as the process remains in-control (i.e., observations that fall below the LL or above the UL indicate potential process errors). These control limits are frequently derived to capture the mean value for the in-control process plus or minus three standard deviations of the mean (an approximate probability of 0.997).

In the Biomonitoring Program, LLs and ULs have been calculated using a similar approach that relies on an overall annual mean[12] (or geometric mean, if data are determined to be log-distributed) of observed concentrations plus or minus three standard deviations of the overall annual mean (or geometric mean) calculated on a Site-wide or Site-specific basis. The resulting LLs and ULs describe a range of concentrations for each analyte in a given matrix that can be considered "typical" or "expected" (with an approximate probability of 0.997) for the monitored areas in the program (i.e., Site-wide and Site-specific). Individual values that fall outside of these control limits, and especially that are greater than an upper limit, are atypical for that Site-wide or Site-specific area and should be flagged for further consideration.

To generate upper and lower limits, the normality of each analyte-matrix pair was first assessed on a Site-wide basis. In general, the data collected in this program are largely lognormal and normality will be improved if data are log-transformed prior to analysis. As such, statistical analyses are typically performed on log-transformed data, which are back-transformed to regular units prior to report upper and lower limits. However, if analysis indicated that data were normally distributed, this process could also be carried out using un-transformed data.

The overall annual mean (or geometric mean, for lognormal data) for each analyte-matrix pair was calculated on a Site-wide and Site-specific basis by as a mean of annual means (or mean of annual geometric means for lognormal) to account for potential variability of sample numbers collected in individual years.

To calculate standard deviations for each analyte-matrix pair, the log-transformed (or normally distributed) data for each analyte in each medium on a Site-wide basis were then subjected to an analysis of variance (ANOVA) Type III model using Year and Site as independent variables with no interaction. Both Year and Site were considered categorical variables and Year was considered a random variable. The residual and year variance components were estimated from the ANOVA tables and used to compute the standard deviation for Site-specific and Site-wide concentrations of each analyte for each year.

For analyte-matrix pairs that were log-transformed, the mean and mean ±3 standard deviations, or upper and lower control limits (UL and LL), were computed on the log scale and then transformed back (by taking the antilog) before the control charts were prepared. For normally distributed data, the mean and mean ±3 standard deviations, or UL and LL could be computed directly.

[12] This overall mean was calculated as a mean of annual means (or mean of annual geometric means for samples with lognormal distributions) to account for potential variability of sample numbers collected in individual years.

The mean and standard deviation of the annual concentrations of the analytes per matrix per test Site or on a Site-wide basis can be used to define the "normal" or "expected" variability of the annual mean concentrations of the analytes. Provided there are no outlying values or temporal trends, the annual mean concentrations of the analytes can be expected to fall within plus or minus three standard deviations of the mean, with an approximate probability of 0.997. The Site-specific calculations incorporate data from each Site individually to determine the typical ranges expected a specific Site, while the Site-wide calculations pool data from every Site together to calculate the typical range for all data. The change in number of Sites per year was accounted for in the computation of the standard deviation of the yearly means. Data that has a high degree of variability will result in a large standard deviation, causing the ±3 standard deviations, or control limits, to be wide.

Following this approach, LLs and ULs were initially calculated in 1997 using data from the first six years of the program (1991-1996). Since then, these limits have been periodically updated to encompass new data, as it became available, on a three-year cycle. The most recent update of these values prior to the current report incorporated data available between 1991 and 2020 (i.e., the UL21 and LL21 values). Throughout this program, LLs and ULs were not developed for Sites and matrices where concentrations of an element were not detected greater than the RDL. Also, LLs and ULs were not developed when less than six detected data points, collected over at least a 6-year period, were available.

When evaluating the data collected in the 2021 Field Year, the UL21 and LL21 values were considered indicative of the ‘typical range’ of concentrations specific to the local environment (Site-wide and/or Site-specific). Therefore, samples collected during the 2021 Field Year with concentrations that were higher than the applicable UL21 concentration for that analyte in that matrix (Site-wide and/or Site-specific) were treated as ‘exceedances’ that warranted further consideration (**Section 3.3 and Section 3.4**). In addition, measured concentrations of these analyte-matrix pairs (Site-wide and/or Site-specific) were compared with relevant guidelines when available. These guidelines include the rural parkland Table 1 SCS, OTR_{98}, ULN, and the PSQG.

Within this biomonitoring program, LLs and ULs had not previously been developed for organic analytes due to a high proportion of non-detect data. However, detection limits for most organic analytes decreased in 2013 due to updates to the analytical methods related to the change in analytical laboratory from ALS Edmonton to ALS Burlington. As such the proportion of detected samples for these analytes increased considerably between 2013 and 2020 compared to those collected prior to 2013. Given the increased proportion of detected samples, it was possible to calculate UL21 and LL21 values for some of these analytes.

It is noted that due to a change in testing facilities from ALS Edmonton to ALS Vancouver in 2018, the sulfur RDL in soil and sediment increased from 200 mg/kg to 1000 mg/kg. The current sulfur RDL (1000 mg/kg) exceeds the Site-specific UL21 (944 mg/kg and 852 mg/kg) in soil at Sites S2 and S4. Where concentrations in soil at Sites S2 or S4 were below the RDL of 1000 mg/kg, they were not considered exceedances which warranted further consideration in this report.

2.6.2 Development and Interpretation of Trend Lines

Change in the environment over time may be influenced by many local, regional, and global factors. In order to understand how concentrations of inorganic analytes have changed in environmental media collected at the biomonitoring Sites, concentration trend lines are developed based on linear regression statistics. Trend lines on a Site-wide and Site-specific basis are updated on a three-year cycle for inorganics and a six-year cycle for organics.

Prior to completing regression analyses, data were screened to identify only datasets with at least six samples (n≥6) collected after the start date specified in Error! Reference source not found. for which new samples have been collected since the previous trend analysis. In addition, only datasets for which at least 50% of samples had measured concentrations greater than the RDL after the start date specified in Error! Reference source not found. were considered appropriate for regression analysis. The screening based on proportion of detected samples was introduced in the 2018 field-year report in order to minimize the generation of spurious or uncertain regressions that are highly influenced by non-detect samples that have been assigned the value of the full reported DL. Screening for number of samples and proportion of detected samples was completed on a Site-wide or Site-specific basis, depending on the linear regressions being updated (i.e., Site-wide if completing Site-wide regressions or Site-specific if completing Site-specific regressions). Only samples collected after the appropriate analyte-matrix specific start date described in Error! Reference source not found. were included in determining suitability for regression analysis.

For each dataset identified as suitable for linear regression, a regression analysis was performed with year of sample collection as the independent variable and either concentration or log-transformed concentration as the dependent variable. In most cases, the data collected in this program have been shown to be lognormal, therefore linear regressions were completed using log-transformed concentrations. However, if data were observed to have a normal distribution, regression could be completed using un-transformed concentrations. Linear regressions were considered to be statistically significant when the regression p-value was less than 0.003 ($p<0.003$).

3.0 RESULTS AND DISCUSSION

3.1 FACTORS AFFECTING THE RESULTS

Environmental factors can affect the movement and fate of chemicals in the environment. Factors potentially affecting the results of the Biomonitoring program include:

- Soil and sediment characteristics (e.g., CEC, OM, clay content and pH):
  - These factors can impact the movement and fate of chemicals in the local environment. Further discussion of these characteristics is provided in Appendix B.
- Continued use of the Ontario ULN and OTR, which may not be specific or relevant to the Site:
  - The ULN represent findings from the 1980s, which may not adequately represent current environmental conditions.
  - The rural parkland OTR98 values represent samples collected across the province. However, the land use surrounding the Lambton Facility could be better characterized by “rural agricultural” land use, thus the rural parkland OTR98 values are not necessarily specific to the conditions of the Lambton Facility.

Another factor that can affect the results of the Biomonitoring Program is climate. Plant growth and environmental conditions are influenced significantly by precipitation, temperature, and wind. Climate in the Sarnia-Lambton region is interpolated from data obtained at the Sarnia Climate weather station at the Sarnia Chris Hadfield Airport (Environment Canada, 2022a), which is approximately 15 km north of the Lambton Facility.

The Sarnia Climate weather information may provide a general indication of weather conditions during the 2021 growing season relative to the Canadian Climate Normals and Averages (1981-2010) for the region (Environment Canada, 2022b).

The 2021 growing season (April to October) experienced slightly greater precipitation (592 mm) than the 30-year climate normal (572 mm). However, the distribution of precipitation over the growing season was uneven, where the months of April and May had approximately half the typical amount of precipitation, and the months of September and October had more precipitation than normal. During the months of June, September, and October, Sarnia received approximately 32.5 mm, 39.7 mm, and 56.8 mm more precipitation, respectively, than the 30-year climate normals (**Figure 3, Appendix A**). In the months of April, May, July, and August, Sarnia received 35 mm, 40.5 mm, 18.7 mm, 15.4 mm lesser precipitation, respectively, than the 30-year climate normals (**Figure 3, Appendix A**). The mean monthly temperatures over the growing season of April to October (16.7˚C) were similar to the 30-year mean for that time period (15.1˚C). Although the temperature was similar to normal, uneven distribution of precipitation during the growing season (drier spring and wetter fall months) may have provided challenging climate conditions for optimal plant growth.

3.2 QUALITY ASSURANCE/QUALITY CONTROL

Seven blind field duplicates were analyzed for inorganic and organic analytes. For inorganic analytes, the RPD of analytes in soil, natural grasses and winter wheat exceeded the acceptable ranges, whereas the RPD of analytes in sediment, soybean, sugar beet and field corn were below the acceptable ranges outlined in **Section 2.5**. In soil, the RPD of Group 1 analyte titanium in the soil sample collected at W2 exceeded the acceptable limit of 40%. In plant tissue samples, the RPD of Group 1 analytes – barium in natural grasses at W2 and silicon in winter wheat at S4, exceeded the acceptable limit for tissue at 60%.

For organic analytes, the RPD of analytes in soil, natural grasses, soybean, field corn and winter wheat exceeded the acceptable ranges, whereas the RPD of analytes in sediment were below the acceptable range. In soil at Site W2, the RPDs of several PCDD/DF parameters (total tetrachlorodibenzofuran, total pentachlorodibenzo-p-dioxin, total HpCDF # Homologues, total HxCDF # Homologues, total TCDD # Homologues and lower bound PCDD/F TEQ) exceeded the acceptable limit for soil. The RPD of total heptachlorodibenzo-p-dioxin, total HpCDD # Homologues, total HpCDF # Homologues, total HcCDF # Homologues, total PeCDD # Homologues, total PeCDF # Homologues, total TCDD # Homologues, total TCDF # Homologues, lower bound PCDD/F TEQ and upper bound PCDD/F TEQ in natural grasses samples collected at Site W2, exceeded the acceptable limit for natural grasses. Similarly, the RPDs of lower bound PCDD/F TEQ in sugar beet samples collected at Site E2, and the mid-point PCDD/F TEQ and upper bound PCDD/F TEQ in soybean samples collected at Site W2 exceeded the acceptable limit for crops. Where the RPDs exceeded the acceptable range, the results should be viewed with discretion and considered estimates. Although these results represented decreased precision, the results did not affect the overall interpretation of sample quality. The RPDs for the field duplicates are provided in **Tables C-1a** through **C-1d** and **Table C-2a** through **C-2d**.

The percent recovery for the laboratory duplicates, laboratory control samples, laboratory control sample duplicates, matrix spikes, matrix spike duplicates, method blanks, certified reference material, internal reference material and standard reference material were within the recovery range acceptable to the analytical laboratory for internal quality control requirements or the overall quality control met acceptability criteria. Where applicable, qualifiers were added to the data and are presented in the laboratory certificates provided in **Appendix H**.

Two field blanks (laboratory supplied distilled water) were collected in laboratory supplied containers to evaluate if sample handling practices would result in an artificial increase of the analytical results. In addition, in the 2021 Field Year, two rinsate samples from every store-bought bottle of distilled water used for decontamination of field equipment, was collected upon opening during two separate sampling events (September and October). The purpose of the rinsate samples is to verify that store bought distilled water used for decontaminating field equipment did not introduce detectable concentrations of confounding inorganics. The two field blanks and the two rinsate blanks (collected from newly opened bottles) were collected at Sites E1 and N4. Trip blanks (laboratory supplied distilled water in sealed containers) were requested but were not supplied by the laboratory for the sampling events. The data quality objective for

field, rinsate and trip blanks are concentrations less than or near the RDL. The analytical data from field blanks and rinsate blanks are provided in **Table C-1e**.

Overall, the field blanks and rinsate blanks met the data quality objective (no detectable analytes). In field blanks collected at Sites E1 and N4, concentrations of calcium and aluminum were detected above their RDLs at Site E1, and concentrations of lead were detected above its RDL at Site N4. In rinsate blanks, concentrations of calcium, chromium, magnesium, nickel, and aluminum were detected above their respective RDLs at Site E1, and concentrations of calcium, aluminum, copper, and lead were detected above their respective RDLs at Site N4. Given that most analytes were below the RDLs in the field blanks and rinsate samples, the equipment rinse is not expected to have meaningfully influenced the analytical results.

3.3 INORGANIC ANALYTES

The analytical results for the 2021 inorganic parameters have been summarized according to their respective environmental media and compared to applicable guidelines and are provided in **Tables C-1a, C-1b, C-1c** and **C-1d** of **Appendix C**.

3.3.1 Annual Findings

In 2021, the concentrations of 18 analytes [14 Group 1 analytes (B, Ca, Cl, Co, Fe, Mg, Mn, Mo, P, Si, Na, Sr, S, Ti) and 4 Group 2 analytes (Al, As, Pb, Hg)] exceeded their respective Site-specific UL21 within various environmental media (**Table C-3** and **Table C-4** of **Appendix C**). The concentrations of aluminum and iron exceeded their Site-wide (analyte by media) UL21 (**Table C-5** of **Appendix C**).

3.3.2 Group 1 Analytes

The Group 1 analytes exceeding the UL21 are discussed below.

3.3.2.1 Boron

The boron concentration (40.3 mg/kg) exceeded the Site-specific UL21 (30.3 mg/kg) in soybeans at Site N4. There are no guidelines available for comparison for agricultural crops. An investigation in the 2010 Field Year Annual Landfill Report reported a threshold injury level (300 mg/kg) where no visible foliar injury could be induced. Therefore, the concentration of boron at Site N4 in the 2021 Field Year was less than the threshold injury level.

On a Site-wide basis, boron concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.2 Calcium

The calcium concentrations (9260 mg/kg and 12600 mg/kg) exceeded the Site-specific UL21 (8920 mg/kg and 6510 mg/kg) in soil at Sites S2 and S4. The concentrations of calcium in soil at both Sites were less than the MOE's OTR_{98} guideline (54000 mg/kg).

The calcium concentration (34400 mg/kg) exceeded the Site-specific UL21 (19400 mg/kg) in natural grasses at Site E5. Additionally, the calcium concentrations (3340 mg/kg and 3120 mg/kg) exceeded the Site-specific UL21 (2870 mg/kg) in soybeans at Site W2. There are no guidelines available for agricultural crops. The concentrations of calcium in natural grasses and soybeans at the Sites were below the Site-specific UL18 values in 2018, 2019 and 2020. This suggests that the calcium exceedances in natural grasses and soybeans are not recurring exceedances at Sites E5 and W2.

On a Site-wide basis, calcium concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.3 Chloride

The chloride concentrations (20.3 mg/kg and 10.7 mg/kg) exceeded the Site-specific UL21 (16.8 mg/kg and 9.44 mg/kg) in soil at Sites S4 and W4. However, the chloride concentrations were below the OTR_{98} (35 mg/kg) in soil at the two Sites. The concentration of chloride in soil at Site S4 was below the UL18 in 2019 and 2020. The concentrations of chloride in soil at Site W4 were analyzed as non-detects in 2019 and 2020 (<5.0 mg/kg), where the DL was greater than the site-specific UL18 (4.6 mg/kg). Thus, chloride concentrations in soil at Sites S4 and W4 have historically been either below the Site-specific UL18 and OTR_{98} or were analyzed as non-detects. This suggests that chloride concentrations in soil are not considered a concern at the two Sites.

On a Site-wide basis, chloride concentrations were below the Site-wide UL21 in soil.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.4 Cobalt

The cobalt concentrations (0.668 mg/kg, 0.363 mg/kg, 0.611 mg/kg) exceeded the Site-specific UL21 (0.417 mg/kg, 0.351 mg/kg, 0.315 mg/kg) in natural grasses at Sites E5, S2 and S4. The concentrations were below the MOE's ULN for natural grasses (2 mg/kg), and were below the Site-specific UL18 in 2018, 2019 and 2020. This suggests that the cobalt exceedances at the three Sites are not recurring exceedances.

On a Site-wide basis, cobalt concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.5 Iron

The iron concentrations (1200 mg/kg, 691 mg/kg, 1310 mg/kg) exceeded the Site-specific UL21 (387 mg/kg, 356 mg/kg, 268 mg/kg) in natural grasses at Sites E5, S2 and S4. The concentrations also exceeded the MOE's ULN for natural grasses (500 mg/kg). However, the iron concentrations in natural grasses at the three Sites were below the Site-specific UL18 and below the ULN in 2018, 2019 and 2020. This suggests that the iron concentrations in natural grasses at Sites E5, S2 and S4 are not recurring exceedances.

On a Site-wide basis, iron concentrations (495 mg/kg) exceeded Site-wide UL21 (302 mg/kg) but were below the ULN (500 mg/kg) for natural grasses. The iron concentrations in natural grasses did not exceed the Site-wide UL18 and the ULN in 2018, 2019 and 2020. This suggests that the iron concentrations in natural grasses across Sites are not recurring exceedances.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.6 Magnesium

The magnesium concentration (11300 mg/kg) exceeded the Site-specific UL21 (9910 mg/kg) in soil at Site S4. There is no Table 1 SCS available for comparison. The soil concentration at Site S4 was above the ULN (10000 mg/kg), and below the OTR_{98} (19000 mg/kg). While magnesium concentrations in soil at Site S4 exceeded the Site-specific UL18 in 2020, the concentrations were below the Site-specific UL18, OTR_{98} and ULN in 2018 and 2019. Site specific trends are discussed in **Section 3.3.7**.

The magnesium concentrations (5780 mg/kg and 4230 mg/kg) exceeded the Site-specific UL21 (4270 mg/kg and 3900 mg/kg) in natural grasses at Sites S2 and S4. There is no MOE ULN guideline available for natural grasses.

Magnesium in soil and natural grasses was investigated in the 2011 Annual Landfill Report where it was concluded it is an essential plant nutrient and its presence in plants and soil is not expected to result in detrimental effects on plant health (Clean Harbors, 2011).

On a side-wide basis, magnesium concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.7 Manganese

The manganese concentration (60.5 mg/kg) exceeded the Site specific UL21 (50.9 mg/kg) and the MOE's ULN (50 mg/kg) in natural grasses at Site S4. An investigation into the manganese concentrations in natural grasses was conducted in the 2010 Annual Landfill Report and it was concluded that the injury threshold level in plants reported in scientific literature was 500 mg/kg dry weight (Clean Harbors, 2011). Thus, the manganese concentration in natural grasses at Site S4 was less than the injury threshold level in plants in 2021.

On a Site-wide basis, manganese concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.8 Molybdenum

The molybdenum concentration (4.19 mg/kg) exceeded the Site-specific UL21 (3.61 mg/kg) in sediment at Site N2. There are no Ontario guidelines available for sediment. While molybdenum concentrations in sediment at Site N2 were above the Site-specific UL18 in 2020, the concentrations were below the Site-specific UL18 in 2018 and 2019. Molybdenum in sediment at Site N2 is further discussed in **Section 3.5.3.1**.

The molybdenum concentration (11.7 mg/kg) exceeded the Site-specific UL21 (10.5 mg/kg) and ULN (6 mg/kg) in natural grasses at Site E5. A literature search indicated that phytotoxicity symptoms could occur in plant tissue with molybdenum concentrations ranging from approximately 500 mg/kg to greater than 6500 mg/kg depending on the plant species and soil conditions (McGrath et al., 2010). According to Gupta et al. (2008), reduced crop yield occurred when molybdenum concentrations in tissue ranged between 100 mg/kg to 1000 mg/kg. For the purpose of this assessment, molybdenum concentration of 100 mg/kg in plant tissue is considered as the threshold limit for natural grasses. As the molybdenum concentration (11.7 mg/kg) in the natural grasses at Site E5 was below this threshold limit, and no phytotoxic symptoms were observed in grass tissue at Site E5, molybdenum is not considered a concern at the Site.

On a Site-wide basis, molybdenum concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time, with the exception of molybdenum concentrations in sediment at Site N2 which are discussed in **Section 3.5.3.1**.

3.3.2.9 Phosphorus

The phosphorus concentration (5950 mg/kg) exceeded the Site-specific UL21 (5540 mg/kg) in natural grasses at Site W4. There is no ULN guideline available for comparison for natural grasses. While phosphorus concentration in natural grasses at Site W4 exceeded the Site-specific UL18 in 2018, there were no Site-specific UL18 exceedances in 2019 and 2020. This suggests that the phosphorus concentration in natural grasses at Site W4 is not a recurring exceedance.

The phosphorus concentrations (869 mg/kg, 912 mg/kg, and 743 mg/kg) exceeded the Site-specific UL18 (866 mg/kg, 799 mg/kg, and 717 mg/kg) in soil at Sites E2, N4 and S2. The concentrations at Sites E2 and N4 also exceeded the OTR_{98} guideline (830 mg/kg) in soil. While the phosphorus concentration in soil at Site E2 was above the Site-specific UL18 in 2020, the concentrations were below the Site-specific UL18 in 2018 and 2019. Similarly, the phosphorus concentration in soil at Site S2 was above the Site-specific UL18 and OTR_{98} guideline in 2018, the concentrations were below the Site-specific UL18 and OTR_{98} in 2019 and 2020. There were no phosphorus concentrations in soil at Site N4 which exceeded the Site-specific UL18 in 2018, 2019 and 2020. This suggests that phosphorus concentrations in soil at Sites E2, N4 and S2 are not recurring exceedances.

On a Site-wide basis, phosphorus concentrations did not exceed the Site-wide UL21 in the sampled media.

As phosphorus is an essential nutrient for plant growth, monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.10 Silicon

The silicon concentrations (373000 mg/kg, 370000 mg/kg, 335000 mg/kg, and 312000 mg/kg) exceeded the Site-specific UL21 (369000 mg/kg, 331000 mg/kg, 304000 mg/kg, 310000 mg/kg) in soil at Sites E5, N4, N5 and S4. In percentages, silicon concentrations at the four Sites exceeded their respective Site-specific UL21 by 1%, 12%, 10% and 1%, respectively. There is no soil SCS, OTR_{98} or ULN guideline available for comparison. The silicon concentrations in soil at Sites E5, N5 and S4 were below the Site-specific UL18 in 2018, 2019 and 2020. This suggests that silicon exceedances in soil at the three sites are not recurring exceedances. While silicon concentrations in soil at Site N4 exceeded the Site-specific UL18 in 2020, the concentration did not exceed the Site-specific UL18 in 2018 and 2019. Monitoring should continue at Site N4, but no additional investigation is required at this time.

The silicon concentrations (264000 mg/kg and 268000 mg/kg) exceeded the Site-specific UL21 (215000 mg/kg and 250000 mg/kg) in sediment at Sites N5 and S4. There are no guidelines available for comparison. The concentrations of silicon in sediment at the two sites were below the Site-specific UL18 in 2018, 2019 and 2020. This suggests that silicon concentrations in sediment at Sites N5 and S4 are not recurring exceedances. On a Site-wide basis, silicon concentrations did not exceed the UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.11 Sodium

The sodium concentration (80 mg/kg) exceeded the Site-specific UL21 (64.3 mg/kg) in natural grasses at Site E2. There is no available guideline for comparison. The concentrations were below the Site-specific UL18 in 2018, 2019 and 2020. This suggests that the sodium concentration in natural grasses is not considered a concern at Site E2.

On a site-side basis, sodium concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.12 Strontium

The strontium concentration (38 mg/kg) exceeded the Site-specific UL21 (31.7 mg/kg) in soil at Site S4. The strontium concentration in soil also exceeded the Site-specific UL18 in 2019 and 2020 but was below the Site-specific UL18 in 2018. The strontium concentration in soil is also below the OTR_{98} guideline (63 mg/kg). Strontium in soil at Site S4 is further discussed in **Section 3.5.3.2**.

The strontium concentration (46.1 mg/kg) exceeded the Site-specific UL21 (27.9 mg/kg) in natural grasses at Site E5. There are no available guidelines for comparison. The strontium concentrations were below the Site-specific UL18 in 2018, 2019 and 2020. This suggests that the strontium concentration in natural grasses at Site E5 is not a recurring exceedance.

On a Site-wide basis, strontium concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time, with the exception of strontium concentrations in soil at Site S4 which are discussed in **Section 3.5.3.2**.

3.3.2.13 Sulfur

The sulfur concentration (15600 mg/kg) exceeded the Site-specific UL21 (4970 mg/kg) in natural grasses at Site E5. The sulfur concentration also exceeded the ULN (5000 mg/kg) for natural grasses and is greater than any historical concentration for sulfur at any site (next highest concentration is 8750 mg/kg in natural grasses at Site S5 in 2013). Sulfur is an essential macronutrient for plants, and it is naturally taken up by plants from the soil or the atmosphere (Linzon et al., 1979). Plants that are acutely exposed to excessive sulfur concentrations may show interveinal lesions and those that are chronically exposed to a threshold concentration of sulfur may have chlorotic injury to the leaf tissue (Linzon et al., 1979). The natural grasses collected at Site E5 did not show signs of stress and appeared to be healthy. Additionally, the sulfur concentrations in natural grasses at Site E5 were below the Site-specific UL18 in 2018, 2019 and 2020. This suggests that the sulfur concentration in natural grasses at Site E5 is not a recurring exceedance. Monitoring should continue, but further investigation is recommended at this time.

On a Site-wide basis, sulfur concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.2.14 Titanium

The titanium concentration (14.5 mg/kg) exceeded the Site-specific UL21 (9.14 mg/kg) in natural grasses at Site S4. There are no available guidelines for comparison. The titanium concentrations in natural grasses at Site S4 were below the Site-specific UL18 in 2018, 2019 and 2020. This suggests that the titanium concentration in natural grasses at Site S4 is not a recurring exceedance.

On a Site-wide basis, titanium concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.3 Group 2 Analytes

The Group 2 analytes exceeding the UL21 are discussed below.

3.3.3.1 Aluminum

The aluminum concentrations (1100 mg/kg, 646 mg/kg, 1170 mg/kg) exceeded the Site-specific UL21 (321 mg/kg, 504 mg/kg, and 212 mg/kg) in natural grasses at Sites E5, S2 and S4. There are no guidelines available for comparison. The aluminum concentrations in natural grasses at the three sites were below the Site-specific UL18 in 2018, 2019 and 2020. This suggests that the elevated concentrations of aluminum in natural grasses at Sites E5, S2 and S4 are not recurring exceedances.

However, 2021 aluminum concentrations in natural grasses at Sites E5 and S4 are approximately 3.5 times and 5.5 times greater than their respective UL21. Compared to previously measured concentrations, the aluminum concentration in natural grasses at Site S4 in 2021 (1170 mg/kg) is approximately double the previous maximum concentration of 640 mg/kg measured in 1996. At Site E5, the 2021 concentration of 1100 mg/kg in natural grasses is less than the previous maximum of 1730 mg/kg measured in 2014; however, the next highest concentration is 420 mg/kg measured in 1996. Corresponding soil samples measured at Sites E5 and S4 in 2021 are within the ranges measured historically. Monitoring should continue but no additional investigation is proposed at this time.

On a Site-wide basis, aluminum concentrations did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.3.2 Arsenic

The arsenic concentration (7.15 mg/kg) marginally exceeded the Site-specific UL21 (7.14 mg/kg) in sediment at Site N2. The concentration also exceeded MOE Table 1 SCS (6 mg/kg) and PSQG (6 mg/kg) for sediment. While arsenic concentrations in sediment also exceeded the Site-specific UL18 and MOE Table 1 SCS at Site N2 in 2020, the concentrations were below the guidelines in 2018 and 2019. The arsenic concentration, in percentage, at the Site N2 exceeded the Site-specific UL21 by 1%. The current exceedance is marginal and does not suggest concern at the Site.

On a Site-wide basis, arsenic concentration did not exceed the Site-wide UL21 in the media sampled.

Monitoring should continue but no additional investigation is proposed at this time.

3.3.3.3 Lead

The lead concentrations (1.07 mg/kg and 0.731 mg/kg) exceeded the Site-specific UL21 (0.921 mg/kg and 0.416 mg/kg) in natural grasses at Sites E5 and S4. However, the concentrations were below the ULN (20 mg/kg). The lead concentrations in natural grasses were also below the Site-specific UL18 at Site S4 in 2018, 2019 and 2020, whereas lead concentration in natural grasses exceeded the Site-specific UL18 once at Site E5 in 2019. This suggests that the lead concentrations in natural grasses at the two Sites are not recurring exceedances.

On a Site-wide basis, lead concentrations were below the Site-wide UL21 in the media sampled.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.3.4 Mercury

The mercury concentrations (0.0903 mg/kg) exceeded the Site-specific UL21 (0.0868 mg/kg) in soil at Site N5. However, the concentrations were below MOE Table 1 SCS (0.16 mg/kg), and only marginally exceeded the UL21. Additionally, while mercury concentrations in soil at Site N5 exceeded the Site-specific UL18 in 2020, the concentrations were below the Site-specific UL18 in 2018 and 2019.

On a Site-wide basis, mercury concentrations were below the Site-wide UL21 in the sampled media.

Monitoring should continue, but no additional investigation is proposed at this time.

3.3.4 Inorganic Analytes at Sites E7 and S8

Sites E7 located off-facility and Site S8 located onsite are Sites that were added to the Biomonitoring Program in the 2019 and 2021 Field Years, respectively. Since these are relatively new sites, upper limit values have not been calculated as the calculation requires at least six years of analytical data. Thus, the laboratory analytical results for analytes in soil, sediment (Site E7 excepted), natural grasses and agricultural crop (Site S8 excepted) samples collected at the two sites were compared against applicable guidelines (where available), as provided in **Tables C-1a, C-1b, C-1c** and **C-1d** of **Appendix C**. While field corn has no applicable guidelines, inorganic analytes in soil, sediment, and natural grasses were generally below theirs, with the following exceptions:

Group 1

- Site E7:
  - Manganese (90.7 mg/kg) in natural grasses exceeded the MOE ULN guidelines (50 mg/kg).
  - Iron (1670 mg/kg) in natural grasses exceeded the MOE ULN guidelines (500 mg/kg).
- Site S8:
  - Molybdenum (2.42 mg/kg) in soil exceeded MOE Table 1 SCS (2 mg/kg).
  - Nickel (26.9 mg/kg) in sediment exceeded MOE Table 1 SCS (16 mg/kg).
  - Manganese (72.1 mg/kg) in natural grasses exceeded the MOE ULN guidelines (50 mg/kg).
  - Molybdenum (9.03 mg/kg) in natural grasses exceeded the MOE ULN guidelines (6 mg/kg)

Group 2

- Site S8:
  - Arsenic (6.12 mg/kg) in sediment exceeded MOE Table 1 SCS (6 mg/kg).
  - Copper (19.6 mg/kg) in sediment exceeded the MOE Table 1 SCS (16 mg/kg).

Monitoring should continue at Sites E7 and S8, but no additional investigation is proposed at this time.

3.3.5 Fluoride

Fluoride analysis was added to the Biomonitoring Program in the 2018 Field Year and included in the 2019, 2020 and 2021 Field Years. Fluoride was added to the program after the discontinuation of the silver maple leaf monitoring program by the MECP which included analysis of fluoride in silver maple leaves collected from trees in the vicinity of the Clean Harbors facility. Fluoride was analyzed as it is phytotoxic and can reduce growth in plants. In the 2017 maple leaf sampling program, the maximum measured fluoride concentration in unwashed and washed silver maple leaves from trees around the Clean Harbors facility was 4 mg/kg and 2.7 mg/kg, respectively. These maple leaf results from 2017 are the most recent maple leaf results reported by the MECP.

In the 2021 Field Year, fluoride was measured in soil, natural grasses, sediment, and agricultural crops. A UL21 is not available for fluoride since it requires six years of data to calculate an upper limit. Fluoride concentrations were compared to available criteria which include an OTR_{98} for soil and a ULN for natural grasses.

Prior to the submission of samples to the testing laboratory for the 2019 and 2020 and 2021 Field Years, Stantec had requested the laboratory to lower the RDLs for fluoride below its applicable guidelines for vegetation. In 2019 and 2020, ALS Laboratories reported a RDL of 40 mg/kg for fluoride in vegetation (natural grasses and agricultural crops) using methodology SM 4500-F-C Modified. In 2021, ALS Laboratories changed their methodology to a modification of Method E3053 to match the MECP standard operating procedure for fluoride analysis in vegetation (E3053 – the Determination of Fluoride in Vegetation by Ion Selective Electrode) used by the MECP in their maple leaf analysis. This methodology achieved an RDL of 8 mg/kg for fluoride in natural grasses and agricultural crops, which is lower than the ULN (12 mg/kg), however, greater than the measured fluoride concentration in silver maple leaves by the MECP in 2017.

In the 2021 Field Year, detected concentrations of fluoride (13 mg/kg) in natural grasses at Site W2 exceeded the ULN (12 mg/kg) and the measured concentrations in silver maple leaves (4 mg/kg for unwashed, and 2.7 mg/kg for washed leaves), whereas detected concentrations of fluoride (9.7 mg/kg and 9.6 mg/kg) in natural grasses at Sites N5 and W4 only exceeded the measured concentrations in maple leaves measured by the MECP.

The fluoride concentrations in agricultural crops (i.e., field corn, soybean, and sugar beet) were reported less than the RDL (8 mg/kg). There are no guidelines available for comparison for agricultural crops. Although the RDLs were greater than the fluoride concentrations measured in silver maple leaves by the MECP in 2017, fluoride concentrations in agricultural crops did not exceed the MOE ULN (12 mg/kg) applicable for natural grasses.

Fluoride was measured at detectable concentrations in soil at all sites but was less than the OTR_{98} (84 mg/kg). Fluoride was measured at detectable concentrations in sediment at all sites where sediment was sampled (i.e., Sites E2, N2, N5, S4 and S8) but no guideline is available for comparison.

Monitoring should continue, and no additional investigation is proposed at this time.

3.3.6 Addition of Antimony and Cyanide

Inorganic analytes such as antimony and cyanide were added to the biomonitoring program on a trial basis for three years beginning from the 2021 Field Year, in response to comments provided by Neegan Burnside Ltd., as discussed in Stantec's letter to Clean Harbors dated June 4, 2021 (Stantec, 2021b). The two analytes were added to understand if measured concentrations in soil would exceed MOE Table 1 SCS, as deposition modeling from the incinerator output completed in a human health risk assessment conducted in 2014 predicted concentrations of these analytes may be close to the MOE Table 1 SCS (Intrinsik, 2014). If soil concentrations of the two analytes exceed background concentrations during the three-year trial period, further investigations will be carried forward.

3.3.6.1 Antimony

Antimony was analyzed in soil, sediment, natural grasses, and agricultural crops at the 12 Sites. Antimony concentrations, ranging from 0.19 mg/kg (Site E5) to 0.41 mg/kg (Site S8), were below the MOE Table 1 SCS (1 mg/kg) in soil across all Sites. Concentrations of antimony were detected in sediment, natural grasses and agricultural crops; however, there are no available guidelines for comparison in these media.

Monitoring should continue for the remainder of the three-year trial period, but no additional investigation is proposed at this time.

3.3.6.2 Cyanide

Cyanide was analyzed in soil and sediment at the 12 Sites. ALS Laboratories was unable to analyze cyanide in vegetation at their Waterloo laboratory. As the purpose of the three-year trial is to confirm if measured soil concentrations are greater than background soil concentrations, this purpose can still be achieved without corresponding data from cyanide in vegetation, particularly given that there are no available standards for cyanide in vegetation.

Cyanide concentrations (0.142 mg/kg, 0.056 mg/kg, 0.125 mg/kg, 0.057 mg/kg, and 0.109 mg/kg) at Sites E1, E2, N2, N4 and W4 exceeded MOE Table 1 SCS (0.051 mg/kg) in soil. The concentrations of cyanide were measured as non-detects in sediment samples, with the exception of the parent sample collected at Site S4 where the cyanide concentration (0.068 mg/kg) was measured below the MOE Table 1 SCS (0.1 mg/kg). The field duplicate concentration at Site S4 was non-detect and below MOE Table 1 SCS.

Monitoring for cyanide should continue for the remainder of the three-year trial period.

3.3.7 Site-Specific Inorganic Trend Lines

Pre-screening based on the number of collected samples and proportion of detected samples (i.e., n≥6 and ≥50% detected samples based samples collected after the start date recommended in Error! Reference source not found.**,** at least one sample collected in 2019, 2020, or 2021) identified 1017 datasets that were suitable for regression analysis (**Table F-1, Appendix F**). As noted in **Section 2.6**, data up to and including 2021 have been shown to be lognormally distributed; therefore, linear regressions of these datasets were carried out using year of sample collection as the independent variable and log-transformed concentration as the dependent variable. Of the resulting 1017 linear regressions, 86 were found to be statistically significant ($p<0.003$) (**Table F-2, Appendix F**). These 86 statistically significant ($p<0.003$) linear regressions, representing 30 decreasing and 56 increasing trends, are presented in graphical form in **Appendix F (Section F.2)**. A visual review of the figures in **Appendix F (Section F.2)** indicated that the significant increasing trends reported for sulfur in soil at site N4 and sulfur in soil at site S4 were artefacts of the increased RDL for sulfur in soil and sediment from 200 mg/kg to 1000 mg/kg described in **Section 2.6.1**. As such, these two regressions will not be included in the discussion of significant increasing trend provided below. For comparison, 55 significant trends (17 decreasing and
38 increasing) were identified as meaningful in the 2018 Field-Year report and 99 trends (15 decreasing and 84 increasing) were identified as meaningful in the 2015 Field-Year report.

The 30 significantly decreasing trends occurred in natural grass (15), soil (12), and sediment (3) (**Table C-6, Appendix C**). The 54[13] increasing trends occurred primarily in soil (26) or sediment (18), with a small number of increasing trends also observed in in natural grass (5) and soybean (5) (**Table C-6, Appendix C**). In most cases, increasing trends observed in soil at a Site were not reflected in increasing trends in plant tissues at that Site (**Table C-7, Appendix C**). The only exceptions to this were observed at Site S4, where significant increases of calcium, magnesium, and phosphorus were observed in soil as well as soybeans (calcium, phosphorus) or natural grasses (magnesium) (**Table C-7, Appendix C**).

The majority of the increasing trends reported in this 2021 Field-Year report were also identified as increasing in the 2018, 2015, and/or 2012 Field-Year reports, indicating long-term stability of many of these trends (**Table C-6, Appendix C**). Specifically, of the 54 increasing trends shown in **Table C-6, Appendix C**, 41 were previously identified as increasing in the 2018, 2015, and/or 2012 Field-Year reports. This includes 23 trends that have been consistently identified as increasing in each Site-specific trend analysis since the 2015 Field-Year report (**Table C-6, Appendix C**). All except six of these consistently increasing trends occurred in sediment at Site N2 (8/23) or in soil at Site S4 (9/23); the remaining consistently increasing trends occurred in sediment at Site S4 (2/23), soybean at Site S4 (1/23), soil at Site N2 (1/23), sediment at Site E2 (1/23) and natural grass at Site E6 (1/23) (**Table C-6, Appendix C**).

[13] Excludes regressions for sulfur in soil at Sites N4 and S4, as these results were determined to be artefacts of a change in RDL for sulfur from 200 mg/kg to 1000 mg/kg and therefore are not likely to indicate a meaningful trend.

Increasing trends were most common at Sites S4 and N2 (20 and 13 increasing trends, respectively). (**Table C-7, Appendix C**). Site N2 is located approximately 700 m to the north of the Lambton Facility, while Site S4 is located approximately 2.4 km south of the Facility. Within the two Sites with the highest number of increasing trends in the 2021 Field Year, these increasing trends were found to occur most frequently in soil and sediment. For Site N2, the Group 2 analytes identified as significantly increasing in soil were aluminum and arsenic and the Group 2 analytes identified as significantly increasing in sediment were aluminum and vanadium. For Site S4, there were no Group 2 analytes identified as significantly increasing in soil; however, there were two Group 2 analytes (arsenic and vanadium) identified as significantly increasing in sediment. Based on the discussion of these analytes in **Section 3.3.3**, additional investigation is not recommended at this time.

The parameters with increasing trends were also evaluated with respect to the applicable guidelines. As shown in **Table C-7, Appendix C**, approximately 11% of the increasing trends (6/54) had measured 2021 Field Year concentrations greater than their applicable guidelines. One of the two sites with the highest number of upward trends (N2 and S4), also had a high number of exceedances of guidelines. At Site S4, three inorganic analytes (Group 1 analytes: calcium, magnesium, and strontium) exceeded their applicable guidelines in the sampled media.

3.4 ORGANIC ANALYTES

The analytical results for the 2021 Field Year organic parameters have been summarized based on environmental media and are found in **Tables C-2a, C-2b, C-2c** and **C-2d** of **Appendix C**.

3.4.1 Annual Findings

As discussed in **Section 2.6.1**, upper limits for some organic analytes are available for the first time in the history of the Biomonitoring Program. In 2021, there were no exceedances for organics when compared to the site-specific or site-wide UL21s. Reported detection limits greater than the UL21 were disregarded.

3.4.1.1 OCP

The concentrations of several OCP parameters were measured at concentrations greater than their respective RDLs in various media.

Of the OCP analytes that were detected, none exceeded the applicable guidelines for soil for analytes with available guidelines (i.e., aldrin, chlordane-alpha, DDD, DDE, DDT, dieldrin, endrin, heptachlor, heptachlor epoxide, lindane and methoxychlor) and for sediment for analytes with available guidelines (i.e., aldrin, DDD, DDE, DDT, dieldrin, endrin and heptachlor epoxide). There are no standards available for comparison of vegetation. Monitoring should continue, but no additional investigation is proposed at this time.

3.4.1.2 PCBs

The concentrations of PCBs were measured in natural grasses, soil, sediment, and agricultural crops greater than their respective RDLs.

The measured concentrations of PCBs in soil or sediment did not exceed the applicable guidelines. There are no standards available for comparison of vegetation.

Monitoring should continue, but no additional investigation is proposed at this time.

3.4.1.3 PCPs

The RDL for pentachlorophenol (PCP) varied from <0.6 ng/g to <2.3 ng/g in agricultural crops (**Table C-2b)**. None of the samples analyzed for PCPs had concentrations greater than the RDL in agricultural crops. There are no standards available for comparison of vegetation.

Monitoring should continue, but no additional investigation is proposed at this time.

3.4.1.4 PCDD/DF

The concentrations of polychlorodibenzo-p-dioxin/ polychlorodibenzo-furan (PCDD/DF) analytes were compared to their respective Table 1 SCS or rural parkland OTR_{98} (where Table 1 SCS were not available) for dioxins/furans (**Tables C-2a, C-2b, C-2c** and **C-2d** of **Appendix C**). There were no exceedances of the soil Table 1 SCS or OTR_{98}, with the exception of the concentration of total hexachlorodibenzo-p-dioxin (13.2 picograms [pg]/g), total heptachlorodibenzfuran (41.2 pg/g) and total heptacholorodibenzo-p-dioxin (81.3 pg/g) at Site N5 which exceeded their respective OTR_{98} guidelines (13pg/g, 32 pg/g, and 55 pg/g). However, the upper bound PCDD/DF TEQ (2.23 pg/g) at Site N5 was below the Ontario Table 1 SCS (7.0 pg/g). Additionally, the concentration of upper bound PCCD/DF TEQ levels measured at Site N5 was within the range of levels in Canada reported in scientific literature (TEQ 1.0 - 330 picogram (pg) /g, from Birmingham *et al.*, 1989).

The concentrations of various PCDD/DF analytes in natural grasses and agricultural crops were reported greater than their respective RDLs. Criteria for comparison of concentrations in natural grasses were not identified. The concentrations of octachlorodibenzodioxin (OCDD) (analyzed as octachlorodibenzo-p-dioxin and ranging from 0.140 pg/g to 2.38 pg/g) measured in field corn, soybeans and sugar beet were within the range of the typical levels for vegetables (Ontario tomatoes, potatoes) reported in scientific literature (ND to 3 pg/g (fresh weight)) (Birmingham *et al.*, 1989).

Monitoring should continue, but no additional investigation is proposed at this time.

3.4.2 Organic Analytes at Sites E7 and S8

Site E7 and Site S8 are new sites that were added to the Biomonitoring Program in the 2019 (Site E7) and 2021 (Site S8) Field Years. Since these are new sites, upper limit values have not been calculated. Thus, the laboratory analytical results for organic analytes in soil collected at the two sites were compared with applicable guidelines provided in **Table C-2b**, whereas laboratory analytical results for analytes in natural grasses, sediment and agricultural crops are presented in **Table C-2a, Table C-2c** and **Table C-2d** respectively of **Appendix C** without guidelines. The organic analytes in soil were reported below the applicable MECP, OTR and ULN guidelines as presented in **Table C-2b**.

Monitoring should continue, but no additional investigation is proposed at this time.

3.5 COMPARISON OF RESULTS

The soil, sediment, and vegetation concentrations of analytes (as described in **Sections 3.3 and 3.4**) around the Clean Harbors Facility were further evaluated based on the number of parameter exceedances of the UL21 and the site-specific upward trends occurring at Sites located upwind and downwind of the Clean Harbors Facility. The results of this study are provided in **Section 0**Error! Reference source not found..

To further understand if frequency of Group 2 exceedances at Sites is directly related to the proximity of Sites to the Clean Harbors Facility, another comparison was made for the number of Group 2 exceedances of the UL21 and site-specific upward trends occurring in various media at Sites within the Clean Harbors Facility (Site N5) and Sites outside the facility (Sites N2, N4, E1, E2, E5, S2, S4, W2 and W4). The results of this study are provided in **Section 3.5.2**.

Site E6 (on-facility) was excluded from the evaluation since it was destroyed. Site E7 (east of the Clean Harbors Facility) and Site S8 (on-facility) were excluded from the evaluation as they are relatively new sites and Site-specific UL21 values have not been established and/or trend analysis has not been conducted.

Comparison of analytical results of organic parameters (OCP, PCBs, PCPs, PCD/DF) in the environmental media across Sites was not made as there were no exceedances of the Site-specific UL21, and the detected concentrations were below applicable guidelines at all Sites, as discussed in **Section 3.4**.

3.5.1 Comparison of Results between Sites Upwind and Downwind

In 2015, the test Sites were evaluated based on a wind rose (**Figure 2 of Appendix A**) generated using meteorological data collected from the Lambton Facility from July 2014 to June 2015. The wind rose indicated that the dominant wind direction came from the south and southwest and blew to a lesser degree from the north and west. Sites N2, N4 and N5 (on-facility) located in the north and Sites E1, E2, and E5 and located in the east of the Clean Harbors were considered to be situated downwind to the north and east of the Lambton incinerator. Sites S2 and S4 located south of the Clean Harbors Facility were selected to cover potential deposition areas due to wind blowing to lesser degree from north to south. Sites W2 and W4 were situated at locations opposite the predominant wind direction and upwind of the Lambton incinerator. For comparison purposes, Sites S2 and S4 were coupled with Sites W2 and W4 as sites located upwind to the Clean Harbors Facility.

Group 2 parameters were considered for comparison as these parameters are known to have toxic effects on environmental receptors. Comparisons of frequency of exceedances of the UL21 and site-specific upward trends for Group 2 parameters based on upwind and downwind Sites are provided in Error! Reference source not found. **and Table 6**. For a list of parameters exceeding the UL21 in each matrix by site, and for the list of upward trends by site, refer to **Tables C-4 and C-7, respectively in Appendix C**.

While Group 2 parameters exceeded the Site-specific UL21 in different media at both upwind and downwind Sites, they were recorded as non-recurring exceedances, or were below threshold limits and provincial guidelines such that no further investigation is required, as discussed in **Section 3.3.2** and **Section 3.3.3**.

For the site-specific upward trends, the list of Group 2 parameters with upward trends (aluminum, arsenic and vanadium) in various media was similar between upwind and downwind Sites.

Table 5: Comparison of Group 2 Exceedances of a Site-Specific UL21 for Upwind and Downwind Sites

Sites	Group 2 Exceedances per Environmental Media				Total Group 1 and Group 2 Exceedances
	Soil	Sediment	Natural Grasses	Crops	
Upwind Sites (S2, S4, W2, W4)	-	-	S2: Aluminum S4: Aluminum, lead	-	25
Downwind Sites (N2, N4, N5, E1, E2, E5)	N5: Mercury	N2: Arsenic	E5: Aluminum, lead	-	19

Table 6: Comparison of Site-Specific Upward Trends for Group 2 Analytes for Upwind and Downwind Sites

Sites	Group 2 Exceedances per Environmental Media				Total Group 1 and Group 2 Upward Trends
	Soil	Sediment	Natural Grasses	Crops	
Upwind Sites (S2, S4, W2, W4)	S2: Aluminum S4: Aluminum W2: Aluminum, arsenic, vanadium	S4: Arsenic, vanadium	-	-	32
Downwind Sites (N2, N4, N5, E1, E2, E5)	N2: Aluminum, arsenic	N2: Arsenic, vanadium	-	-	19

3.5.2 Comparison of Results between Sites On-Facility and Off-Facility

Comparisons of frequency of Group 2 exceedances of the UL21 and site-specific upward trends based on Sites located on and outside the Clean Harbors Facility are provided in **Table 7** and **Table 8**. For a list of parameters exceeding the UL21 and the upward trends in each matrix by site, refer to **Tables C-4 and C-7, respectively, in Appendix C**.

Based on analytical results generated for various media sampled during the 2021 Field Year, parameters exceeding the Site-specific UL21 were mostly observed at Sites located outside the Clean Harbors Facility. Notably, specific Group 2 parameters exceeding the UL21 were different between on and off-facility sites.

Similarly, there were no upward trends for Group 2 parameters on a Facility site, and numerous increasing trends at off-Facility sites. These findings suggest that off-Facility sites may be influenced by activities unrelated to the Lambton Facility.

Table 7: Comparison of Group 2 Exceedances of the Site-Specific UL21 for On-Facility and Off-Facility Sites

Sites	Group 2 Exceedances of Total Exceedances in Environmental Media			Total Group 1 and Group 2 Exceedances
	Soil	Sediment	Natural Grasses	
On-Facility Site (N5)	N5: Mercury	-	-	3
Off-Facility Sites (N2, N4, E1, E2, E5, S2, S4, W2, W4)	-	N2: Arsenic	S2: Aluminum S4: Aluminum, lead E5: Aluminum, lead	40

Table 8: Comparison of Site-Specific Upward Trends for Group 2 Analytes for On-Facility and Off-Facility Sites

Sites	Group 2 Exceedances of Total Exceedances in Environmental Media			Total Group 1 and Group 2 Upward Trends
	Soil	Sediment	Natural Grasses	
On-Facility Site (N5)	-	-	-	0
Off-Facility Sites (N2, N4, E1, E2, E5, S2, S4, W2, W4)	N2: Aluminum, arsenic S2: Aluminum S4: Aluminum W2 Aluminum, arsenic, vanadium	N2: Aluminum, vanadium S4: Arsenic, Vanadium	-	52

3.5.3 Recurring Inorganic Findings

3.5.3.1 Molybdenum: Sediment at Site N2

An exceedance of the UL21 for molybdenum in sediment alongside an increasing trend measured at Site N2 during the 2021 Field Year. Although there are no Ontario or federal guidelines for molybdenum in sediment, there are working sediment quality guidelines (WSQG) from the British Columbia (BC) Ministry of Environment and Climate Change Strategy.

The lower working sediment WSQG for molybdenum of 25 ug/g is based on research from the Netherlands National Institute of Public Health and the Environment. The lower WSQG is a sediment concentration that is not associated with adverse biological effects. As the maximum measured concentration of molybdenum in sediment at N2 (4.19 µg/g in 2021) is less than the guideline, monitoring should continue but additional investigation is not required at this time.

3.5.3.2 Strontium: Soil at Site S4

Soil concentrations of strontium at Site S4 during the 2019, 2020 and 2021 Field Years have exceeded their respective UL and exhibited a consistent increasing trend since the 2015 Field-Year report. As discussed in **Section 3.3.7**, 20 of the 54 statistically significant increasing trends occurred at Site S4, where 10 increasing trends were identified in soil at Site S4. Site S4 is located to the south of the Lambton Facility; the dominant wind direction blows from the south toward the Lambton Facility. Based on the comparison of results between sites upwind and downwind, as well as on- and off-Facility, in **Section 3.5.1** and **Section 3.5.2**, the strontium increase is not expected to be caused by the Lambton Facility. Strontium in soil remains below the OTR_{98} guideline (63 mg/kg) and therefore strontium in soil at Site S4 is not a concern during the 2021 Field Year. Monitoring should continue but further investigation is not required at this time.

3.6 FOLLOW UP OF RECOMMENDATIONS FROM PREVIOUS BIOMONITORING REPORTS

Conclusions and recommendations presented previously in the 2020 Biomonitoring Program report which are to be address in the 2021 Field Year are listed in **Table 9** below.

Table 9: Status of Conclusions and Recommendations of the 2021 Field Year Biomonitoring Program

Conclusions and Recommendations	Discussion	Status
An additional sample in natural grasses at Site E6 was proposed based on recurring exceedances as noted in the 2020 Field Year.	Site E6 was found to be destroyed during the 2021 Field Year and no sampling was conducted at this site. A replacement site is proposed to be installed in the vicinity of the destroyed Site E6 in the 2022 Field Year.	Monitoring for lead in natural grasses at the replacement site will be conducted in the 2022 Field Year.

Conclusions and Recommendations	Discussion	Status
Monitoring of changes in the RDLs during the program should continue and impacts on the results should be reported where applicable.	The RDL for fluoride in vegetation was decreased in the 2021 Field Year. This lower RDL allows for meaningful comparison to the ULN. Fluoride is discussed in **Section 3.3.5**. The RDL for sulfur in soil and sediment increased starting in the 2018 Field Year. The impact of the increased RDL is considered in the interpretation of the UL21 as noted in Section 2.6.1, and in the interpretation of the site-specific trend lines discussed in **Sections 2.6.2 and 3.3.7**.	Monitoring of changes in the RDLs during the program should continue.
When assessing the results for the Biomonitoring Program the greatest weight should be given to comparisons within and between sites monitored in the program versus comparisons with the Table 1 SCS, Ontario ULN and rural parkland OTR_{98} which are representative of aging databases.	Comparisons within and between sites monitored in the program are discussed in **Section 3.0** along with comparisons to the Table 1 SCS, ULN and OTR_{98}. Where UL21s are not available comparison to available guidelines is conducted. Specifically, fluoride, cyanide and antimony do not have UL21s and are compared to available guidelines in **Section 3.3.5** and **Section 3.3.6**. Also, as Site E7 (2019) and Site (S8) were added to the Biomonitoring Program in recent years, site-specific UL21s were not available. Guideline exceedances for these sites are discussed in **Section 0** and **Section 3.4.2**.	Ongoing.

4.0 CONCLUSIONS

Overall, the majority of exceedances of the UL21 in the 2021 Field Year were identified for Group 1 inorganic analytes (i.e., boron, calcium, chloride, cobalt, iron, magnesium, manganese, molybdenum, phosphorus, silicon, sodium, strontium, sulfur, and titanium). Many of these Group 1 analytes are ubiquitous or are required nutrients in the environment and are not expected to have deleterious effects on plant, human and animal health due to chemical toxicity. Although these analytes may be present in the material processed at the Facility, they are given a lower weighting in the Biomonitoring Report. Monitoring of these analytes in the Biomonitoring Program should continue to satisfy the requirements of ECA No. A031806 and do not warrant additional investigation at this time.

Group 2 analytes (i.e., aluminum, arsenic, lead, and mercury) exceeded the Site-specific UL21 values. While continued monitoring of this analyte is important, additional investigation is not proposed at this time.

Fluoride analysis was added to the Biomonitoring Program in the 2018 Field Year and does not have calculated UL21. The fluoride concentrations measured in soil were less than the OTR_{98}. A sediment guideline was not available for comparison. The fluoride analytical method for vegetation samples was changed in 2021 to a similar method used by the MECP for fluoride in their historical maple leaf sampling program which results in an RDL lower than the ULN. The fluoride concentration in natural grasses at Site W2 was greater than the ULN. Monitoring should continue using the new analytical method in vegetation.

Cyanide and antimony were added to the Biomonitoring Program in the 2021 Field Year for a three-year trial period. Antimony concentrations were below the applicable guidelines, while cyanide concentrations in soil exceeded the Ontario Table 1 SCS background concentrations. Monitoring should continue for the remainder of the trial period to determine if those analytes should be added to the baseline Biomonitoring Program.

No UL21s were available for Site E7, and the newly added Site, S8. However, analytes were compared to applicable guidelines. During the 2021 Field Year, Site S8 had exceedances for molybdenum in soil and natural grasses, nickel in sediment, manganese in natural grasses, arsenic in sediment, and copper in sediment. Site E7 had exceedances of applicable guidelines for manganese and iron in natural grasses. Monitoring should continue at Sites E7 and S8, but no additional investigation is proposed at this time.

Overall, the Group 3 organic analytes were not detected at concentrations which exceeded the applicable guidelines (i.e., OCPs and PCBs) or the concentrations were less than the RDLs (i.e., PCPs) in each media sampled. The concentrations of PCDD/DF analytes did not exceed the applicable guideline, with the exception of select congeners in soil at Site N5 which were greater than the OTR_{98}. However, the lower and upper bound PCDD/DF TEQ was less than the Table 1 SCS at Site N5. There were no exceedances when compared to the UL21 site-specific and site-wide for organics. Reported detection limits greater than the UL21 were disregarded.

Conclusions
February 21, 2023

Site-specific inorganic trends were evaluated, and 86 statistically significant ($p<0.003$) linear regressions were identified. Of the 86 statistically significant ($p<0.003$) linear regressions, 30 showed decreasing trends and 56 showed increasing trends. Approximately 11% of the analytes with increasing trends had measured concentrations greater than their applicable guidelines.

In general, the results of the biomonitoring program based on field observations of agricultural crops, fertility and characteristization data, and/or measured analytical concentrations in sampled environmental media, do not indicate that upset conditions have occurred and that the biomonitoring results are comparable to previous years. Further, based on the findings of the report, there are several methods of data analysis and reporting that should continue or require change. These methods are outlined below:

- Monitoring of changes in the RDLs during the program should continue and impacts on the results should be reported where applicable.
- When assessing the results for the Biomonitoring Program the greatest weight should **continue** to be given to comparisons within and between Sites monitored in the program versus comparisons with the Table 1 SCS, Ontario ULN and rural parkland OTR98 which are representative of aging databases.
- Discussion of recurring findings should continue annually so that previous discussions are compiled and either confirmed or revised based on new results.

The concentrations of the identified chemicals were generally within the expected range in comparison with baseline levels, with exceptions/qualifications discussed herein. The range of results indicates that the Biomonitoring Program continues to effectively meet its specific objectives of monitoring environmental concentrations and identifying the trends in concentrations over time.

5.0 LIMITATIONS

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities, or claims, howsoever arising, from third party use of this report.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers, and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

Limitations

The conclusions are based on the Site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, Site conditions (e.g., utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire Site. The purpose of this report is to identify Site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the Site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report.

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All of which is respectfully submitted,

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APPENDICES

Appendix A FIGURES

\\ca0004-ppfss04\work_group\012211\active\122160252\drawing\MXD\2020_CH_Bio monitoringRpt\122160252_2020ch_bio_fig01_siteplan.mxd
Revised: 2022-05-11 By: ipodrug

N

PLANK ROAD

PETROLIA LINE

ROKEBY LINE

WAUBUNO ROAD

TELFER ROAD

BRIGDEN ROAD

N2
N4
E7
W4
N5
E2
E1
E6
W2
S8
S3
S7
E5
S1
S2
S4

0 450 900 m
1:20,000

May 2022
122160252

Stantec

Legend

- Existing Sampling Locations (Approximate)
- Existing Sampling Station to be Removed (Approximate)
- Watercourse
- Building
- Lambton Facility
- Waterbody
- Wooded Area

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2020.
3. Orthoimagery © Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, 2020. Imagery Date, 2018.

Client/Project

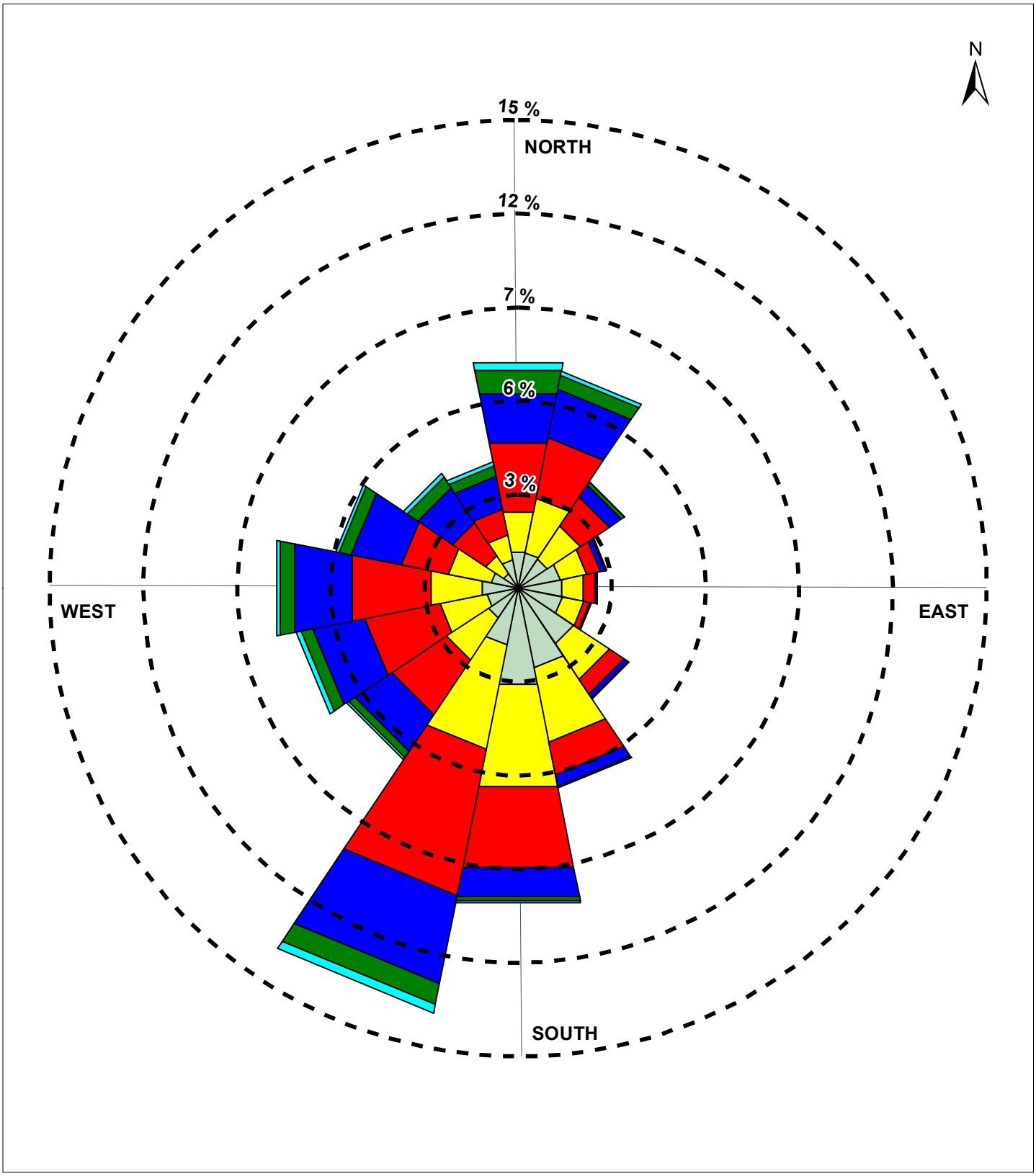
Clean Harbors Environmental Services Inc.
Biomonitoring Program
Lambton Facility

Figure No.

1

Title

Existing and **Former** Sampling Locations



\\cal1220-f02\work_group\01221\active\122160003\drawing\MXD\Internal\122160003_Fig0X_WindRose.mxd
Revised: 2015-12-03 By: svandamme

January 2019
122160003

Stantec

Notes
1. Note to scale.

Legend

Wind Speed (Knots)

- >= 22
- 17 - 21
- 11 - 17
- 7 - 11
- 4 -7
- 1 - 4

Calms: 3.06%

Client/Project

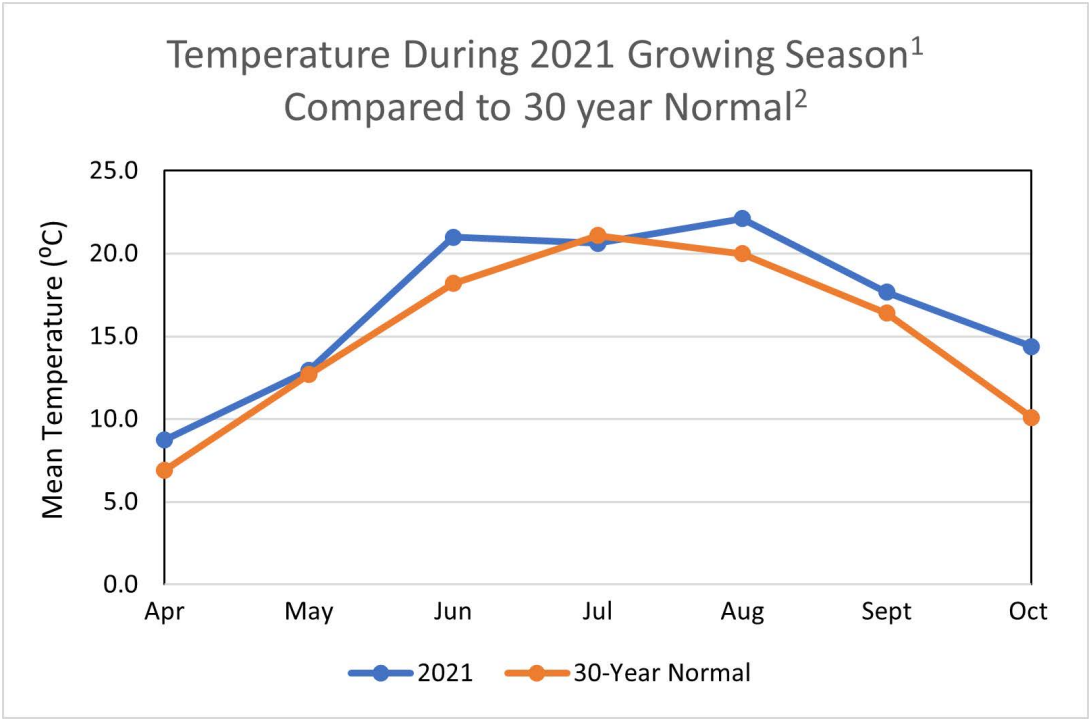
Clean Harbours Environmental Services Inc.
Biomonitoring Program
Lambton Facility

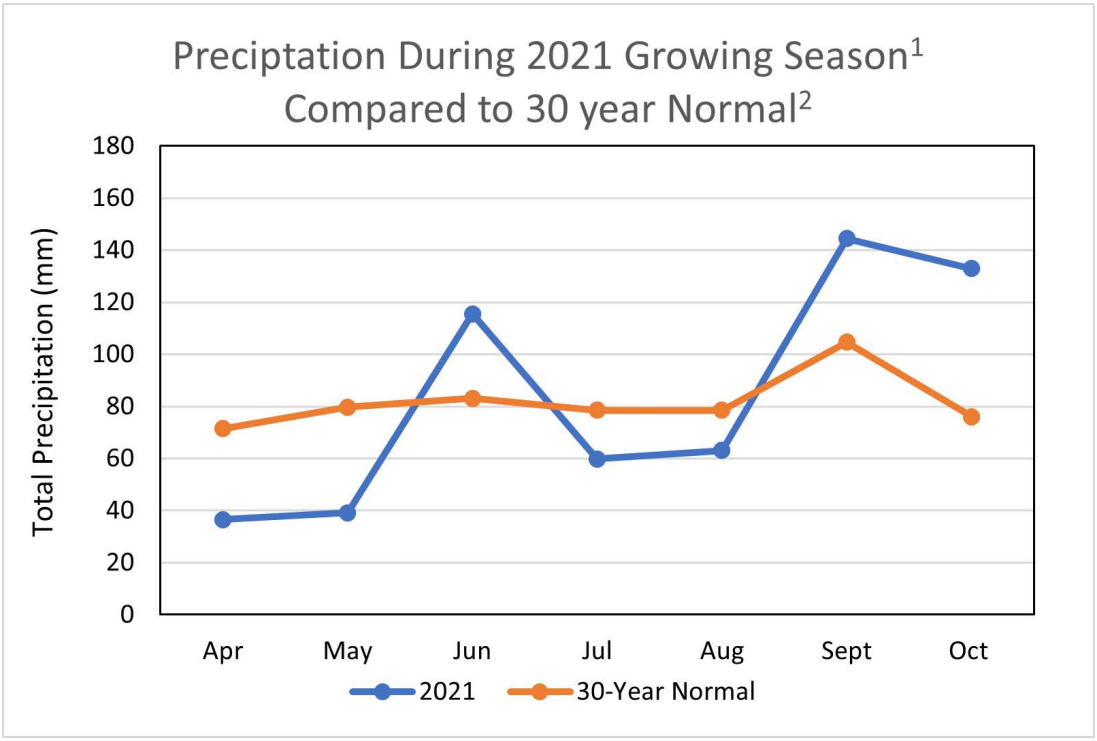
Figure No.

2

Title

Wind Speed Direction (blowing from), July 2014 to June 2015





Notes

[1] - Daily Data Report, Sarnia Climate, Ontario. Environment Canada, 2022a

[2] - Canadian Climate Normals 1981 2010, Environment Canada, 2021b

September 2022
122160252

Stantec

Client/Project

Clean Harbours Environmental Services Inc.
Biomonitoring Program
Lambton Facility

Figure No.

3

Title

Temperature and Precipitation during 2021 Growing Season

Appendix B CHARACTERIZATION OF SOILS AT TEST SITES

B.1 SOIL AND SEDIMENT CHARACTERISTICS

The media used to monitor the inorganic and organic chemicals in the Biomonitoring Program include agricultural soil, crops, natural grasses, and sediment from nearby drainage ditches (many of which collect water and eroded soil from adjacent farm fields, woodlots, and grassy areas). Since the inherent characteristics of two of these media, soil, and sediment, have a very significant impact on the movement and fate of chemicals in the local environment, they also have a very significant impact on the results of the program. In soil, cation exchange capacity CEC, OM, clay content and pH are among the most important factors affecting the fate of inorganic and organic chemicals. In general, soil consists of 25% air, 25% water, 45% mineral matter and 5% OM (Brady & Weil, 2002). Clay in mineral matter and humus in OM possess an abundance of positive and negative molecular charges on their surfaces. Negatively charged Sites, however, tend to predominate. This is particularly true for humus in neutral and alkaline (pH ≥ 7.0) soils. Thus, to varying degrees, chemicals in the soil solution, which are also positively and/or negatively charged, are attracted to, and held by soil particles, or are repelled by soil particles and taken up by plants or leached into the groundwater.

CEC measures the ability of a soil to adsorb, or attract and hold, positively charged ions (e.g., Al3+, Ca2+, Mg2+, K+, NH4+, Na+) called cations (anions are negatively charged ions). Cations are attracted to the negatively charged surfaces of clay and humus particles in the soil. Hydrogen ions (H+), which are also positively charged, compete with other cations for negative charge Sites on clay and humus particles. The pH of the soil, which indicates the concentration of H+ ions in the soil, has a significant impact on the CEC.

In soil, these processes drive the movement of inorganic chemicals. Although these processes also affect some organic chemicals, most organic chemicals, due to their hydrophobic characteristics, are generally absorbed within the organic fraction of soils (Brady & Weil, 2002). This sorption process leads to a partitioning of the organic chemical: a portion becomes associated with OM and a portion remains in the soil solution. The following general statements apply to discussions on the effect of soil CEC, OM, clay content and pH on the findings arising from the Biomonitoring Program:

- Increase OM, increase CEC, may increase sorption
- Increase clay, increase CEC, may increase sorption
- Increase pH, increase CEC, may increase sorption

Therefore, for inorganic chemicals:

- Increase pH (less H+), increase CEC (more negative Sites available)
- For cations increase soil adsorption, decrease plant and microbial uptake, decrease leaching

Therefore, for organic chemicals:

- Increase OM (more sorption Sites)
- Increase soil sorption, decrease plant and microbial uptake, decrease leaching

B.2 SOIL AND SEDIMENT CHARACTERIZATION

The soil at each test Site was characterized in two ways. First, when the Site was initiated, the soil profile was examined to a depth of 100 cm. The Site was classified and compared with the expected classification indicated in the Soil Survey of Lambton County Report No. 22 of the Ontario Soil Survey (Mathews et al., 1957). The soil and general conditions at each test Site were assessed in the field and described in accordance with the information presented in the Field Manual for Describing Soils in Ontario (Ontario Centre for Soil Resource Evaluation, 1993). This provided a method for the description and classification of soil properties, soil profiles and landscape features consistent with the Canadian System of Soil Classification (Research Branch, 1987). Second, samples of the soil are analyzed on a six-year cycle to determine the concentrations of nutrients, OM, pH and CEC and particle size distribution (texture).

Due to the potential influence of water movement in each drainage ditch on the characteristics of the sediment in each drainage ditch, samples of the sediment are analyzed to determine the concentrations of nutrients, OM, pH, CEC, and particle size distribution (texture). These analyses are conducted annually to ensure that the characterization of the drainage ditch sediment represents the conditions under which the analytical samples were obtained. The detailed methodology for sediment sampling is provided in the Revised Biomonitoring Sampling Program (Stantec, 2018).

B.3 SOIL HORIZON LAYERS

The following information provides descriptions of the general soil horizons as identified on the biomonitoring Sites, soil characterization field sheets. Each horizon description is identified with a combination of an upper-case A, B or C letter code that describes the mineral layer or horizon and various lower-case suffixes that describe the characteristics of the horizon. The combination of upper- and lower-case codes represents the soil horizon sequence and specific attributes of each horizon.

Mineral Layers or Horizons:

A Dark coloured, mineral, surface horizons, enriched with OM

B Brownish, subsurface horizons, often described as zones of accumulation

C Relatively non-weathered material from which the soil profile has developed

AB A transition horizon from A to B materials

g A horizon characterized by grey colours and/or prominent mottling, indicating periodic intense reduction

j A modifier of suffixes to denote an expression of, but failure to meet the requirements of the suffix it modifies. It must be placed to the right of and adjacent to the suffix it modifies

k A horizon containing calcium and/or magnesium carbonates that will effervesce with dilute hydrochloric acid (HCl)

m A horizon slightly altered by hydrolysis, oxidation, or solution, or all three to give a change in colour or structure or both

p A horizon disturbed by man's activities such as cultivation, logging, and habitation

t A horizon enriched with silicate clay

Table 10: Explanation of Nutrient Levels

Nutrient	Typical Range for Agricultural Soils in Ontario (mg/kg)	Analysis Methodology
Phosphorous (P)	0-30	Phosphorous analysis was calculated as sodium bicarbonate extractable phosphorous and was expressed in parts per million (mg/kg).
Potassium (K)	150 - 250	Potassium analysis was calculated as ammonium acetate extractable potassium and was expressed in parts per million (mg/kg).
Magnesium (Mg)	100 - 400	Magnesium analysis was calculated as ammonium acetate extractable magnesium and was expressed in parts per million (mg/kg).
Calcium (Ca)	1,000 – 5,000	Calcium analysis was calculated as ammonium acetate extractable calcium and was expressed in parts per million (mg/kg).

B.4 SOIL CLASS

When the individual biomonitoring Sites were initiated, the soil profile was examined to a depth of 100 cm with the exception of Sites S7 and S8. The soil profiles at Site S7 and S8 are inferred to be comparable to Site S3 given their proximity. The soil types reported for the individual biomonitoring Sites were representative of the soils commonly found in the area surrounding the facility. The soil profile descriptions recorded for the biomonitoring Sites were used to verify the type of soils identified in the Soil Survey of Lambton County Report No. 22 of the Ontario Soil Survey (Mathews et al., 1957). **Table 11** provides details on the soil profile identified at each Site.

The majority of the Sites (10 of 15) were classified as a Caistor clay loam. These soils are composed of fine textured limestone till materials containing abundant Huron shale fragments in the clayey parent material. The B horizon is frequently a dense and compact layer and restrictive to root growth. The topography is level to slightly undulating and embodies numerous shallow depression areas. One Site (W2) was classified as well to imperfectly drained Caistor-loamy phase soils. These soils are characterized as medium textured material over shallow clay till parent material that occurs within one metre of the surface. The entire profile contains numerous coarse fragments in the form of gravels and Huron shale particles. The three Sites (N5, E6, S7) located at the Lambton Facility were composed of calcareous clay materials. All of these Sites were consistent with the calcareous parent material associated with the Caistor clay soil series. However, the fact that they consisted of disturbed soil precluded actual naming of the soil series. One Site (W4) was classified as a poorly drained Brookston clay soil. These soils developed on level to slightly sloping topography and have slow internal and external drainage.

Table 11: Soil Profile Descriptions for Each Site, Biomonitoring Program, Lambton Facility

Site	Horizon[1] [2]	Depth (cm)	Texture[3]	Drainage Class	Slope (%)	Soil Type
N2	Ap Bmgj Btgj Ckgj	0 - 20 20 - 34 34 - 63 63 - 100	C SiCL C C	Imperfect	0.5	Caistor Clay Loam
N4	P MgJ KgJ	0 - 25 25 - 46 46 - 100	L/CL Si/CL Si/CL	Imperfect	1-1.5	Caistor Clay Loam
N5	Abk Bmgjk Ckgj	0 – 30 30 – 55 55 – 70+	SiCl SiCl SiCl	Not Applicable	<1	Disturbed (Landscaped Perimeter)
E1	Ap Bmgj Btgj Ckgj	0 - 23 23 - 49 49 - 92 92 - 100	L SCL SiCL SiCL	Imperfect	1.0	Caistor Clay Loam
E2	Ap Bmgj Btgj Ckgj	0 - 20 20 - 31 31 - 46 46 - 100	SCL CL SiCL SiCL	Imperfect	0.5	Caistor Clay Loam
E5	Ap AB Bmgj Btgj Ckgj	0 - 20 20 - 32 32 - 47 47 - 81 81 - 100	L CL CL SiC SiCL	Imperfect	1.0	Caistor Clay Loam

Appendix B Characterization of Soils at Test Sites
January 31, 2023

Site	Horizon[1] [2]	Depth (cm)	Texture[3]	Drainage Class	Slope (%)	Soil Type
E6	Ahk Ckg	0 - 20 20 - 25 > 25	C C Dense clay & shale fragments	Not Applicable	<1	Disturbed Soil (Landfill Cap)
E7	Ap Bkgjk Ckgj	0 - 26 26 - 48 48 - 100	CL CL CL	Imperfect	<1	Caistor Clay Loam
S2	Ap Bmgj Ckgj	0 - 22 22 - 35 35 - 100	CL SiC C	Imperfect	0.5	Caistor Clay Loam
S3, S7 and S8*	Ap Ckgj	Disturbed Site	L[4]	Not Applicable	2.0	Disturbed Soil (Landfill Cap)
S4	Ap Btgj Ckg	0 – 22 22 – 71 71 – 100	SiCL C C	Imperfect	1.0	Caistor Clay Loam
S5	Ap Btgj Ckgj	0 – 25 25 – 58 58 – 100	SCL C C	Imperfect	1.0	Caistor Clay Loam
W2	Ap Bmgj Btgj Ckgj	0 – 23 23 – 45 45 – 61 61 – 100	L CL SiC SiC	Well	0.5	Caistor-Loamy Phase
W4	Ap Bmgj Ckgj	0 – 21 21 – 56 56 – 100	CL C C	Poor	<1.0	Brookston Clay

Note(s):

Data collected July 1993 for all Sites except S5 (1995), W4 (1997), E6 (2000), N4 (2001), N5 (2002) and E7 (2019) when these Sites entered the program.

C = Clay, L = Loam, S = Sand, Si = Silt

A Horizon Only

* Soil profile at Sites S7 and S8 adopted from Site S3 (Site S3 removed from biomonitoring program). Site S7 was destroyed in the 2020 Field Year. Site S8 was added in the 2021 Field Year.

B.5 SOIL AND SEDIMENT RESULTS

B.5.1 Soil Class

Soil characterization samples were collected during the 2017 Field Year, with the exception of the samples collected at the Site E7 during the 2019 Field Year, and samples collected at the new Site S8 during the 2021 Field Year (**Table 12**). This information is collected on a six-year cycle. The soil types reported for the individual biomonitoring Sites were representative of the soils commonly found in the area surrounding the facility. The soil profile descriptions recorded for the 15 biomonitoring Sites were used to verify the type of soils identified in the Soil Survey of Lambton County Report No. 22 of the Ontario Soil Survey (Mathews *et al*., 1957).

Table 12: Particle Size Distribution and Textural Class of Soil, 2017 Biomonitoring Program, Lambton Facility

Site	Soil Texture	Sand (%)	Silt (%)	Clay (%)
N2	Clay Loam	30	36	34
N4	Clay Loam	27	41	32
N5	Loam	38	40	22
E1	Clay Loam	35	36	29
E2	Loam	50	36	14
E5	Loam	41	35	24
E6	Loam	47	37	16
E7*	Clay Loam	30	42	28
S1	Clay Loam	36	36	28
S2	Clay Loam	29	39	32
S4	Clay	15	38	47
S5	Clay Loam	28	37	35
S7	Loam	43	36	21
S8*	Clay Loam	32	36	32
W2	Clay Loam	27	43	30
W4	Silty Clay Loam	19	42	39

Note(s):

* Sites E7 and S8 data obtained during the 2019 and 2021 Field Years, respectively, upon their addition to the Biomonitoring Program.

B.5.2 Soil Nutrients, OM, CEC, pH, Clay Content and Surface Texture, 2017 Field Year

Soil fertility samples were collected during the 2017 Field Year, with the exception of the samples collected at the new Site E7 during the 2019 Field Year (**Table 13**). The 2017 and 2019 soil fertility results indicated that the nutrients, OM, CEC, pH, and surface texture of the near surface soil varied from Site to Site. The soil fertility results were comparable to those last reported in 2011, taking into consideration natural variation.

Table 13: Nutrients (P, K, Mg, Ca), Organic Matter (OM), pH, Cation Exchange Capacity (CEC) of Soil, 2017 Biomonitoring Program, Lambton Facility

Site	P (parts per million [ppm])	K (ppm)	Mg (ppm)	Ca (ppm)	OM (%)	pH	CEC (Milliequivalent [MEQ]/100g)
N2	43	128	479	2856	4.9	6.7	19.8
N4	30	149	263	5031	4.2	7.8	28.9
N5	6	113	420	4367	6.0	7.7	26.8
E1	7	89	391	1993	2.6	7.8	14.7
E2	21	81	261	2593	6.0	7.4	16.5
E5	8	93	429	2917	3.5	7.6	19.6
E6	6	144	260	4015	6.0	7.6	23.8
E7*	7	115	376	3775	2.7	7.6	23.5
S1	6	81	401	2845	3.3	7.7	19.0
S2	14	102	407	2674	3.3	7.6	18.2
S4	34	212	467	4633	4.7	7.7	28.8
S5	13	106	523	3744	2.9	7.8	26.4
S7	7	198	385	2898	6.3	7.4	31.4
S8*	6	143	407	5340	4.0	7.9	31.7
W2	7	94	458	3434	4.2	7.6	22.4
W4	62	161	508	2951	5.4	6.5	20.6

Note(s):

* Sites E7 and S8 data obtained during the 2019 and 2021 Field Years, respectively, upon their addition to the Biomonitoring Program.

B.5.3 Sediment Depth

The depth of the sediment in each drainage ditch varies from year to year and Site to Site depending on soil erosion processes. Precipitation, cropping practices and the stability of the drainage ditch banks are a few of the factors affecting how much sediment may be present in a drainage ditch at a given time.

B.5.4 Sediment Nutrients, OM, CEC, pH, Clay Content and Surface Texture,2016 Field Year

The sediment nutrients, OM, CEC, pH, clay content and surface texture are described below. Sediment was sampled under dry conditions for all Sites where drainage ditch sediment was sampled (Sites N2, N5, S1, S4, E2, S7 and S8).

As expected, in 2017 the sand, silt and clay content (**Table 14**) and the nutrients, OM, CEC and pH (**Table 15**) of the sediment varied from Site to Site, similar to last year where samples were collected at the new Site S8 during the 2021 Field Year. These sediment characteristics can be affected by the annual and historical management practices used at each field or location in which each test Site is located. The data fell within the expected range for southern Ontario and there were no observable spatial trends among the Sites.

Table 14: Particle Size Distribution and Textural Class of Sediment, 2017 Biomonitoring Program, Lambton Facility

Site	Sediment Texture	Sand (%)	Silt (%)	Clay (%)
N2	Silt Clay	18	41	41
N5	Silty Clay Loam	19	45	36
E2	Silty Clay Loam	16	49	35
S1	Clay Loam	34	38	28
S4	Clay	21	38	41
S7	Clay Loam	27	38	35
S8*	Clay Loam	29	39	32

Note(s):

* Site S8 data obtained during the 2021 Field Year upon its addition to the Biomonitoring Program.

Table 15: Nutrients (P, K, Mg, Ca), Organic Matter (OM), pH, Cation Exchange Capacity (CEC) of Sediment, 2017 Biomonitoring Program, Lambton Facility

Site	P	K	Mg	Ca	OM	pH	CEC
	(ppm)	(ppm)	(ppm)	(ppm)	(%)		(MEQ/100g)
N2	21	114	518	4910	7.4	7.5	30.4
N5	10	113	359	4689	2.9	8.0	27.9
E2	8	89	365	4463	1.7	8.0	26.7
S1	10	104	540	3489	6.0	7.2	23.4
S4	17	141	509	5220	4.7	7.9	31.9
S7	4	73	526	5129	2.0	7.9	31.4
S8*	8	135	331	4390	2.4	8.0	26.3

Note(s):

* Site S8 data obtained during the 2021 Field Year upon its addition to the Biomonitoring Program.

B.6 REFERENCES

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Appendix C TABLES

Table C-1a
Summary of Natural Grass 2021 Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Sample Location			E1	E2	E5	E7	N2	N4	N5	S2	S4	S8	W2			W4
Sample Date			6-Oct-21	21-Sep-21	5-Oct-21	4-Oct-21	5-Oct-21	21-Sep-21	22-Sep-21	4-Oct-21	21-Sep-21	22-Sep-21	20-Sep-21	20-Sep-21		20-Sep-21
Sample ID			21-E1-NG-CH-039	21-E2-NG-CH-049	21-E5-NG-CH-055	21-E7-NG-CH-305	21-N2-NG-CH-019	21-N4-NG-CH-025	21-N5-NG-CH-035	21-S2-NG-CH-075	21-S4-NG-CH-093	21-S8-NG-CH-085	21-W2-NG-CH-003	21-D3-NG-CH-203		21-W4-NG-CH-009
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC
Laboratory			ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS		ALS
Laboratory Work Order			L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806		L2657806
Laboratory Sample ID			L2657806-18	L2657806-22	L2657806-25	L2657806-28	L2657806-9	L2657806-13	L2657806-16	L2657806-31	L2657806-35	L2657806-39	L2657806-3	L2657806-46		L2657806-6
Sample Type	Units	MOE												Field Duplicate	RPD (%)	
General Chemistry																
Chloride	mg/kg	10,000[A]	7,620	2,560	7,460	6,700	6,540	**10,300[A]**	3,030	4,650	7,030	4,370	6,210	6,920	11%	**12,700[A]**
Fluoride	mg/kg	12[A]	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	9.7	<8.0	<8.0	<8.0	**13.0[A]**	**13.0[A]**	0%	9.6
Metals, Group 1																
Antimony**	mg/kg	n/v	<0.010	<0.010	<0.010	0.018	0.012	0.011	0.043	<0.010	0.010	0.032	0.027	0.011	nc	<0.010
Barium	mg/kg	n/v	18.4	19.8	18.0	6.49	11.1	10.6	11.8	47.6	11.3	26.9	4.04	8.23	**68%**	10.6
Beryllium	mg/kg	n/v	<0.010	<0.010	0.047	<0.010	<0.010	<0.010	<0.010	0.028	0.051	0.069	<0.010	<0.010	nc	<0.010
Boron	mg/kg	20[A]	4.5	6.4	**26.1[A]**	8.3	4.1	6.0	6.6	3.3	7.9	10.8	9.2	8.0	14%	6.0
Calcium	mg/kg	n/v	4,700	6,330	34,400	10,300	5,250	5,130	4,380	5,150	10,800	9,550	7,900	8,940	12%	4,230
Chromium	mg/kg	5[A]	0.181	1.14	2.35	0.324	0.454	0.419	0.490	1.02	1.95	2.87	0.332	0.175	nc	0.442
Cobalt	mg/kg	2[A]	0.025	0.054	0.668	0.045	0.061	0.081	0.122	0.363	0.611	0.736	0.026	0.024	nc	0.027
Iron	mg/kg	500[A]	65.8	163	**1,200[A]**	70.9	158	201	197	**691[A]**	**1,310[A]**	**1,670[A]**	90.5	83.8	8%	130
Magnesium	mg/kg	n/v	1,540	2,660	5,180	2,410	1,970	2,370	1,480	5,780	4,230	3,370	2,400	2,230	7%	2,140
Manganese	mg/kg	50[A]	12.3	27.6	**57.5[A]**	**90.7[A]**	36.5	**61.1[A]**	14.7	27.5	**60.5[A]**	**72.1[A]**	46.8	42.8	9%	28.1
Molybdenum	mg/kg	6[A]	2.39	5.58	**11.7[A]**	5.20	**8.51[A]**	1.74	2.58	3.40	4.42	**9.03[A]**	**7.17[A]**	**12.1[A]**	51%	**6.94[A]**
Nickel	mg/kg	5[A]	0.29	0.44	1.88	0.31	0.71	0.67	0.51	1.18	2.40	3.54	0.28	0.34	nc	0.47
Phosphorus	mg/kg	n/v	3,440	4,980	1,670	1,430	2,480	1,380	1,130	1,960	3,260	1,630	3,660	3,330	9%	5,950
Potassium	mg/kg	n/v	20,000	30,900	19,300	10,900	18,800	17,500	7,790	19,100	24,700	17,800	24,200	27,700	13%	45,600
Silicon	mg/kg	n/v	9,640	7,150	9,260	9,440	8,650	7,750	6,920	8,050	7,550	9,900	11,000	7,930	32%	9,010
Silver	mg/kg	n/v	<0.0050	<0.0050	0.0100	<0.0050	<0.0050	<0.0050	0.0059	<0.0050	<0.0050	0.0111	<0.0050	<0.0050	nc	<0.0050
Sodium	mg/kg	n/v	<20	80	43	238	20	35	<20	49	31	69	22	23	nc	82
Strontium	mg/kg	n/v	16.8	17.4	46.1	55.1	7.96	13.8	49.6	27.5	17.9	21.9	10.6	13.2	22%	6.44
Sulfur	mg/kg	5,000[A]	2,960	4,510	**15,600[A]**	1,890	2,480	3,060	3,070	2,140	3,330	2,670	3,060	2,810	9%	4,200
Titanium	mg/kg	n/v	0.29	0.69	14.3	<0.25	2.04	2.20	3.22	7.29	14.5	13.1	0.79	0.29	nc	1.29
Zirconium	mg/kg	n/v	<0.20	<0.20	0.63	<0.20	<0.20	<0.20	<0.20	<0.20	0.46	1.40	<0.20	<0.20	nc	0.21
Metals, Group 2																
Aluminum	mg/kg	n/v	26.2	119	1,100	41.0	115	176	132	646	1,170	1,450	33.6	33.4	1%	50.1
Arsenic	mg/kg	n/v	0.030	0.072	0.414	0.071	0.046	0.083	0.102	0.213	0.316	0.515	0.026	0.026	nc	0.101
Cadmium	mg/kg	0.5[A]	0.0297	0.0408	0.0658	0.0488	0.0436	0.0204	0.113	0.341	0.0447	0.281	0.0241	0.0161	nc	0.245
Copper	mg/kg	7[A]	4.60	**8.37[A]**	6.19	3.48	5.97	5.18	3.40	5.21	**7.43[A]**	6.66	**9.78[A]**	**9.11[A]**	7%	**9.68[A]**
Lead	mg/kg	20[A]	0.175	0.159	1.07	0.266	0.183	0.175	1.04	0.584	0.731	1.99	0.151	0.254	51%	0.066
Mercury	mg/kg	n/v	0.0074	0.0081	0.0121	0.0122	0.0115	0.0070	0.0382	0.0072	0.0120	0.0235	0.0153	0.0144	nc	<0.0050
Thallium	mg/kg	n/v	<0.0020	0.0025	0.0190	0.0045	0.0026	0.0064	0.0045	0.0112	0.0124	0.0341	<0.0020	<0.0020	nc	<0.0020
Vanadium	mg/kg	6[A]	<0.10	0.25	2.47	0.12	0.25	0.35	0.33	1.33	2.40	3.17	<0.10	<0.10	nc	0.12
Zinc	mg/kg	40[A]	27.6	24.5	33.2	20.1	17.1	31.5	20.0	13.2	15.9	39.5	25.4	30.6	19%	21.2

Notes:

MOE	Ontario Ministry of the Environment
[A]	Ontario Ministry of the Environment Rural "upper limit of normal" contaminant guidelines for phytotoxicology samples (1989)
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
RPD	Relative Percent Difference.
61%	RPD exceeds data quality objective of 60%.
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.
**	Cyanide and antimony are being added to the Biomonitoring Program on a trial basis and will be measured in the biomonitoring samples for three years (2022 - 2024 Field Years). If soil concentrations are lower than the Ontario background for three years, then no further evaluation will be required.

Table C-1b
Summary of Soil 2021 Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Sample Location				E1	E2	E5	E7	N2	N4	N5	S2	S4	S8	W2			W4
Sample Date				6-Oct-21	21-Sep-21	5-Oct-21	4-Oct-21	5-Oct-21	21-Sep-21	22-Sep-21	4-Oct-21	9-Jul-21	22-Sep-21	20-Sep-21	20-Sep-21		9-Jul-21
Sample ID				21-E1-SS-CH-037	21-E2-SS-CH-043	21-E5-SS-CH-053	21-E7-SS-CH-303	21-N2-SS-CH-103	21-N4-SS-CH-023	21-N5-SS-CH-029	21-S2-SS-CH-073	21-S4-SS-CH-087	21-S8-SS-CH-079	21-W2-SS-CH-001	21-D1-SS-CH-200		21-W4-SS-CH-007
Sample Depth				15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm		15 cm
Sampling Company				STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC
Laboratory				ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS		ALS
Laboratory Work Order				L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806		L2657806
Laboratory Sample ID				L2657806-17	L2657806-20	L2657806-24	L2657806-27	L2657806-7	L2657806-11	L2657806-14	L2657806-30	L2657806-33	L2657806-37	L2657806-1	L2657806-44		L2657806-4
Sample Type	Units	Ontario SCS	MOE*												Field Duplicate	RPD (%)	
General Chemistry																	
Chloride	mg/kg	n/a[A]	35[B]	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7.7	<5.0	20.3	<5.0	<5.0	<5.0	nc	10.7
Cyanide**	mg/kg	0.051[A]	n/v	**0.142[A]**	**0.056[A]**	<0.050	<0.050	**0.125[A]**	**0.057[A]**	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	nc	**0.109[A]**
Fluoride	mg/kg	n/v	84[B]	1.64	3.16	4.02	4.60	2.30	3.71	4.54	4.97	4.85	5.36	4.33	4.55	5%	2.19
Metals, Group 1																	
Antimony**	mg/kg	1[A]	n/v	0.22	0.31	0.19	0.24	0.34	0.28	0.36	0.28	0.23	0.41	0.29	0.28	nc	0.32
Barium	mg/kg	210[A]	170[B]	58.1	79.6	55.0	78.5	118	104	66.6	89.0	150	78.5	62.6	59.4	5%	107
Beryllium	mg/kg	2.5[A]	1.1[B]	0.57	0.64	0.53	0.75	1.14	0.92	0.59	0.87	1.32	0.74	0.66	0.60	10%	1.09
Boron	mg/kg	36[A]	30[B]	10.4	9.7	7.0	9.2	22.3	14.0	12.4	16.3	19.9	15.3	9.6	7.1	nc	22.3
Calcium	mg/kg	n/v	54,000[B]	3,190	5,700	4,280	5,730	5,330	4,480	12,400	9,260	12,600	33,900	4,670	6,430	32%	5,180
Chromium	mg/kg	67[A]	58[B]	20.3	23.6	18.8	24.9	39.8	30.0	21.2	29.3	43.2	29.1	22.6	19.4	15%	34.9
Cobalt	mg/kg	19[A]	16[B]	5.90	8.86	5.82	9.43	11.1	10.8	7.83	9.83	14.9	8.39	7.37	7.05	4%	8.73
Iron	mg/kg	n/v	36,000[B]	15,100	19,000	15,600	20,400	25,000	22,300	16,000	22,300	29,400	18,500	18,000	16,700	7%	24,000
Magnesium	mg/kg	n/v	19,000[B]	3,490	4,340	3,880	5,660	7,280	5,210	6,090	7,790	11,300	12,600	4,030	3,620	11%	6,380
Manganese	mg/kg	n/v	1,900[B]	318	442	232	336	337	427	341	319	409	313	356	376	5%	228
Molybdenum	mg/kg	2[A]	0.984[B]	1.25	1.76	1.41	1.71	1.3	**2.03[A]**	1.95	1.51	0.90	**2.42[A]**	1.97	**2.25[A]**	13%	**2.05[A]**
Nickel	mg/kg	37[A]	34[B]	16.4	19.6	15.0	22.2	34.7	23.6	17.8	25.8	35.6	26.5	17.9	16.4	9%	29.6
Phosphorus	mg/kg	n/v	830[B]	625	*869[B]*	409	602	*910[B]*	*912[B]*	454	743	753	410	552	527	5%	*1,100[B]*
Potassium	mg/kg	n/v	6,500[B]	1,950	2,720	1,430	2,180	4,790	2,980	1,800	3,210	4,370	2,390	1,860	1,390	29%	4,740
Silicon	mg/kg	n/v	n/v	362,000	352,000	373,000	353,000	308,000	370,000	335,000	345,000	312,000	319,000	371,000	363,000	2%	323,000
Silver	mg/kg	0.5[A]	0.27[B]	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	nc	<0.10
Sodium	mg/kg	n/a[A]	690[B]	52	70	<50	56	80	64	83	70	113	101	82	<50	nc	87
Strontium	mg/kg	n/v	63[B]	12.7	22.2	13.5	18.3	24.4	19.5	58.9	24.5	38.0	41.8	14.9	13.3	11%	21.6
Sulfur	mg/kg	n/v	790[B]	***<1,000***	***<1,000***	***<1,000***	***<1,000***	***<1,000***	***<1,000***	***<1,000***	***<1,000***	***<1,000***	***<1,000***	***<1,000***	***<1,000***	nc	***<1,000***
Titanium	mg/kg	n/v	5,500[B]	108	91.2	94.9	83.3	185	124	103	169	114	137	157	95.0	**49%**	145
Zirconium	mg/kg	n/v	n/v	1.5	2.0	1.1	1.9	5.6	4.2	2.1	1.8	4.1	2.2	1.4	1.7	nc	3.2
Metals, Group 2																	
Aluminum	mg/kg	n/v	30,000[B]	13,000	14,900	11,900	17,700	28,400	20,900	14,100	20,100	29,900	16,000	16,200	13,100	21%	23,800
Arsenic	mg/kg	11[A]	11[B]	5.16	5.62	4.89	6.13	5.72	7.08	5.53	6.55	5.97	5.93	6.77	6.34	7%	6.41
Cadmium	mg/kg	1[A]	0.7[B]	0.386	0.413	0.307	0.328	0.521	0.541	0.558	0.297	0.291	0.621	0.460	0.403	13%	0.446
Copper	mg/kg	62[A]	46[B]	13.6	17.1	9.54	13.3	31.3	19.2	15.6	14.4	19.7	19.6	12.8	11.5	11%	24.8
Lead	mg/kg	45[A]	34[B]	13.0	23.5	13.3	14.3	16.2	17.1	29.1	15.3	17.7	19.0	15.4	16.2	5%	17.5
Mercury	mg/kg	0.16[A]	0.13[B]	0.0453	0.0587	0.0281	0.0316	0.0573	0.0500	0.0903	0.0305	0.0441	0.111	0.0492	0.0472	4%	0.0479
Thallium	mg/kg	1[A]	n/v	0.187	0.214	0.166	0.226	0.286	0.267	0.248	0.251	0.262	0.329	0.238	0.196	nc	0.347
Vanadium	mg/kg	86[A]	86[B]	31.5	31.9	30.0	36.0	48.7	43.6	29.8	41.4	52.4	35.3	39.4	33.2	17%	48.2
Zinc	mg/kg	290[A]	160[B]	55.2	69.8	51.3	51.5	80.9	75.3	71.0	57.3	76.8	79.0	53.5	49.9	7%	91.6

See notes on last page

Table C-1b
Summary of Soil 2021 Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Notes:

Ontario SCS	Soil, Ground Water and Sediment Standards for Use under Part XV.I of the Environmental Protection Act (MOE, 2011) Site Condition Standards (SCS)
A	Table 1 - Agricultural or Other Property Use
MOE	Ontario Ministry of the Environment
B	Ontario Typical Range (OTR) values for Rural Parks, Ontario Ministry of Environment and Energy (OMEE, 1993)
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
n/a	Not applicable.
RPD	Relative Percent Difference.
61%	RPD exceeds data quality objective of 40%.
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.
*	Results are only compared to the MOE OTR value in the absence of an Ontario SCS value
**	Cyanide and antimony are being added to the Biomonitoring Program on a trial basis and will be measured in the biomonitoring samples for three years (2022 - 2024 Field Years). If soil concentrations are lower than the Ontario background for three years, then no further evaluation will be required.

Table C-1c
Summary of Sediment 2021 Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Sample Location				E2	N2	N5	S4			S8
Sample Date				21-Sep-21	5-Oct-21	22-Sep-21	21-Sep-21	21-Sep-21		5-Oct-21
Sample ID				21-E2-SD-CH-045	21-N2-SD-CH-015	21-N5-SD-CH-031	21-S4-SD-CH-089	21-D4-SD-CH-204		21-S8-SD-CH-001
Sampling Company				STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC
Laboratory				ALS	ALS	ALS	ALS	ALS		ALS
Laboratory Work Order				L2657806	L2657806	L2657806	L2657806	L2657806		L2657806
Laboratory Sample ID				L2657806-21	L2657806-8	L2657806-15	L2657806-34	L2657806-49		L2657806-38
Sample Type	Units	Ontario SCS	PSQG*					Field Duplicate	RPD (%)	
General Chemistry										
Chloride	mg/kg	n/v	n/v	40.8	19.2	24.5	46.9	31.9	38%	61.7
Cyanide**	mg/kg	0.1[A]	n/v	<0.050	<0.050	<0.050	0.068	<0.050	nc	<0.050
Fluoride	mg/kg	n/v	n/v	5.40	6.78	4.52	5.40	5.68	5%	6.85
Metals, Group 1										
Antimony**	mg/kg	n/v	n/v	0.28	0.36	0.44	0.22	0.25	nc	0.53
Barium	mg/kg	n/v	n/v	69.6	73.8	89.1	100	120	18%	70.2
Beryllium	mg/kg	n/v	n/v	0.66	0.62	0.84	0.90	1.03	13%	0.62
Boron	mg/kg	n/v	n/v	17.3	20.8	21.8	20.9	19.7	nc	18.2
Calcium	mg/kg	n/v	n/v	81,800	97,600	53,000	47,400	62,900	28%	88,100
Chromium	mg/kg	26[A]	26[B]	25.1	23.5	**31.1[A]**	**32.5[A]**	**36.1[A]**	10%	25.5
Cobalt	mg/kg	50[A]	n/v	8.97	8.80	9.14	10.7	12.4	15%	9.42
Iron	mg/kg	n/v	20,000[B]	19,300	19,100	**22,900[B]**	**24,100[B]**	**27,700[B]**	14%	18,600
Magnesium	mg/kg	n/v	n/v	27,000	32,800	20,200	16,900	20,800	21%	26,700
Manganese	mg/kg	n/v	460[B]	352	351	364	**480[B]**	**556[B]**	15%	413
Molybdenum	mg/kg	n/v	n/v	2.52	4.19	2.35	1.18	1.46	21%	4.32
Nickel	mg/kg	16[A]	16[B]	**26.3[A]**	**25.7[A]**	**28.9[A]**	**29.8[A]**	**34.1[A]**	13%	**26.9[A]**
Phosphorus	mg/kg	n/v	600[B]	456	397	577	**789[B]**	**922[B]**	16%	392
Potassium	mg/kg	n/v	n/v	2,790	3,110	3,170	3,810	3,770	1%	2,640
Silicon	mg/kg	n/v	n/v	214,000	224,000	264,000	268,000	238,000	12%	71,400
Silver	mg/kg	0.5[A]	n/v	<0.10	<0.10	<0.10	<0.10	<0.10	nc	<0.10
Sodium	mg/kg	n/v	n/v	224	191	177	176	218	nc	249
Strontium	mg/kg	n/v	n/v	93.6	90.4	66.7	78.4	98.1	22%	88.3
Sulfur	mg/kg	n/v	n/v	<1,000	<1,000	<1,000	<1,000	<1,000	nc	<1,000
Titanium	mg/kg	n/v	n/v	162	241	144	140	123	13%	205
Zirconium	mg/kg	n/v	n/v	4.2	9.7	1.6	2.0	3.5	nc	5.4
Metals, Group 2										
Aluminum	mg/kg	n/v	n/v	14,700	13,600	19,000	20,600	22,500	9%	12,700
Arsenic	mg/kg	6[A]	6[B]	5.86	**7.15[A]**	**6.92[A]**	5.15	5.94	14%	**6.12[A]**
Cadmium	mg/kg	0.6[A]	0.6[B]	0.217	0.184	0.511	0.277	0.317	13%	0.306
Copper	mg/kg	16[A]	16[B]	**17.8[A]**	**16.6[A]**	**24.7[A]**	**19.6[A]**	**22.8[A]**	15%	**19.6[A]**
Lead	mg/kg	31[A]	31[B]	8.95	8.06	20.4	12.2	13.7	12%	12.9
Mercury	mg/kg	0.2[A]	0.2[B]	0.0259	0.0202	0.0781	0.0371	0.0355	4%	0.0500
Thallium	mg/kg	n/v	n/v	0.230	0.309	0.312	0.226	0.243	nc	0.252
Vanadium	mg/kg	n/v	n/v	30.4	31.7	41.7	39.4	42.7	8%	31.2
Zinc	mg/kg	120[A]	120[B]	59.8	44.7	97.8	63.2	71.9	13%	50.6

See notes on last page

Table C-1c
Summary of Sediment 2021 Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Notes:

Ontario SCS [A]	Soil, Ground Water and Sediment Standards for Use under Part XV.I of the Environmental Protection Act (MOE, 2011) Site Condition Standards (SCS) Table 1 - All Types of Property Uses
PSQG [B]	Ontario Provincial Sediment Quality Guidelines Table 1: PSQG for Metals and Nutrients - Lowest Effect Level
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
RPD	Relative Percent Difference.
61%	RPD exceeds data quality objective of 40%.
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.
*	Results are only compared to the PSQG value in the absence of an Ontario SCS value
**	Cyanide and antimony are being added to the Biomonitoring Program on a trial basis and will be measured in the biomonitoring samples for three years (2022 - 2024 Field Years). If soil concentrations are lower than the Ontario background for three years, then no further evaluation will be required

Table C-1d
Summary of Agricultural Crops 2021 Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Sample Location		E1	E2			E5	E7			N2	N4	S2	S4			W2			W4
Sample Date		6-Oct-21	21-Sep-21	21-Sep-21		5-Oct-21	4-Oct-21	4-Oct-21		5-Oct-21	21-Sep-21	4-Oct-21	9-Jul-21	9-Jul-21		20-Sep-21	20-Sep-21		9-Jul-21
Sample ID		21-E1-FC-CH-041	21-E2-SU-CH-051	21-D8-SU-CH-210		21-E5-FC-CH-057	21-E7-FC-CH-300	21-D6-FC-CH-207		21-N2-FC-CH-021	21-N4-SB-CH-027	21-S2-FC-CH-077	21-S4-WW-CH-095	21-D7-WW-CH-209		21-W2-SB-CH-005	21-D5-SB-CH-205		21-W4-WW-CH-011
Sampling Company		STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC	STANTEC		STANTEC
Laboratory		ALS	ALS	ALS		ALS	ALS	ALS		ALS	ALS	ALS	ALS	ALS		ALS	ALS		ALS
Laboratory Work Order		L2657806	L2657806	L2657806		L2657806	L2657806	L2657806		L2657806	L2657806	L2657806	L2657806	L2657806		L2657806	L2657806		L2657806
Laboratory Sample ID		L2657806-19	L2657806-23	L2657806-47	RPD	L2657806-26	L2657806-29	L2657806-48	RPD	L2657806-10	L2657806-12	L2657806-32	L2657806-36	L2657806-50	RPD	L2657806-2	L2657806-45	RPD	L2657806-5
Sample Type	Units			Field Duplicate	(%)			Field Duplicate	(%)					Field Duplicate	(%)		Field Duplicate	(%)	
General Chemistry																			
Chloride	mg/kg	396	134	374	-	377	425	425	-	351	36	481	362	271	-	48	49	-	393
Fluoride	mg/kg	<8.0	<8.0	<8.0	nc	<8.0	<8.0	<8.0	-	<8.0	<8.0	<8.0	<8.0	<8.0	-	<8.0	<8.0	-	<8.0
Metals, Group 1																			
Antimony**	mg/kg	<0.010	0.011	0.011	nc	<0.010	<0.010	<0.010	nc	<0.010	<0.010	<0.010	<0.010	<0.010	nc	<0.010	<0.010	nc	<0.010
Barium	mg/kg	<0.050	5.70	7.70	30%	<0.050	<0.050	<0.050	nc	<0.050	0.814	<0.050	2.28	1.97	15%	1.37	1.34	2%	5.18
Beryllium	mg/kg	<0.010	0.017	0.019	nc	<0.010	<0.010	<0.010	nc	<0.010	<0.010	<0.010	<0.010	<0.010	nc	<0.010	<0.010	nc	<0.010
Boron	mg/kg	2.7	12.1	12.6	4%	2.5	2.3	2.3	nc	2.5	40.3	1.7	<1.0	<1.0	nc	27.7	28.7	4%	1.7
Calcium	mg/kg	31	1,420	1,500	5%	41	61	55	nc	39	1,860	62	565	570	1%	3,340	3,120	7%	869
Chromium	mg/kg	<0.050	0.711	0.824	15%	<0.050	<0.050	<0.050	nc	<0.050	<0.050	<0.050	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050
Cobalt	mg/kg	<0.020	0.224	0.269	18%	<0.020	<0.020	<0.020	nc	<0.020	0.071	<0.020	<0.020	<0.020	nc	0.108	0.093	nc	<0.020
Iron	mg/kg	22.0	469	532	13%	21.9	21.9	18.9	15%	14.6	76.6	28.0	29.8	48.6	48%	71.4	68.3	4%	45.3
Magnesium	mg/kg	1,040	2,340	2,110	10%	1,410	1,340	1,080	21%	853	2,480	1,270	1,230	1,390	12%	2,760	2,510	9%	1,070
Manganese	mg/kg	4.23	21.7	27.2	22%	4.79	4.40	3.26	30%	3.37	24.2	3.75	13.2	15.0	13%	26.5	26.3	1%	28.6
Molybdenum	mg/kg	0.487	0.064	0.139	nc	0.852	2.65	2.59	2%	0.533	7.96	0.827	0.988	1.18	18%	11.4	11.1	3%	0.847
Nickel	mg/kg	0.26	0.60	0.62	nc	<0.20	<0.20	<0.20	nc	<0.20	2.79	<0.20	<0.20	<0.20	nc	1.00	1.07	7%	0.30
Phosphorus	mg/kg	2,830	2,500	1,980	23%	3,710	3,920	3,120	23%	2,430	7,220	3,260	3,250	3,660	12%	7,140	6,700	6%	2,820
Potassium	mg/kg	3,600	7,940	9,350	16%	4,270	4,230	3,700	13%	3,180	20,900	4,000	3,400	3,550	4%	21,000	19,300	8%	3,220
Silicon	mg/kg	<200	1,660	2,220	29%	<200	<200	<200	nc	<200	<200	<200	7,280	2,470	**99%**	<200	<200	nc	767
Silver	mg/kg	<0.0050	0.0054	0.0057	nc	<0.0050	<0.0050	<0.0050	nc	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	<0.0050	<0.0050	nc	<0.0050
Sodium	mg/kg	<20	196	227	15%	<20	<20	<20	nc	<20	<20	<20	<20	<20	nc	<20	<20	nc	<20
Strontium	mg/kg	<0.050	8.25	7.88	5%	<0.050	0.104	0.081	nc	<0.050	1.52	0.112	1.76	1.72	2%	2.95	3.00	2%	1.85
Sulfur	mg/kg	1,000	490	440	nc	1,080	820	790	4%	1,040	4,380	1,010	1,260	1,390	10%	3,220	3,340	4%	1,310
Titanium	mg/kg	<0.25	9.19	9.74	6%	<0.25	<0.25	<0.25	nc	<0.25	<0.25	<0.25	<0.25	<0.25	nc	<0.25	<0.25	nc	<0.25
Zirconium	mg/kg	<0.20	0.51	0.50	nc	<0.20	<0.20	<0.20	nc	<0.20	<0.20	<0.20	<0.20	<0.20	nc	<0.20	<0.20	nc	<0.20
Metals, Group 2																			
Aluminum	mg/kg	<2.0	389	436	11%	<2.0	<2.0	<2.0	nc	<2.0	<2.0	<2.0	2.6	2.7	nc	<2.0	<2.0	nc	6.4
Arsenic	mg/kg	<0.020	0.134	0.160	18%	<0.020	<0.020	<0.020	nc	<0.020	<0.020	<0.020	<0.020	<0.020	nc	<0.020	<0.020	nc	<0.020
Cadmium	mg/kg	0.0077	0.121	0.0851	35%	<0.0050	<0.0050	<0.0050	nc	0.0054	0.0595	<0.0050	0.0771	0.0862	11%	0.0197	0.0209	nc	0.178
Copper	mg/kg	1.74	5.12	5.74	11%	1.86	2.19	1.98	10%	1.56	14.9	1.87	4.59	5.29	14%	13.0	11.8	10%	3.61
Lead	mg/kg	<0.020	0.539	0.596	10%	<0.020	<0.020	<0.020	nc	<0.020	<0.020	<0.020	<0.020	<0.020	nc	<0.020	<0.020	nc	0.034
Mercury	mg/kg	<0.0050	<0.0050	<0.0050	nc	<0.0050	<0.0050	<0.0050	nc	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	nc	<0.0050	<0.0050	nc	<0.0050
Thallium	mg/kg	<0.0020	0.0125	0.0094	nc	<0.0020	<0.0020	<0.0020	nc	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	nc	<0.0020	<0.0020	nc	<0.0020
Vanadium	mg/kg	<0.10	0.87	0.97	11%	<0.10	<0.10	<0.10	nc	<0.10	<0.10	<0.10	<0.10	<0.10	nc	<0.10	<0.10	nc	<0.10
Zinc	mg/kg	17.9	14.6	12.1	19%	22.9	18.4	14.3	25%	14.1	41.4	12.9	17.7	20.9	17%	33.4	30.3	10%	22.5

See notes on last page

Table C-1d
Summary of Agricultural Crops 2021 Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Notes:

6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
RPD	Relative Percent Difference.
61%	RPD exceeds data quality objective of 60%.
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.
**	Cyanide and antimony are being added to the Biomonitoring Program on a trial basis and will be measured in the biomonitoring samples for three years (2022 - 2024 Field Years). If soil concentrations are lower than the Ontario background for three years, then no further evaluation will be required.

Table C-1e
Summary of Quality Control 2021 Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Sample Location		Field Blank (E1)	Field Blank (N4)	Rinsate Blank (E1)	Rinsate Blank (N4)
Sample Date		7-Oct-21	21-Sep-21	7-Oct-21	21-Sep-21
Sample ID		21-E1-FB-CH-218	21-N4-FB-CH-213	21-E1-RB-CH-217	21-N4-RB-CH-215
Sampling Company		STANTEC	STANTEC	STANTEC	STANTEC
Laboratory		ALS	ALS	ALS	ALS
Laboratory Work Order		L2657806	L2657806	L2657806	L2657806
Laboratory Sample ID		L2657806-43	L2657806-41	L2657806-42	L2657806-40
Sample Type	Units	Field Blank	Field Blank	Material Rinse Blank	Material Rinse Blank
Metals, Group 1					
Antimony**	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Barium	mg/L	<0.020	<0.020	<0.020	<0.020
Beryllium	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Boron	mg/L	<0.10	<0.10	<0.10	<0.10
Calcium	mg/L	0.30	<0.10	0.51	0.37
Chromium	mg/L	<0.0010	<0.0010	0.0012	<0.0010
Cobalt	mg/L	<0.00030	<0.00030	<0.00030	<0.00030
Iron	mg/L	<0.030	<0.030	<0.030	<0.030
Magnesium	mg/L	<0.10	<0.10	0.10	<0.10
Manganese	mg/L	<0.00030	<0.00030	<0.00030	<0.00030
Molybdenum	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
Nickel	mg/L	<0.0010	<0.0010	0.0176	<0.0010
Potassium	mg/L	<2.0	<2.0	<2.0	<2.0
Silver	mg/L	<0.000020	<0.000020	<0.000020	<0.000020
Sodium	mg/L	<2.0	<2.0	<2.0	<2.0
Sulfur	mg/L	<0.50	<0.50	<0.50	<0.50
Titanium	mg/L	<0.010	<0.010	<0.010	<0.010
Metals, Group 2					
Aluminum	mg/L	0.0164	<0.0050	0.0318	0.0250
Arsenic	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Cadmium	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Copper	mg/L	<0.0010	0.0013 RV	<0.0010	0.0048
Lead	mg/L	<0.00050	<0.00050	<0.00050	0.00058
Mercury	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Thallium	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
Vanadium	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	<0.0050	<0.0050	<0.0050	<0.0050

Notes:

6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
RPD	Relative Percent Difference.
61%	RPD exceeds data quality objective of 40%.
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.
**	Cyanide and antimony are being added to the Biomonitoring Program on a trial basis and will be measured in the biomonitoring samples for three years (2022 - 2024 Field Years). If soil concentrations are lower than the Ontario background for three years, then no further evaluation will be required.
RV	Reported Result Verified By Repeat Analysis

Table C-2a
Summary of Natural Grass 2021 Organic Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Sample Location		E1	E2	E5	E7	N2	N4	N5	S2	S4	S8	W2			W4
Sample Date		6-Oct-21	21-Sep-21	5-Oct-21	4-Oct-21	5-Oct-21	21-Sep-21	22-Sep-21	4-Oct-21	21-Sep-21	22-Sep-21	20-Sep-21	20-Sep-21		20-Sep-21
Sample ID		21-E1-NG-CH-039	21-E2-NG-CH-049	21-E5-NG-CH-055	21-E7-NG-CH-305	21-N2-NG-CH-019	21-N4-NG-CH-025	21-N5-NG-CH-035	21-S2-NG-CH-075	21-S4-NG-CH-093	21-S8-NG-CH-085	21-W2-NG-CH-003	21-D3-NG-CH-203		21-W4-NG-CH-009
Sampling Company		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC
Laboratory		ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS		ALS
Laboratory Work Order		L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806		L2657806
Laboratory Sample ID		L2657806-18	L2657806-22	L2657806-25	L2657806-28	L2657806-9	L2657806-13	L2657806-16	L2657806-31	L2657806-35	L2657806-39	L2657806-3	L2657806-46		L2657806-6
Sample Type	Units												Field Duplicate	RPD (%)	
General Chemistry															
Moisture Content	%	71.8	75.7	72.1	57.0	75.5	75.1	83.4	69.9	70.6	81.3	70.5	72.0	2%	83.5
Dioxins/Furans (PCDD/DF)															
Tetrachlorodibenzofuran, 2,3,7,8-	pg/g	<0.078	<0.091	<0.076	0.061 XM JA	<0.13	<0.086	<0.14	<0.031 XM	0.055 XM JA	<0.070	<0.095 XM	0.058 XM JA EN	nc	<0.17 XM
Tetrachlorodibenzo-p-Dioxin, 2,3,7,8-	pg/g	<0.087	<0.096	<0.079	<0.043	<0.18	<0.15	<0.19	<0.026	<0.044 XM	<0.060 XM	<0.13	<0.024	nc	<0.23
Pentachlorodibenzofuran, 1,2,3,7,8- (PeCDF)	pg/g	<0.087 XM	<0.062	<0.070	<0.019	<0.12	<0.070 XM	<0.069	<0.015	<0.011	0.079 XM JA	0.063 JA EN	0.052 XM JA	nc	<0.11
Pentachlorodibenzofuran, 2,3,4,7,8-	pg/g	<0.072	<0.050	<0.062 XM	<0.015	<0.10	<0.064 XM	<0.060	<0.012	<0.0090	0.072 XM JA	<0.054	0.041 XM JA	nc	<0.099
Pentachlorodibenzo-p-Dioxin, 1,2,3,7,8-	pg/g	<0.081	<0.083	<0.078 XM	0.068 XM JA B	<0.13	<0.12	<0.16	0.084 XM JA B	0.120 XM JA B	0.136 XM JA B	<0.087	0.054 XM JA B	nc	<0.093
Octachlorodibenzofuran (OCDF)	pg/g	1.46 XM JA	1.53 JA	0.380 JA EN	0.569 XM JA	1.40 JA	0.730 JA EN	2.48 XM JA	0.285 XM JA	0.405 XM JA	0.851 XM JA	0.90 XM JA EN	0.542 XM JA	50%	1.47 XM JA
Octachlorodibenzo-p-dioxin	pg/g	5.69 JA	2.02 XM JA	6.63 JA	5.98 JA	5.40 JA EN	2.92 JA	13.1 JA	3.36 XM JA	5.30 XM JA	8.15 XM JA	6.52 JA	4.91 JA	28%	3.99 JA
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	pg/g	0.200 JA EN	0.190 JA EN	0.313 JA	0.322 XM JA B	0.310 XM JA EN	<0.12	0.63 XM JA EN	0.214 XM JA B	0.247 XM JA B	0.649 XM JA	0.270 XM JA EN	0.313 XM JA B	nc	0.370 XM JA EN
Heptachlorodibenzofuran, 1,2,3,4,7,8,9-	pg/g	0.093 XM JA EN	<0.094	<0.037	<0.032 XM	<0.12	<0.23	<0.38	<0.050 XM	<0.026 XM	0.110 XM JA EN	<0.081	<0.037	nc	<0.14
Heptachlorodibenzo-p-Dioxin, 1,2,3,4,6,7,8-	pg/g	1.22 JA	0.39 JA EN	1.51 JA	1.19 XM JA	0.89 XM JA EN	0.40 XM JA EN	1.70 JA EN	0.846 XM JA	1.38 JA	1.75 JA	1.41 JA	1.62 JA	14%	0.88 JA
Hexachlorodibenzofuran, 1,2,3,4,7,8-	pg/g	<0.050	<0.053	0.053 JA	0.057 XM JA EN	<0.078	<0.091	<0.089	0.030 JA EN	0.050 XM JA EN	0.52 XM JA	<0.068 XM	0.075 JA B	nc	<0.072
Hexachlorodibenzofuran, 1,2,3,6,7,8-	pg/g	0.066 XM JA	<0.055	<0.037	0.055 XM JA B	<0.080	<0.092	<0.096	0.045 JA B	0.062 XM JA EN	0.36 XM JA EN	<0.065	0.072 JA B	nc	<0.074
Hexachlorodibenzofuran, 1,2,3,7,8,9-	pg/g	<0.069	<0.073	<0.046	0.048 XM JA EN	<0.10	<0.097	<0.12	0.034 XM JA B	<0.020	<0.30 XM	<0.092	<0.038	nc	<0.092
Hexachlorodibenzofuran, 2,3,4,6,7,8-	pg/g	0.071 XM JA	<0.058	<0.037	0.100 XM JA B	<0.082	<0.082	<0.096	0.045 XM JA B	0.056 XM JA B	0.44 XM JA EN	<0.082 XM	0.094 XM JA B	nc	<0.082
Hexachlorodibenzo-p-Dioxin, 1,2,3,4,7,8-	pg/g	<0.077	<0.077	<0.063	0.063 XM JA	<0.15	<0.12	<0.21	0.054 JA	0.079 XM JA	0.100 XM JA EN	0.098 XM JA EN	0.071 XM JA EN	nc	<0.17
Hexachlorodibenzo-p-Dioxin, 1,2,3,6,7,8-	pg/g	0.094 XM JA EN	<0.080	<0.062	0.121 XM JA	<0.16 XM	<0.12 XM	<0.21	0.095 JA	0.108 XM JA	0.160 XM JA EN	0.100 XM JA EN	0.120 XM JA EN	nc	<0.17
Hexachlorodibenzo-p-Dioxin, 1,2,3,7,8,9-	pg/g	0.110 XM JA EN	<0.074	<0.059	0.100 XM JA EN	<0.15	<0.11	<0.20	0.064 JA B	0.092 XM JA EN	0.130 XM JA EN	0.140 XM JA EN	0.120 JA EN	nc	<0.16
Total Tetrachlorodibenzofuran	pg/g	<0.078	<0.091	0.195	0.485	0.16	0.237	0.65	0.564	0.429	0.691	<0.095	0.599	nc	<0.17
Total Tetrachlorodibenzo-p-dioxin	pg/g	<0.087	<0.096	<0.079	<0.043	<0.18	<0.15	<0.19	0.215	0.199	0.674	<0.13	0.222	nc	<0.23
Total Pentachlorodibenzofuran	pg/g	0.230	<0.062	<0.070	0.465	<0.12	<0.070	<0.069	0.111	0.392	0.667	<0.061	0.454	nc	<0.11
Total Pentachlorodibenzo-p-dioxin	pg/g	0.572	<0.083	0.446	1.18	<0.13	<0.12	0.39	1.14	0.928	0.832	<0.087	1.73	nc	<0.093
Total Hexachlorodibenzofuran	pg/g	0.321	<0.073	0.331	0.483	0.31	0.114	<0.12	0.152	0.519	0.52	0.102	0.865	nc	0.217
Total Hexachlorodibenzo-p-dioxin	pg/g	1.29	<0.080	1.54	1.28	1.51	<0.12	0.44	2.02	1.20	2.38	2.75	1.89	37%	1.08
Total Heptachlorodibenzofuran	pg/g	<0.070	<0.094	0.433	0.322	<0.12	<0.23	<0.38	0.243	0.247	0.649	<0.081	0.313	nc	<0.14
Total Heptachlorodibenzo-p-dioxin	pg/g	3.05	<0.15	1.51	1.19	<0.50	1.78	4.17	0.846	1.38	1.75	4.37	1.62	**92%**	0.88
Total HpCDD # Homologues	none	2	0	1	1	0	1	1	1	1	1	2	1	nc	1
Total HpCDF # Homologues	none	0	0	2	1	0	0	0	2	1	1	0	1	nc	0
Total HxCDD # Homologues	none	2	0	1	3	2	0	1	5	3	1	2	2	nc	1
Total HxCDF # Homologues	none	3	0	2	5	1	2	0	4	4	1	1	6	nc	1
Total PeCDD # Homologues	none	2	0	2	6	0	0	1	5	4	3	0	5	nc	0
Total PeCDF # Homologues	none	2	0	0	6	0	0	0	2	3	5	0	5	nc	0
Total TCDD # Homologues	none	0	0	0	0	0	0	0	3	4	2	0	2	nc	0
Total TCDF # Homologues	none	0	0	2	6	1	2	2	4	7	6	0	6	nc	0
Lower Bound PCDD/F TEQ (WHO 2005)	pg/g	0.0280	0.00107	0.0255	0.125	0.000420	0.000876	0.00467	0.129	0.168	0.239	0.0161	0.113	**150%**	0.0104
Mid Point PCDD/F TEQ (WHO 2005)	pg/g	0.161	0.133	0.134	0.170	0.233	0.192	0.273	0.149	0.213	0.407	0.192	0.164	16%	0.242
Upper Bound PCDD/F TEQ (WHO 2005)	pg/g	0.271	0.260	0.242	0.194	0.452	0.380	0.518	0.166	0.237	0.456	0.329	0.178	**60%**	0.470
Organochlorinated pesticides (OCP)															
Aldrin	ng/g	-	-	-	-	-	-	<0.37	-	-	<1.5	<1.3	<3.0	nc	-
BHC, alpha-	ng/g	-	-	-	-	-	-	<0	-	-	<3.3	<0.82	<3.0	nc	-
BHC, beta-	ng/g	-	-	-	-	-	-	<7.2	-	-	<5.1	<4.9	<4.3	nc	-
BHC, delta-	ng/g	-	-	-	-	-	-	<3.3	-	-	<4.2	<2.9	<3.9	nc	-
Chlordane, alpha-	ng/g	-	-	-	-	-	-	<8.2	-	-	<12	<2.4	<6.3	nc	-
Chlordane, trans- (gamma-Chlordane)	ng/g	-	-	-	-	-	-	<8.9	-	-	<13	<2.6	<6.8	nc	-
DDD (p,p'-DDD)	ng/g	-	-	-	-	-	-	<4.2	-	-	<7.6	<11	<7.3	nc	-
DDE (p,p'-DDE)	ng/g	-	-	-	-	-	-	<3.3	-	-	<3.8	<4.8	<9.2	nc	-
DDT (p,p'-DDT)	ng/g	-	-	-	-	-	-	<7.2	-	-	<10	<9.7	<13	nc	-
Dieldrin	ng/g	-	-	-	-	-	-	<1.9	-	-	<1.9	<7.1	<3.2	nc	-
Endosulfan I	ng/g	-	-	-	-	-	-	<0.88	-	-	<3.7	<2.2	<2.9	nc	-
Endosulfan II	ng/g	-	-	-	-	-	-	<1.8	-	-	<5.2	<3.8	<4.8	nc	-
Endosulfan Sulfate	ng/g	-	-	-	-	-	-	<0.69	-	-	<0.50	<0.96	<0.93	nc	-
Endrin	ng/g	-	-	-	-	-	-	<3.3	-	-	<3.5	<9.4	<7.6	nc	-
Endrin Aldehyde	ng/g	-	-	-	-	-	-	<2.4	-	-	<4.8	<9.7	<7.2	nc	-
Heptachlor	ng/g	-	-	-	-	-	-	<0.13	-	-	<0.25	<0.27	<0.88	nc	-
Heptachlor Epoxide	ng/g	-	-	-	-	-	-	<0.73	-	-	<2.1	<1.6	<4.3	nc	-
Lindane (Hexachlorocyclohexane, gamma)	ng/g	-	-	-	-	-	-	<1.8	-	-	<4.0	<1.4	<3.5	nc	-
Methoxychlor (4,4'-Methoxychlor)	ng/g	-	-	-	-	-	-	<3.9	-	-	<3.6	<7.2	<4.3	nc	-
Mirex	ng/g	-	-	-	-	-	-	<0.31	-	-	<0.33	<0.69	<0.49	nc	-
Polychlorinated biphenyls (PCB)															
Polychlorinated Biphenyls (PCBs)	ng/g	-	-	-	-	-	-	0.069	-	-	0.17	<0.097	0.75	nc	-

See notes on last page

Table C-2a
Summary of Natural Grass 2021 Organic Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Notes:

6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
B	Indicates analyte was found in associated blank, as well as in the sample.
EN	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
JA	Analyte was detected below the calibrated range but above the detection limit.
XM	A peak has been manually integrated.
RPD	Relative Percent Difference.
61%	RPD exceeds data quality objective of 60%.
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.

Table C-2b
Summary of Soil 2021 Organic Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Sample Location					E1	E2	E5	E7	N2	N4	N5	S2	S4	S8		W2		W4
Sample Date					6-Oct-21	21-Sep-21	5-Oct-21	4-Oct-21	5-Oct-21	21-Sep-21	22-Sep-21	4-Oct-21	9-Jul-21	22-Sep-21	20-Sep-21	20-Sep-21		9-Jul-21
Sample ID					21-E1-SS-CH-037	21-E2-SS-CH-043	21-E5-SS-CH-053	21-E7-SS-CH-303	21-N2-SS-CH-103	21-N4-SS-CH-023	21-N5-SS-CH-029	21-S2-SS-CH-073	21-S4-SS-CH-087	21-S8-SS-CH-079	21-W2-SS-CH-001	21-D1-SS-CH-200		21-W4-SS-CH-007
Sample Depth					15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm	15 cm		15 cm
Sampling Company					STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC
Laboratory					ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS		ALS
Laboratory Work Order					L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806	L2657806		L2657806
Laboratory Sample ID					L2657806-17	L2657806-20	L2657806-24	L2657806-27	L2657806-7	L2657806-11	L2657806-14	L2657806-30	L2657806-33	L2657806-37	L2657806-1	L2657806-44		L2657806-4
Sample Type	Units	Ontario SCS	MOE*													Field Duplicate	RPD (%)	
General Chemistry																		
Moisture Content	%	n/v	n/v	n/v	19.3	16.8	20.1	22.5	24.0	16.6	25.7	20.0	24.2	23.2	14.4	13.8	4%	22.2
Dioxins/Furans (PCDD/DF)																		
Tetrachlorodibenzofuran, 2,3,7,8-	pg/g	n/v	n/v	n/v	0.310 JA EN	0.250 XM JA EN	0.170 XM JA EN	0.350 XM JA	0.40 JA	0.527 JA	0.45 XM JA	0.237 XM JA	0.350 XM JA EN	0.25 XM JA EN	0.170 JA EN	0.180 JA EN	nc	0.560 JA EN
Tetrachlorodibenzo-p-Dioxin, 2,3,7,8-	pg/g	n/v	0.9	n/v	0.160 JA EN	0.170 XM JA EN	0.140 JA EN	0.198 JA	0.356 JA	0.246 JA	0.110 XM JA EN	0.150 XM JA EN	0.315 JA	0.404 JA	0.164 XM JA	0.091 JA EN	nc	0.456 XM JA
Pentachlorodibenzofuran, 1,2,3,7,8- (PeCDF)	pg/g	n/v	n/v	n/v	0.160 JA EN	0.188 JA	0.130 JA EN	0.255 JA	0.25 JA	0.31 JA	0.358 JA	0.180 XM JA	0.210 JA	0.180 JA EN	0.173 JA	0.180 JA EN	nc	0.354 JA
Pentachlorodibenzofuran, 2,3,4,7,8-	pg/g	n/v	n/v	n/v	0.358 JA	0.340 JA EN	0.310 JA	0.492 JA	0.45 JA	0.676 JA	0.623 JA	0.350 JA EN	0.410 JA	0.356 JA	0.598 JA	0.717 JA	18%	0.701 JA
Pentachlorodibenzo-p-Dioxin, 1,2,3,7,8-	pg/g	n/v	n/v	n/v	0.187 JA	0.185 JA	0.150 JA EN	0.180 JA EN	0.230 JA EN	0.215 JA	0.360 XM JA	0.190 JA EN	0.180 JA EN	0.245 JA	0.150 JA EN	0.211 JA	nc	0.303 JA
Octachlorodibenzofuran (OCDF)	pg/g	n/v	n/v	n/v	5.63 JA	1.96 JA	1.85 JA	4.63 JA	1.87 JA	2.34 JA	39.9	1.33 JA	3.40 JA	9.17	1.89 JA	2.08 JA	10%	10.8
Octachlorodibenzo-p-dioxin	pg/g	n/v	n/v	n/v	45.9	41.6	28.4	65.5	26.3	33.2	347	23.1 B	58.8	156	31.5	37.2	17%	102
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	pg/g	n/v	n/v	n/v	4.00 XM,EMPE	1.80 XM,JA,EMPE	1.65 JA	2.89 JA	1.84 JA	2.14 JA	19.8	1.53 JA	2.59 JA	3.73	1.77 JA	1.98 JA	11%	7.85
Heptachlorodibenzofuran, 1,2,3,4,7,8,9-	pg/g	n/v	n/v	n/v	0.190 JA EN	0.150 JA EN	0.105 JA	0.200 JA EN	0.120 JA EN	0.088 JA EN	1.15 JA	0.067 JA EN	0.173 JA	0.28 JA EN	0.120 JA EN	0.120 JA EN	nc	0.40 JA
Heptachlorodibenzo-p-Dioxin, 1,2,3,4,6,7,8-	pg/g	n/v	n/v	n/v	5.77	7.02	4.81	9.70	4.96	6.39	47.1	4.45	8.79	15.1	5.72	6.41	11%	18.8
Hexachlorodibenzofuran, 1,2,3,4,7,8-	pg/g	n/v	n/v	n/v	0.614 JA	0.250 JA EN	0.260 JA EN	0.518 JA	0.420 JA EN	0.466 JA	0.978 JA	0.332 XM JA	0.366 JA	0.497 JA	0.335 JA	0.411 JA	20%	0.723 JA
Hexachlorodibenzofuran, 1,2,3,6,7,8-	pg/g	n/v	n/v	n/v	0.436 JA	0.340 JA EN	0.230 JA	0.325 JA	0.379 JA	0.360 JA EN	1.03 JA	0.260 XM JA EN	0.273 JA	0.350 JA EN	0.400 JA EN	0.500 JA	22%	0.570 JA EN
Hexachlorodibenzofuran, 1,2,3,7,8,9-	pg/g	n/v	n/v	n/v	0.110 JA	0.080 JA EN	0.060 JA EN	0.107 JA	0.086 JA	0.098 JA	0.180 XM JA EN	<0.11	0.089 JA EN	0.092 XM JA EN	<0.077	0.137 JA	nc	0.129 JA
Hexachlorodibenzofuran, 2,3,4,6,7,8-	pg/g	n/v	n/v	n/v	0.366 JA	0.357 JA	0.274 JA	0.520 XM,JA,EMPE	0.361 JA	0.457 JA	1.10 JA	0.252 JA	0.390 XM,JA,EN,EMPE	0.350 JA EN	0.460 JA EN	0.504 JA	9%	0.715 JA
Hexachlorodibenzo-p-Dioxin, 1,2,3,4,7,8-	pg/g	n/v	n/v	n/v	0.150 JA EN	0.220 JA EN	0.130 JA EN	0.233 JA	0.220 JA EN	0.190 XM JA EN	0.653 JA	0.150 XM JA EN	0.184 JA	0.200 JA EN	0.191 JA	0.194 JA	nc	0.300 XM JA EN
Hexachlorodibenzo-p-Dioxin, 1,2,3,6,7,8-	pg/g	n/v	n/v	n/v	0.380 JA	0.431 JA	0.270 JA EN	0.494 JA	0.417 JA	0.436 XM JA	1.62 JA	0.340 XM JA EN	0.450 JA EN	0.610 JA EN	0.395 JA	0.434 JA	9%	1.07 XM JA
Hexachlorodibenzo-p-Dioxin, 1,2,3,7,8,9-	pg/g	n/v	n/v	n/v	0.350 XM JA EN	0.585 JA	0.342 JA	0.480 XM JA	0.350 JA EN	0.390 XM JA EN	1.62 XM JA	0.280 XM JA EN	0.480 JA EN	0.488 JA	0.360 XM JA EN	0.497 XM JA	32%	0.867 XM JA
Total Tetrachlorodibenzofuran	pg/g	n/v	12	n/v	2.93	2.24	1.48	1.62	3.06	7.61	3.37	3.01	2.46	1.97	5.26	2.80	**61%**	5.56
Total Tetrachlorodibenzo-p-dioxin	pg/g	n/v	6.6	n/v	0.926	0.766	0.459	0.873	1.69	0.332	1.75	0.845	1.71	1.93	0.659	0.451	37%	2.22
Total Pentachlorodibenzofuran	pg/g	n/v	19	n/v	3.85	2.74	2.26	7.18	2.91	6.71	7.01	4.17	4.92	2.32	8.32	8.89	7%	9.81
Total Pentachlorodibenzo-p-dioxin	pg/g	n/v	16	n/v	1.65	2.44	0.638	0.906	1.04	1.56	3.95	0.234	2.29	3.57	1.82	0.919	**66%**	2.97
Total Hexachlorodibenzofuran	pg/g	n/v	28	n/v	3.83	2.80	1.93	5.28	3.08	3.69	15.1	2.55	3.18	3.64	4.20	5.40	25%	9.34
Total Hexachlorodibenzo-p-dioxin	pg/g	n/v	13	n/v	4.62	5.57	3.23	6.43	5.26	5.07	*13.2*[B]	1.75	4.52	7.47	5.38	5.10	5%	9.41
Total Heptachlorodibenzofuran	pg/g	n/v	32	n/v	5.66	2.63	2.63	5.51	2.74	3.20	*41.2*[B]	2.37	4.88	7.68	2.78	3.21	14%	16.5
Total Heptachlorodibenzo-p-dioxin	pg/g	n/v	55	n/v	12.1	13.7	10.0	18.8	9.82	12.7	*81.3*[B]	8.75	15.8	31.6	10.9	12.3	12%	31.8
Total HpCDD # Homologues	none	n/v	n/v	n/v	2	2	2	2	2	2	2	2	2	2	2	2	nc	2
Total HpCDF # Homologues	none	n/v	n/v	n/v	3	2	4	2	2	2	3	3	3	2	2	3	nc	3
Total HxCDD # Homologues	none	n/v	n/v	n/v	5	6	3	6	4	5	6	1	3	5	5	5	nc	5
Total HxCDF # Homologues	none	n/v	n/v	n/v	8	5	6	8	6	6	7	6	6	5	6	10	nc	9
Total PeCDD # Homologues	none	n/v	n/v	n/v	4	5	1	3	3	5	8	1	4	5	5	4	nc	5
Total PeCDF # Homologues	none	n/v	n/v	n/v	7	7	7	11	7	8	9	10	7	5	9	8	nc	11
Total TCDD # Homologues	none	n/v	n/v	n/v	4	3	1	5	5	2	5	4	8	7	2	3	nc	5
Total TCDF # Homologues	none	n/v	n/v	n/v	10	5	8	5	7	14	6	8	5	7	13	9	nc	7
Lower Bound PCDD/F TEQ (WHO 2005)	pg/g	7	4.8	n/v	0.558	0.411	0.252	0.751	0.739	0.968	2.10	0.155	0.661	1.09	0.526	0.789	**40%**	1.63
Mid Point PCDD/F TEQ (WHO 2005)	pg/g	7	4.8	n/v	0.846	0.817	0.635	0.985	1.07	1.06	2.23	0.709	1.02	1.29	0.820	0.905	10%	1.78
Upper Bound PCDD/F TEQ (WHO 2005)	pg/g	7	4.8	n/v	0.846	0.817	0.635	0.985	1.07	1.06	2.23	0.714	1.02	1.29	0.824	0.905	9%	1.78
Organochlorinated pesticides (OCP)																		
Aldrin	ng/g	50	1_p	n/v	-	-	-	-	-	-	0.0039 XM JA EN	-	-	0.0107 XM JA	<0.0016	<0.0011	nc	-
BHC, alpha-	ng/g	n/v	n/v	n/v	-	-	-	-	-	-	<0.0097	-	-	0.072 JA	<0.0095	<0.0069	nc	-
BHC, beta-	ng/g	n/v	n/v	n/v	-	-	-	-	-	-	<0.014	-	-	0.299	<0.014	<0.010	nc	-
BHC, delta-	ng/g	n/v	n/v	n/v	-	-	-	-	-	-	<0.013	-	-	<0.013	<0.012	<0.0093	nc	-
Chlordane, alpha-	ng/g	n/v	2_p	n/v	-	-	-	-	-	-	<0.014 XM	-	-	0.167 XM	<0.0071	<0.022	nc	-
Chlordane, trans- (gamma-Chlordane)	ng/g	n/v	n/v	n/v	-	-	-	-	-	-	<0.016	-	-	0.278	0.0130 XM JA EN	<0.025	nc	-
DDD (p,p'-DDD)	ng/g	50_{s4}	n/v	n/v	-	-	-	-	-	-	0.0315 JA	-	-	2.88	0.0064 XM JA	0.0065 XM JA	nc	-
DDE (p,p'-DDE)	ng/g	50_{s4}	n/v	n/v	-	-	-	-	-	-	0.333	-	-	1.54	0.206	0.220	7%	-
DDT (p,p'-DDT)	ng/g	78_{s4}	75	n/v	-	-	-	-	-	-	0.216	-	-	3.63	0.181	0.182	1%	-
Dieldrin	ng/g	50	4_p	n/v	-	-	-	-	-	-	0.039 JA EN	-	-	0.389	0.0211 XM JA	0.0220 XM JA EN	nc	-
Endosulfan I	ng/g	n/v	n/v	n/v	-	-	-	-	-	-	<0.021	-	-	0.069 XM JA	<0.0058	<0.0078	nc	-
Endosulfan II	ng/g	n/v	n/v	n/v	-	-	-	-	-	-	<0.031	-	-	<0.044	<0.019	<0.021	nc	-
Endosulfan Sulfate	ng/g	n/v	n/v	n/v	-	-	-	-	-	-	<0.0069	-	-	0.018 XM JA EN	<0.0031	<0.0030	nc	-
Endrin	ng/g	40	4_p	n/v	-	-	-	-	-	-	<0.019	-	-	0.118 JA	<0.0067	0.0123 XM JA	nc	-
Endrin Aldehyde	ng/g	n/v	n/v	n/v	-	-	-	-	-	-	<0.0081 XM	-	-	<0.010 XM	<0.0066 XM	<0.0054	nc	-
Heptachlor	ng/g	50	1_p	n/v	-	-	-	-	-	-	0.00300 XM JA EN	-	-	0.0041 XM JA EN	<0.0011 XM	0.00150 XM JA EN	nc	-
Heptachlor Epoxide	ng/g	50	1_p	n/v	-	-	-	-	-	-	0.0074 XM JA EN	-	-	0.0135 XM JA	0.0101 XM JA	0.0097 XM JA EN	4%	-
Lindane (Hexachlorocyclohexane, gamma)	ng/g	10	1_p	n/v	-	-	-	-	-	-	0.060 JA	-	-	1.89	<0.013	0.0144 XM JA	nc	-
Methoxychlor (4,4'-Methoxychlor)	ng/g	50	5_p	n/v	-	-	-	-	-	-	0.0180 XM JA EN	-	-	0.0399 JA	<0.0053	<0.0039	nc	-
Mirex	ng/g	n/v	n/v	n/v	-	-	-	-	-	-	0.0137 JA	-	-	0.0200 XM JA EN	0.00690 JA EN	0.00890 JA EN	25%	-
Polychlorinated biphenyls (PCB)																		
Polychlorinated Biphenyls (PCBs)	ng/g	300_{s14}	15_n	n/v	-	-	-	-	-	-	3.35	-	-	3.16	1.62	1.65	2%	-

See notes on last page

Table C-2b
Summary of Soil 2021 Organic Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Notes:

Ontario SCS	Soil, Ground Water and Sediment Standards for Use under Part XV.I of the Environmental Protection Act (MOE, 2011) Site Condition Standards (SCS)
A	Table 1 - Agricultural or Other Property Use
MOE	Ontario Ministry of the Environment
B	Ontario Typical Range (OTR) values for Rural Parks, Ontario Ministry of Environment and Energy (OMEE, 1993)
C	Ontario Ministry of the Environment Rural "upper limit of normal" contaminant guidelines for phytotoxicology samples (1989)
*	Results are only compared to the Rural OTR and Rural ULN values in the absence of an Ontario SCS value
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
p	Provisional
s4	Standard is applicable to total sum of isomers, individual isomers must be summed for comparison.
s14	Standard is applicable to total PCBs, and the individual Aroclors should be added for comparison.
1.0.390	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
1.0.520	Analyte was detected below the calibrated range but above the detection limit.
1.1.80	Analyte was detected below the calibrated range but above the detection limit.
1.4.00	A peak has been manually integrated.
B	Indicates analyte was found in associated blank, as well as in the sample.
EN	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
EMPE	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure
JA	Analyte was detected below the calibrated range but above the detection limit.
XM	A peak has been manually integrated.
RPD	Relative Percent Difference.
61%	RPD exceeds data quality objective of 40%.
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.

Table C-2c
Summary of Sediment 2021 Organic Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Sample Location				E2	N2	N5	S4			S8
Sample Date				21-Sep-21	5-Oct-21	22-Sep-21	21-Sep-21	21-Sep-21		5-Oct-21
Sample ID				21-E2-SD-CH-045	21-N2-SD-CH-015	21-N5-SD-CH-031	21-S4-SD-CH-089	21-D4-SD-CH-204		21-S8-SD-CH-001
Sampling Company				STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC
Laboratory				ALS	ALS	ALS	ALS	ALS		ALS
Laboratory Work Order				L2657806	L2657806	L2657806	L2657806	L2657806		L2657806
Laboratory Sample ID				L2657806-21	L2657806-8	L2657806-15	L2657806-34	L2657806-49		L2657806-38
Sample Type	Units	Ontario SCS	PSQG*					Field Duplicate	RPD (%)	
General Chemistry										
Moisture Content	%	n/v	n/v	25.2	19.8	38.8	45.5	46.1	1%	23.5
Organochlorinated pesticides (OCP)										
Aldrin	ng/g	2	n/v	-	-	0.0056 XM JA	<0.0062	<0.0026	nc	0.0044 XM JA EN
BHC, alpha-	ng/g	n/v	n/v	-	-	<0.016	<0.031	<0.011	nc	<0.0084
BHC, beta-	ng/g	n/v	n/v	-	-	<0.022	<0.044	<0.018	nc	0.029 XM JA EN
BHC, delta-	ng/g	n/v	n/v	-	-	<0.019	<0.036	<0.016	nc	<0.012
Chlordane, alpha-	ng/g	n/v	n/v	-	-	<0.033	<0.032	0.035 XM JA EN	nc	0.058 XM JA
Chlordane, trans- (gamma-Chlordane)	ng/g	n/v	n/v	-	-	0.059 XM JA EN	<0.036	<0.030 XM	nc	0.045 XM JA
DDD (p,p'-DDD)	ng/g	8_{s4}	n/v	-	-	0.122 JA	0.029 XM JA	0.0210 XM JA EN	nc	0.113 JA
DDE (p,p'-DDE)	ng/g	5_{s4}	n/v	-	-	0.562	0.158 JA	0.205	26%	0.0781 JA
DDT (p,p'-DDT)	ng/g	7_{s4}	n/v	-	-	0.371	0.056 JA EN	0.138 JA	nc	0.0692 JA
Dieldrin	ng/g	2	n/v	-	-	0.0694 XM JA	<0.030 XM	0.071 XM JA	nc	0.045 XM JA EN
Endosulfan I	ng/g	n/v	n/v	-	-	<0.021	<0.045	0.090 XM JA	nc	0.024 XM JA
Endosulfan II	ng/g	n/v	n/v	-	-	<0.029	<0.067	<0.068	nc	<0.041
Endosulfan Sulfate	ng/g	n/v	n/v	-	-	<0.0084	<0.012	0.0160 XM JA EN	nc	<0.0074
Endrin	ng/g	3	n/v	-	-	0.016 XM JA EN	<0.040	<0.017	nc	0.037 XM JA EN
Endrin Aldehyde	ng/g	n/v	n/v	-	-	<0.012	<0.019	<0.0097	nc	<0.013
Heptachlor	ng/g	n/v	n/v	-	-	<0.0018 XM JA R	<0.0026 XM	0.0053 XM JA EN	nc	0.0027 XM JA EN
Heptachlor Epoxide	ng/g	5	n/v	-	-	0.0093 XM JA EN	0.013 XM JA	0.0169 XM JA	nc	0.0039 XM JA EN
Lindane (Hexachlorocyclohexane, gamma)	ng/g	n/v	n/v	-	-	0.098 XM JA	<0.040	<0.014	nc	0.886
Methoxychlor (4,4'-Methoxychlor)	ng/g	n/v	n/v	-	-	0.0510 XM JA EN	<0.019	<0.031	nc	<0.012
Mirex	ng/g	n/v	n/v	-	-	0.0300 JA EN	0.0039 XM JA EN	0.0077 XM JA EN	nc	0.0240 JA EN
Polychlorinated biphenyls (PCB)										
Polychlorinated Biphenyls (PCBs)	ng/g	70_{s14}	n/v	-	-	26.7	<0.0090	3.11	nc	25.2

Notes:

Ontario SCS	Soil, Ground Water and Sediment Standards for Use under Part XV.I of the Environmental Protection Act (MOE, 2011) Site Condition Standards (SCS)
A	Table 1 - All Types of Property Uses
PSQG	Ontario Provincial Sediment Quality Guidelines
B	Table 1: PSQG for Metals and Nutrients - Lowest Effect Level
*	Results are only compared to the PSQG value in the absence of an Ontario SCS value
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
s4	Standard is applicable to total sum of isomers, individual isomers must be summed for comparison.
s14	Standard is applicable to total PCBs, and the individual Aroclors should be added for comparison.
EN	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
JA	Analyte was detected below the calibrated range but above the detection limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
XM	A peak has been manually integrated.
RPD	Relative Percent Difference.
61%	RPD exceeds data quality objective of 40%.
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.

Table C-2d
Summary of Agricultural Crop 2021 Organic Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Sample Location		E1	E2			E5	E7			N2	N4	S2	S4			W2			W4
Sample Date		6-Oct-21	21-Sep-21	21-Sep-21		5-Oct-21	4-Oct-21	4-Oct-21		5-Oct-21	21-Sep-21	4-Oct-21	9-Jul-21	9-Jul-21		20-Sep-21	20-Sep-21		9-Jul-21
Sample ID		21-E1-FC-CH-041	21-E2-SU-CH-051	21-D8-SU-CH-210		21-E5-FC-CH-057	21-E7-FC-CH-300	21-D6-FC-CH-207		21-N2-FC-CH-021	21-N4-SB-CH-027	21-S2-FC-CH-077	21-S4-WW-CH-095	21-D7-WW-CH-209		21-W2-SB-CH-005	21-D5-SB-CH-205		21-W4-WW-CH-011
Sampling Company		STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC	STANTEC		STANTEC
Laboratory		ALS	ALS	ALS		ALS	ALS	ALS		ALS	ALS	ALS	ALS	ALS		ALS	ALS		ALS
Laboratory Work Order		L2657806	L2657806	L2657806		L2657806	L2657806	L2657806		L2657806	L2657806	L2657806	L2657806	L2657806		L2657806	L2657806		L2657806
Laboratory Sample ID		L2657806-19	L2657806-23	L2657806-47	RPD	L2657806-26	L2657806-29	L2657806-48	RPD	L2657806-10	L2657806-12	L2657806-32	L2657806-36	L2657806-50	RPD	L2657806-2	L2657806-45	RPD	L2657806-5
Sample Type	Units			Field Duplicate	(%)			Field Duplicate	(%)					Field Duplicate	(%)		Field Duplicate	(%)	
General Chemistry																			
Moisture Content	%	19.2	78.6	77.8	1%	26.0	18.9	20.2	7%	20.1	21.9	27.5	21.9	21.4	2%	11.3	11.6	3%	24.0
Dioxins/Furans (PCDD/DF)																			
Tetrachlorodibenzofuran, 2,3,7,8-	pg/g	<0.017	<0.065	<0.060	nc	<0.014	<0.0047	<0.0040	nc	<0.022	<0.024	<0.0050	<0.010	0.0124 XM JA	nc	<0.043	<0.0044 XM	nc	<0.026
Tetrachlorodibenzo-p-Dioxin, 2,3,7,8-	pg/g	<0.027	<0.064	<0.12	nc	<0.023	<0.0080	<0.0083	nc	<0.034	<0.041	<0.0083	<0.010	<0.0096	nc	<0.065	<0.011	nc	<0.034
Pentachlorodibenzofuran, 1,2,3,7,8- (PeCDF)	pg/g	<0.014	<0.064	0.066 XM JA	nc	<0.0093	<0.0036	0.0140 XM JA EN	nc	<0.023	<0.017	<0.0035	0.0179 XM JA	0.0107 JA	50%	<0.026	0.0140 XM JA EN	nc	<0.013
Pentachlorodibenzofuran, 2,3,4,7,8-	pg/g	<0.011	<0.052	0.027 XM JA EN	nc	<0.0072	<0.0031	0.0067 JA EN	nc	<0.017	<0.015	<0.0030	0.0124 JA	0.0045 XM JA	**93%**	<0.024 XM	0.0104 XM JA	nc	<0.012
Pentachlorodibenzo-p-Dioxin, 1,2,3,7,8-	pg/g	<0.015	<0.047	<0.037 XM	nc	<0.0094	<0.0066	<0.0065 XM	nc	<0.020	<0.017	<0.0066	<0.012 XM	<0.0089	nc	<0.058	0.0146 XM JA B	nc	<0.032
Octachlorodibenzofuran (OCDF)	pg/g	0.190 JA EN	0.80 JA EN	0.221 XM JA	**113%**	0.370 JA EN	0.0214 XM JA	0.0400 XM JA EN	**61%**	0.180 JA EN	0.320 JA	0.070 XM JA	0.092 XM JA	0.0410 JA EN	**77%**	0.31 XM JA EN	0.060 XM JA	**135%**	0.063 XM JA EN
Octachlorodibenzo-p-dioxin	pg/g	0.240 XM JA EN	2.38 JA	1.37 JA B	54%	0.510 XM JA EN	0.140 XM JA B	0.141 XM JA B	1%	0.280 JA EN	0.170 XM JA EN	0.396 XM JA B	0.471 XM JA B	0.334 XM JA B	34%	0.940 JA EN	0.150 XM JA B	**145%**	0.420 JA EN
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	pg/g	0.0470 XM JA EN	0.170 JA EN	0.125 XM JA B	31%	0.0558 JA	0.0134 XM JA B	0.0100 XM JA EN	29%	<0.014	0.029 XM JA EN	0.0203 XM JA B	0.0307 XM JA B	0.0150 XM JA EN	**69%**	0.038 XM JA EN	<0.0085	nc	<0.018
Heptachlorodibenzofuran, 1,2,3,4,7,8,9-	pg/g	<0.012	<0.059	<0.049	nc	<0.011	<0.0061	0.0080 XM JA EN	nc	<0.020	<0.023	<0.011 XM	0.0305 XM JA B	<0.0074 XM	nc	0.035 XM JA EN	0.013 XM JA EN	**92%**	<0.028
Heptachlorodibenzo-p-Dioxin, 1,2,3,4,6,7,8-	pg/g	<0.033 XM	0.410 JA EN	0.263 XM JA B	44%	<0.020	0.027 XM JA B	0.029 XM JA B	7%	0.024 XM JA EN	0.025 XM JA EN	0.047 XM JA B	0.072 JA B	0.0812 XM JA B	12%	<0.059	0.0335 XM JA B	nc	0.049 JA EN
Hexachlorodibenzofuran, 1,2,3,4,7,8-	pg/g	<0.011	0.039 XM JA	0.056 XM JA B	36%	<0.0061	0.0075 XM JA EN	0.0091 XM JA B	19%	<0.0089	<0.012	<0.0055	0.0151 XM JA B	0.050 XM JA B	**107%**	<0.020	0.0111 XM JA B	nc	<0.011
Hexachlorodibenzofuran, 1,2,3,6,7,8-	pg/g	<0.011 XM	<0.027 XM	<0.024	nc	<0.0062 XM	0.0072 XM JA EN	0.0087 XM JA B	19%	<0.0086	<0.013	<0.0056	0.0125 XM JA B	<0.039 XM	nc	<0.019	0.0134 XM JA B	nc	<0.012
Hexachlorodibenzofuran, 1,2,3,7,8,9-	pg/g	<0.015	<0.035 XM	0.047 JA B	nc	<0.0077	<0.0059	0.0139 XM JA B	nc	<0.012	<0.017	0.0130 XM JA B	0.0218 XM JA B	<0.084 XM	nc	<0.028	0.0092 XM JA B	nc	<0.014
Hexachlorodibenzofuran, 2,3,4,6,7,8-	pg/g	<0.012	0.038 XM JA EN	0.039 XM JA B	3%	<0.0061 XM	0.0100 XM JA B	0.0106 XM JA B	6%	<0.0094	<0.014	<0.0057	0.0141 XM JA B	<0.043 XM	nc	<0.022	0.0126 XM JA B	nc	<0.011
Hexachlorodibenzo-p-Dioxin, 1,2,3,4,7,8-	pg/g	<0.012	<0.056	0.064 XM JA	nc	<0.014	0.0106 XM JA	0.0096 XM JA EN	10%	<0.012	<0.023	<0.010	0.0164 XM JA	<0.010	nc	<0.036	0.0095 XM JA EN	nc	<0.021
Hexachlorodibenzo-p-Dioxin, 1,2,3,6,7,8-	pg/g	<0.012	0.069 XM JA	<0.049 XM	nc	<0.014	0.0065 XM JA	0.0120 XM JA EN	59%	<0.013	<0.025	<0.011	0.0160 XM JA EN	<0.010	nc	<0.036	0.0100 XM JA EN	nc	<0.020
Hexachlorodibenzo-p-Dioxin, 1,2,3,7,8,9-	pg/g	<0.011	<0.053	<0.046 XM	nc	<0.013	0.0074 XM JA B	<0.0070	nc	<0.012	<0.023	<0.0097	0.0179 XM JA B	<0.0094	nc	<0.034	0.0091 XM JA EN	nc	<0.019
Total Tetrachlorodibenzofuran	pg/g	<0.017	0.176	<0.060	nc	<0.014	<0.0047	<0.0040	nc	<0.022	<0.024	<0.0050	<0.010	0.0246	nc	<0.043	<0.0044	nc	<0.026
Total Tetrachlorodibenzo-p-dioxin	pg/g	<0.027	<0.064	<0.12	nc	<0.023	<0.0080	<0.0083	nc	<0.034	<0.041	<0.0083	<0.010	<0.0096	nc	<0.065	<0.011	nc	<0.034
Total Pentachlorodibenzofuran	pg/g	<0.014	<0.064	0.066	nc	<0.0093	<0.0036	<0.0031	nc	<0.023	<0.017	<0.0035	0.0523	0.0341	42%	<0.026	0.0104	nc	<0.013
Total Pentachlorodibenzo-p-dioxin	pg/g	<0.015	<0.047	<0.037	nc	<0.0094	<0.0066	<0.0065	nc	<0.020	<0.017	<0.0066	0.029	<0.0089	nc	<0.058	0.0146	nc	0.048
Total Hexachlorodibenzofuran	pg/g	<0.015	0.121	0.142	16%	<0.0077	0.0100	0.0423	124%	<0.012	<0.017	0.0130	0.0910	0.179	**65%**	<0.028	0.0463	nc	<0.014
Total Hexachlorodibenzo-p-dioxin	pg/g	<0.012	0.069	0.064	8%	<0.014	0.0244	<0.0077	nc	<0.013	<0.025	<0.011	0.119	0.077	43%	<0.036	<0.0065	nc	<0.021
Total Heptachlorodibenzofuran	pg/g	<0.012	<0.059	0.125	nc	0.056	0.0134	<0.0058	nc	<0.020	<0.023	0.029	0.0611	<0.0074	nc	<0.032	<0.012	nc	<0.028
Total Heptachlorodibenzo-p-dioxin	pg/g	<0.033	0.534	0.263	**68%**	<0.020	0.027	0.029	7%	<0.015	<0.017	0.047	0.072	0.0812	12%	<0.059	0.0335	nc	<0.015
Total HpCDD # Homologues	none	0	1	1	nc	0	1	1	nc	0	0	1	1	1	nc	0	1	nc	0
Total HpCDF # Homologues	none	0	0	1	nc	1	1	0	nc	0	0	2	2	0	nc	0	0	nc	0
Total HxCDD # Homologues	none	0	1	1	nc	0	3	0	nc	0	0	0	3	1	nc	0	0	nc	0
Total HxCDF # Homologues	none	0	2	3	nc	0	1	4	nc	0	0	1	6	4	nc	0	4	nc	0
Total PeCDD # Homologues	none	0	0	0	nc	0	0	0	nc	0	0	0	2	0	nc	0	1	nc	1
Total PeCDF # Homologues	none	0	0	1	nc	0	0	0	nc	0	0	0	5	3	nc	0	1	nc	0
Total TCDD # Homologues	none	0	0	0	nc	0	0	0	nc	0	0	0	0	0	nc	0	0	nc	0
Total TCDF # Homologues	none	0	1	0	nc	0	0	0	nc	0	0	0	0	2	nc	0	0	nc	0
Lower Bound PCDD/F TEQ (WHO 2005)	pg/g	0.00	0.0115	0.0269	**80%**	0.000558	0.00389	0.00456	16%	0.00	0.0000960	0.00212	0.0155	0.00882	55%	0.00	0.0227	nc	0.00
Mid Point PCDD/F TEQ (WHO 2005)	pg/g	0.0287	0.0977	0.123	23%	0.0225	0.0137	0.0173	23%	0.0353	0.0399	0.0127	0.0286	0.0280	2%	0.0788	0.0319	**85%**	0.0426
Upper Bound PCDD/F TEQ (WHO 2005)	pg/g	0.0569	0.174	0.210	19%	0.0441	0.0221	0.0252	13%	0.0703	0.0790	0.0234	0.0401	0.0471	16%	0.156	0.0377	**122%**	0.0845
Organochlorinated pesticides (OCP)																			
Aldrin	ng/g	<0.034	<0.11	<0.082	nc	-	<0.011	<0.013	nc	-	<0.042	-	<0.021	<0.0040	nc	<0.071	<0.48	nc	<0.025
BHC, alpha-	ng/g	<0.24	<0.92	<0.84	nc	-	<0.096	<0.096	nc	-	<0.20	-	<0.26	<0.030	nc	<0.097	<0.53	nc	<0.18
BHC, beta-	ng/g	<1.2	<1.3	<1.5	nc	-	<0.20	<0.24	nc	-	<0.96	-	<0.51	<0.070	nc	<0.71	<1.6	nc	<0.72
BHC, delta-	ng/g	<0.64	<1.2	<1.2	nc	-	<0.20	<0.20	nc	-	<0.66	-	<0.49	<0.052	nc	<0.42	<1.1	nc	<0.47
Chlordane, alpha-	ng/g	<0.24	<0.38	<0.36	nc	-	<0.029	<0.063	nc	-	<0.31	-	<0.064	<0.028	nc	<0.42	<1.0	nc	<0.39
Chlordane, trans- (gamma-Chlordane)	ng/g	<0.25	<0.43	<0.40	nc	-	<0.032	<0.070	nc	-	<0.33	-	<0.072	<0.031	nc	<0.46	<1.1	nc	<0.42
DDD (p,p'-DDD)	ng/g	<0.095	<0.35	<0.31	nc	-	<0.056	<0.053	nc	-	<0.12	-	<0.13	<0.017	nc	<0.77	<2.3	nc	<0.089
DDE (p,p'-DDE)	ng/g	<0.16	<0.32	<0.33	nc	-	<0.043	<0.036	nc	-	<0.17	-	<0.099	<0.011 XM JA R	nc	<0.37	<1.7	nc	<0.088
DDT (p,p'-DDT)	ng/g	<0.16	<0.43	<0.52	nc	-	<0.088	<0.057	nc	-	<0.19	-	<0.13	<0.023	nc	<0.91	<2.8	nc	<0.060
Dieldrin	ng/g	<0.15	<0.30	<0.19	nc	-	<0.022	<0.031	nc	-	<0.14	-	<0.13	<0.010	nc	<0.30	<0.61	nc	<0.15
Endosulfan I	ng/g	<0.18	<0.39	<0.54	nc	-	<0.099	<0.072	nc	-	<0.40	-	<0.20	<0.020	nc	<0.45	<0.68	nc	<0.18
Endosulfan II	ng/g	<0.31	<1.2	<0.70	nc	-	<0.15	<0.090	nc	-	<0.62	-	<0.24	<0.038	nc	<0.55	<1.4	nc	<0.33
Endosulfan Sulfate	ng/g	<0.080	<0.16	<0.11	nc	-	<0.026	<0.019	nc	-	<0.11	-	<0.12	<0.0081	nc	<0.14	<0.23	nc	<0.042
Endrin	ng/g	<0.15	<0.66	<0.49	nc	-	<0.044	<0.055	nc	-	<0.17	-	<0.23	<0.016	nc	<0.42	<1.2	nc	<0.17
Endrin Aldehyde	ng/g	<0.090	<0.51	<0.29	nc	-	<0.032	<0.024	nc	-	<0.12	-	<0.13	<0.010	nc	<0.64	<1.3	nc	<0.17
Heptachlor	ng/g	<0.020	<0.052	<0.028	nc	-	<0.0072	<0.0082	nc	-	<0.017	-	<0.0094	<0.0033	nc	<0.015	<0.14	nc	<0.012
Heptachlor Epoxide	ng/g	<0.040	<0.069	<0.066	nc	-	<0.012	<0.016	nc	-	<0.061	-	<0.017	<0.0032	nc	<0.11 XM	<0.71	nc	<0.066
Lindane (Hexachlorocyclohexane, gamma)	ng/g	<0.33	<0.98	<0.95	nc	-	<0.14	<0.12	nc	-	<0.33	-	<0.32	<0.042	nc	<0.19	<0.72	nc	<0.27
Methoxychlor (4,4'-Methoxychlor)	ng/g	<0.15	<0.23	<0.21	nc	-	<0.042	<0.047	nc	-	<0.10	-	<0.12	<0.023	nc	<0.26	<1.0	nc	<0.058
Mirex	ng/g	<0.010	<0.015	<0.017	nc	-	<0.0033	<0.0023	nc	-	<0.011	-	<0.0076	<0.00092	nc	<0.057	<0.092	nc	<0.0078
Polychlorinated biphenyls (PCB)																			
Polychlorinated Biphenyls (PCBs)	ng/g	<0.0060	<0.023	<0.022	nc	-	<0.0060	<0.0060	nc	-	<0.0060	-	0.06	0.027	**76%**	<0.0060	0.04	nc	<0.012
Pentachlorophenol (PCP)																			
Pentachlorophenol	ng/g	<0.6	<2.3	<2.2	nc	-	<0.6	<1.2	nc	-	<0.6	-	<1.3	<1.8	nc	<0.6	<0.6	nc	<0.7

See notes on last page

Table C-2d
Summary of Agricultural Crop 2021 Organic Analytical Results
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Notes:

6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
B	Indicates analyte was found in associated blank, as well as in the sample.
EN	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
JA	Analyte was detected below the calibrated range but above the detection limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
XM	A peak has been manually integrated.
RPD	Relative Percent Difference.
61%	RPD exceeds data quality objective of 60%.
nc	RPD is not calculated if one or more values is non detect or if one or more values is less than five times the reportable detection limit.

Table C-3: Concentrations of Analytes in Environmental Media That Exceeded Upper Control Limits on a Site-Specific Basis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte Group Number	Analyte	Matrix	Site	Sample ID	Sample Type	Detected Conc. (mg/kg)	MDL (mg/kg)	Value Compared to UL21 (mg/kg)	UL21 (mg/kg)	Conc. as % of UL18	LL21 (mg/kg)	Rural OTR98 MOE 2011 (mg/kg)	Rural ULN (mg/kg)	MOE O. Reg. 153/04 Table 1 Sediment (1) (mg/kg)	PSQG - Table 1 - LEL (mg/kg)	MOE O. Reg. 153/04 Table 1 Agricultural/ Other Property Use	Exceedance
Group1	Boron	SB	N4	21-N4-SB-CH-027	N	40.3	1.0	40.3	30.3	133	13.5						>UL21
Group1	Calcium	NG	E5	21-E5-NG-CH-055	N	34400	20	34400	19400	177	3080						>UL21
Group1	Calcium	SS	S2	21-S2-SS-CH-073	N	9260	50	9260	8920	104	4220	54000					>UL21
Group1	Calcium	SS	S4	21-S4-SS-CH-087	N	12600	50	12600	6510	194	3080	54000					>UL21
Group1	Calcium	SB	W2	21-W2-SB-CH-005	N	3340	20	3340	2870	116	1020						>UL21
Group1	Calcium	SB	W2	21-D5-SB-CH-205	FD	3120	20	3120	2870	109	1020						>UL21
Group1	Chloride	SS	S4	21-S4-SS-CH-087	N	20.3	5.0	20.3	16.8	121	1.27	35					>UL21
Group1	Chloride	SS	W4	21-W4-SS-CH-007	N	10.7	5.0	10.7	9.44	113	0.714	35					>UL21
Group1	Cobalt	NG	E5	21-E5-NG-CH-055	N	0.668	0.020	0.668	0.417	160	0.0384		2				>UL21
Group1	Cobalt	NG	S2	21-S2-NG-CH-075	N	0.363	0.020	0.363	0.351	103	0.0323		2				>UL21
Group1	Cobalt	NG	S4	21-S4-NG-CH-093	N	0.611	0.020	0.611	0.315	194	0.0291		2				>UL21
Group1	Iron	NG	E5	21-E5-NG-CH-055	N	1200	3.0	1200	387	310	68.3		500				>UL21>ULN
Group1	Iron	NG	S2	21-S2-NG-CH-075	N	691	3.0	691	356	194	62.9		500				>UL21>ULN
Group1	Iron	NG	S4	21-S4-NG-CH-093	N	1310	3.0	1310	268	489	47.3		500				>UL21>ULN
Group1	Magnesium	NG	S2	21-S2-NG-CH-075	N	5780	2.0	5780	4270	135	1460						>UL21
Group1	Magnesium	NG	S4	21-S4-NG-CH-093	N	4230	2.0	4230	3900	108	1330						>UL21
Group1	Magnesium	SS	S4	21-S4-SS-CH-087	N	11300	20	11300	9910	114	4840	19000	10000				>UL21>ULN
Group1	Manganese	NG	S4	21-S4-NG-CH-093	N	60.5	0.050	60.5	50.9	119	15.2		50				>UL21>ULN
Group1	Molybdenum	NG	E5	21-E5-NG-CH-055	N	11.7	0.020	11.7	10.5	111	1.25		6				>UL21>ULN
Group1	Molybdenum	SD	N2	21-N2-SD-CH-015	N	4.19	0.10	4.19	3.61	116	0.767						>UL21
Group1	Phosphorus	NG	W4	21-W4-NG-CH-009	N	5950	10	5950	5540	107	1940						>UL21
Group1	Phosphorus	SS	E2	21-E2-SS-CH-043	N	869	50	869	866	100	463	830					>UL21,>OTR
Group1	Phosphorus	SS	N4	21-N4-SS-CH-023	N	912	50	912	799	114	427	830					>UL21,>OTR
Group1	Phosphorus	SS	S2	21-S2-SS-CH-073	N	743	50	743	717	104	383	830					>UL21
Group1	Silicon	SD	N5	21-N5-SD-CH-031	N	264000	0	264000	215000	123	159000						>UL21
Group1	Silicon	SD	S4	21-S4-SD-CH-089	N	268000	0	268000	250000	107	185000						>UL21
Group1	Silicon	SS	E5	21-E5-SS-CH-053	N	373000	0	373000	369000	101	282000						>UL21
Group1	Silicon	SS	N4	21-N4-SS-CH-023	N	370000	0	370000	331000	112	253000						>UL21
Group1	Silicon	SS	N5	21-N5-SS-CH-029	N	335000	0	335000	304000	110	232000						>UL21
Group1	Silicon	SS	S4	21-S4-SS-CH-087	N	312000	0	312000	310000	101	237000						>UL21
Group1	Sodium	NG	E2	21-E2-NG-CH-049	N	80	20	80	64.3	124	12.5						>UL21
Group1	Strontium	NG	E5	21-E5-NG-CH-055	N	46.1	0.050	46.1	27.9	165	7.46						>UL21
Group1	Strontium	SS	S4	21-S4-SS-CH-087	N	38	0.50	38	31.7	120	13.5	63					>UL21
Group1	Sulfur	NG	E5	21-E5-NG-CH-055	N	15600	100	15600	4970	314	1440		5000				>UL21>ULN
Group1	Titanium	NG	S4	21-S4-NG-CH-093	N	14.5	0.25	14.5	9.14	159	0.218						>UL21
Group2	Aluminum	NG	E5	21-E5-NG-CH-055	N	1100	2.0	1100	321	343	15.6						>UL21
Group2	Aluminum	NG	S2	21-S2-NG-CH-075	N	646	2.0	646	504	128	24.5						>UL21
Group2	Aluminum	NG	S4	21-S4-NG-CH-093	N	1170	2.0	1170	212	552	10.3						>UL21
Group2	Arsenic	SD	N2	21-N2-SD-CH-015	N	7.15	0.10	7.15	7.14	100	3.3			6	6		>UL21>MOE,>PSQ
Group2	Lead	NG	E5	21-E5-NG-CH-055	N	1.07	0.020	1.07	0.921	116	0.121		20				>UL21
Group2	Lead	NG	S4	21-S4-NG-CH-093	N	0.731	0.020	0.731	0.416	176	0.0547		20				>UL21
Group2	Mercury	SS	N5	21-N5-SS-CH-029	N	0.0903	0.0050	0.0903	0.0868	104	0.0577	0.13	0.15			0.16	>UL21

Notes:

Rural OTR98	Rural parkland Ontario Typical Range
Rural ULN	Rural Upper Limit of the Normal
MOE O. Reg 153/04 Table 1	Ontario Regulation 153/04 Table 1 site condition standards
PSQG	Provincial Sediment Quality Guideline
MDL	Method Detection Limit
UL21	Upper Limit 2021
LL21	Lower Limit 2021
SS	Soil
NG	Natural grasses
SB	Soybean
N/A	Not applicable
N/V	No value

Table C-4: List of Sites and Matrices Where the Concentrations of Analytes in Environmental Media Exceeded Upper Control Limits on a Site-Specific Basis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Site	FC	NG	SB	SD	SS	WW	Total Exceedances of UL21
E1	0	0	NA	NA	0	NA	0
E2	NA	Sodium	NA	0	Phosphorus	NA	2
E5	0	**Aluminum**, Calcium, Cobalt, Iron, **Lead**, Molybdenum, Strontium, Sulfur	NA	NA	Silicon	NA	9
N2	0	0	NA	**Arsenic**, Molybdenum	0	NA	2
N4	NA	0	Boron	NA	Phosphorus, Silicon	NA	3
N5	NA	0	NA	Silicon	**Mercury**, Silicon	NA	3
S2	NA	Cobalt, Iron, Magnesium	NA	NA	Calcium, Phosphorus	NA	7
S4	NA	**Aluminum**, Cobalt, Iron, **Lead,** Magnesium, Manganese, Titanium	NA	Silicon	Calcium, Chloride, Magnesium, Silicon, Strontium	0	14
W2	NA	0	Calcium	NA	0	NA	2
W4	NA	Phosphorus	NA	NA	Chloride	NA	2
Number of exceedances per media	0	20	2	4	14	0	-

Notes:

N/A	Not Available
Chloride	Group 1 Analyte
Mercury	Group 2 Analyte

Appendix C-5: Inorganic Analytes Where Concentrations of Analytes in Environmental Media Exceeded Upper Control Limits on a Site-Wide Basis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte Group Number	Analyte	Matrix	No. Samples (n)	MDL (mg/kg)	Mean Conc. (mg/kg)	LL21 (mg/kg)	UL21 (mg/kg)	Conc. as % of UL21	Rural OTR98 MOE 2011 (mg/kg)	Rural ULN (mg/kg)	Exceedances
Group1	Iron	NG	12	3.0	495.3	53.3	302	164		500	>UL21
Group2	Aluminum	NG	12	2.0	421.6	15.4	317	133			>UL21

Notes:

Rural OTR98	Rural parkland Ontario Typical Range
Rural ULN	Rural Upper Limit of the Normal
MDL	Method Detection Limit
UL18	Upper Limit 2021
LL18	Lower Limit 2021
SS	Soil
NG	Natural grasses
n/v	No value

Appendix C Tables

Table C-6: Comparison of Trend Results for Statistically Site-Specific Trend Lines for Inorganic Analytes (p<0.003) from the 2021 Biomonitoring Program, Lambton Facility to Paired Results from 2018, 2015, and 2012 Field Years

Analyte	Matrix	Site	Trend from 2021 Field Year	Trend from 2018 Field Year	Trend from 2015 Field Year	Trend from 2012 Field Year
Aluminum	SD	N2	Increasing	Increasing	Increasing	Increasing
Aluminum	SS	N2	Increasing	No trend	Increasing	No trend
Aluminum	SS	S2	Increasing	No trend	Increasing	No trend
Aluminum	SS	S4	Increasing	Increasing	Increasing	No trend
Aluminum	SS	W2	Increasing	Increasing	No trend	No trend
Arsenic	SD	S4	Increasing	Increasing	Increasing	No trend
Arsenic	SS	N2	Increasing	No trend	Increasing	No trend
Arsenic	SS	W2	Increasing	No trend	Increasing	No trend
Barium	SS	S4	Increasing	Increasing	Increasing	Increasing
Beryllium	SD	E2	Increasing	Increasing	Increasing	Increasing
Beryllium	SD	N2	Increasing	Increasing	Increasing	Increasing
Beryllium	SS	S4	Increasing	Increasing	Increasing	No trend
Cadmium	SD	S4	Decreasing	Decreasing	No trend	No trend
Calcium	SB	S2	Increasing	No trend	No trend	No trend
Calcium	SB	S4	Increasing	Increasing	No trend	No trend
Calcium	SS	S4	Increasing	Increasing	Increasing	Increasing
Chromium	NG	E1	Decreasing	No trend	No trend	No trend
Chromium	NG	N5	Decreasing	No trend	No trend	No trend
Chromium	SD	N2	Increasing	Increasing	Increasing	Increasing
Chromium	SD	S4	Increasing	No trend	No trend	No trend
Chromium	SS	S1	Increasing	No trend	Increasing	No trend
Chromium	SS	S2	Increasing	No trend	No trend	Increasing
Chromium	SS	S4	Increasing	Increasing	Increasing	No trend
Chromium	SS	W2	Increasing	No trend	No trend	No trend
Cobalt	SD	N2	Increasing	Increasing	Increasing	No trend
Copper	SD	S4	Decreasing	Decreasing	Decreasing	No trend
Copper	SS	E1	Decreasing	Decreasing	No trend	No trend
Copper	SS	W2	Decreasing	Decreasing	Decreasing	Decreasing
Iron	SD	N2	Increasing	Increasing	Increasing	Increasing
Lead	NG	N5	Decreasing	Decreasing	No trend	No trend
Magnesium	NG	S4	Increasing	Increasing	No trend	No trend
Magnesium	SS	S4	Increasing	Increasing	Increasing	No trend
Manganese	SD	S4	Increasing	Increasing	Increasing	No trend
Manganese	SS	S4	Increasing	No trend	Increasing	Increasing
Mercury	NG	E1	Decreasing	Decreasing	No trend	No trend
Mercury	NG	E2	Decreasing	Decreasing	No trend	No trend
Mercury	NG	N2	Decreasing	No trend	No trend	No trend
Mercury	NG	N4	Decreasing	Decreasing	Decreasing	No trend
Mercury	NG	N5	Decreasing	Decreasing	No trend	No trend
Mercury	NG	S2	Decreasing	Decreasing	No trend	No trend
Mercury	NG	S4	Decreasing	No trend	No trend	No trend
Mercury	NG	W4	Decreasing	No trend	No trend	No trend
Molybdenum	NG	E2	Increasing	No trend	No trend	No trend
Molybdenum	NG	E6	Increasing	Increasing	Increasing	No trend
Molybdenum	NG	S4	Increasing	Increasing	No trend	No trend
Molybdenum	NG	W2	Increasing	No trend	No trend	No trend
Molybdenum	SB	S4	Increasing	Increasing	Increasing	No trend
Molybdenum	SD	E2	Increasing	No trend	No trend	No trend
Molybdenum	SD	N2	Increasing	No trend	No trend	No trend

Appendix C Tables

Analyte	Matrix	Site	Trend from 2021 Field Year	Trend from 2018 Field Year	Trend from 2015 Field Year	Trend from 2012 Field Year
Molybdenum	SD	N5	Increasing	No trend	Increasing	No trend
Nickel	SD	N2	Increasing	Increasing	Increasing	No trend
Phosphorus	SB	S4	Increasing	Increasing	No trend	No trend
Phosphorus	SS	N2	Increasing	Increasing	Increasing	No trend
Phosphorus	SS	N4	Increasing	No trend	Increasing	No trend
Phosphorus	SS	S2	Increasing	No trend	No trend	No trend
Phosphorus	SS	S4	Increasing	Increasing	Increasing	No trend
Potassium	SD	E2	Increasing	No trend	Increasing	No trend
Potassium	SD	N2	Increasing	Increasing	Increasing	Increasing
Potassium	SD	S4	Increasing	Increasing	No trend	No trend
Potassium	SS	N2	Increasing	No trend	Increasing	No trend
Potassium	SS	S1	Increasing	No trend	No trend	No trend
Potassium	SS	S2	Increasing	No trend	No trend	No trend
Potassium	SS	S4	Increasing	Increasing	Increasing	No trend
Potassium	SS	W2	Increasing	Increasing	No trend	No trend
Sodium	SD	N5	Decreasing	No trend	No trend	No trend
Sodium	SS	E1	Decreasing	No trend	No trend	No trend
Sodium	SS	E2	Decreasing	Decreasing	No trend	No trend
Sodium	SS	E5	Decreasing	No trend	No trend	No trend
Sodium	SS	N2	Decreasing	No trend	No trend	No trend
Sodium	SS	N4	Decreasing	No trend	No trend	No trend
Sodium	SS	N5	Decreasing	Decreasing	No trend	No trend
Sodium	SS	S2	Decreasing	No trend	No trend	No trend
Sodium	SS	W4	Decreasing	No trend	No trend	No trend
Strontium	SS	S4	Increasing	Increasing	Increasing	No trend
Sulfur	SB	W4	Increasing	No trend	No trend	No trend
Thallium	NG	N5	Decreasing	No trend	No trend	No trend
Vanadium	NG	N2	Decreasing	No trend	No trend	No trend
Vanadium	NG	W2	Decreasing	No trend	No trend	No trend
Vanadium	NG	W4	Decreasing	No trend	No trend	No trend
Vanadium	SD	N2	Increasing	Increasing	Increasing	No trend
Vanadium	SD	S4	Increasing	No trend	No trend	No trend
Vanadium	SS	W2	Increasing	No trend	No trend	No trend
Zinc	SS	N5	Decreasing	No trend	No trend	No trend
Zirconium	SS	N5	Decreasing	No trend	No trend	No trend

Table C-7: Summary of Sites and Matrices With Site-Specific Upward Trend Lines (p<0.003) for Inorganic Analytes, 2021 Biomonitoring Program, Lambton Facility

Site*	Matrix				Total Upward Trends	Parameters with Upward Trends where 2021 Concentration also Exceeds UL21 and/or Applicable Standards
	Natural Grasses	Soybeans	Sediment	Soil		
E1	0	0	NA	0	0	0
E2	Molybdenum	0	Beryllium, Molybdenum, Potassium	0	4	0
E5	0	0	NA	0	0	0
E6	Molybdenum	NA	NA	0	1	0
N2	0	0	**Aluminum**, Beryllium, Chromium, Cobalt, Iron, Molybdenum, Nickel, Potassium, **Vanadium**	**Aluminum**, **Arsenic**, Phosphorus, Potassium	13	Sediment Molybdenum > UL21
N4	0	0	NA	Phosphorus	1	0
N5	0	NA	Molybdenum	0	1	0
S1	0	0	0	Chromium, Potassium	2	0
S2	0	Calcium	NA	**Aluminum**, Chromium, Phosphorus, Potassium	5	Soil Phosphorus > UL21
S4	Magnesium, Molybdenum	Calcium, Molybdenum, Phosphorus	**Arsenic**, Chromium, Manganese, Potassium, **Vanadium**	**Aluminum**, Barium, Beryllium, Calcium, Chromium, Magnesium, Manganese, Phosphorus, Potassium, Strontium	20	Natural Grasses Magnesium > UL21 Soil Calcium > UL21 Magnesium > UL21, > ULN Strontium > UL21
W2	Molybdenum	0	NA	**Aluminum**, **Arsenic**, Chromium, Potassium, **Vanadium**	6	0
W4	0	Sulfur	NA	0	1	0
Total	5	5	18	26	54	

Appendix C Tables

Notes:
Not Bold = Group 1
Bold = Group 2 Analyte
N/A = Not available
ULN - Upper Limit of Normal (MOECC, 1989)
OTR - Ontario Typical Range (MOECC, 2011)
Table 1 SCS - MOECC O.Reg. 153/04 Table 1 Full Depth Background Site Condition Standards (MOECC, 2011)
PSQG - Provincial Sediment Quality Guidelines (MOECC, 2008)
* Excludes sites which were decommissioned prior to 2019.

Appendix D PHOTOLOG

Photo 1: Winter wheat collection area at Site S4.

Photo 2: Collecting winter wheat samples at Site W4.

Photo 3: Collecting soil samples at Site S4.

Photo 4: Collecting soil samples at Site W2.

Photo 5: Sediment collection area at Site N4.

Photo 6: Collecting soybean samples at Site W2.

Photo 7: Collecting sugar beet samples at Site E2.

Photo 8: Soybean collection area at Site W2.

Photo 9: Installation of ball marker at new on-facility Site S8.

Photo 10: Sediment sampling at new Site S8.

Photo 11: Location for the new Site S8, south of the smoke stack.

Photo 12: Location cont. of S8

Photo 13: Approximate location of destroyed on-facility Site E6 (buried under new landfill cell).

Photo 14: Field Corn collection area at Site E5.

Photo 15: Collecting sediment sample at Site E2.

Photo 16: Collecting natural grasses at Site E5.

Photo 17: NORM monitoring at Site E2.

Photo 18: NORM monitoring at Site S2.

Photo 19: NORM monitoring at Site E7.

Appendix E ASSESSMENT OF APPROPRIATE START DATE FOR STATISTICAL ANALYSIS

E.1 RATIONALE AND DISCUSSION

As noted in prior reports, RDLs have shifted since 1991 for certain analyte-matrix pairs due to changes in analytical methods. In most cases, RDLs have decreased because of increased sensitivity of the analytical method. However, in other cases, RDLs have increased, generally as a trade-off for greater sensitivity for other analytes. For analyte-matrix pairs that have large proportions of non-detect data, these changes in RDL can have major impacts on statistical results for analyses that consider all data collected throughout the Biomonitoring Program (e.g., linear regressions and calculations of upper and lower limits).

Therefore, prior to analyses carried out in the present report, analytical data were reviewed for each analyte-matrix pair to determine the appropriate start date for statistical analyses. To facilitate this review, scatterplots of available analytical data for these analyte-matrix pairs since 1991 were plotted on a Site-wide basis. The plots for inorganic analytes are provided in **Section E.2** of this appendix and the plots for organic analytes are provided in **Section E.4.** of this appendix. As noted elsewhere, values reported as less than the RDL were assigned the full RDL value in these plots. As such, areas of these graphs with points that form a horizontal line are indicative of several years of data points reported as less than the RDL with a stable RDL. Therefore, a visual analysis was applied to identify datasets where results over time appear to be influenced by instability in the analytical method rather than actual meaningful changes in measured analyte concentrations and the appropriate start date was identified accordingly. For example, see the scatterplot for aluminum in soybean in **Section E.2.5** of this appendix. In this dataset, reported values were largely less than the RDL, but the RDL has fluctuated from 30 mg/kg from 1991 to 2001, down to 10 mg/kg in 2001 to 2002, further down to 4 mg/kg in 2003 and 2004, and then back up to 10 mg/kg from 2005 to 2017. For this dataset, truncating the dataset to 2005 onwards will create a dataset with a consistent DL and avoid statistical artefacts related to RDL fluctuations.

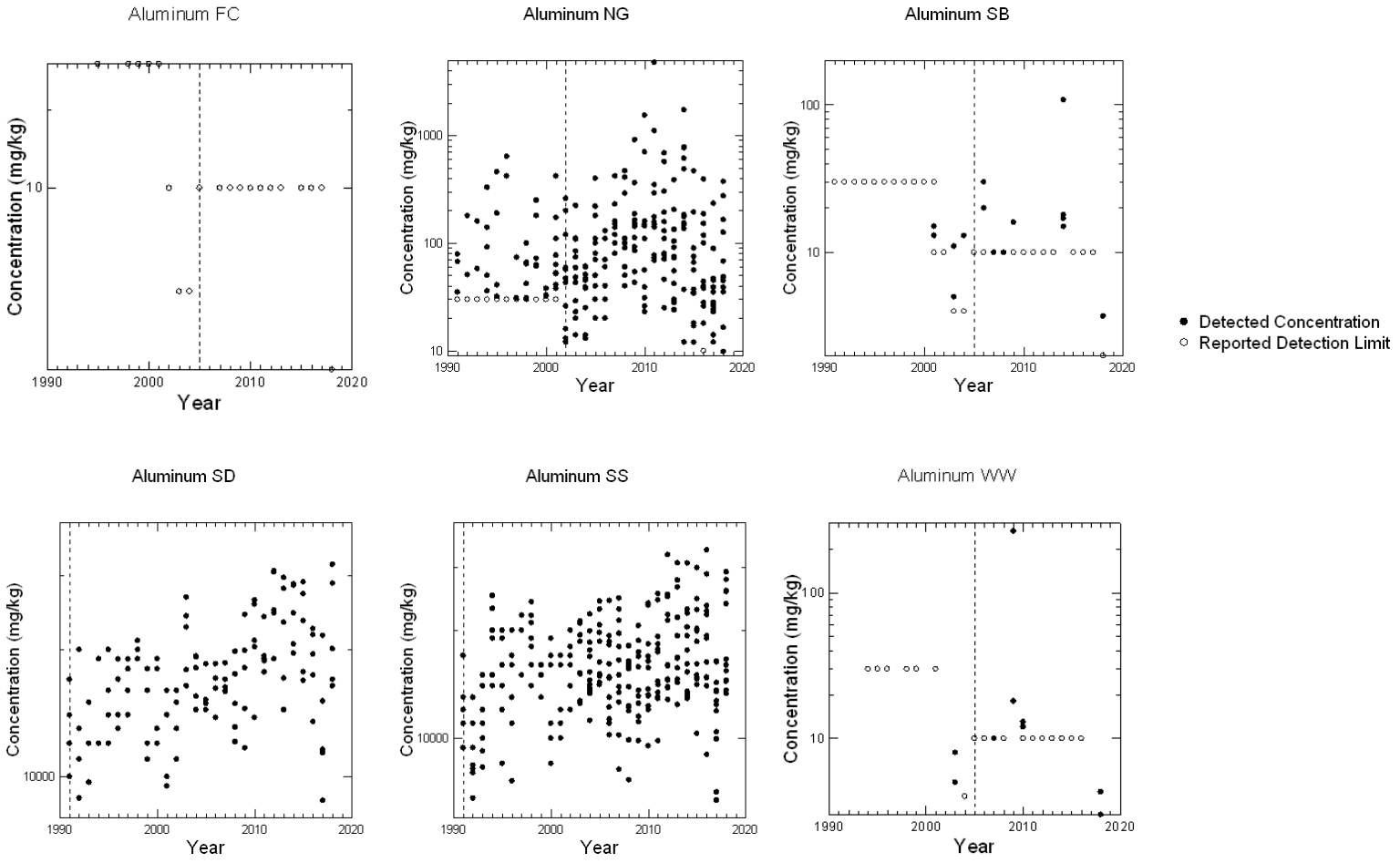
The assessed appropriate start dates for statistical analysis (control charts and linear regression) for each analyte-matrix pair on a Site-wide basis are indicated by a dashed vertical line on the figures in **Section E.2** and **Section E.4** of this appendix, with summary tables provided in **Section E.3** and **Section E.5** of this appendix for inorganic and organic analytes, respectively. The inorganic analyte statistical analysis start dates were last updated as part of the 2018 Field Year report in support of Site-specific trend analysis and the scatterplots of inorganic analyte concentrations provided in **Section E.2** include data from 1991 to 2018. The organic analyte statistical analysis start dates were last updated as part of the 2019 Field Year report in support of Site-specific trend analysis and the scatterplots of inorganic analyte concentrations provided in **Section E.4** include data from 1991 to 2019. Statistical analyses (e.g., linear regression and calculation of upper and lower limits) that rely on data collected over time in this report and future reports will adopt the analyte-matrix specific start dates described herein unless future analysis identifies a more suitable approach. Historical data will be retained for historical comparison purposes only.

E.2 SCATTERPLOTS OF SITE-WIDE ANALYTICAL DATA AVAILABLE FOR EACH ANALYTE-MATRIX PAIR SINCE 1991 (INORGANIC)

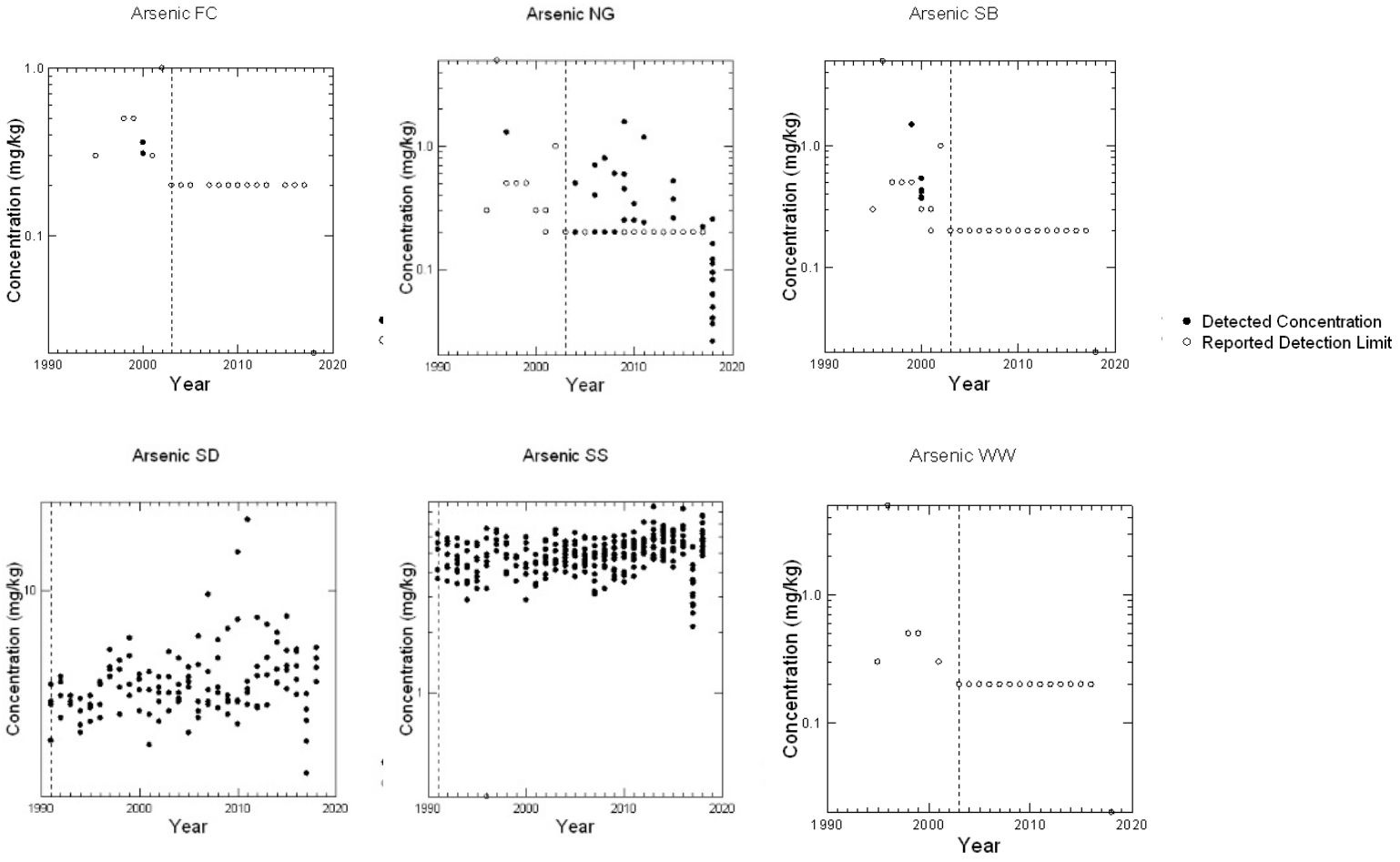
This appendix provides scatterplots of available analytical data for each analyte-matrix pair for inorganic analytes on a Site-wide basis. The assessed appropriate start dates for statistical analysis (control charts and linear regression) for each analyte-matrix pair on a Site-wide basis are indicated by a dashed vertical line on the figures.

Note, the monitoring of fluoride was initiated in the 2018 Field Year as per the MECP approved changes. Therefore, fluoride has been exempted from the assessment of appropriate start date due to the limited amount of available data. A review of the appropriate start date for fluoride analysis will be considered when there are at least six years of available data, as this is the minimum data requirement set in this biomonitoring program for the calculation of an upper limit. In the interim, regression analyses for fluoride will be evaluated with a start date of 2018.

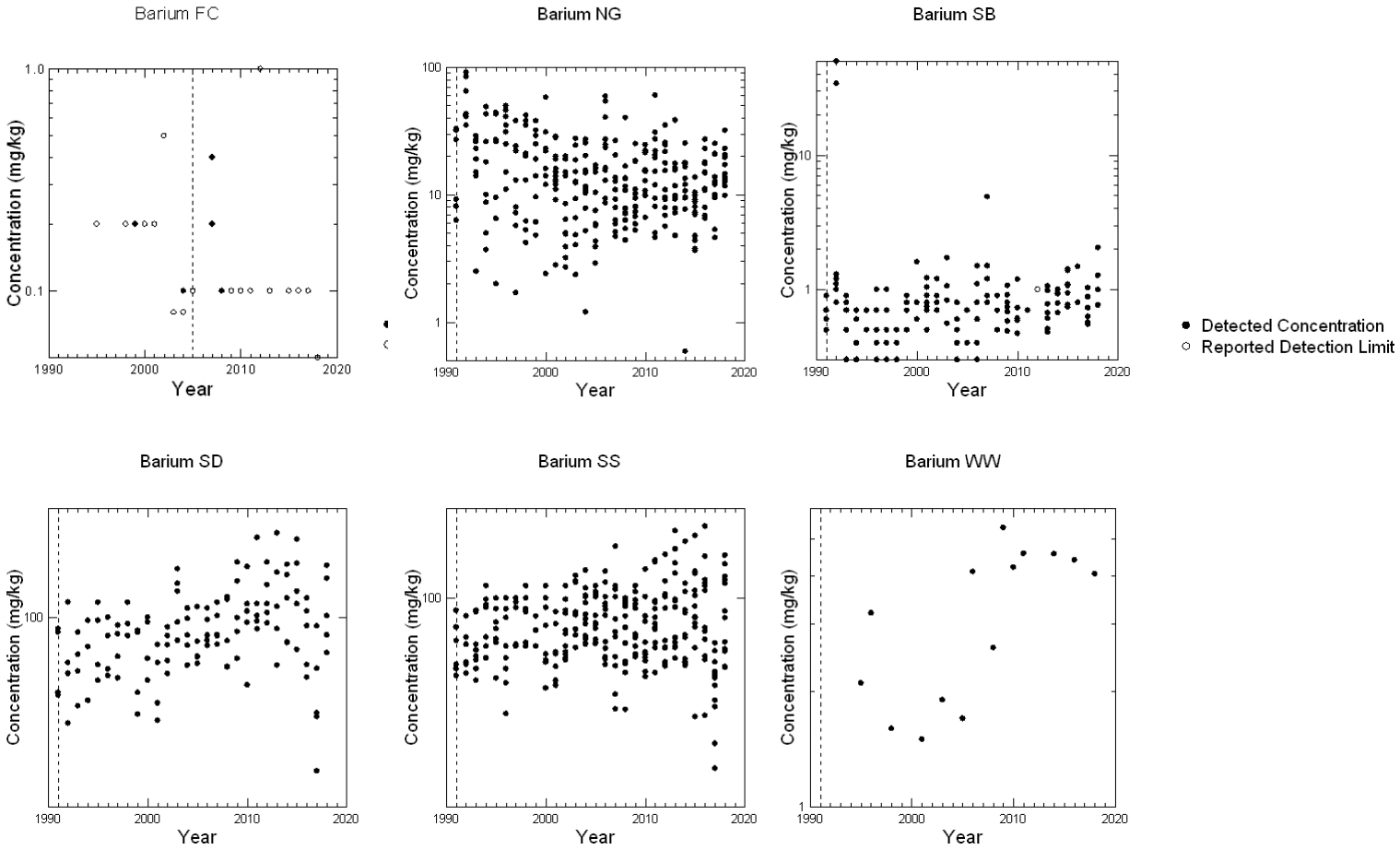
E.2.1 Aluminum



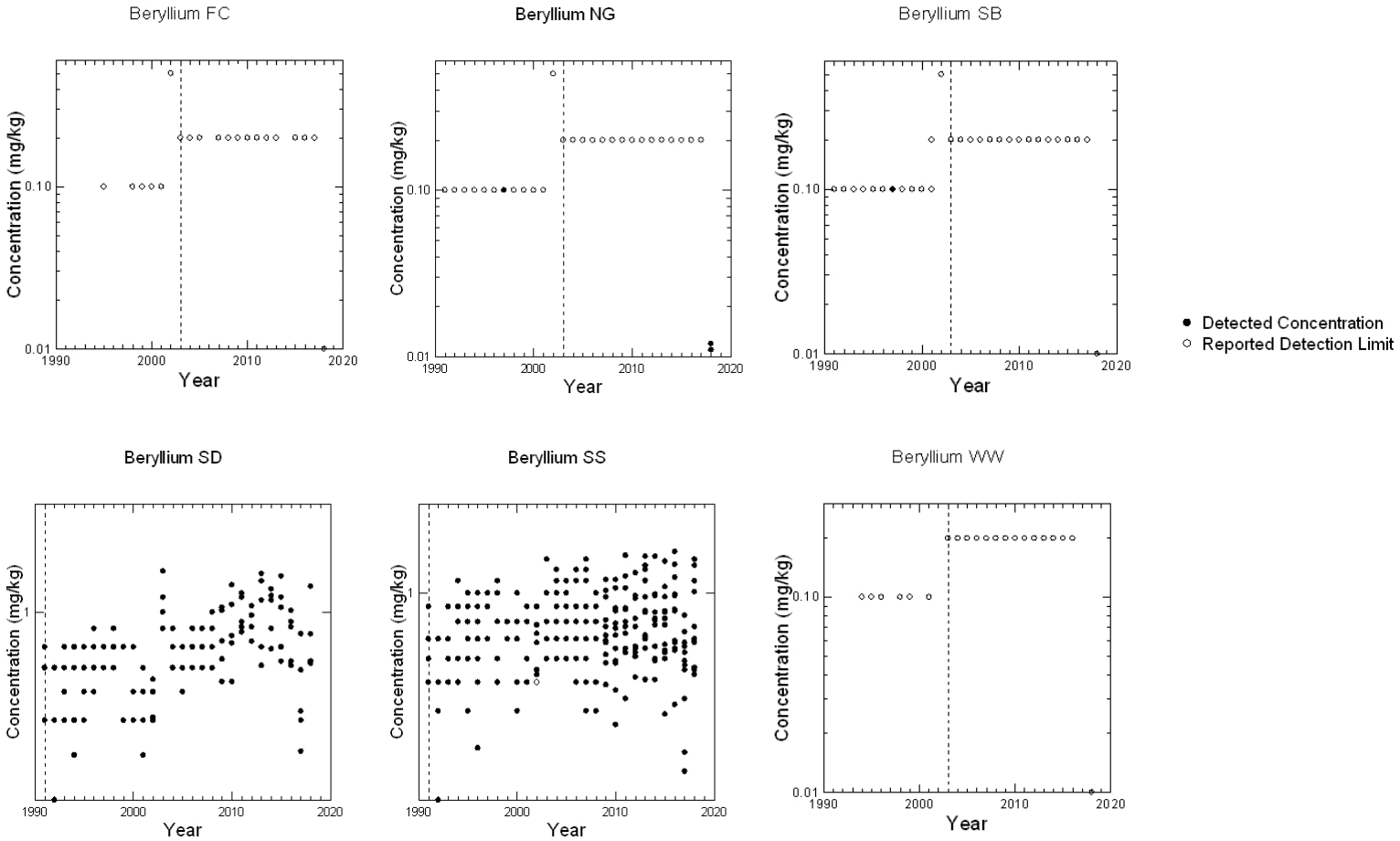
E.2.2 Arsenic


Arsenic FC
Arsenic NG
Arsenic SB
Arsenic SD
Arsenic SS
Arsenic WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
0.1
1.0
10
Detected Concentration
Reported Detection Limit

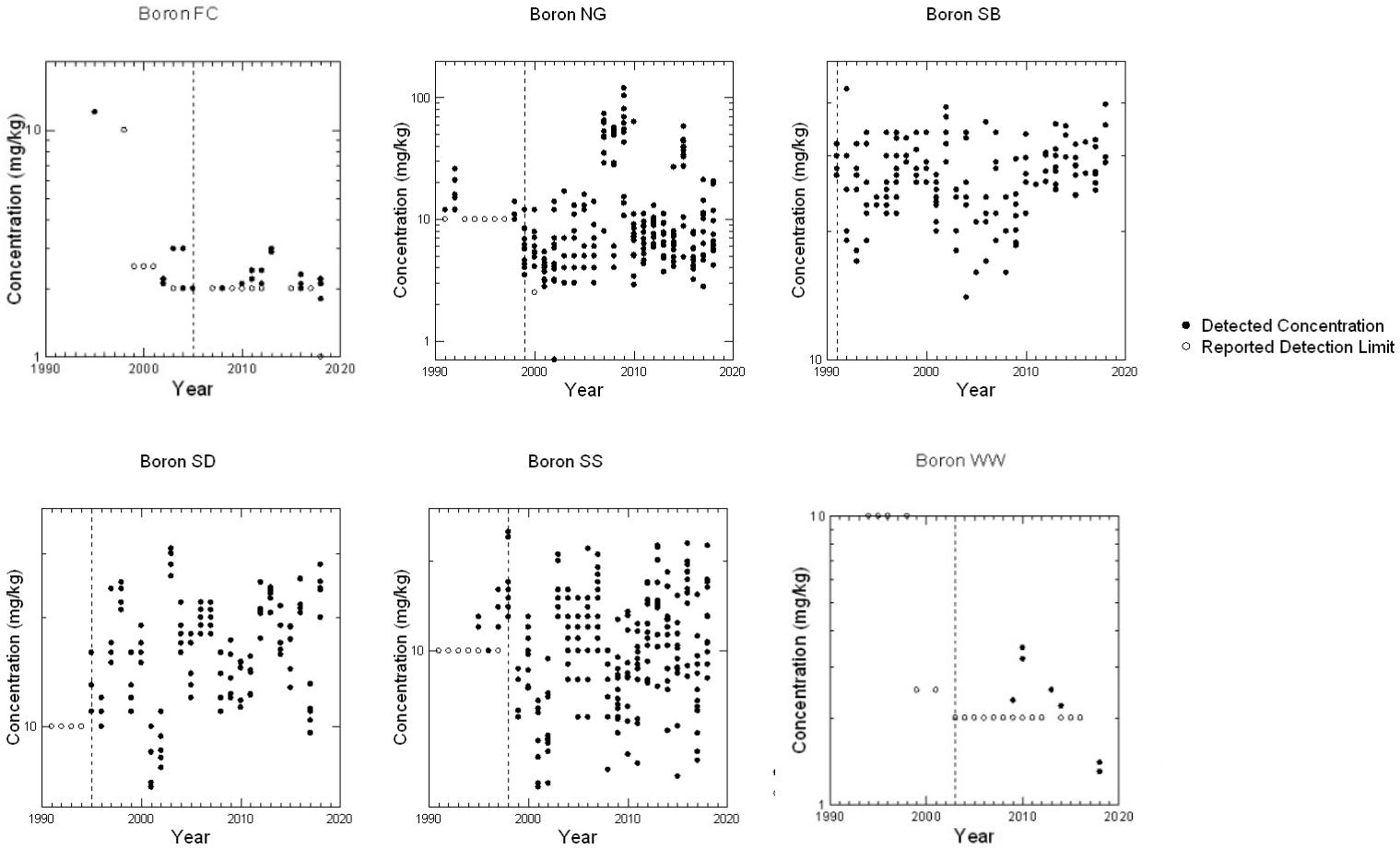
E.2.3 Barium


Barium FC
Barium NG
Barium SB
Barium SD
Barium SS
Barium WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
Detected Concentration
Reported Detection Limit

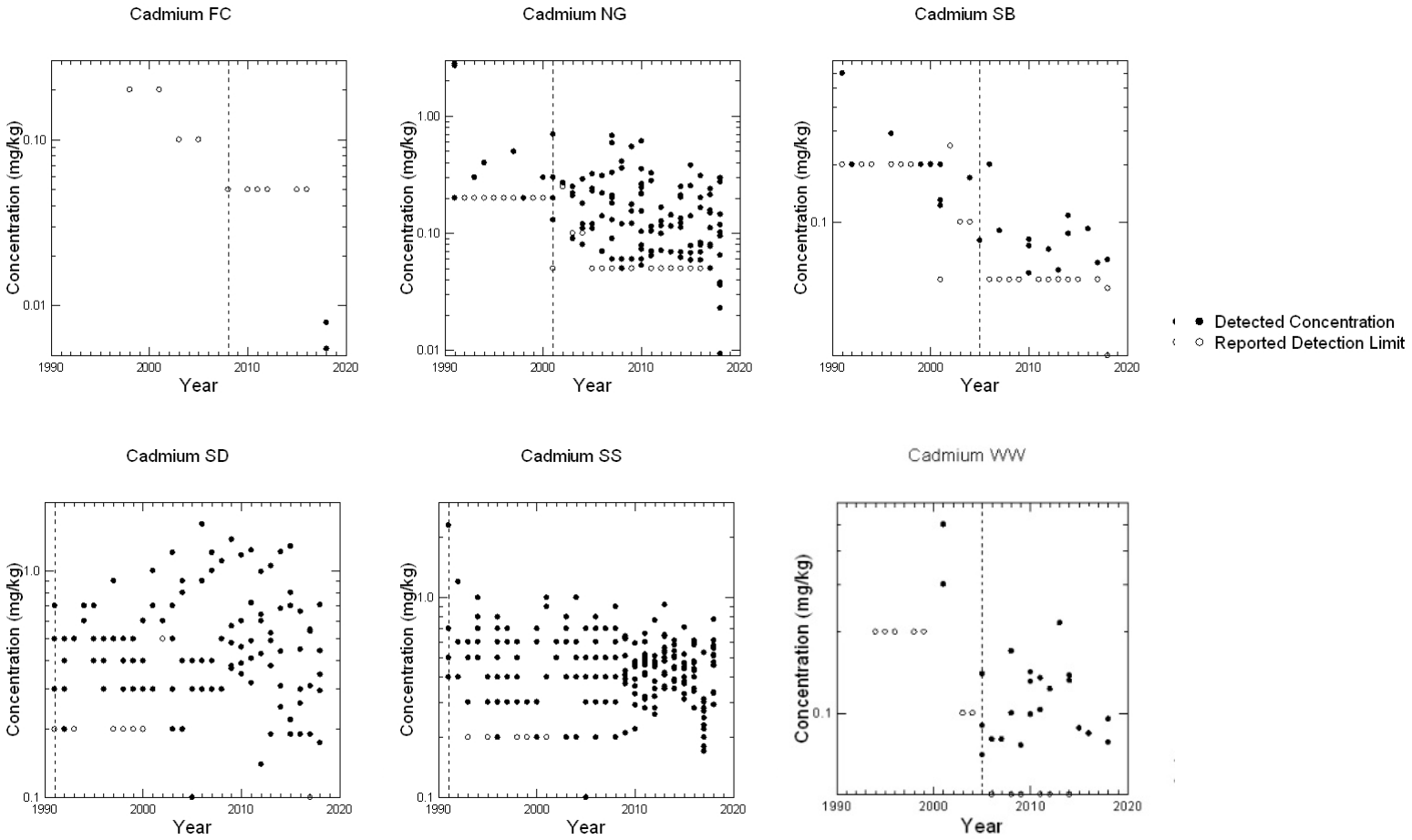
E.2.4 Beryllium



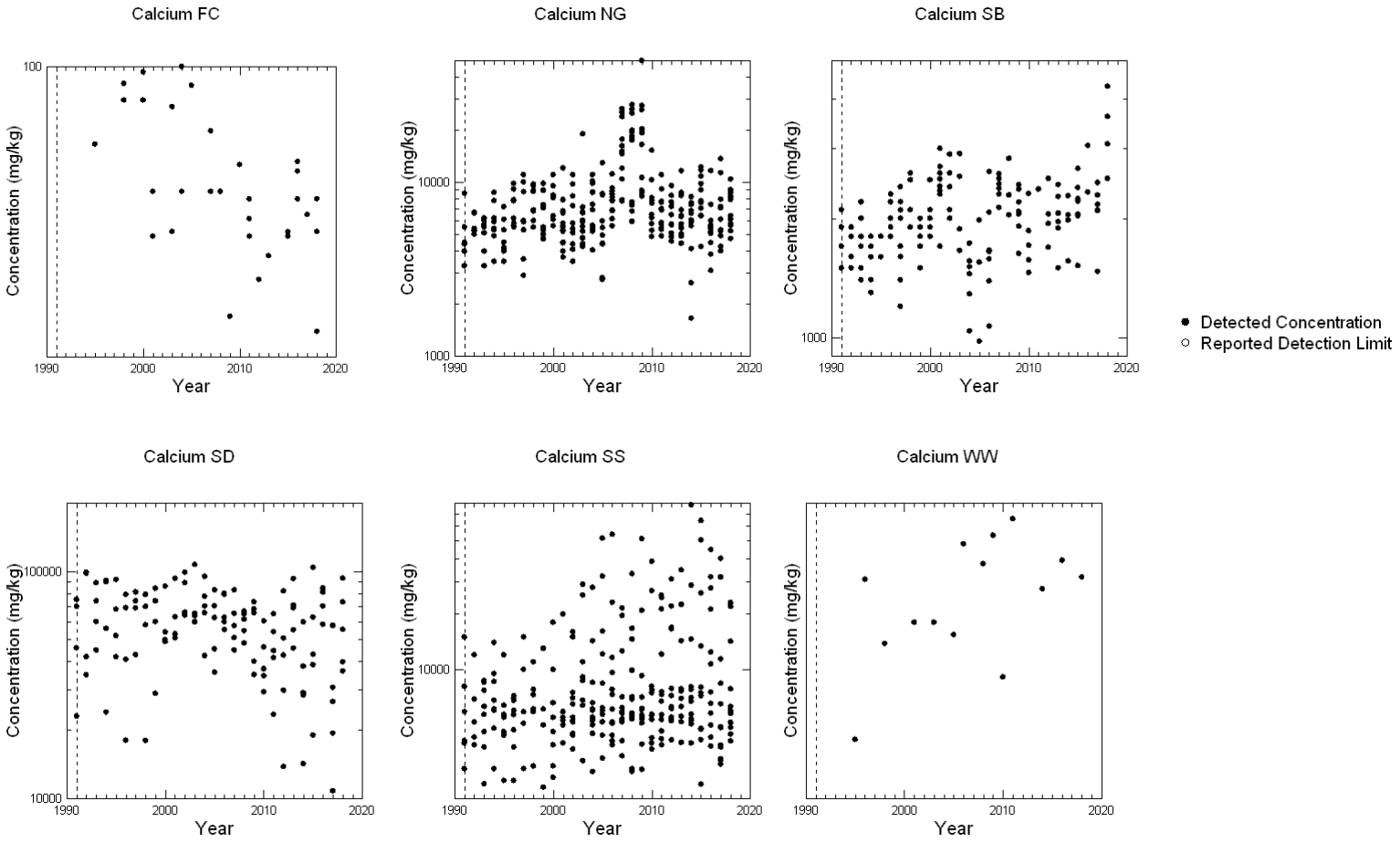
E.2.5 Boron


Boron FC
Boron NG
Boron SB
Boron SD
Boron SS
Boron WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
1
10
100
Detected Concentration
Reported Detection Limit

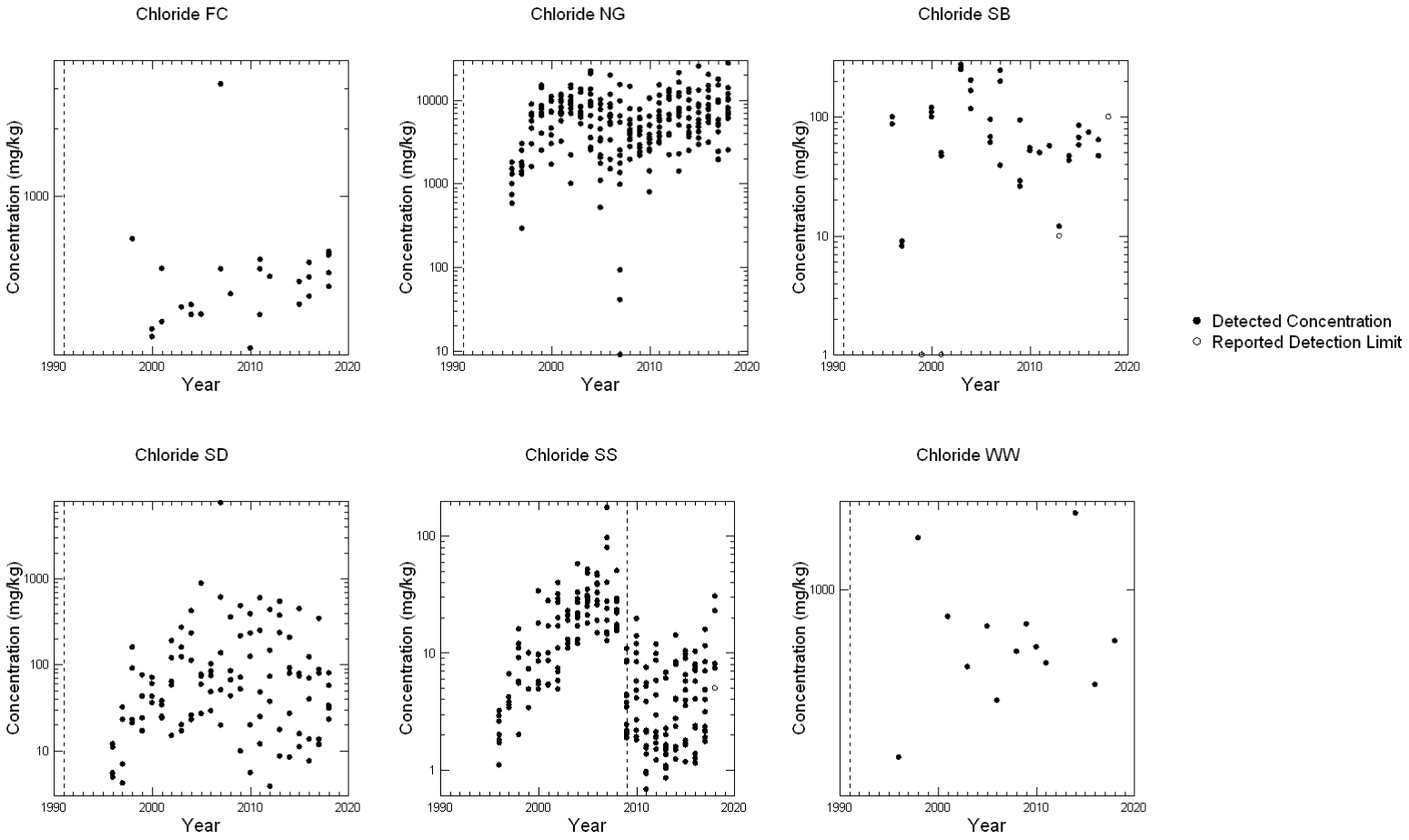
E.2.6 Cadmium


Cadmium FC
Cadmium NG
Cadmium SB
Cadmium SD
Cadmium SS
Cadmium WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
0.01
0.10
1.00
0.1
1.0
Detected Concentration
Reported Detection Limit

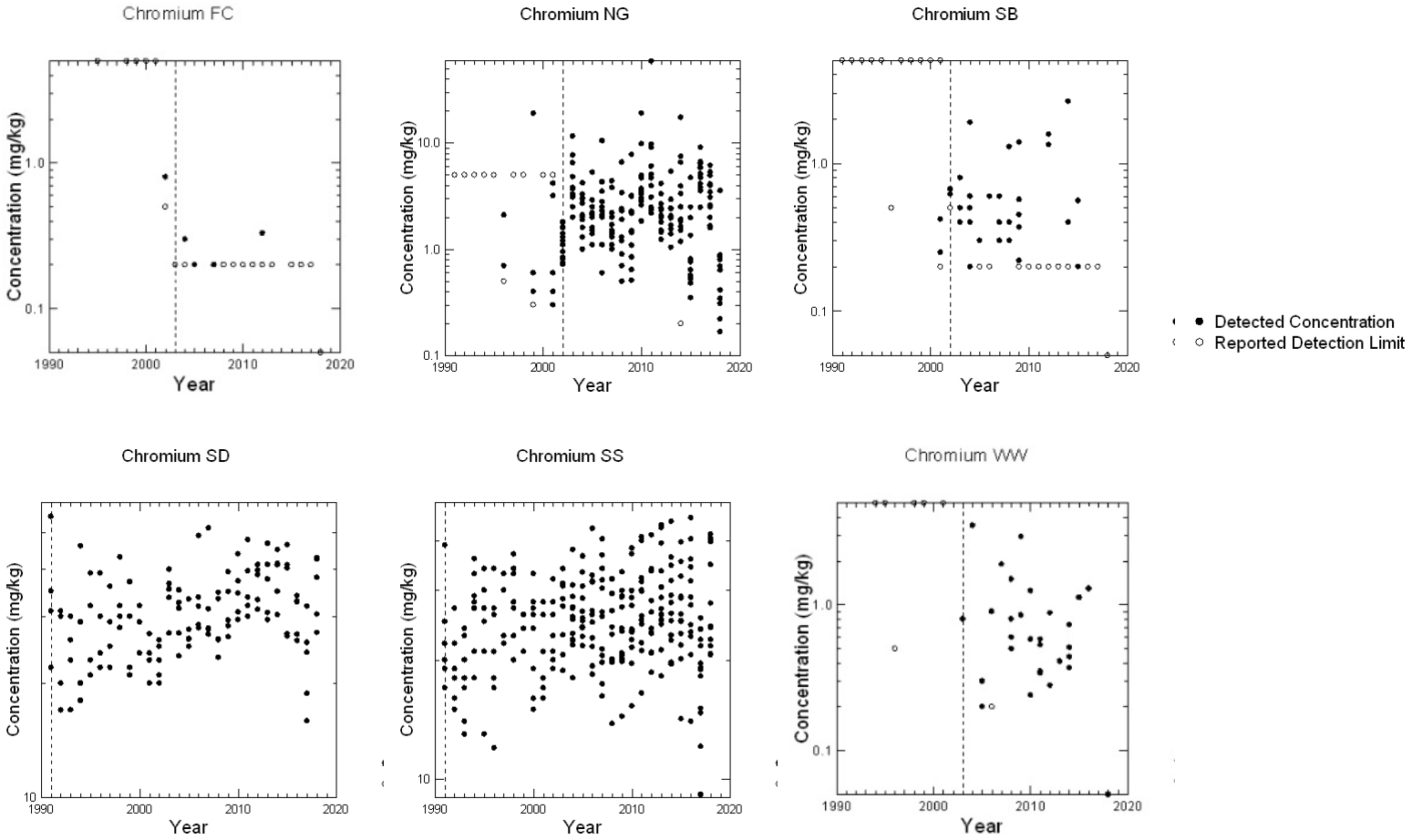
E.2.7 Calcium


Calcium FC
Calcium NG
Calcium SB
Calcium SD
Calcium SS
Calcium WW
Concentration (mg/kg)
Year
100
1000
10000
100000
1990
2000
2010
2020
Detected Concentration
Reported Detection Limit

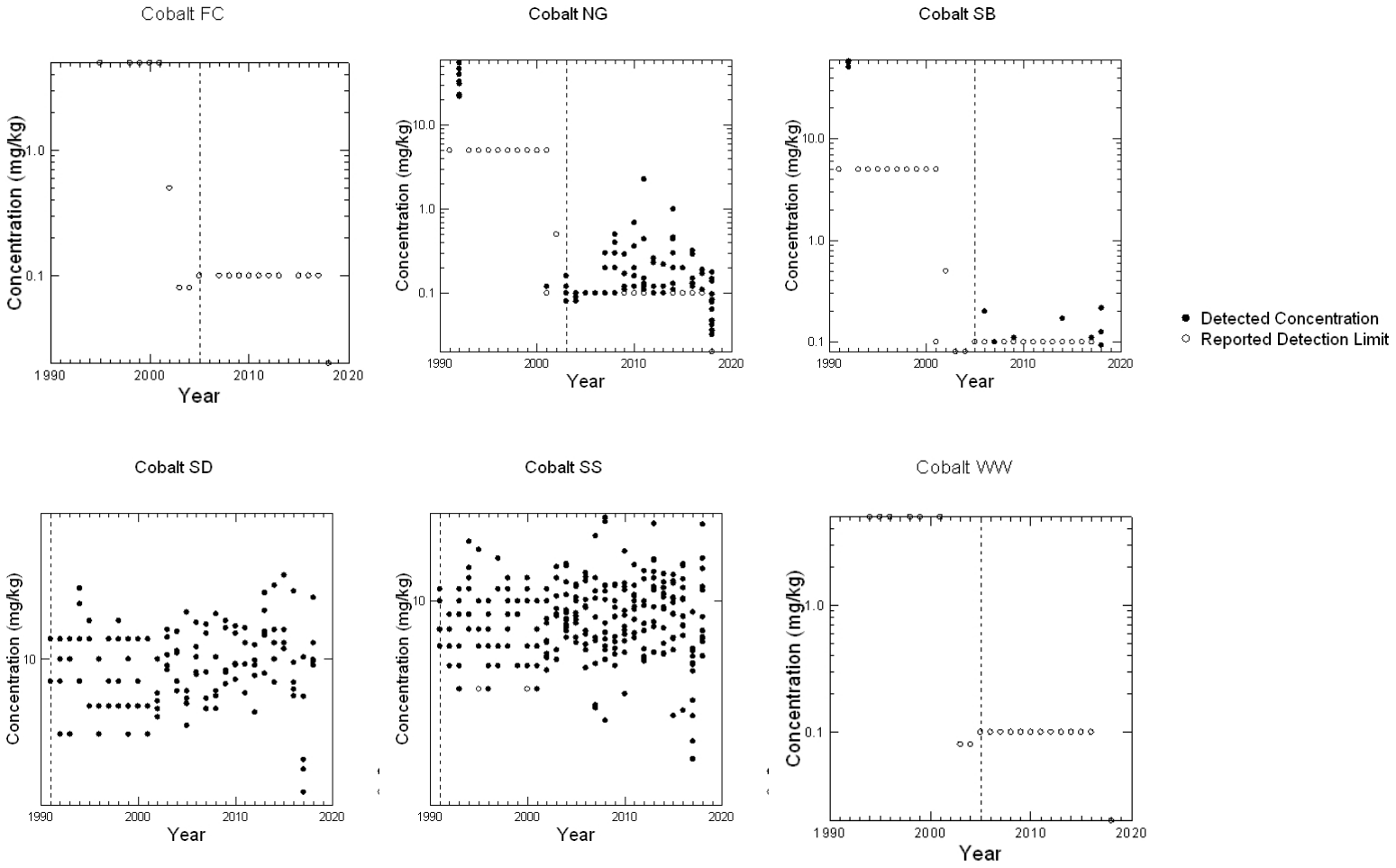
E.2.8 Chloride



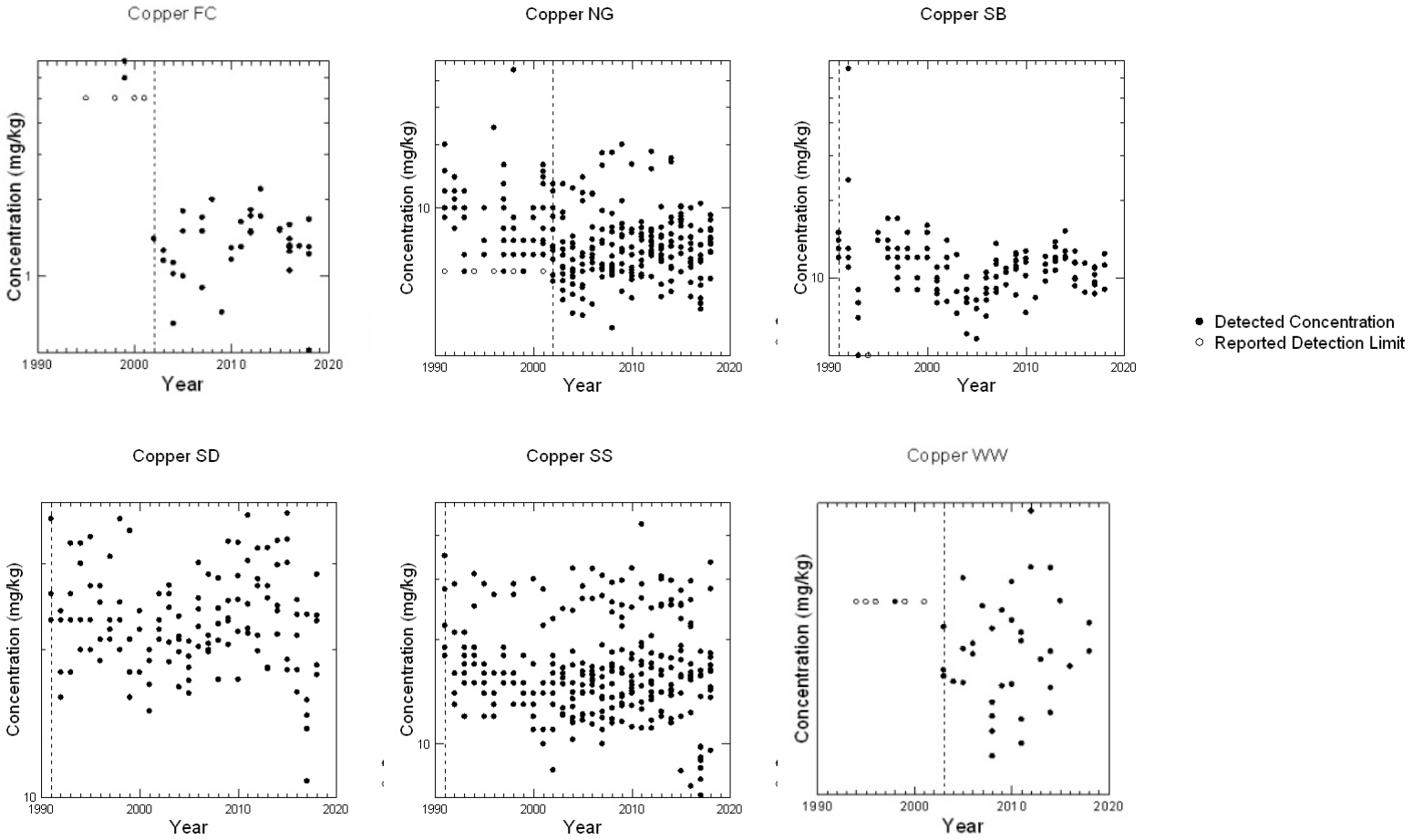
E.2.9 Chromium



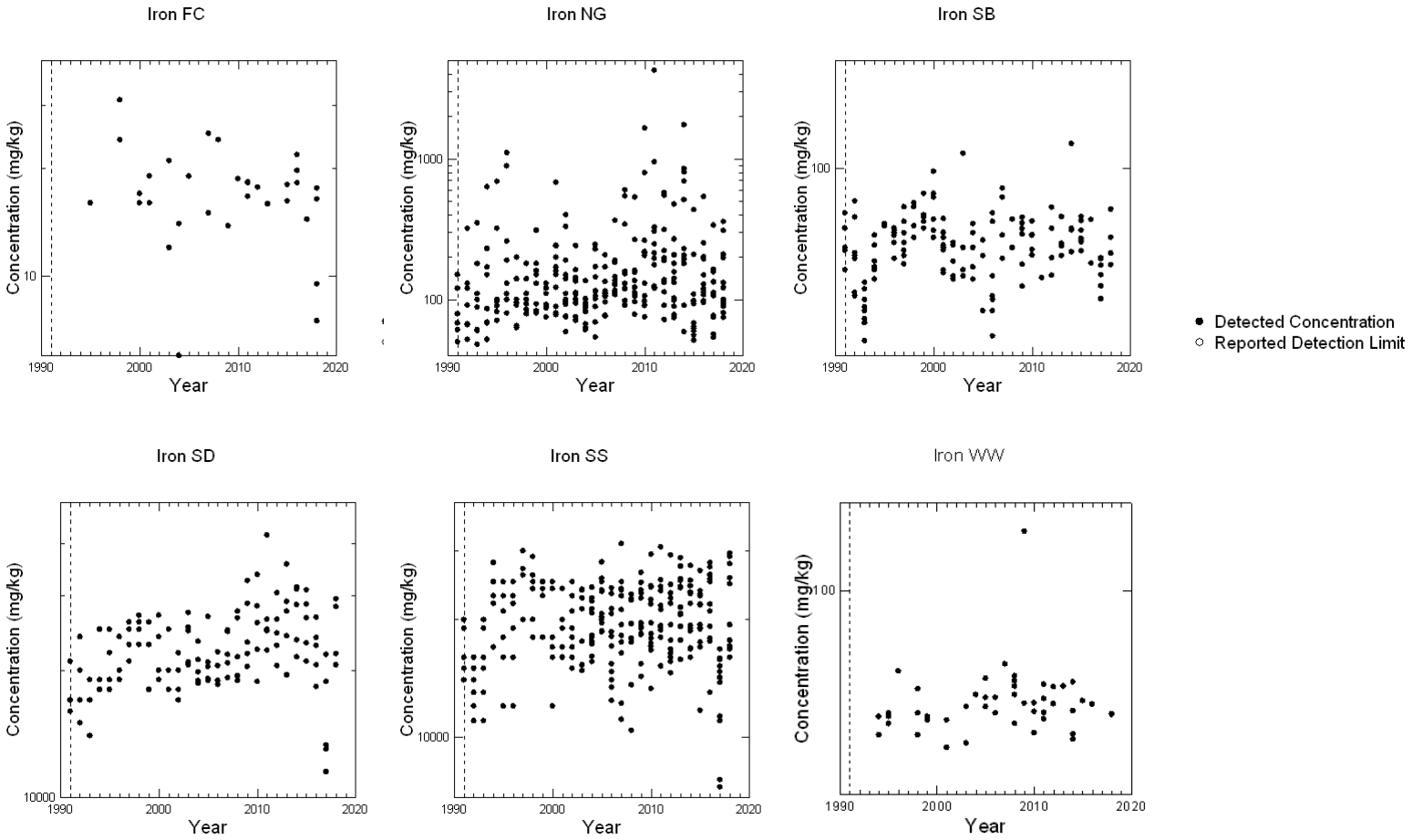
E.2.10 Cobalt


Cobalt FC
Cobalt NG
Cobalt SB
Cobalt SD
Cobalt SS
Cobalt WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
0.1
1.0
10.0
10
Detected Concentration
Reported Detection Limit

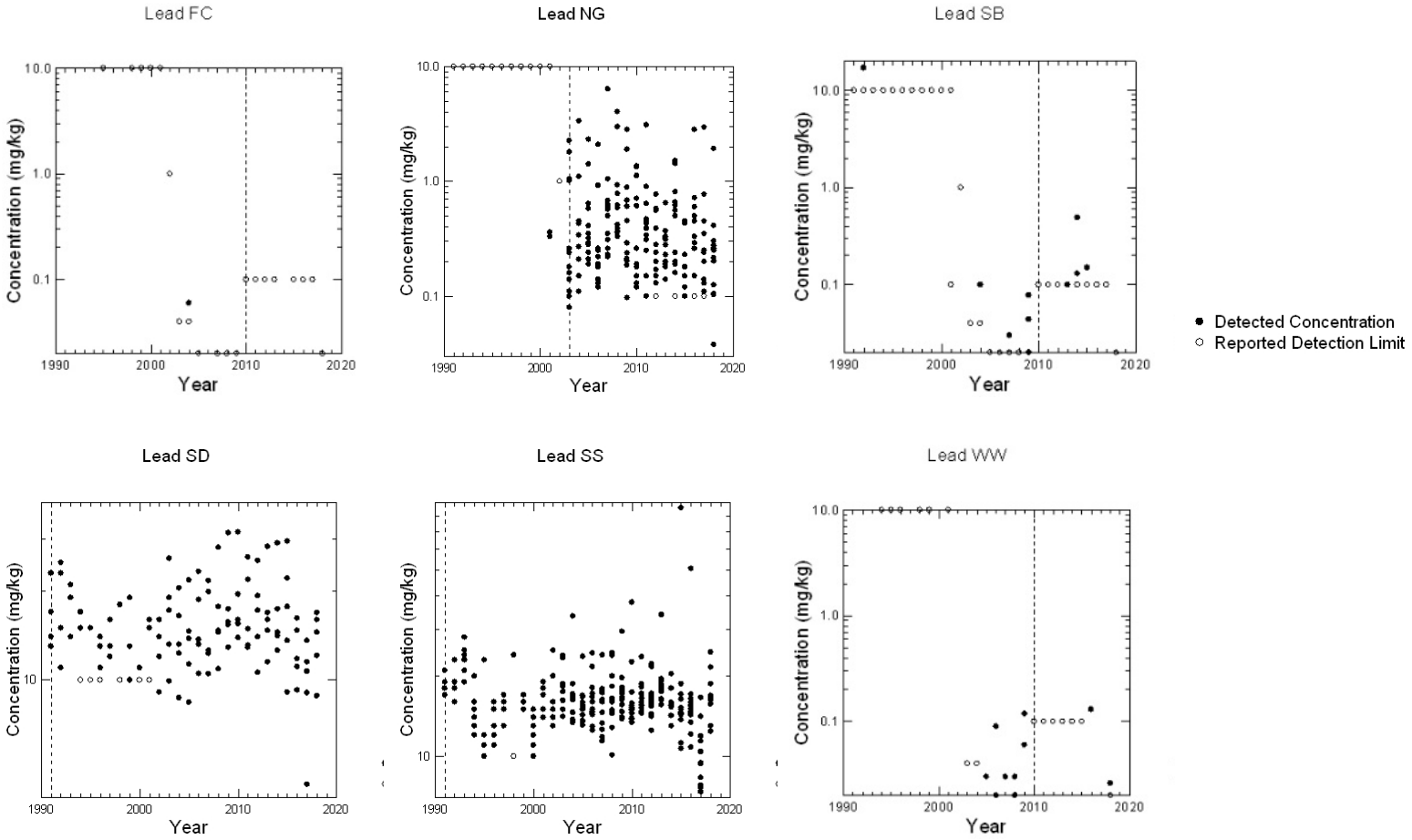
E.2.11 Copper


Copper FC
Copper NG
Copper SB
Copper SD
Copper SS
Copper WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
1
10
Detected Concentration
Reported Detection Limit

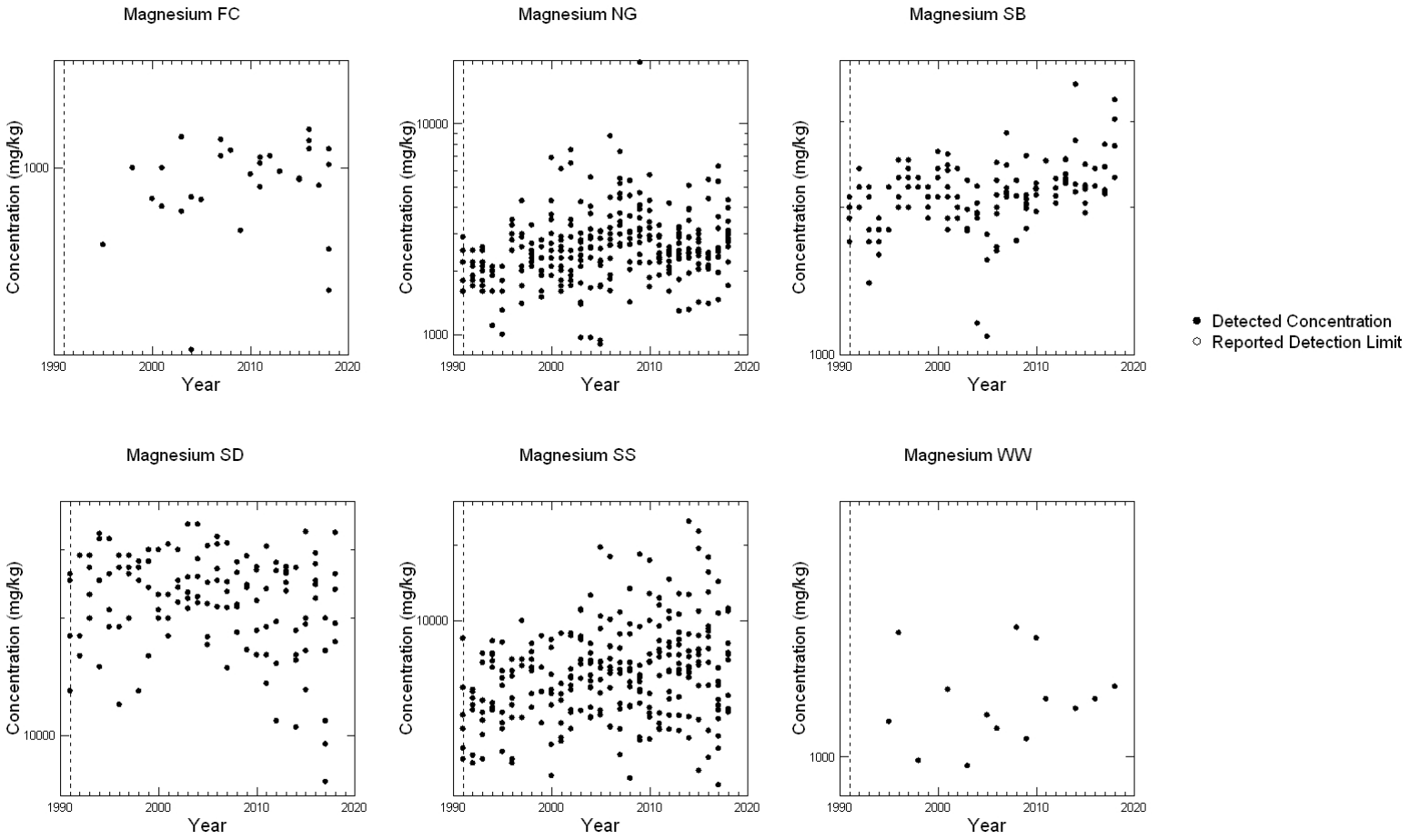
E.2.12 Iron


Iron FC
Iron NG
Iron SB
Iron SD
Iron SS
Iron WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
10
100
1000
10000
Detected Concentration
Reported Detection Limit

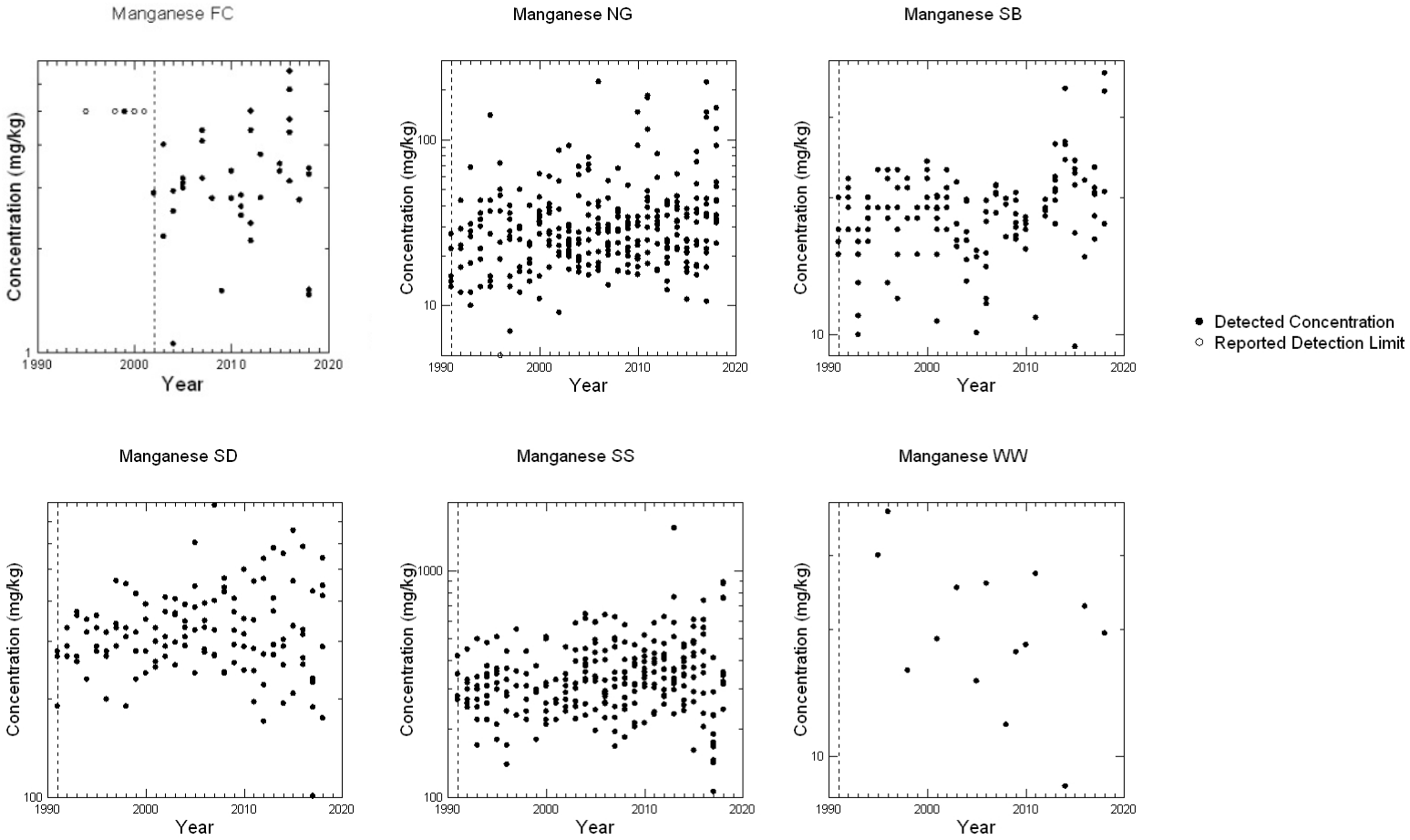
E.2.13 Lead


Lead FC
Lead NG
Lead SB
Lead SD
Lead SS
Lead WW
Concentration (mg/kg)
Year
10.0
1.0
0.1
10
1990
2000
2010
2020
Detected Concentration
Reported Detection Limit

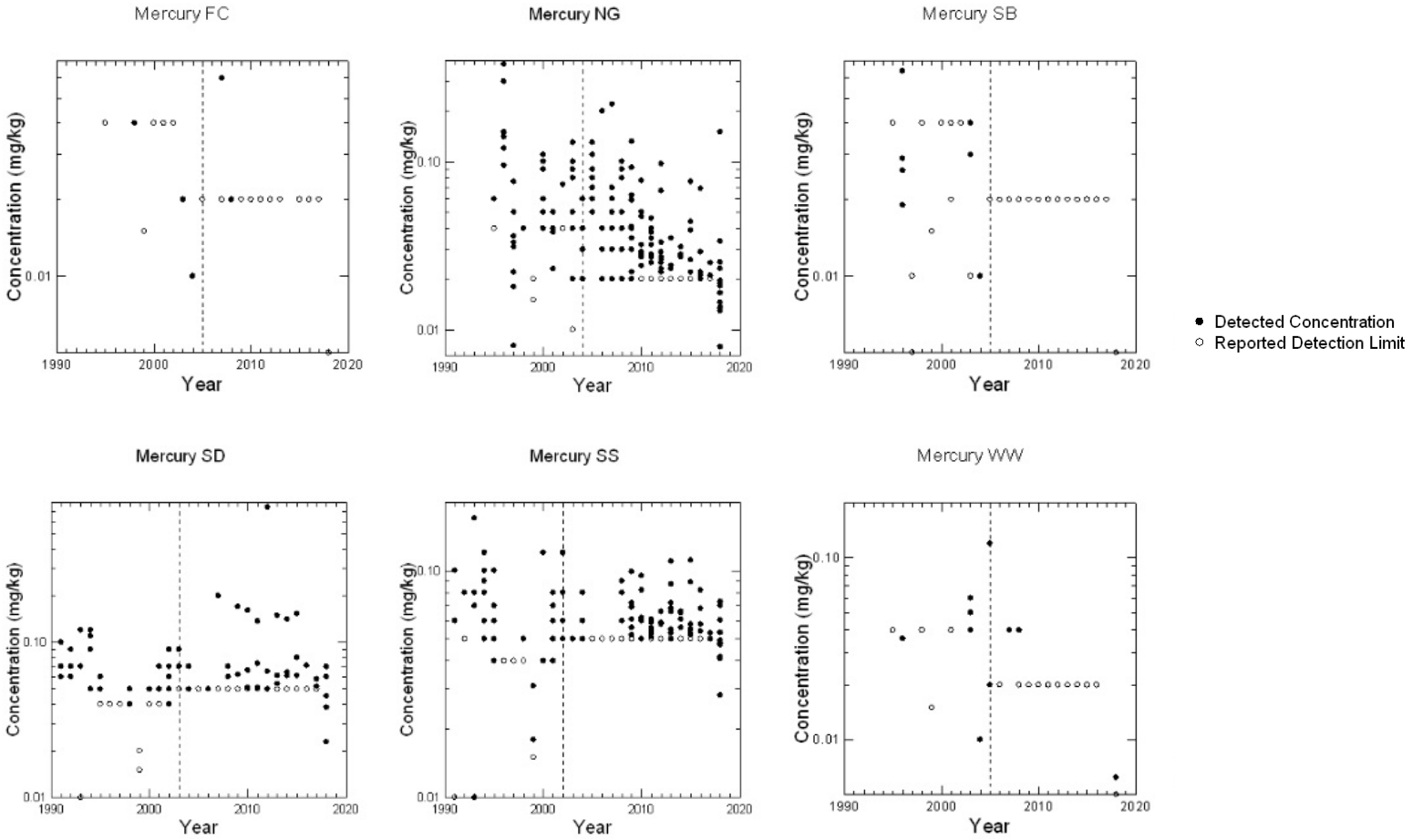
E.2.14 Magnesium



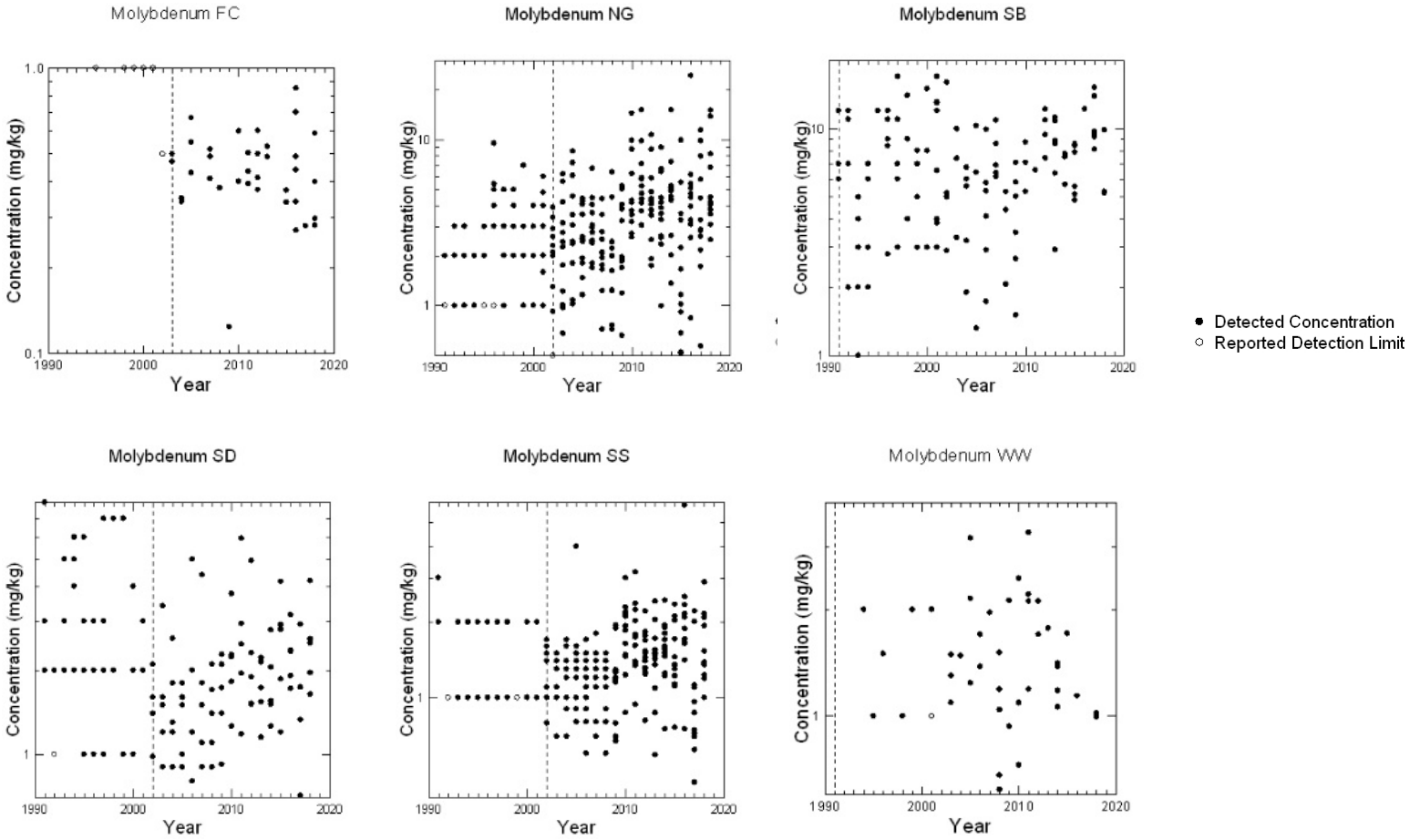
E.2.15 Manganese



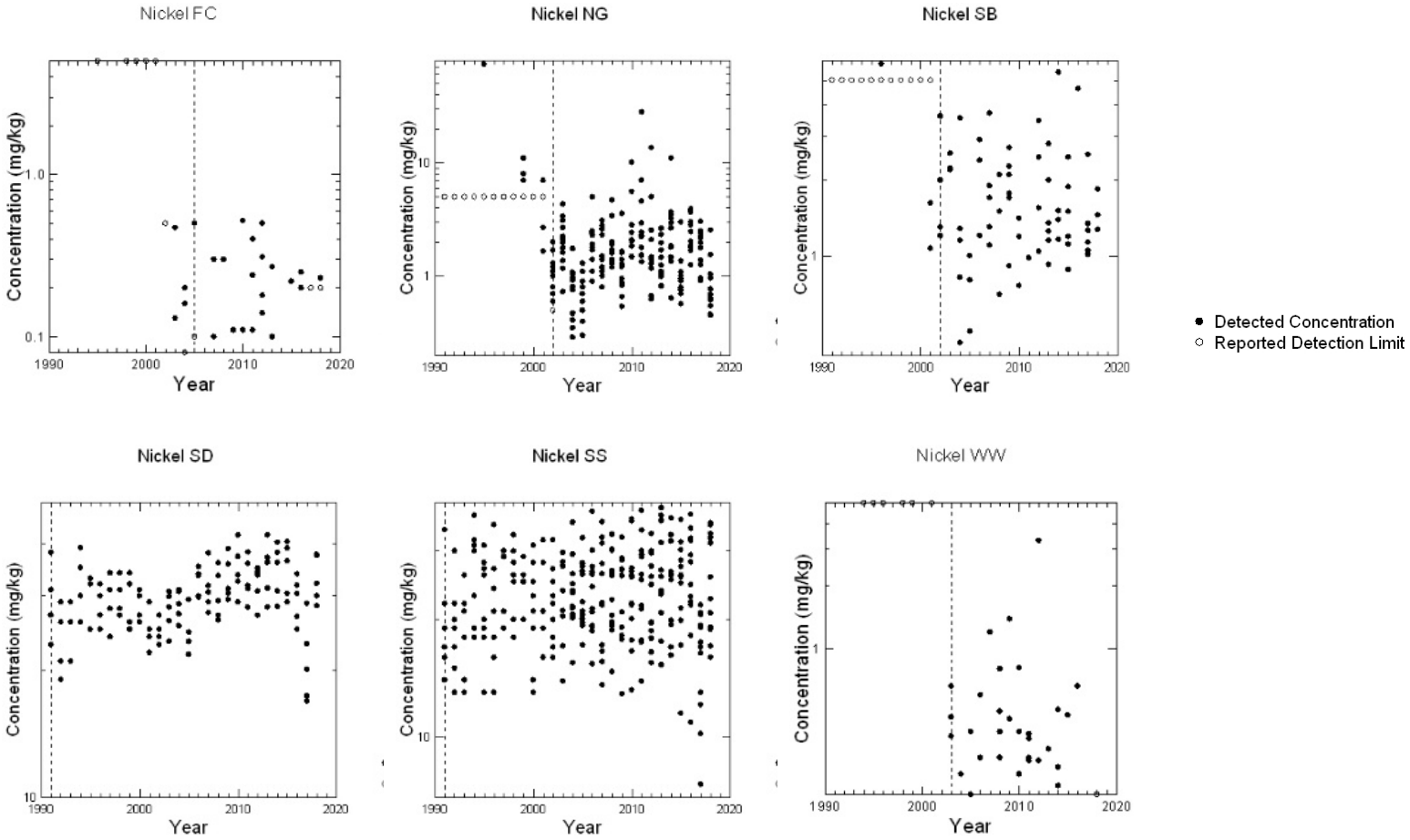
E.2.16 Mercury



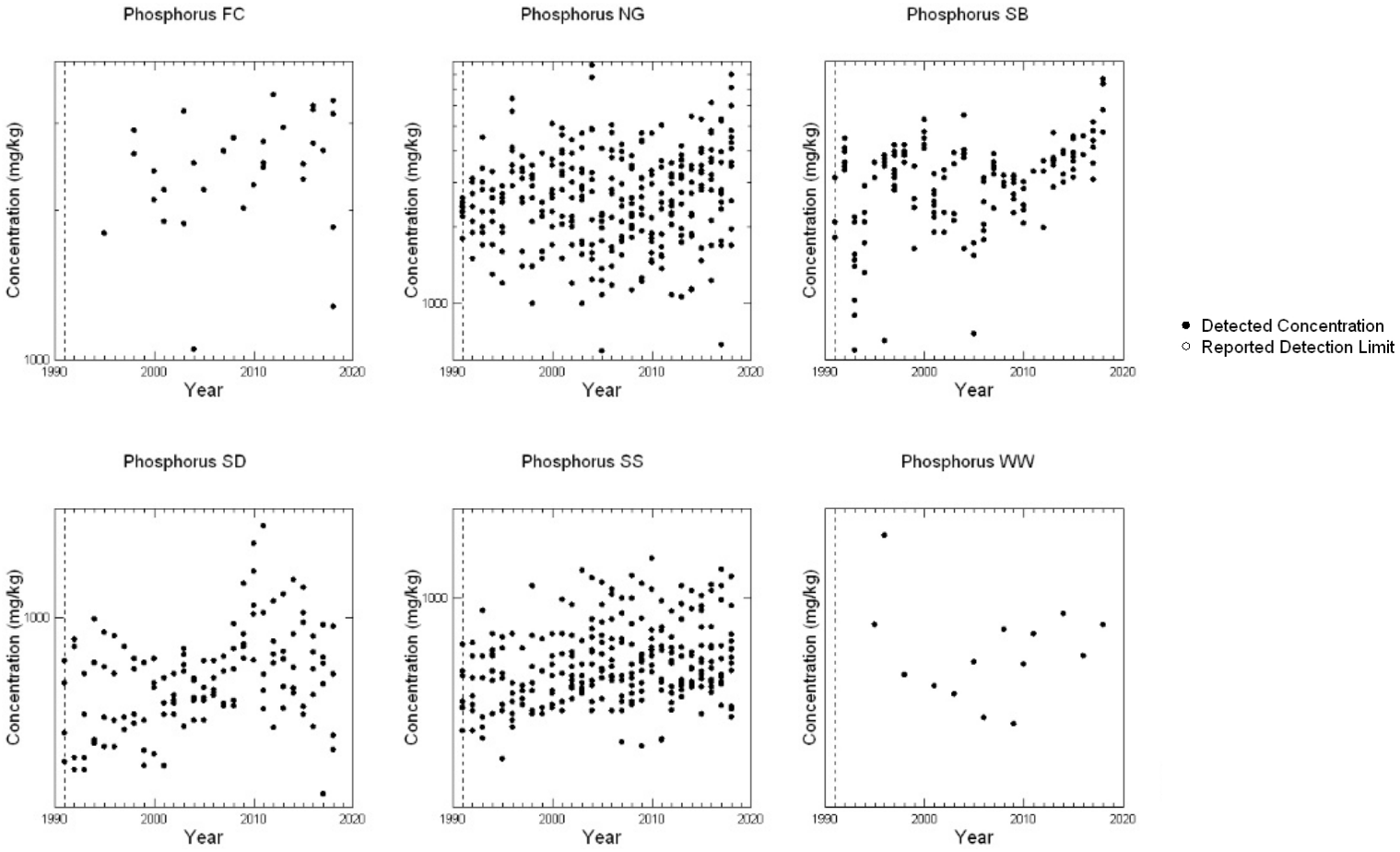
E.2.17 Molybdenum



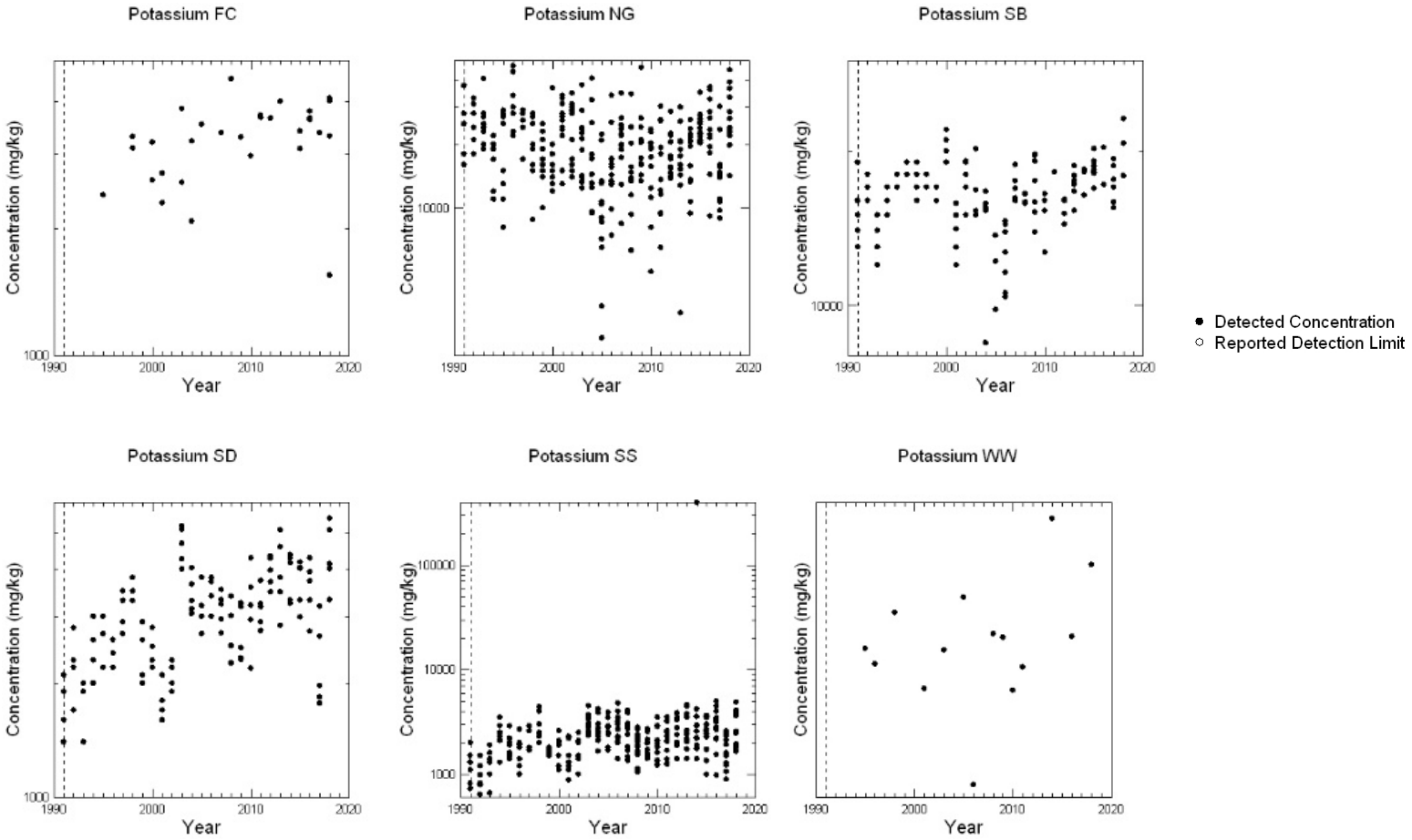
E.2.18 Nickel


Nickel FC
Nickel NG
Nickel SB
Nickel SD
Nickel SS
Nickel WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
0.1
1.0
1
10
Detected Concentration
Reported Detection Limit

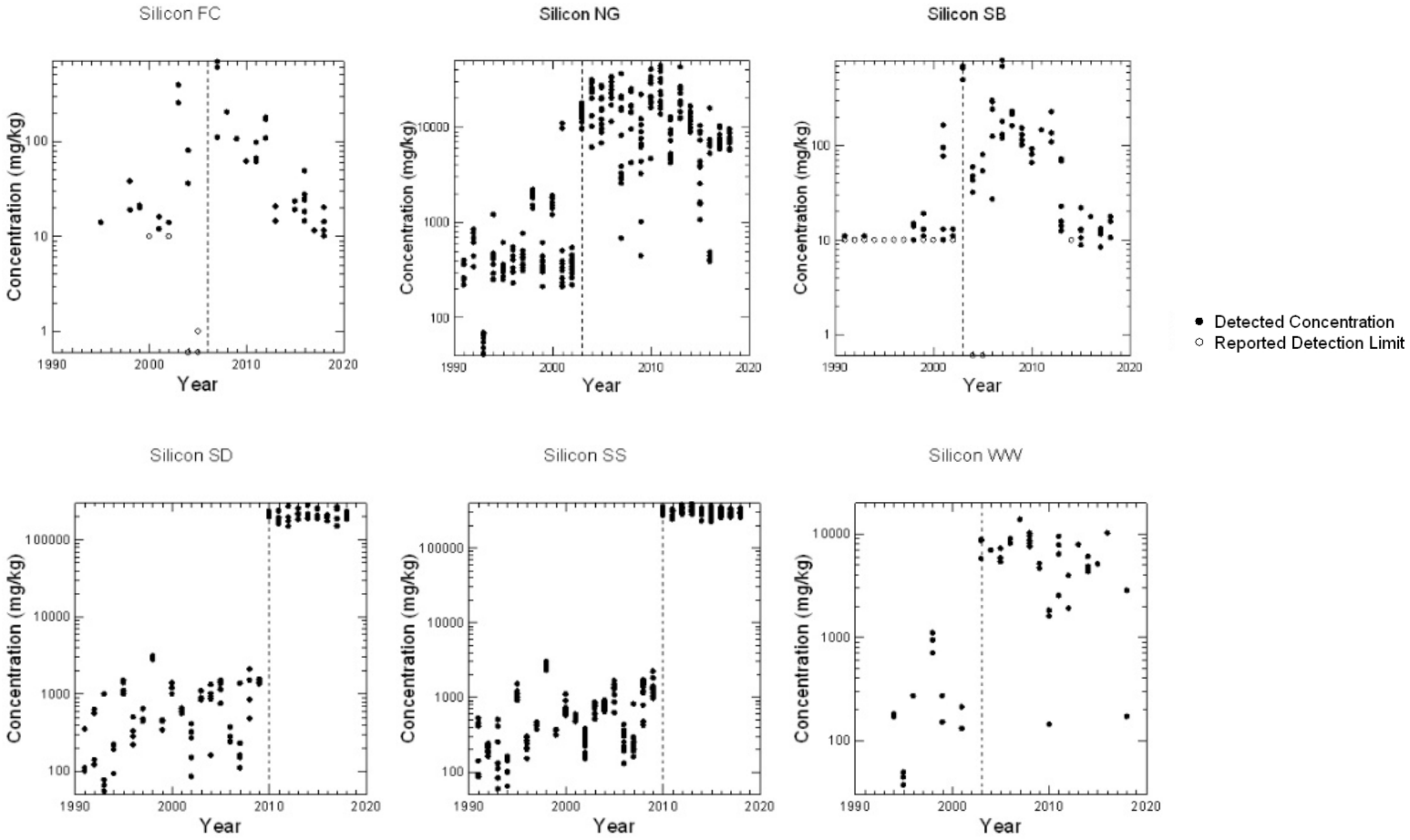
E.2.19 Phosphorus



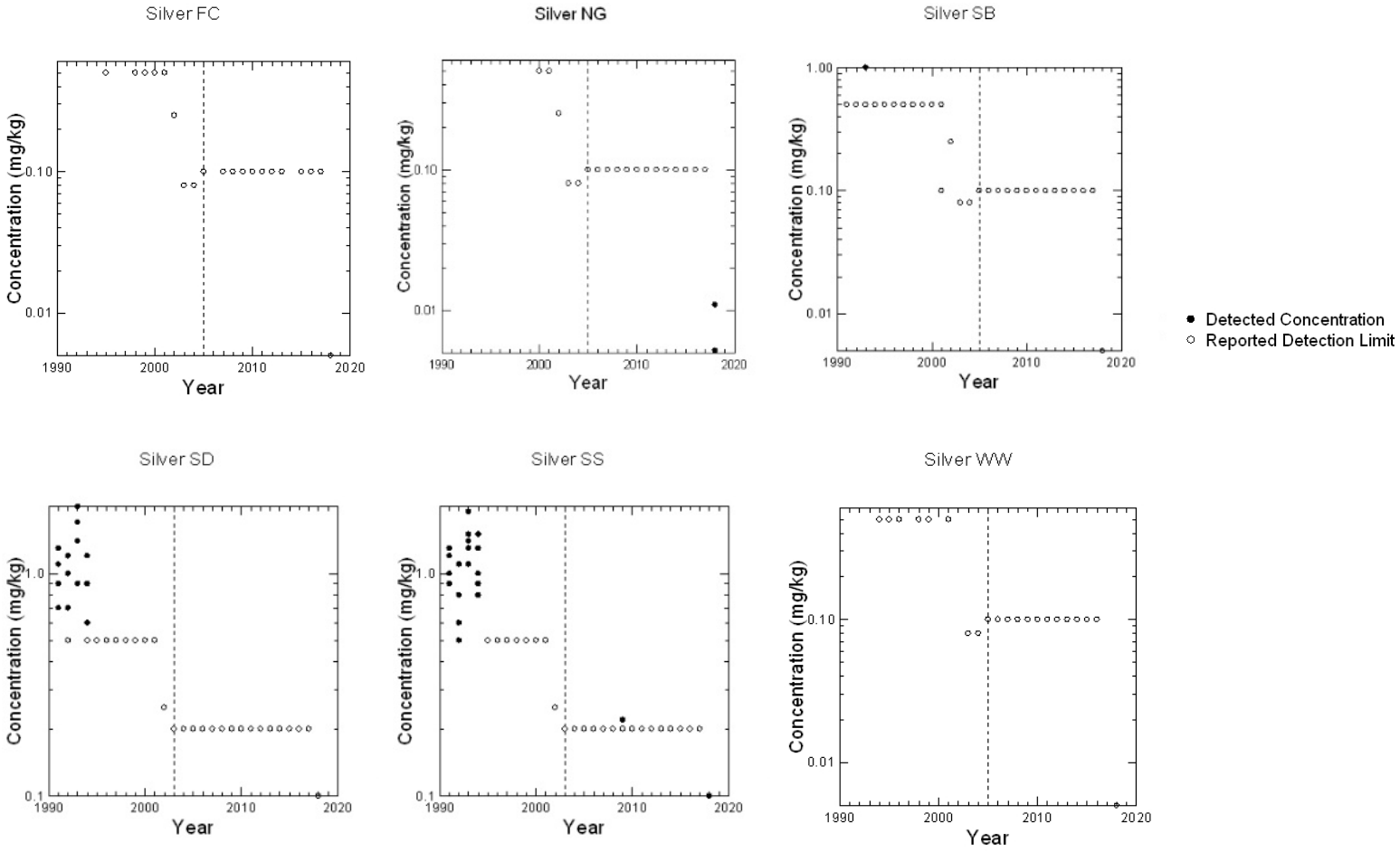
E.2.20 Potassium



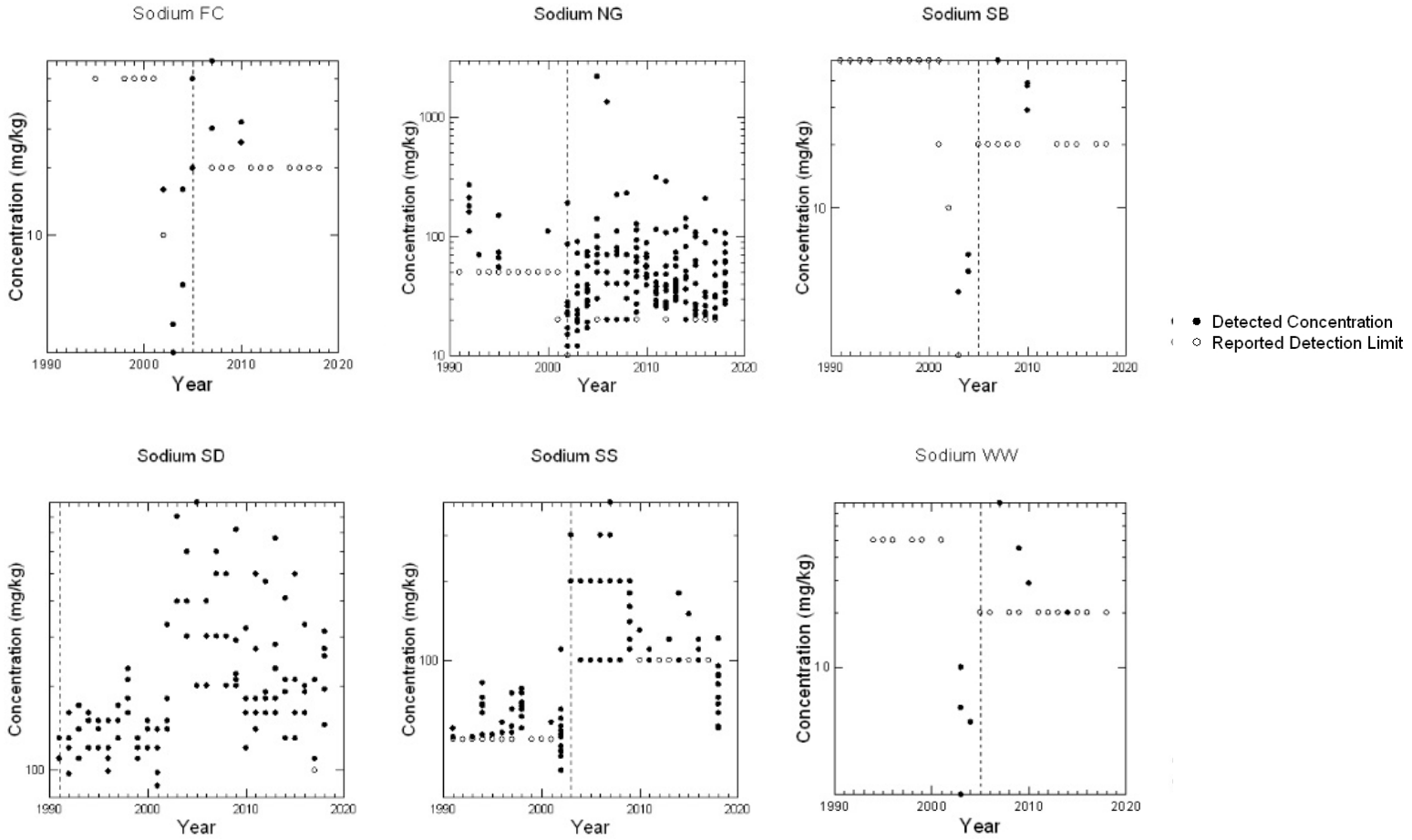
E.2.21 Silicon



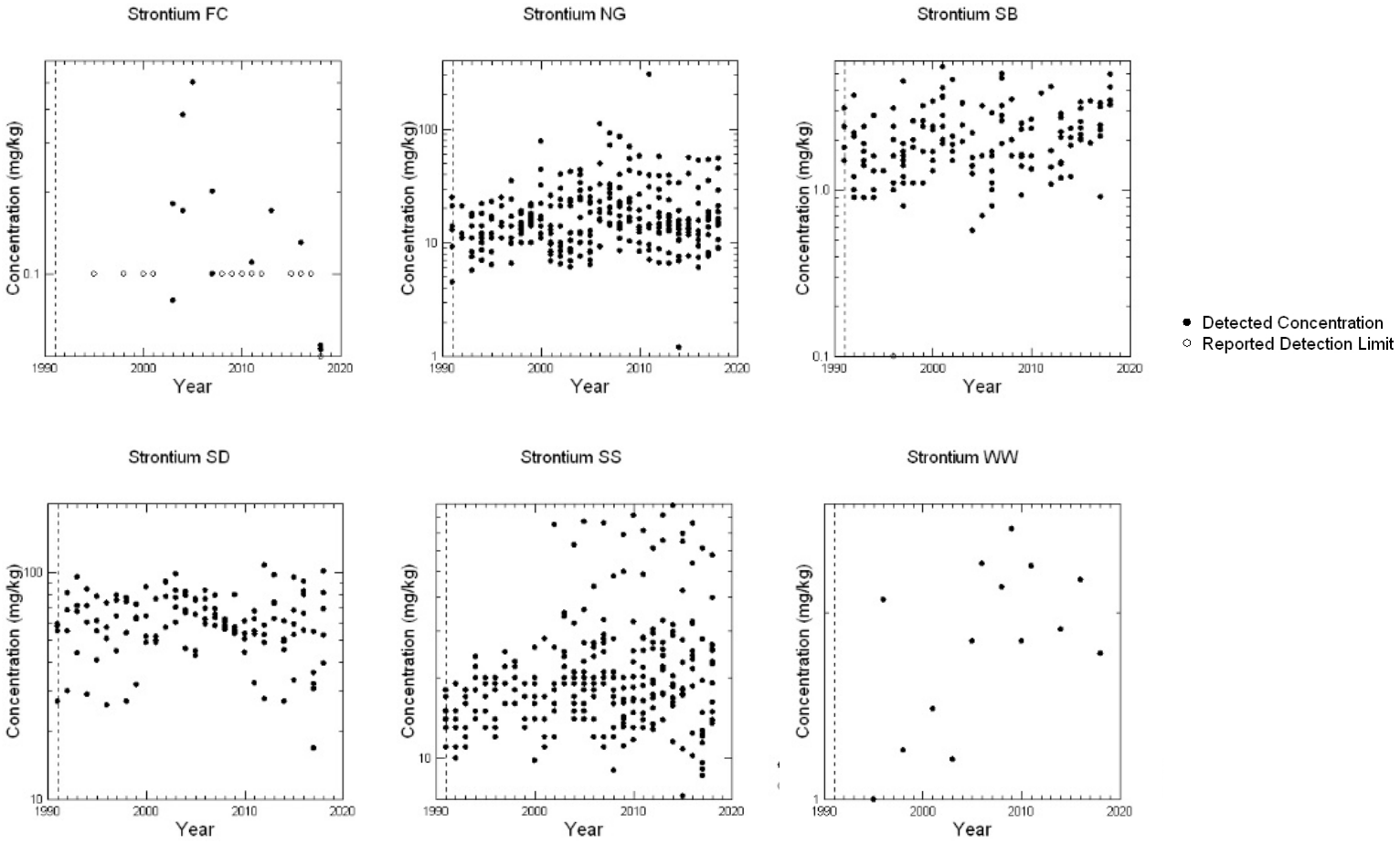
E.2.22 Silver


Silver FC
Silver NG
Silver SB
Silver SD
Silver SS
Silver WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
0.01
0.10
1.00
1.0
0.1
Detected Concentration
Reported Detection Limit

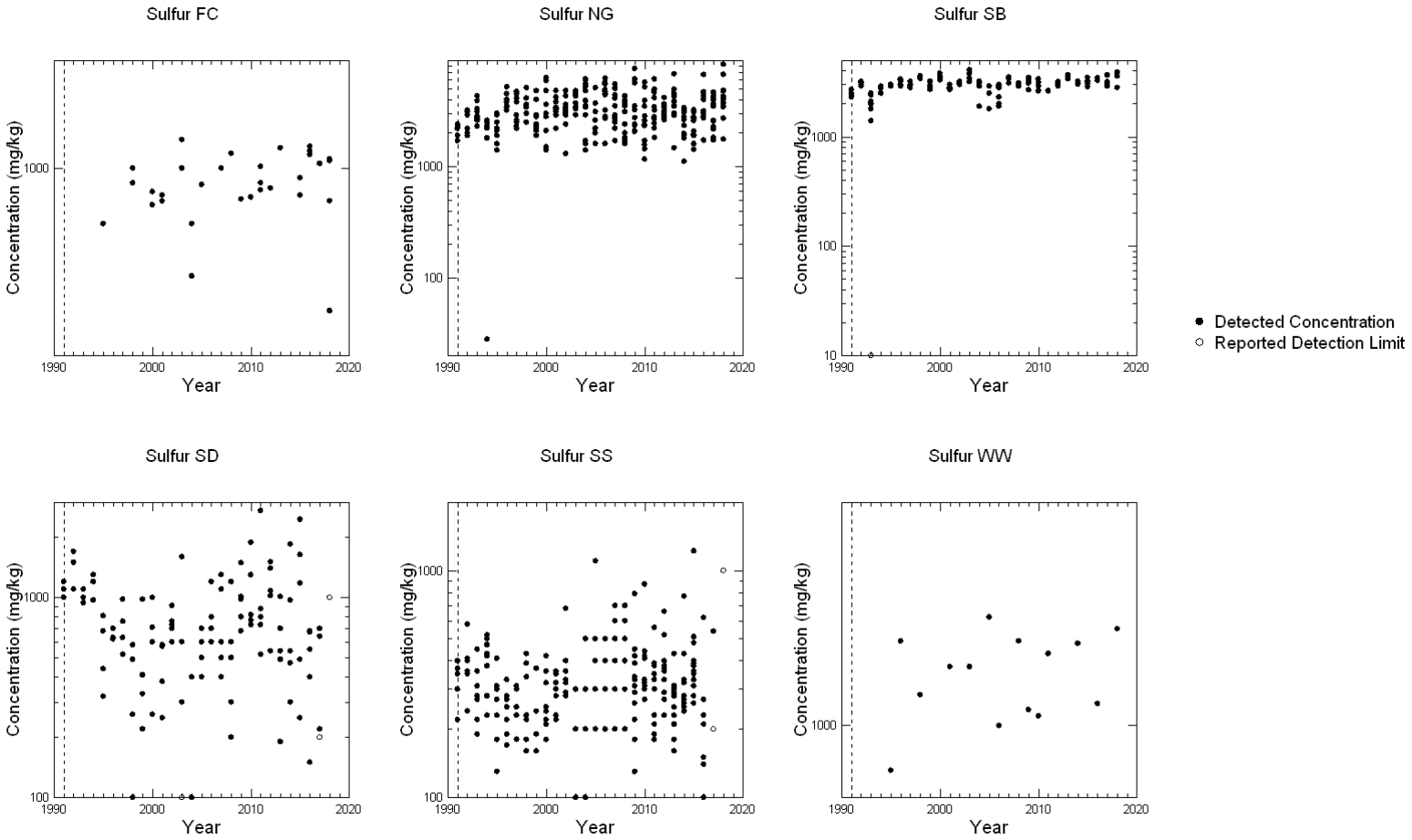
E.2.23 Sodium


Sodium FC
Sodium NG
Sodium SB
Sodium SD
Sodium SS
Sodium WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
10
100
1000
Detected Concentration
Reported Detection Limit

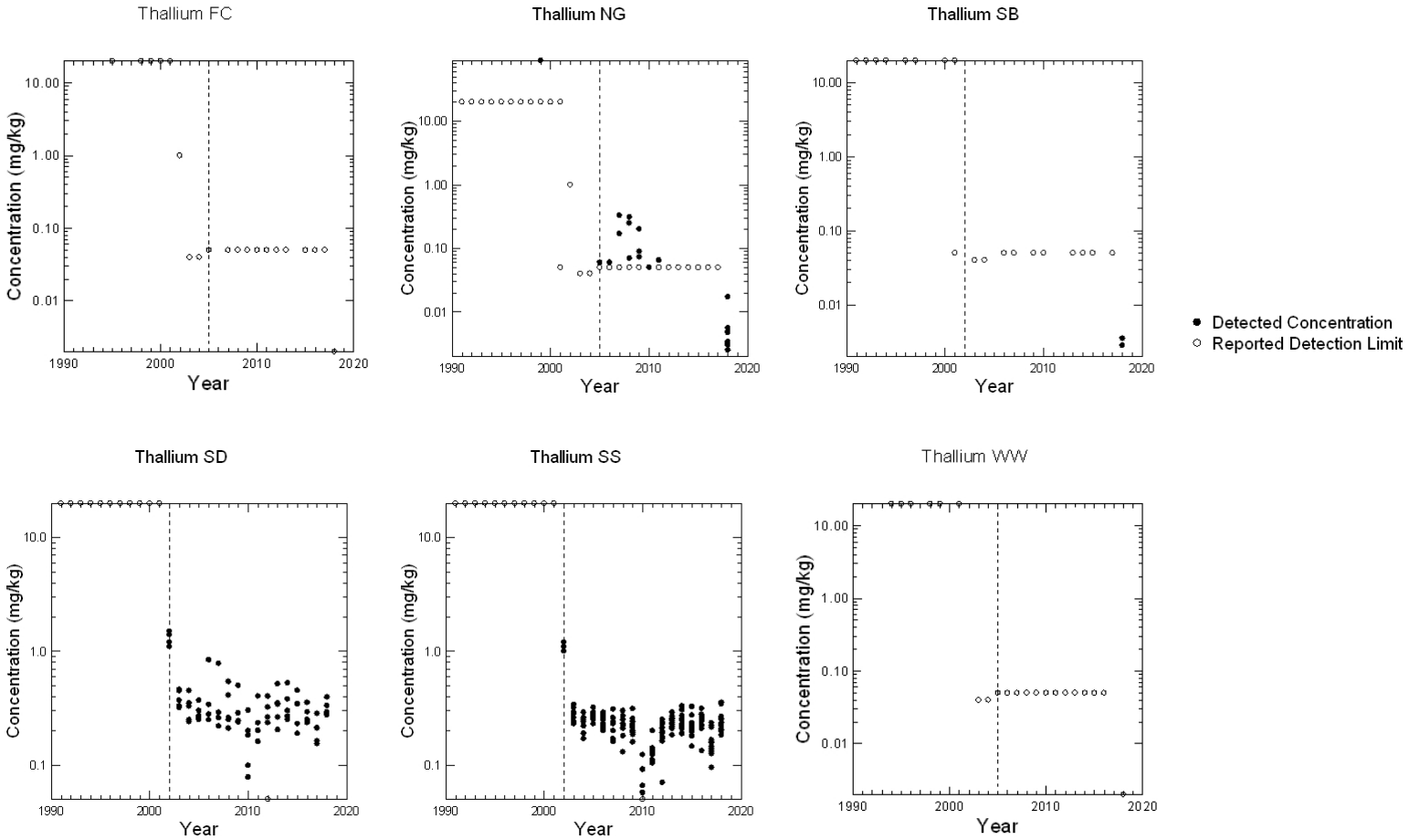
E.2.24 Strontium



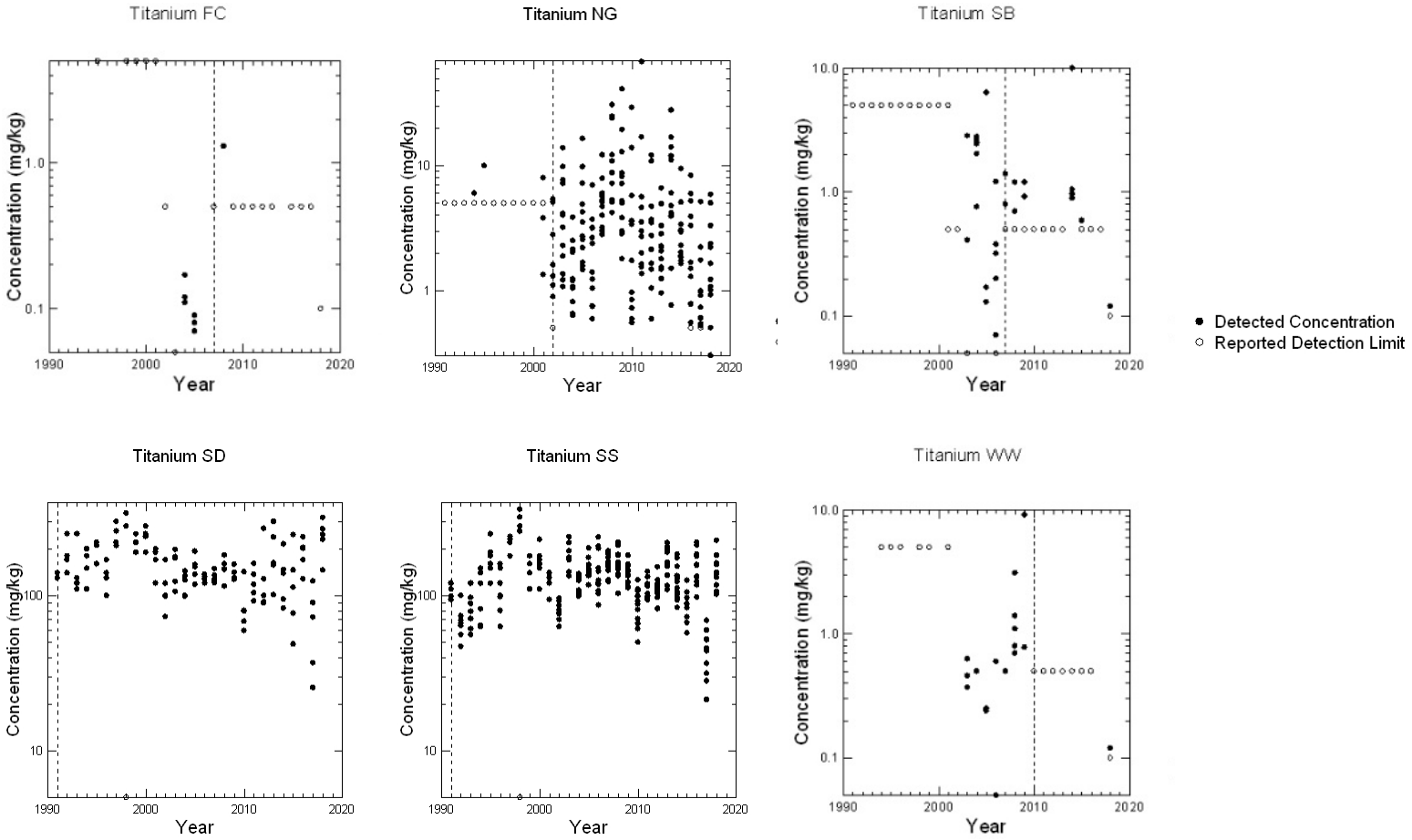
E.2.25 Sulfur


Sulfur FC
Sulfur NG
Sulfur SB
Sulfur SD
Sulfur SS
Sulfur WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
10
100
1000
Detected Concentration
Reported Detection Limit

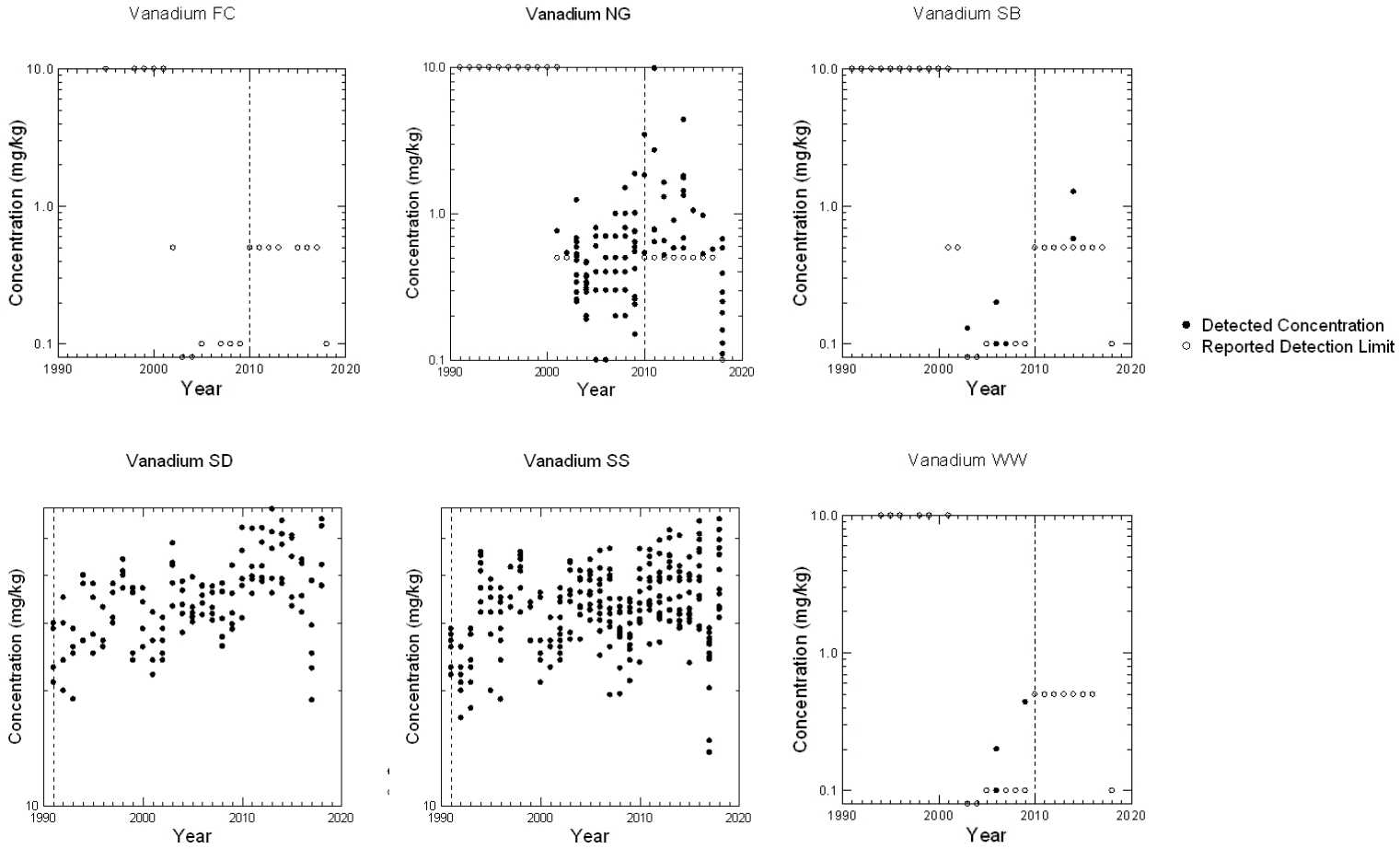
E.2.26 Thallium



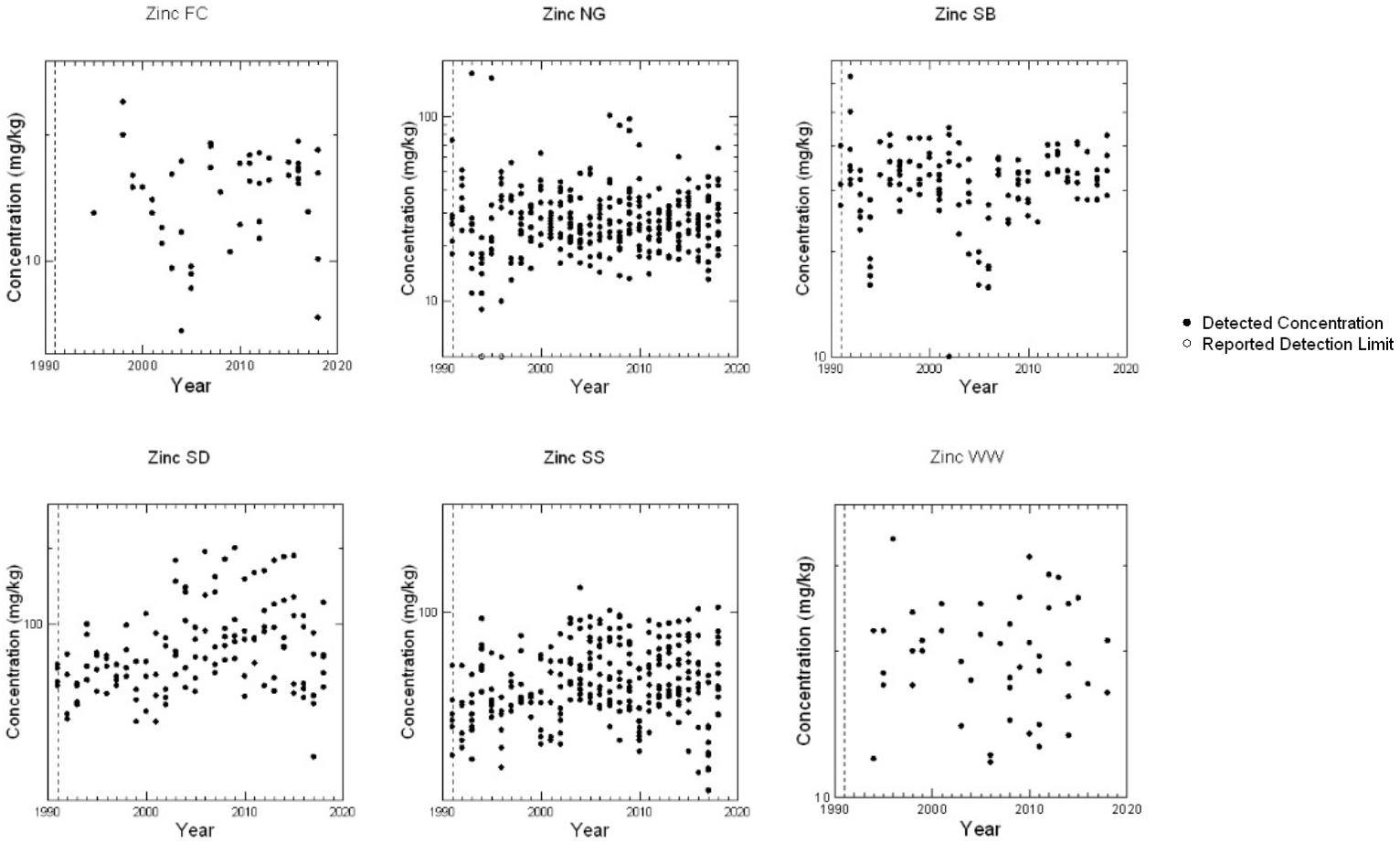
E.2.27 Titanium



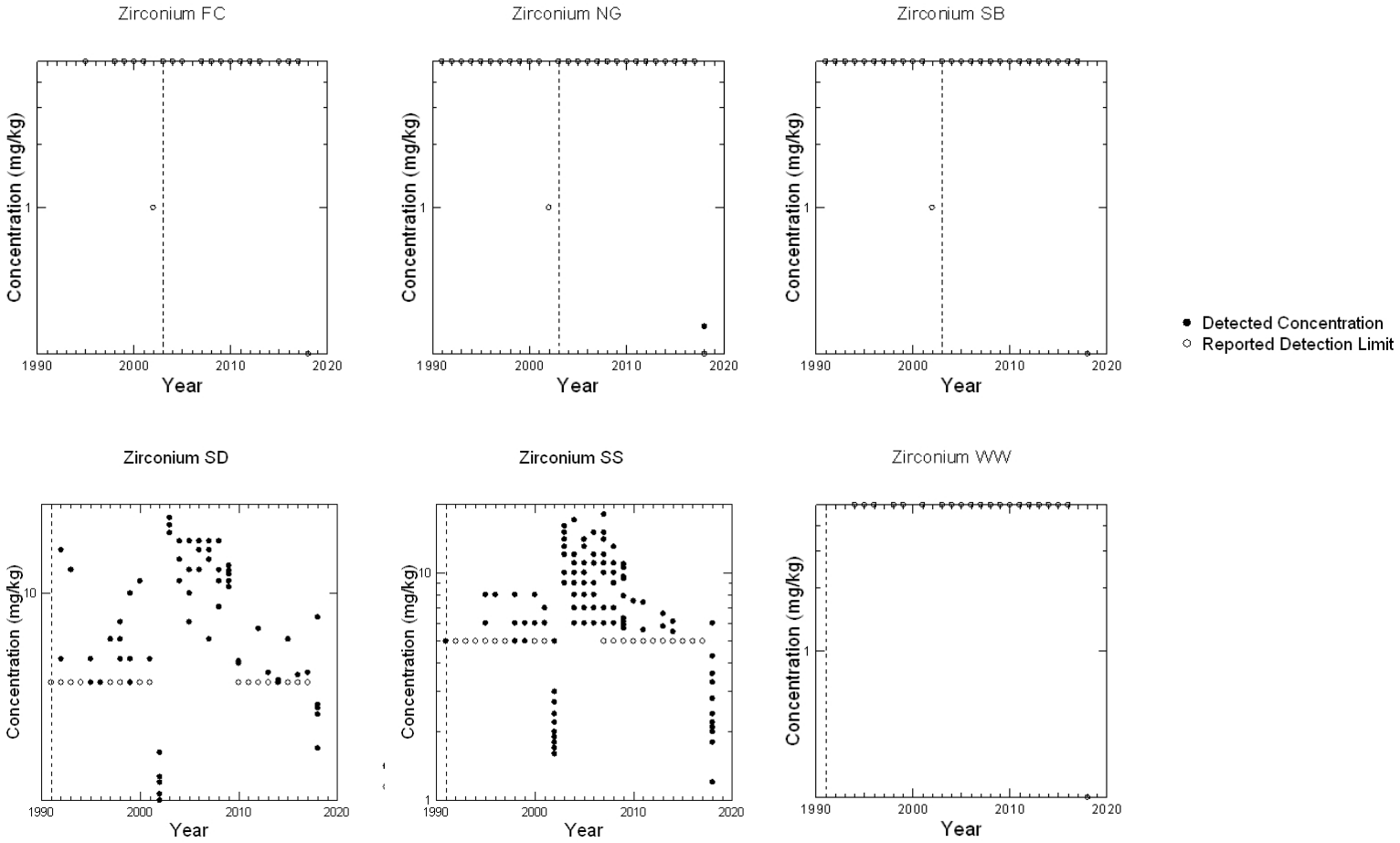
E.2.28 Vanadium



E.2.29 Zinc


Zinc FC
Zinc NG
Zinc SB
Zinc SD
Zinc SS
Zinc WW
Concentration (mg/kg)
Year
1990
2000
2010
2020
10
100
Detected Concentration
Reported Detection Limit

E.2.30 Zirconium



E.3 FINAL RECOMMENDED START DATES FOR EACH ANALYTE-MATRIX PAIR (INORGANIC)

Analyte	Matrix	Recommended Statistical Start Date
Aluminum	FC	2005
Aluminum	NG	2002
Aluminum	SB	2005
Aluminum	SD	1991
Aluminum	SS	1991
Aluminum	WW	2005
Arsenic	FC	2003
Arsenic	NG	2003
Arsenic	SB	2003
Arsenic	SD	1991
Arsenic	SS	1991
Arsenic	WW	2003
Barium	FC	2005
Barium	NG	1991
Barium	SB	1991
Barium	SD	1991
Barium	SS	1991
Barium	WW	1991
Beryllium	FC	2003
Beryllium	NG	2003
Beryllium	SB	2003
Beryllium	SD	1991
Beryllium	SS	1991
Beryllium	WW	2003
Boron	FC	2005
Boron	NG	1999
Boron	SB	1991
Boron	SD	1995
Boron	SS	1998
Boron	WW	2003
Cadmium	FC	2007
Cadmium	NG	2001
Cadmium	SB	2005

Analyte	Matrix	Recommended Statistical Start Date
Cadmium	SD	1991
Cadmium	SS	1991
Cadmium	WW	2005
Calcium	FC	1991
Calcium	NG	1991
Calcium	SB	1991
Calcium	SD	1991
Calcium	SS	1991
Calcium	WW	1991
Chloride	FC	1991
Chloride	NG	1991
Chloride	SB	1991
Chloride	SD	1991
Chloride	SS	2009
Chloride	WW	1991
Chromium	FC	2003
Chromium	NG	2002
Chromium	SB	2002
Chromium	SD	1991
Chromium	SS	1991
Chromium	WW	2003
Cobalt	FC	2005
Cobalt	NG	2003
Cobalt	SB	2005
Cobalt	SD	1991
Cobalt	SS	1991
Cobalt	WW	2005
Copper	FC	2002
Copper	NG	2002
Copper	SB	1991
Copper	SD	1991
Copper	SS	1991
Copper	WW	2003
Fluoride	All Matrices	2018[A]
Iron	FC	1991
Iron	NG	1991

Analyte	Matrix	Recommended Statistical Start Date
Iron	SB	1991
Iron	SD	1991
Iron	SS	1991
Iron	WW	1991
Lead	FC	2010
Lead	NG	2003
Lead	SB	2010
Lead	SD	1991
Lead	SS	1991
Lead	WW	2010
Magnesium	FC	1991
Magnesium	NG	1991
Magnesium	SB	1991
Magnesium	SD	1991
Magnesium	SS	1991
Magnesium	WW	1991
Manganese	FC	2002
Manganese	NG	1991
Manganese	SB	1991
Manganese	SD	1991
Manganese	SS	1991
Manganese	WW	1991
Mercury	FC	2005
Mercury	NG	2004
Mercury	SB	2005
Mercury	SD	2003
Mercury	SS	2002
Mercury	WW	2005
Molybdenum	FC	2003
Molybdenum	NG	2002
Molybdenum	SB	1991
Molybdenum	SD	2002
Molybdenum	SS	2002
Molybdenum	WW	1991
Nickel	FC	2005
Nickel	NG	2002

Analyte	Matrix	Recommended Statistical Start Date
Nickel	SB	2002
Nickel	SD	1991
Nickel	SS	1991
Nickel	WW	2003
Phosphorus	FC	1991
Phosphorus	NG	1991
Phosphorus	SB	1991
Phosphorus	SD	1991
Phosphorus	SS	1991
Phosphorus	WW	1991
Potassium	FC	1991
Potassium	NG	1991
Potassium	SB	1991
Potassium	SD	1991
Potassium	SS	1991
Potassium	WW	1991
Silicon	FC	2006
Silicon	NG	2003
Silicon	SB	2003
Silicon	SD	2010
Silicon	SS	2010
Silicon	WW	2003
Silver	FC	2005
Silver	NG	2005
Silver	SB	2005
Silver	SD	2003
Silver	SS	2003
Silver	WW	2005
Sodium	FC	2005
Sodium	NG	2002
Sodium	SB	2005
Sodium	SD	1991
Sodium	SS	2003
Sodium	WW	2005
Strontium	FC	1991
Strontium	NG	1991

Analyte	Matrix	Recommended Statistical Start Date
Strontium	SB	1991
Strontium	SD	1991
Strontium	SS	1991
Strontium	WW	1991
Sulfur	FC	1991
Sulfur	NG	1991
Sulfur	SB	1991
Sulfur	SD	1991
Sulfur	SS	1991
Sulfur	WW	1991
Thallium	FC	2005
Thallium	NG	2005
Thallium	SB	2005
Thallium	SD	2002
Thallium	SS	2002
Thallium	WW	2005
Titanium	FC	2007
Titanium	NG	2002
Titanium	SB	2007
Titanium	SD	1991
Titanium	SS	1991
Titanium	WW	2010
Vanadium	FC	2010
Vanadium	NG	2010
Vanadium	SB	2010
Vanadium	SD	1991
Vanadium	SS	1991
Vanadium	WW	2010
Zinc	FC	1991
Zinc	NG	1991
Zinc	SB	1991
Zinc	SD	1991
Zinc	SS	1991
Zinc	WW	1991
Zirconium	FC	2003
Zirconium	NG	2003

Analyte	Matrix	Recommended Statistical Start Date
Zirconium	SB	2003
Zirconium	SD	1991
Zirconium	SS	1991
Zirconium	WW	1991

Note(s):

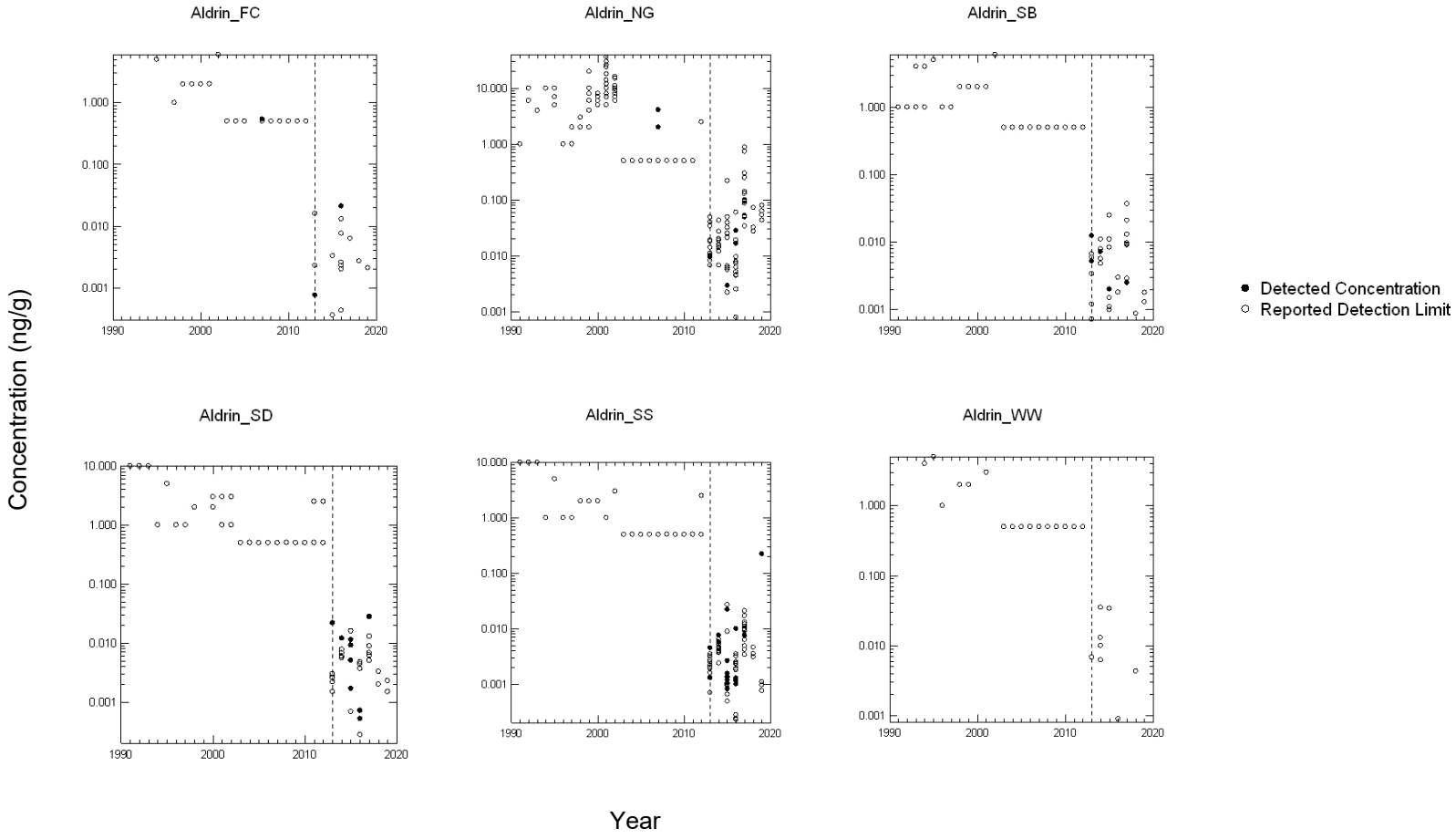
[A] Monitoring of fluoride was initiated in the 2018 Field Year as per the MECP approved changes. Therefore, fluoride has been exempted from the assessment of appropriate start date due to the limited amount of available data. A review of the appropriate start date for fluoride analysis will be considered when there are at least six years of available data, as this is the minimum data requirement set in this biomonitoring program for the calculation of an upper limit. In the interim, regression analyses for fluoride will be evaluated with a start date of 2018.

E.4 SCATTERPLOTS OF SITE-WIDE ANALYTICAL DATA AVAILABLE FOR EACH ANALYTE-MATRIX PAIR SINCE 1991 (ORGANIC)

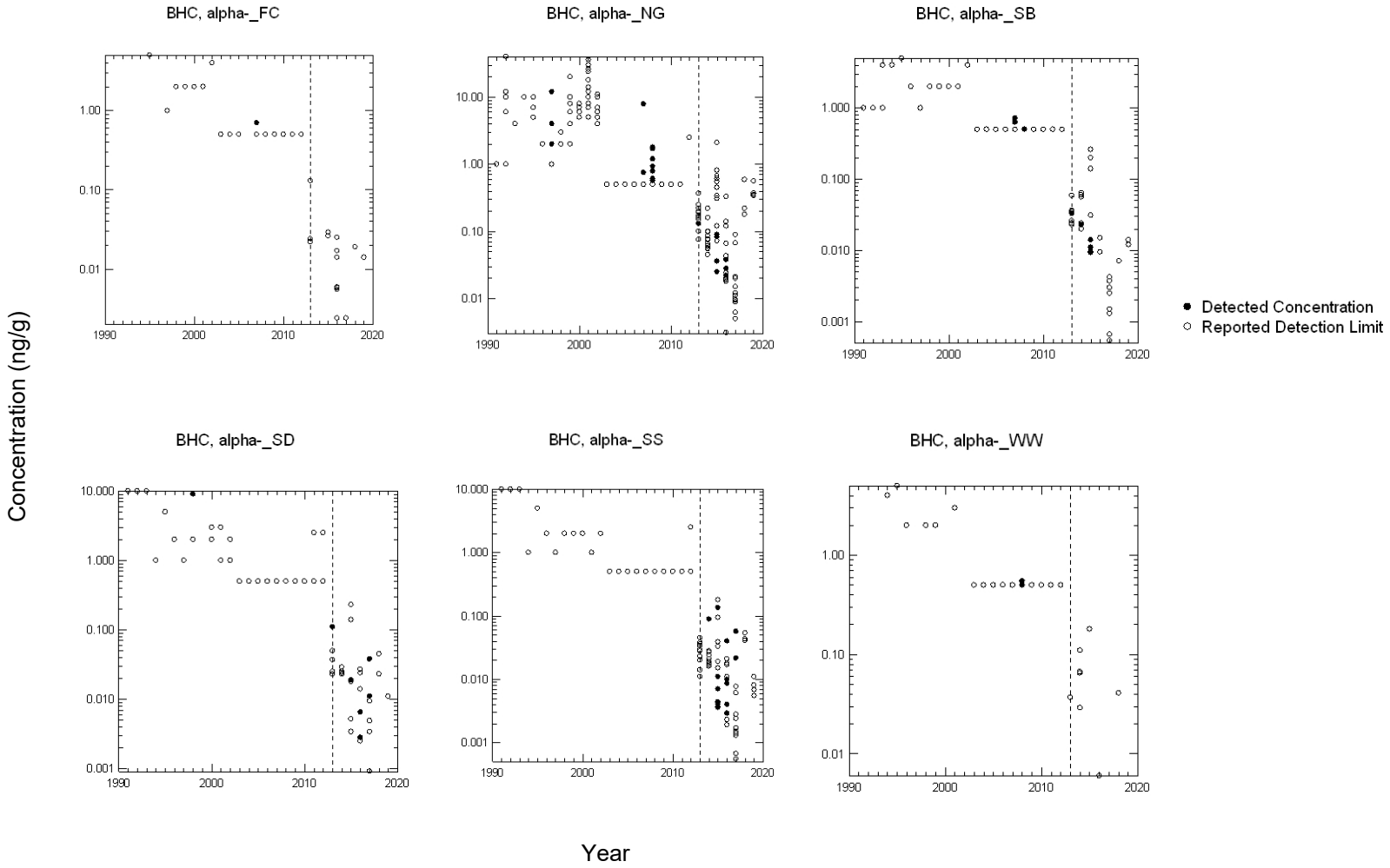
This appendix provides scatterplots of available analytical data for each analyte-matrix pair for organic analytes on a Site-wide basis. The assessed appropriate start dates for statistical analysis (control charts and linear regression) for each analyte-matrix pair on a Site-wide basis are indicated by a dashed vertical line on the figures.

E.4.1 OCPs

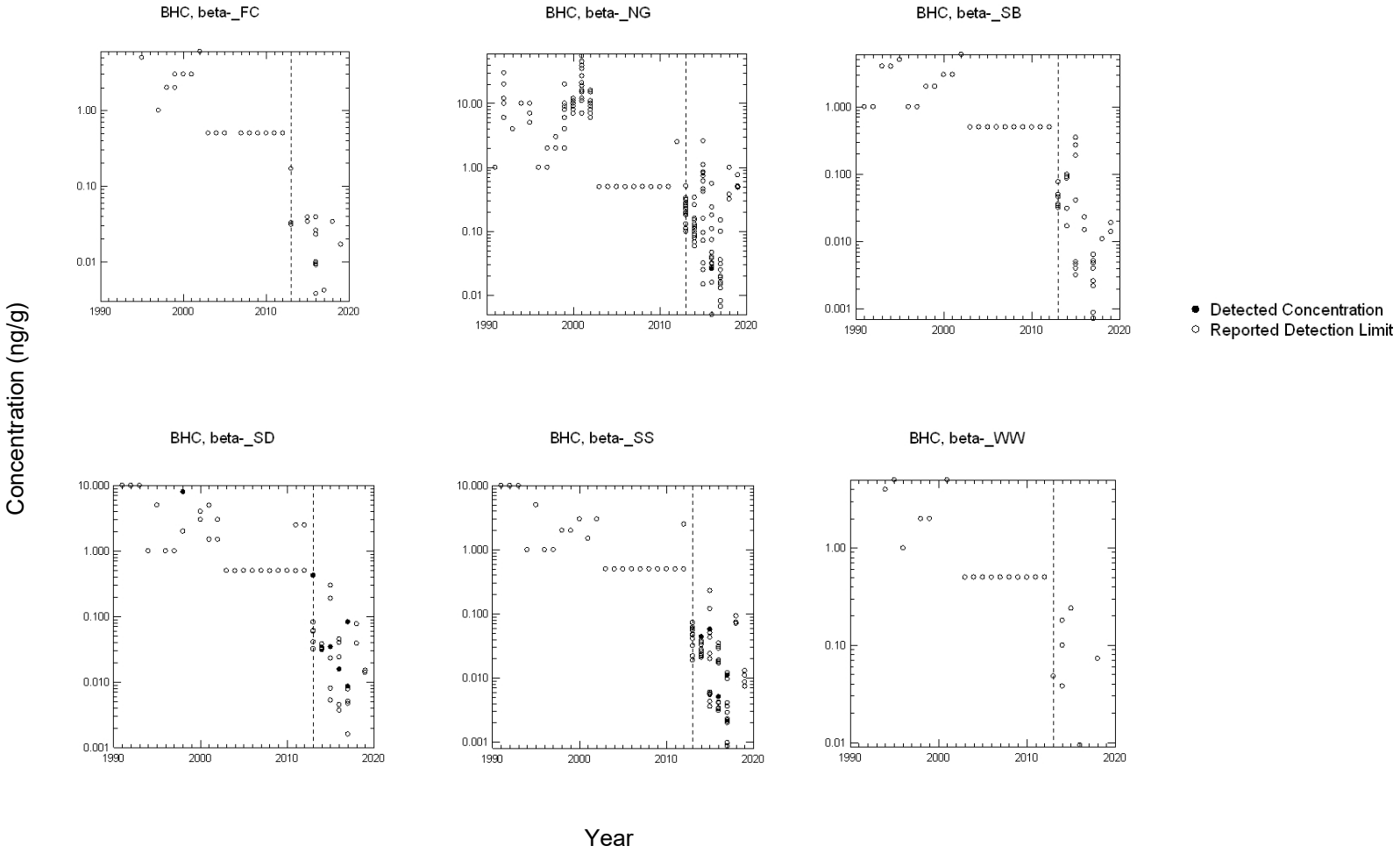
1. Aldrin



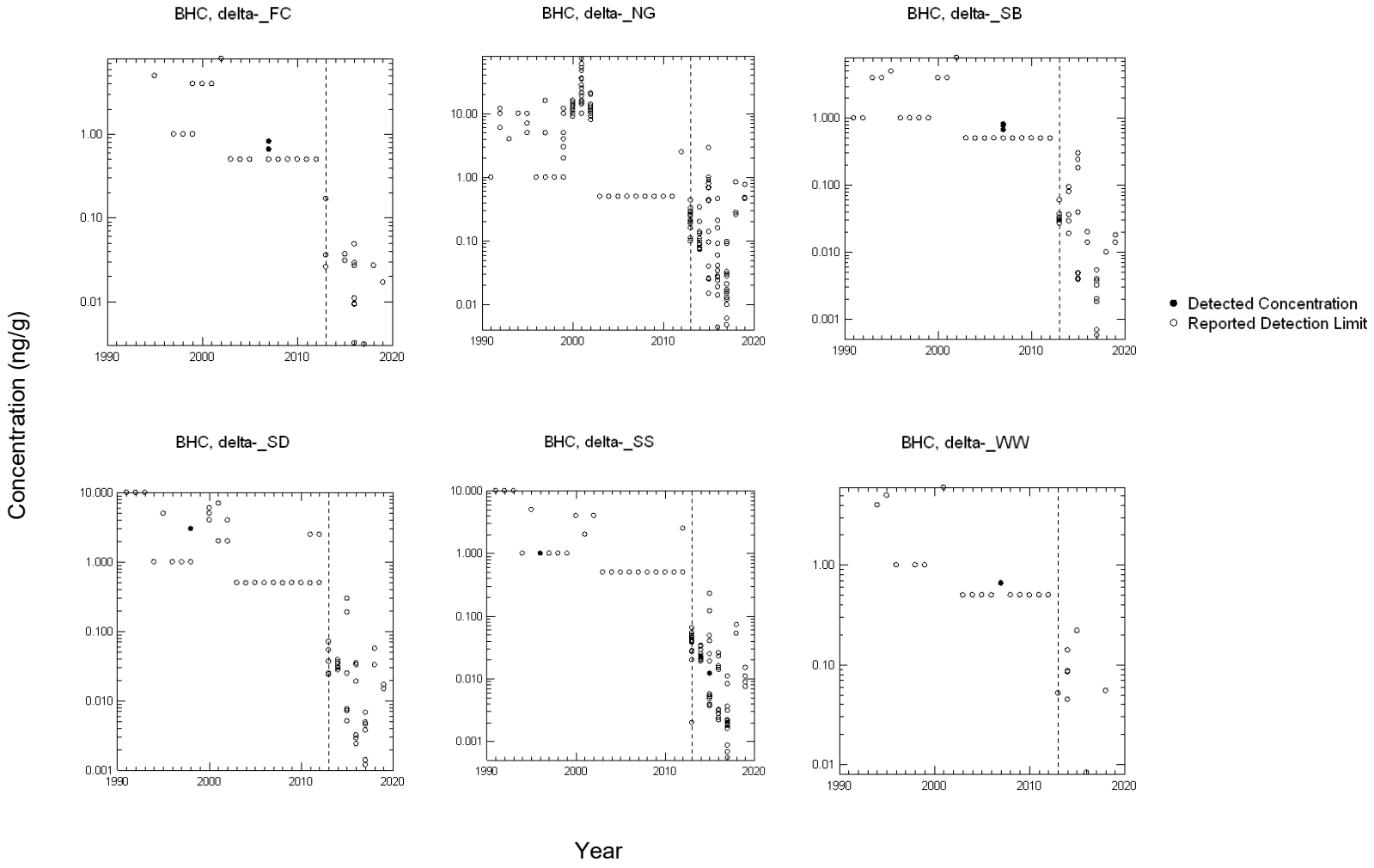
2. BHC, alpha-


BHC, alpha-_FC
BHC, alpha-_NG
BHC, alpha-_SB
BHC, alpha-_SD
BHC, alpha-_SS
BHC, alpha-_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

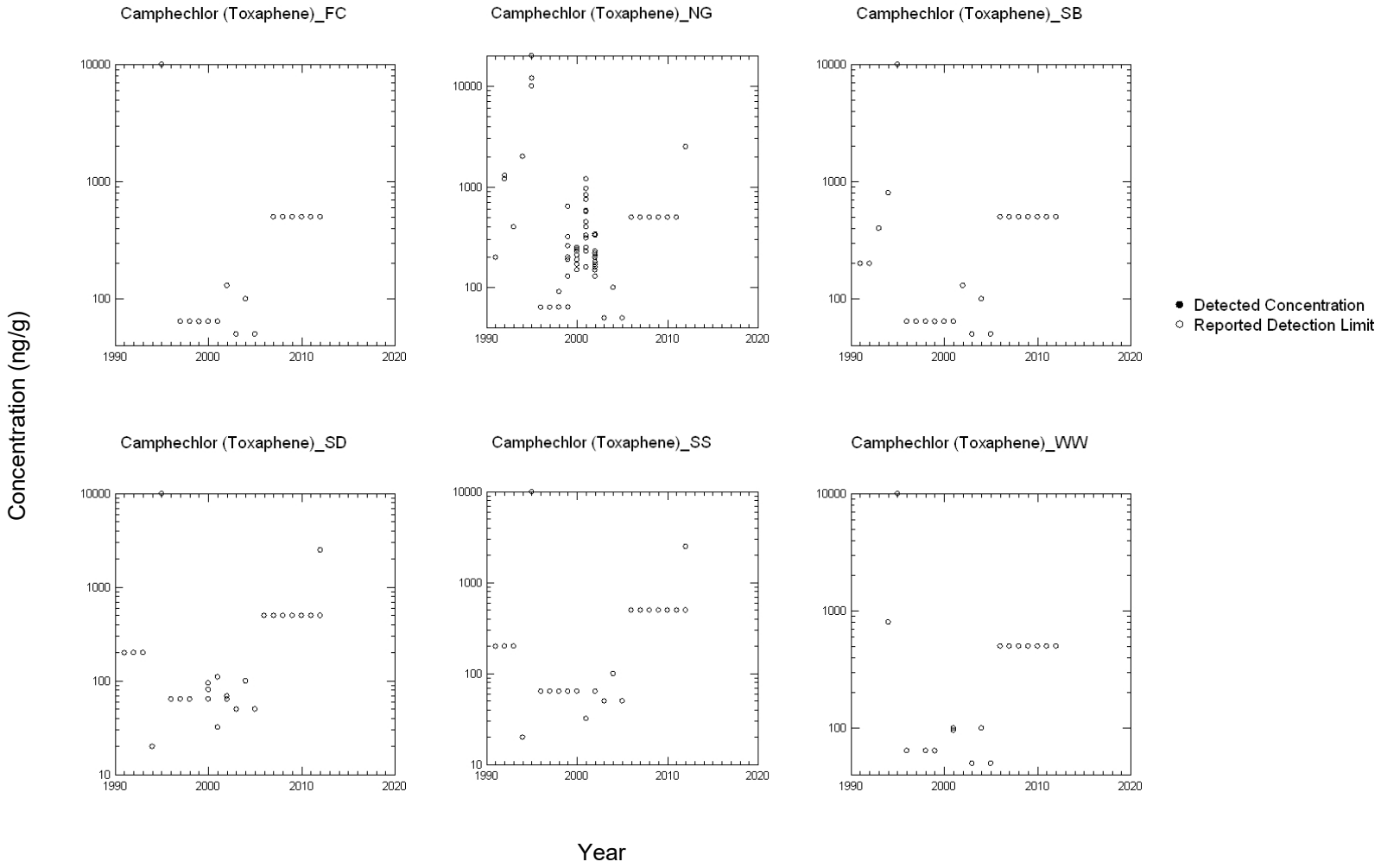
3. BHC, beta-


BHC, beta-_FC
BHC, beta-_NG
BHC, beta-_SB
BHC, beta-_SD
BHC, beta-_SS
BHC, beta-_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

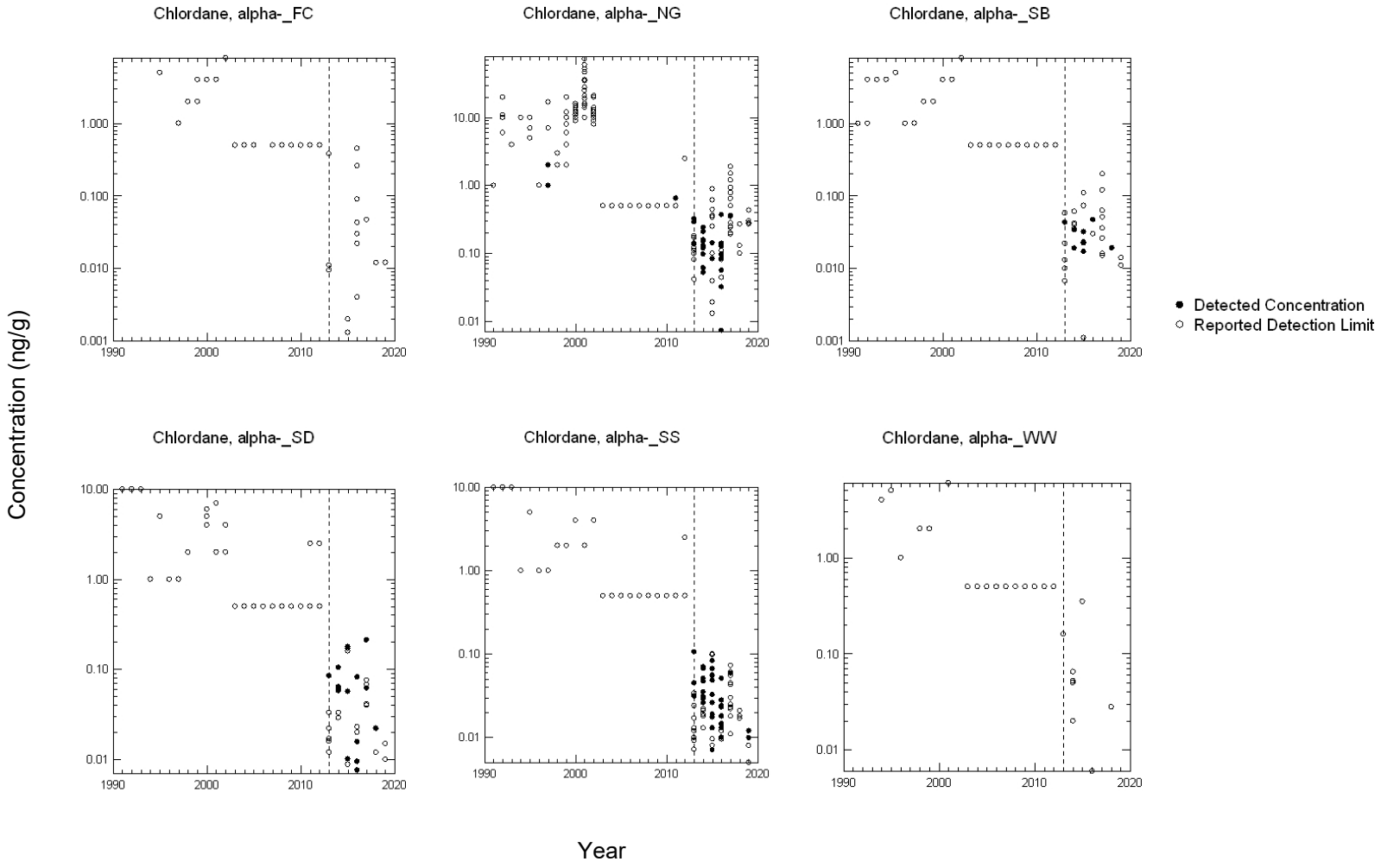
4. BHC, delta-


BHC, delta-_FC
BHC, delta-_NG
BHC, delta-_SB
BHC, delta-_SD
BHC, delta-_SS
BHC, delta-_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

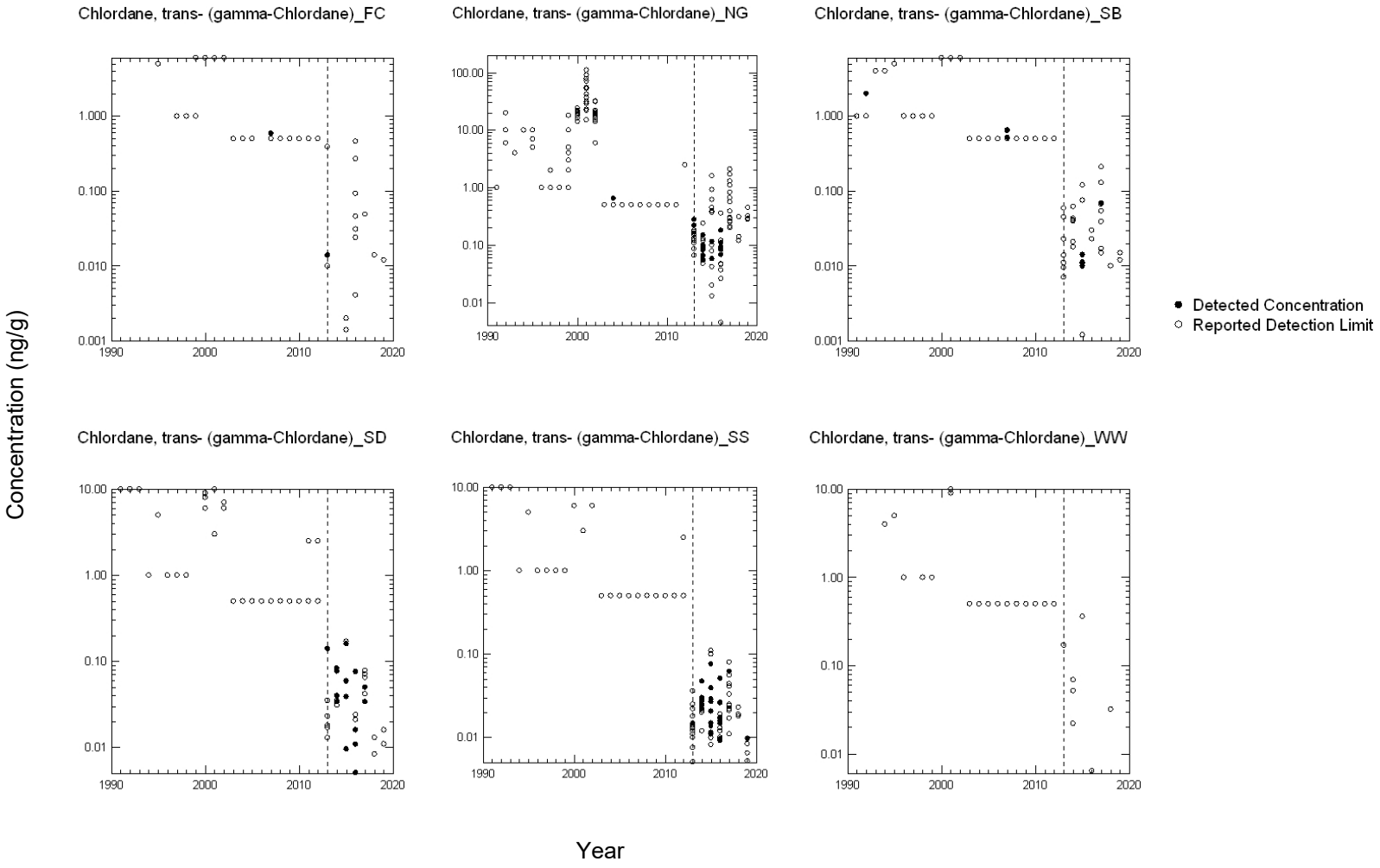
5. Camphechlor (Toxaphene)



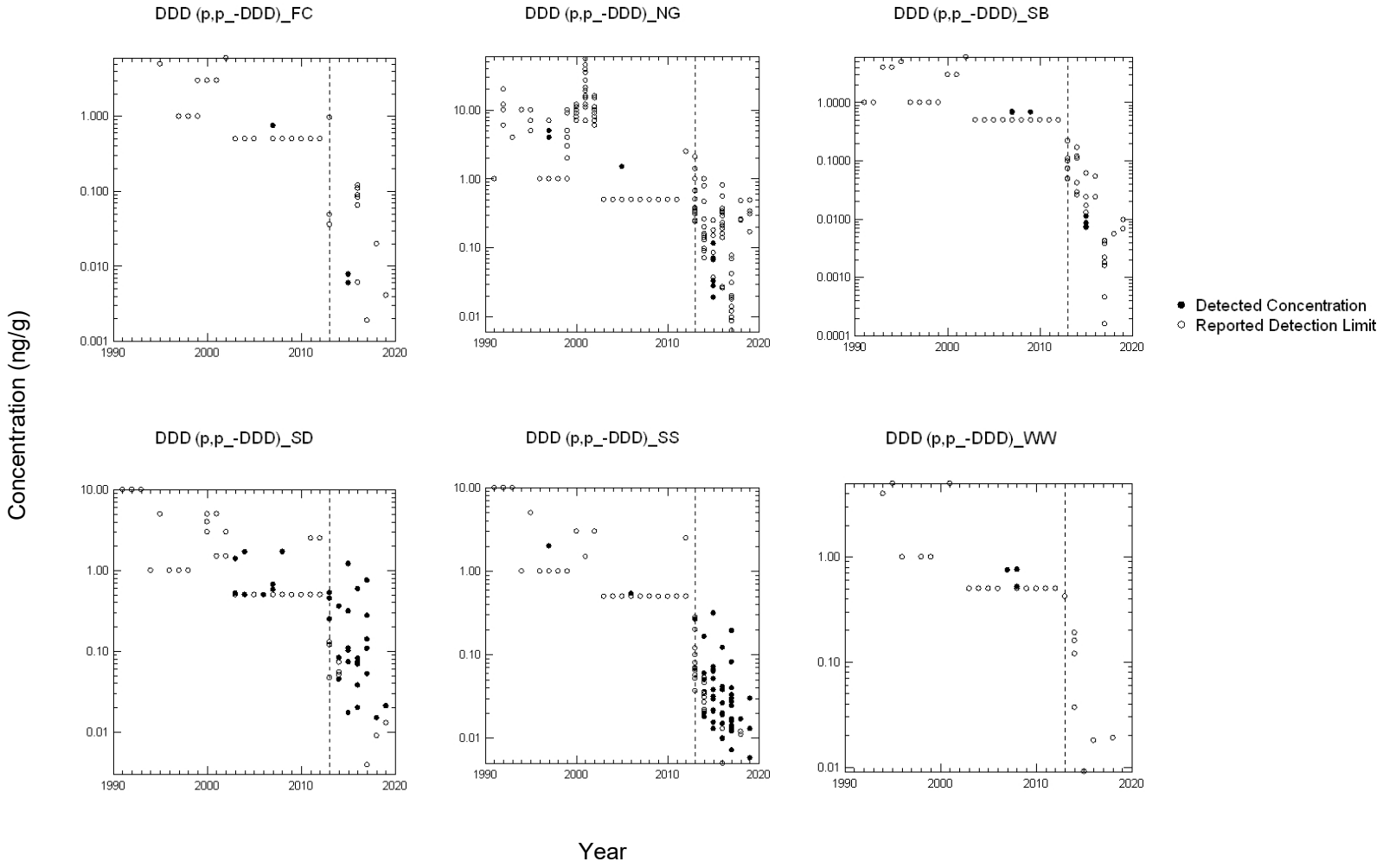
6. Chlordane, alpha-



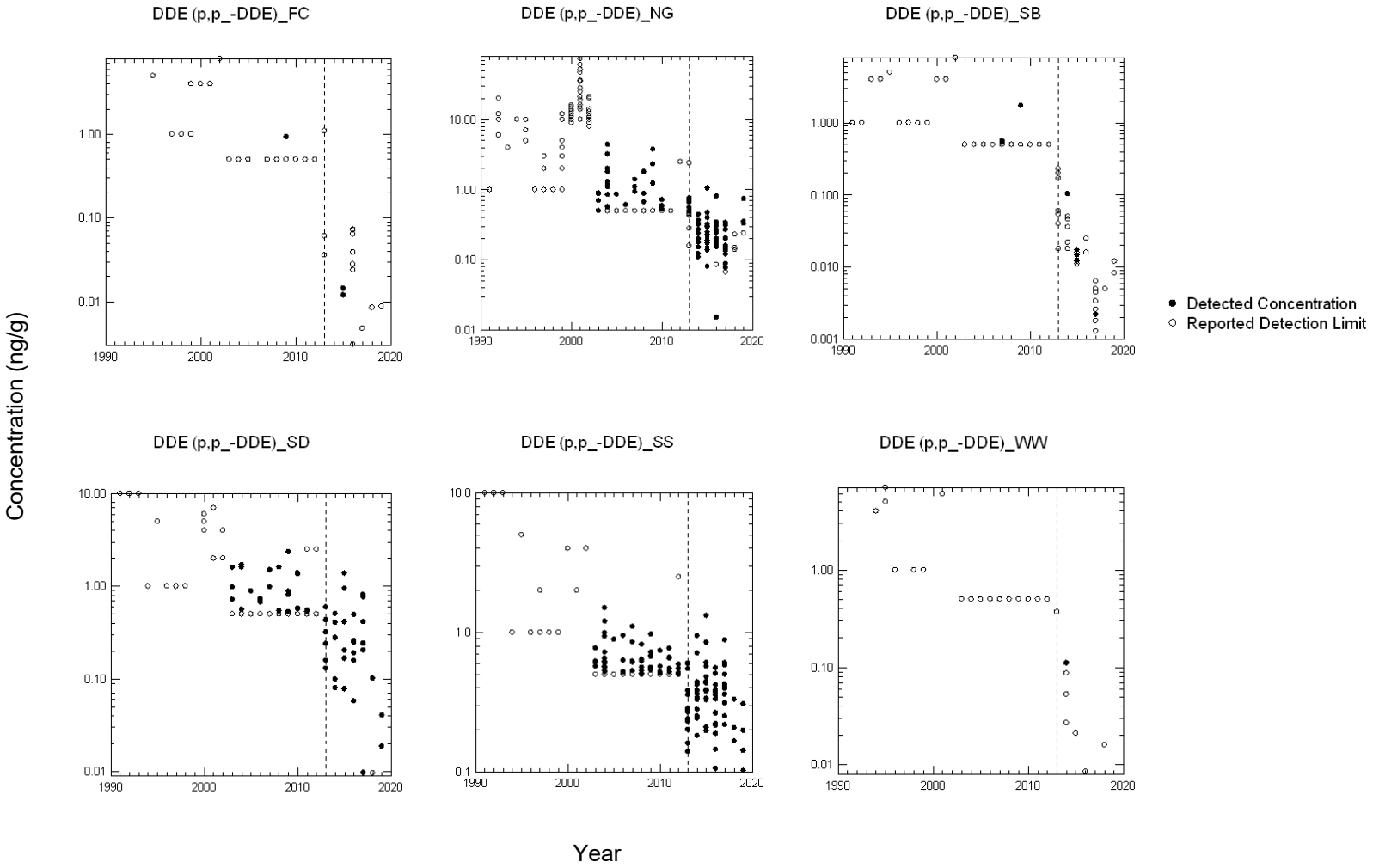
7. Chlordane, trans- (gamma-Chlordane)



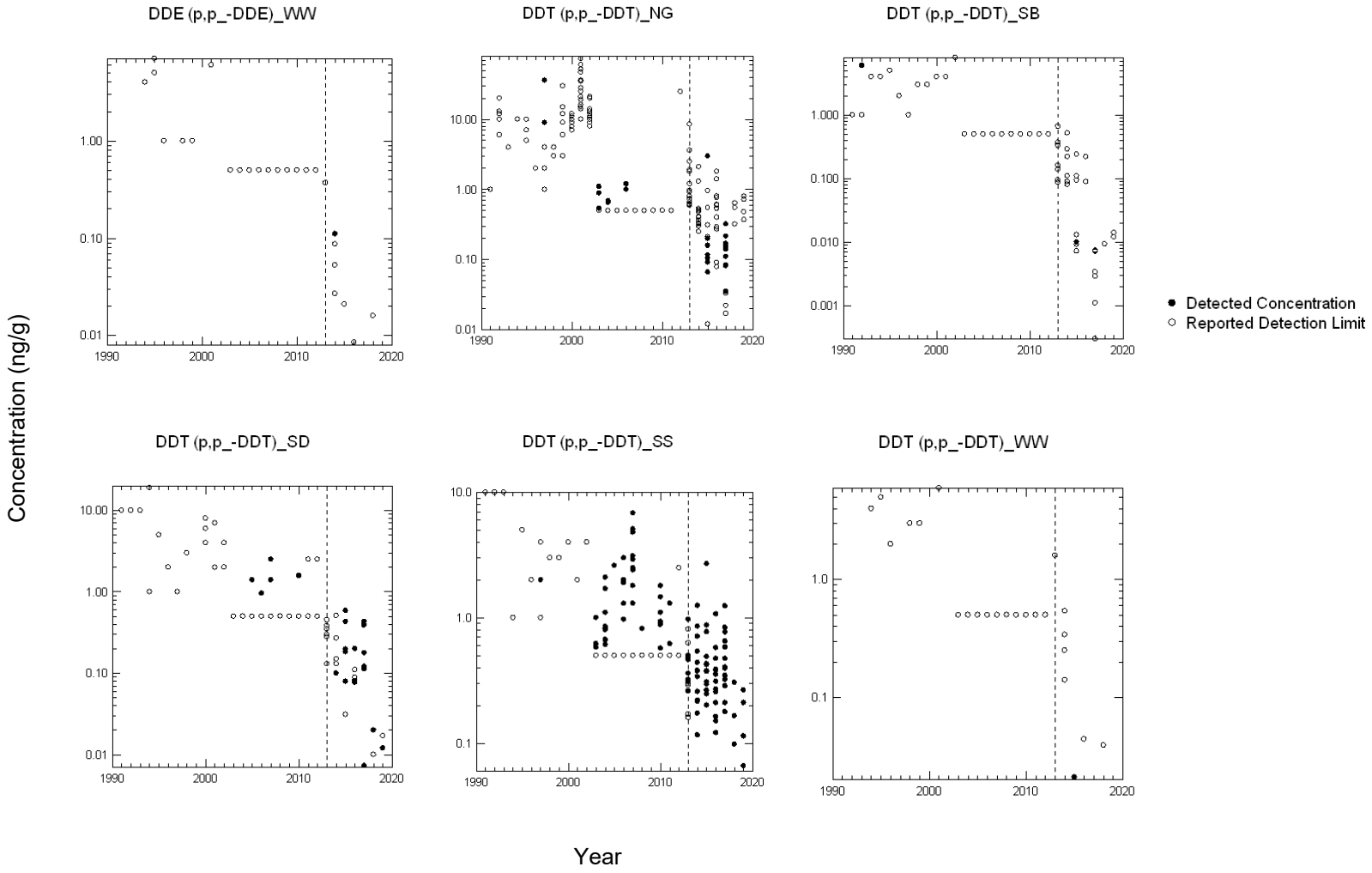
8. DDD (p,p'-DDD)


DDD (p,p_-DDD)_FC
DDD (p,p_-DDD)_NG
DDD (p,p_-DDD)_SB
DDD (p,p_-DDD)_SD
DDD (p,p_-DDD)_SS
DDD (p,p_-DDD)_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

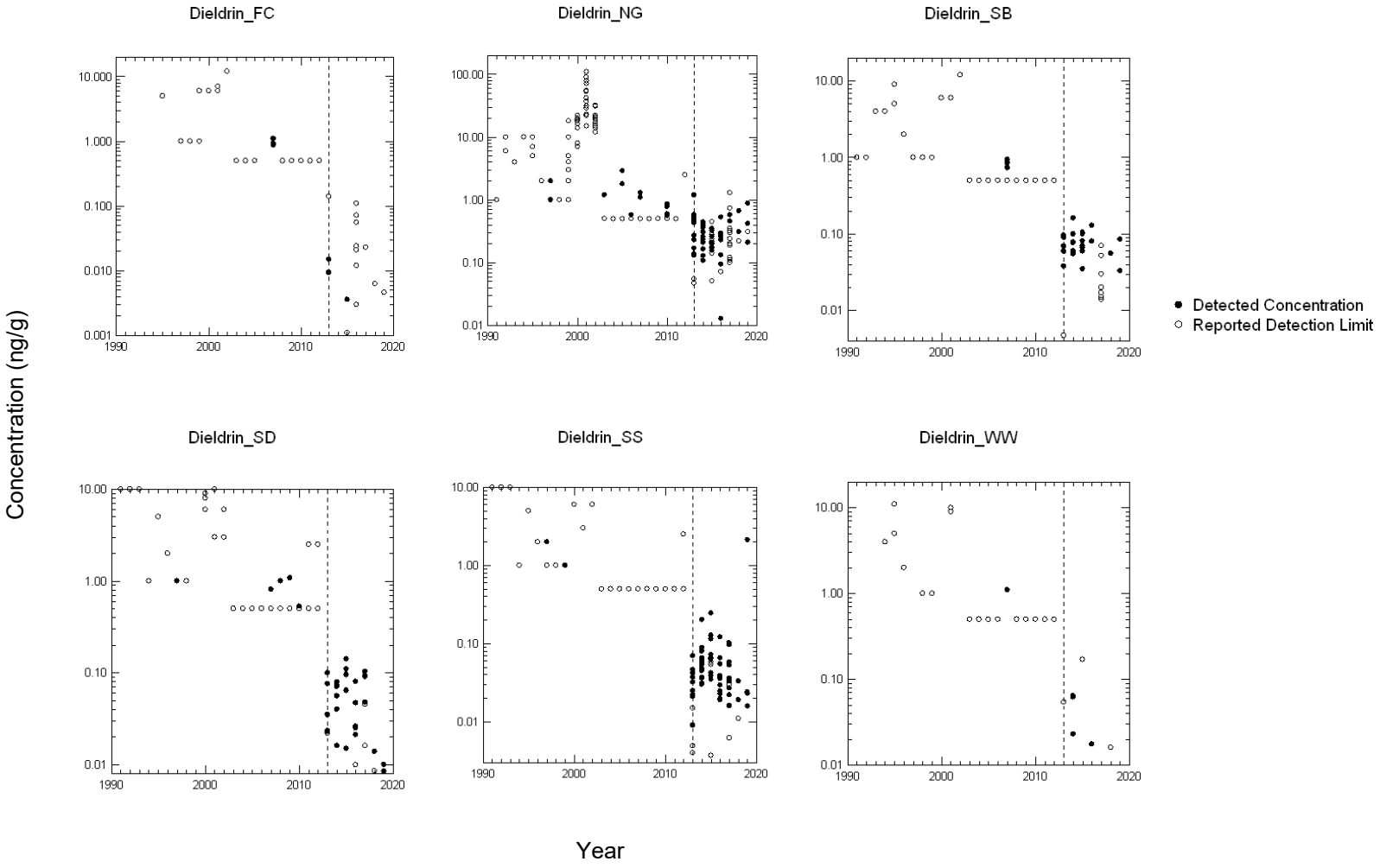
9. DDE (p,p'-DDE)


DDE (p,p_-DDE)_FC
DDE (p,p_-DDE)_NG
DDE (p,p_-DDE)_SB
DDE (p,p_-DDE)_SD
DDE (p,p_-DDE)_SS
DDE (p,p_-DDE)_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

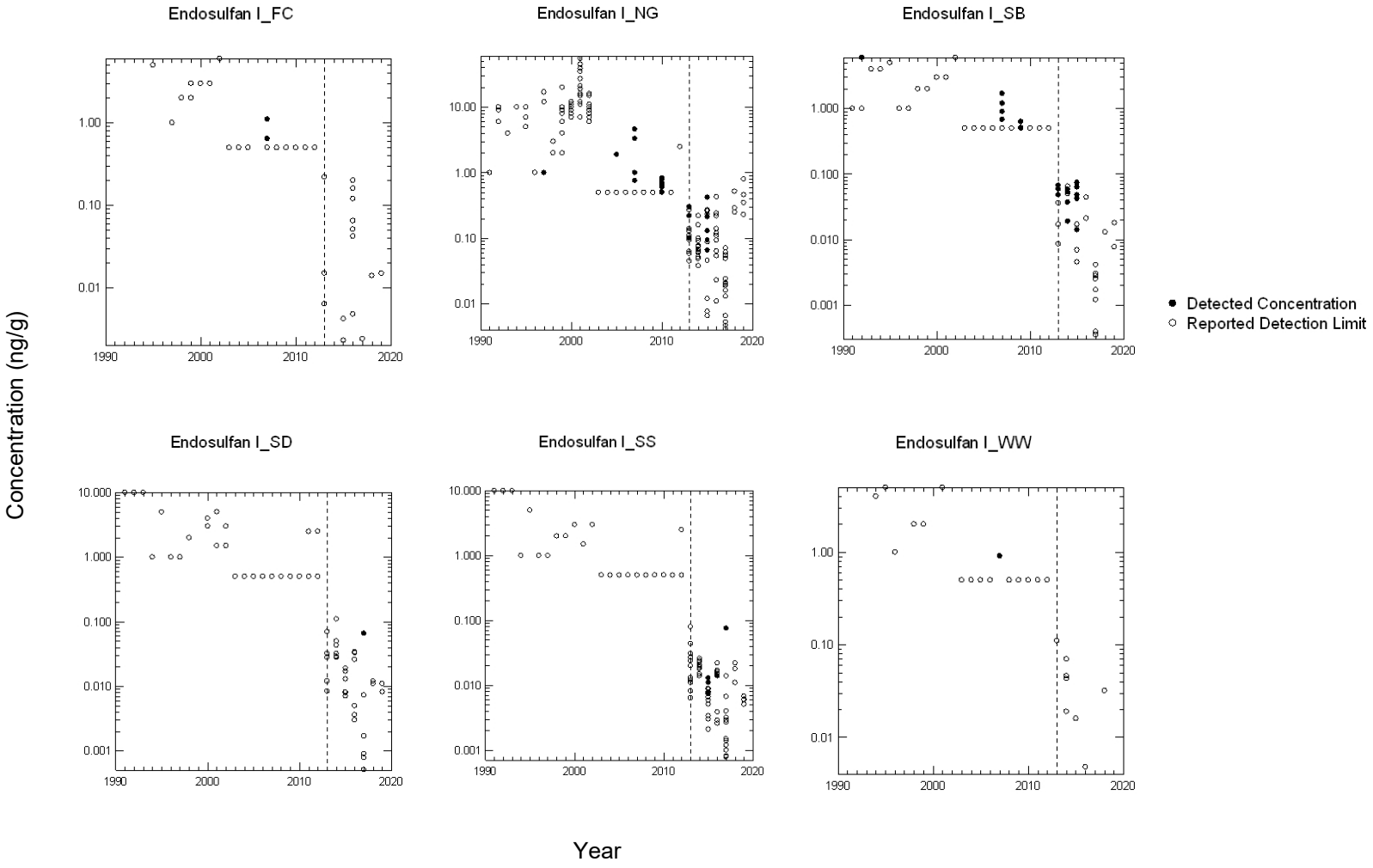
10. DDT (p,p'-DDT)


DDE (p,p_-DDE)_WW
DDT (p,p_-DDT)_NG
DDT (p,p_-DDT)_SB
DDT (p,p_-DDT)_SD
DDT (p,p_-DDT)_SS
DDT (p,p_-DDT)_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

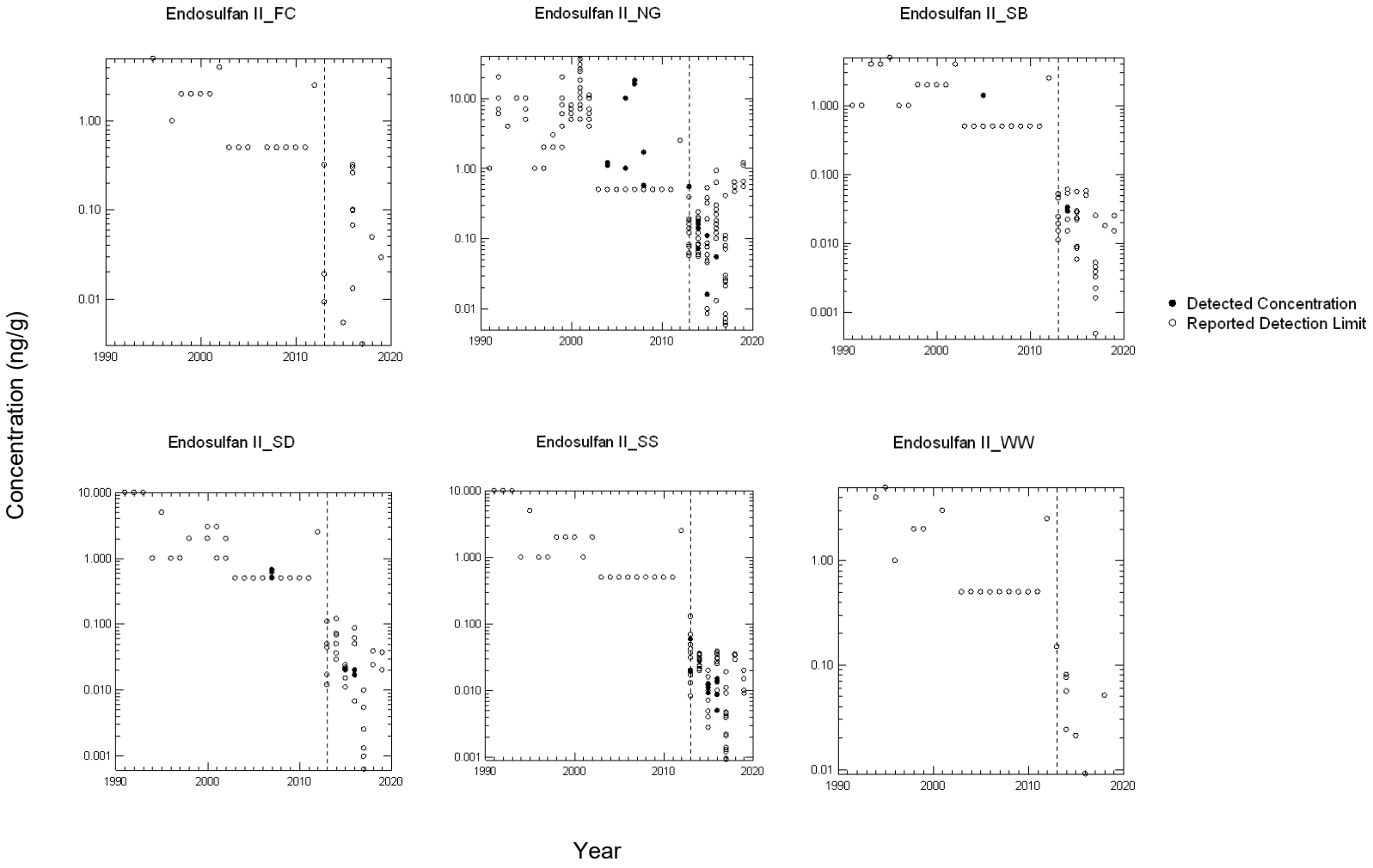
11. Dieldrin


Dieldrin_FC
Dieldrin_NG
Dieldrin_SB
Dieldrin_SD
Dieldrin_SS
Dieldrin_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

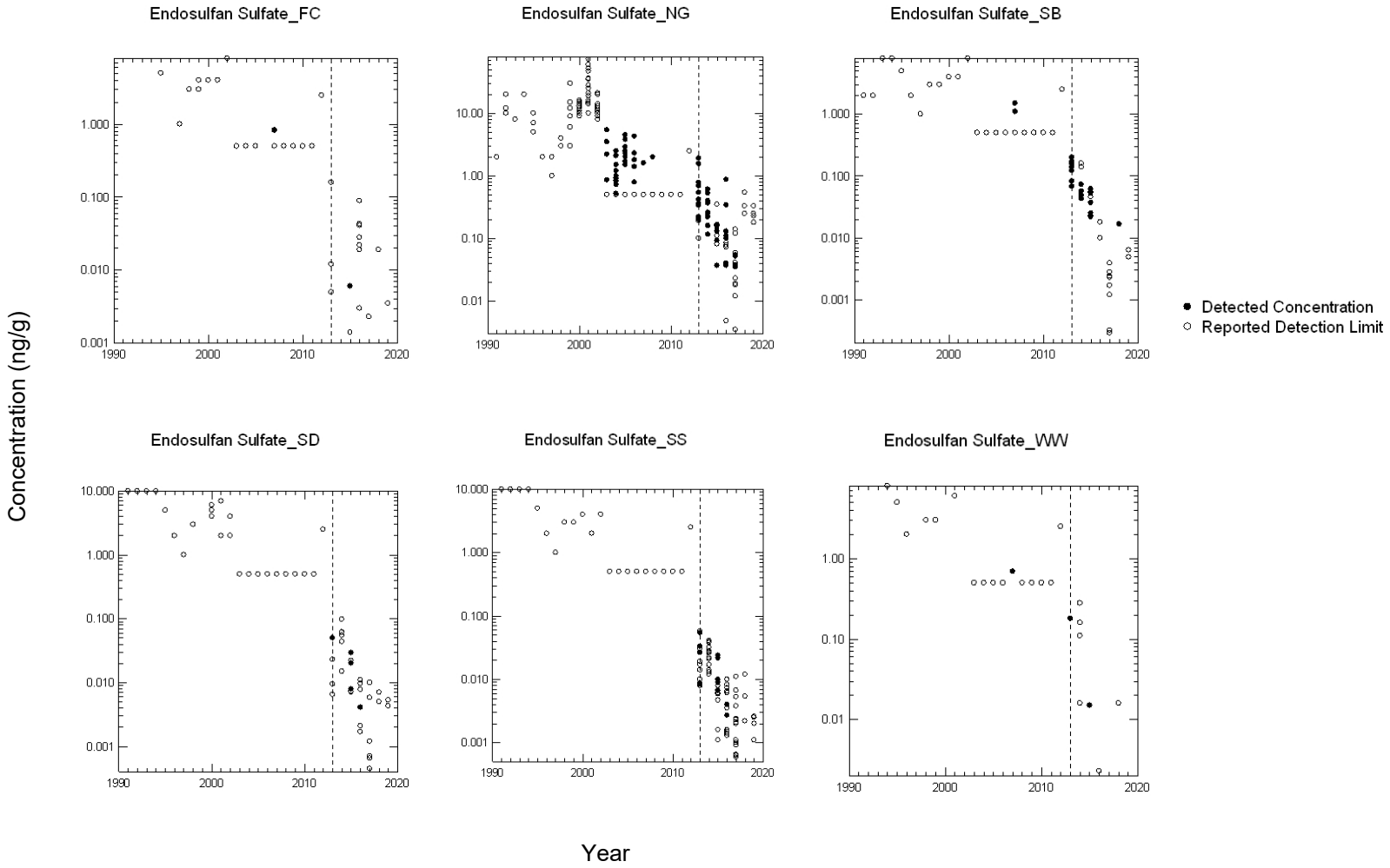
12. Endosulfan I



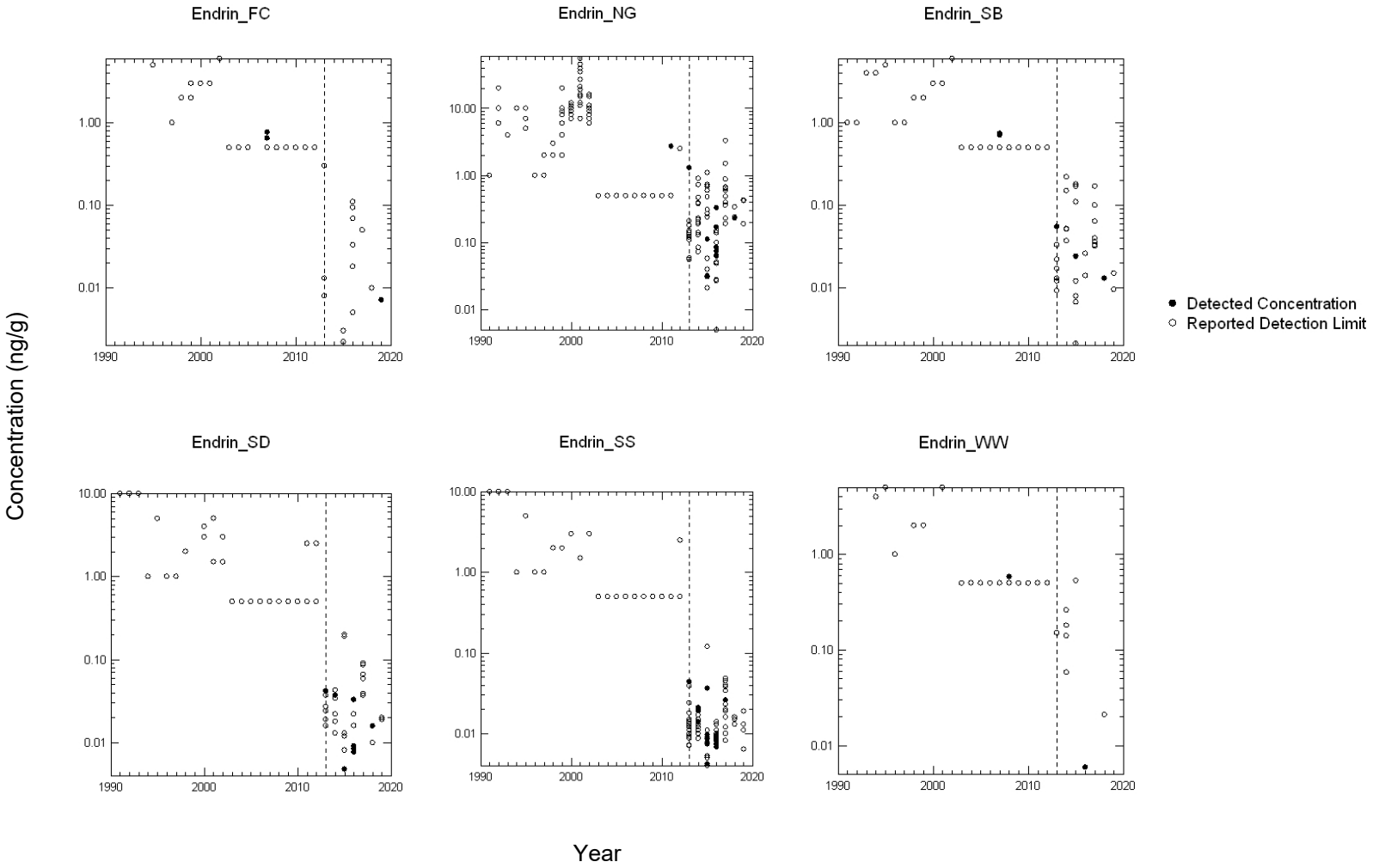
13. Endosulfan II



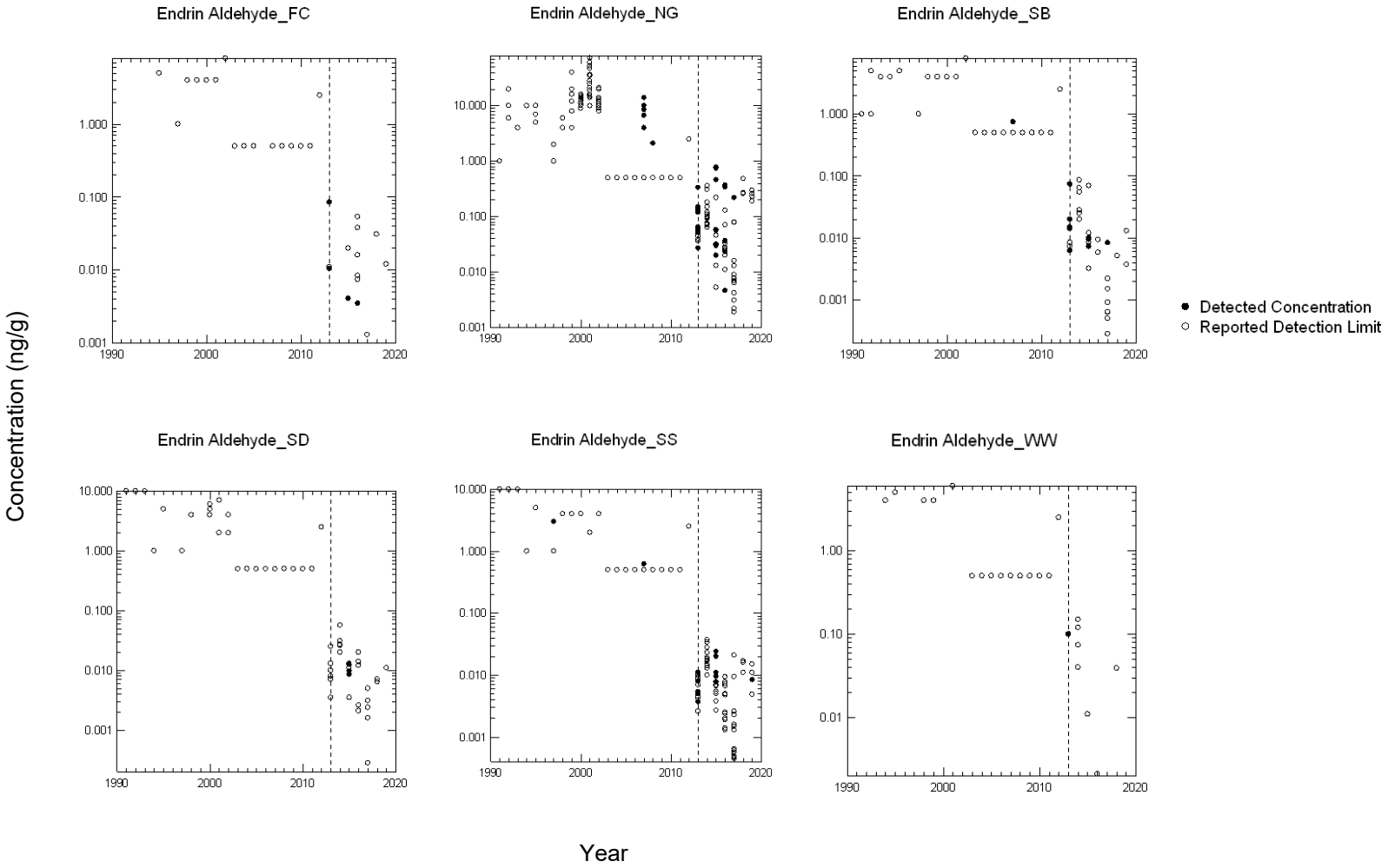
14. Endosulfan Sulfate



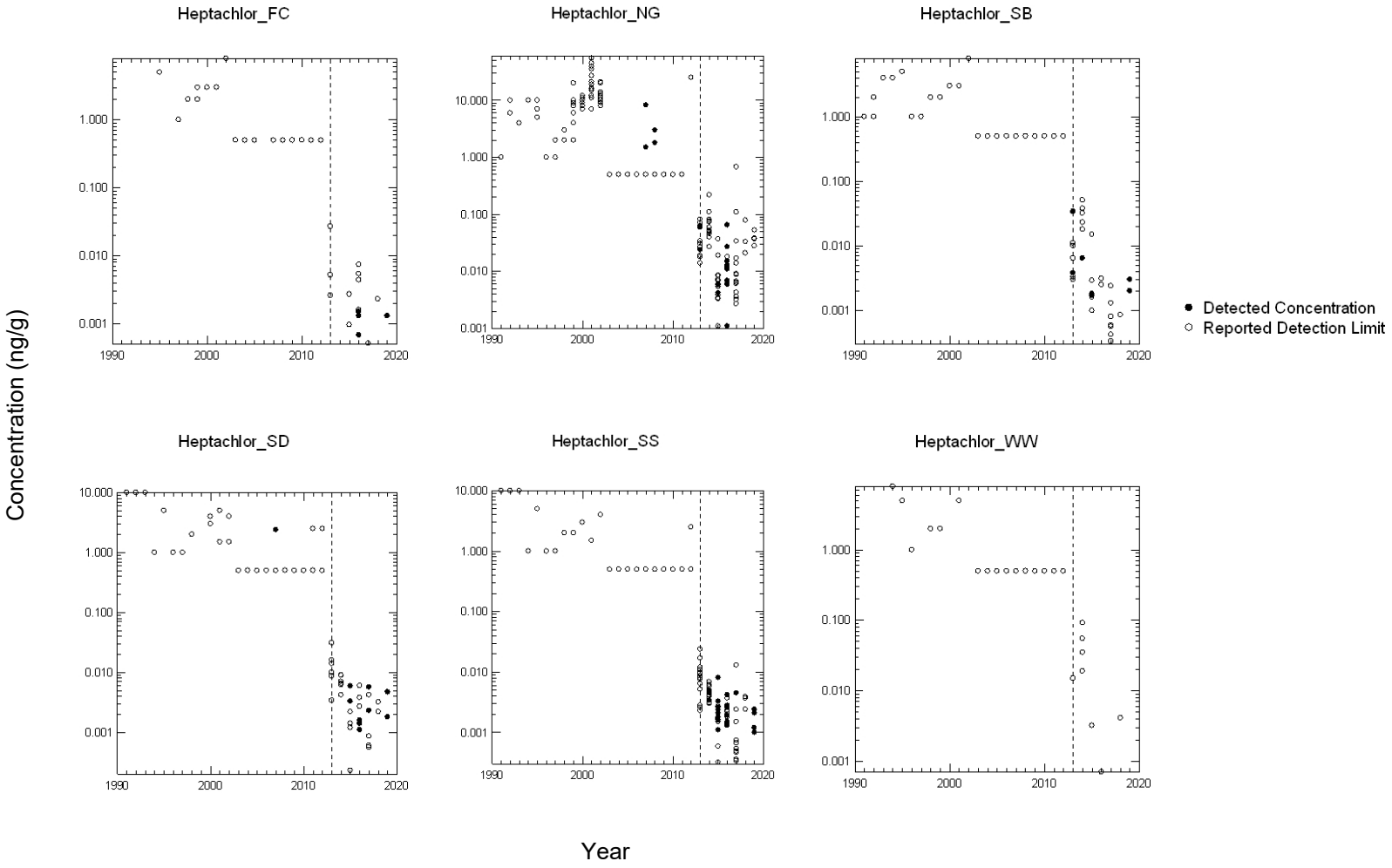
15. Endrin


Endrin_FC
Endrin_NG
Endrin_SB
Endrin_SD
Endrin_SS
Endrin_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

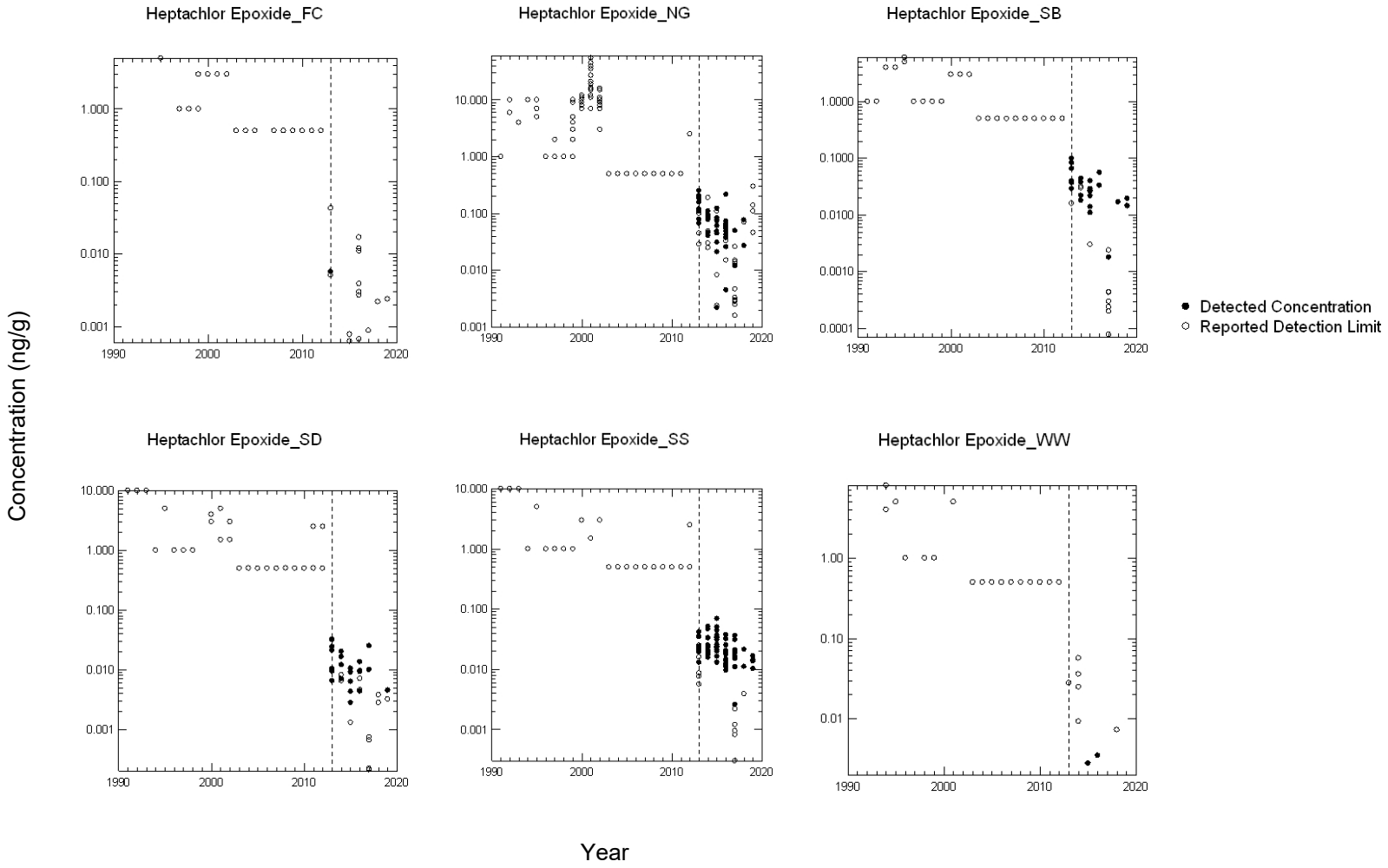
16. Endrin Aldehyde



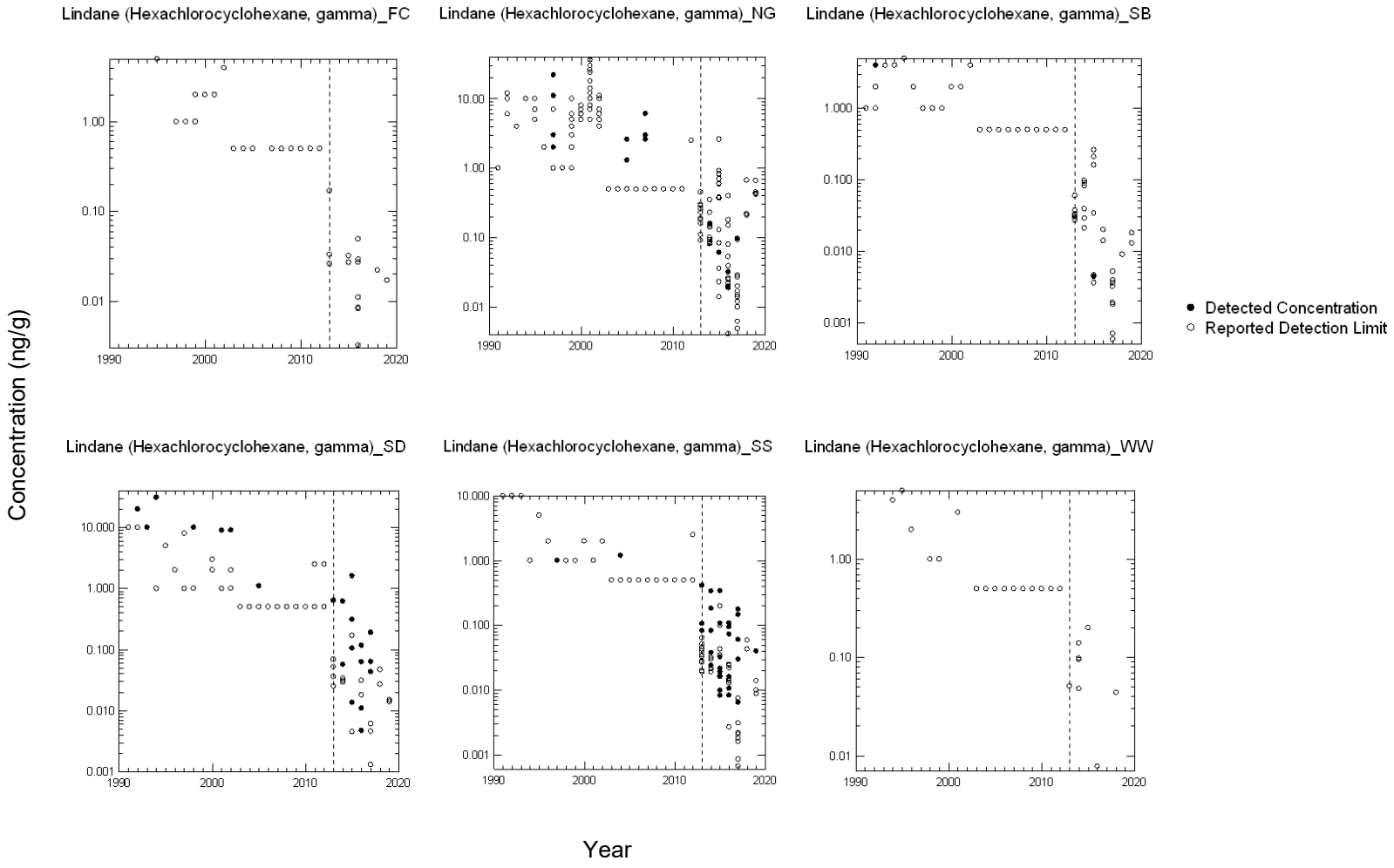
17. Heptachlor



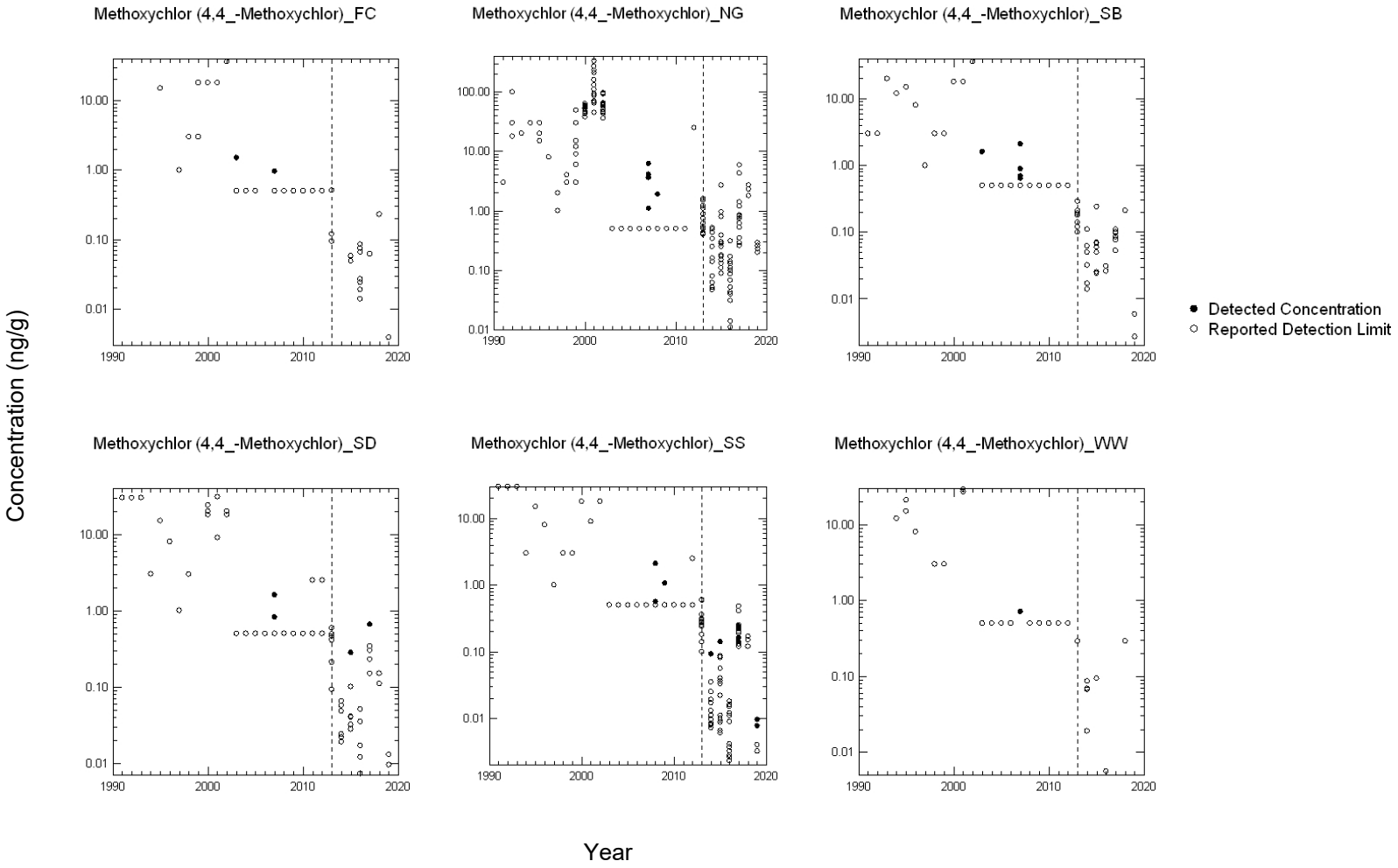
18. Heptachlor Epoxide



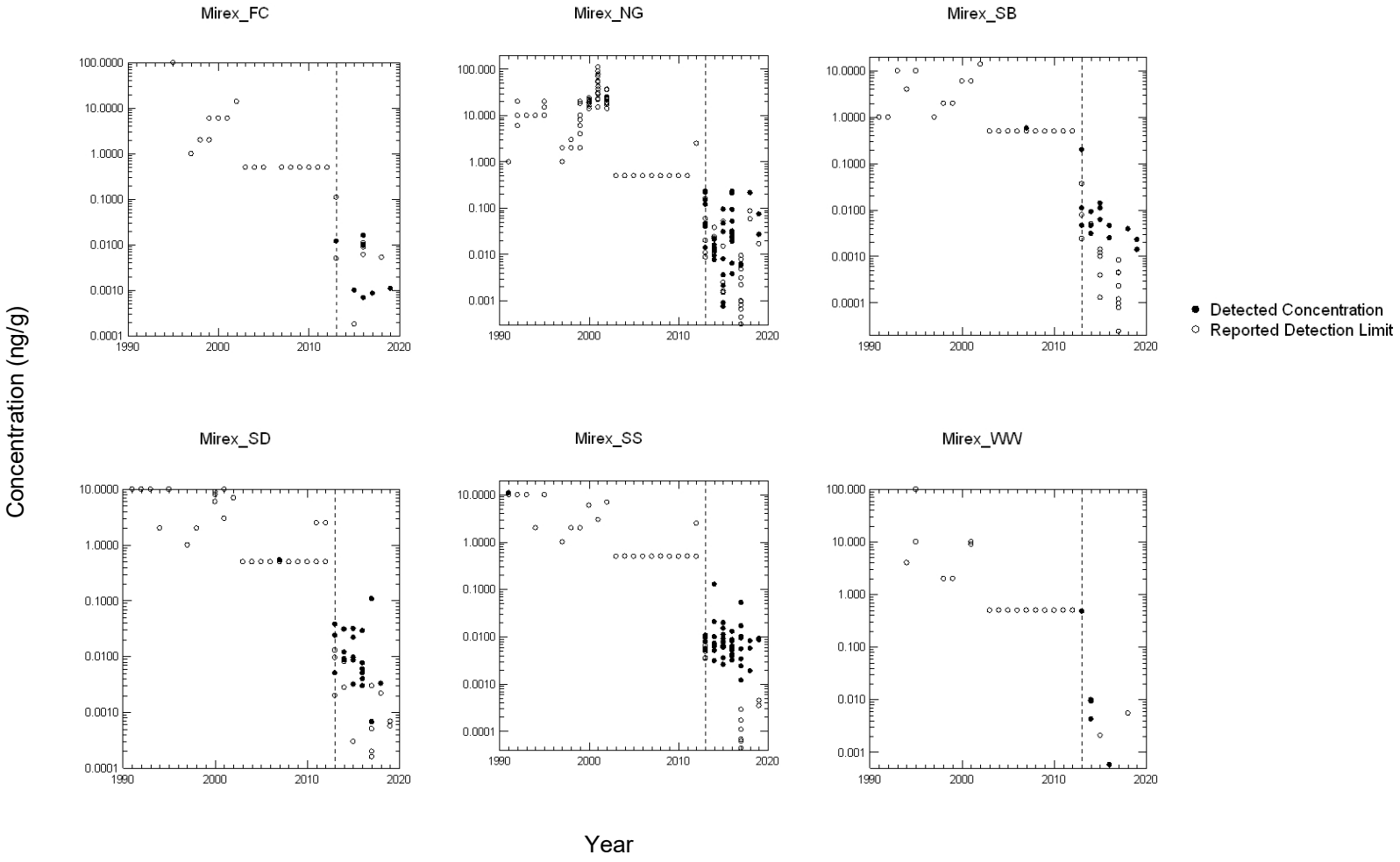
19. Lindane (Hexachlorocyclohexane, gamma)



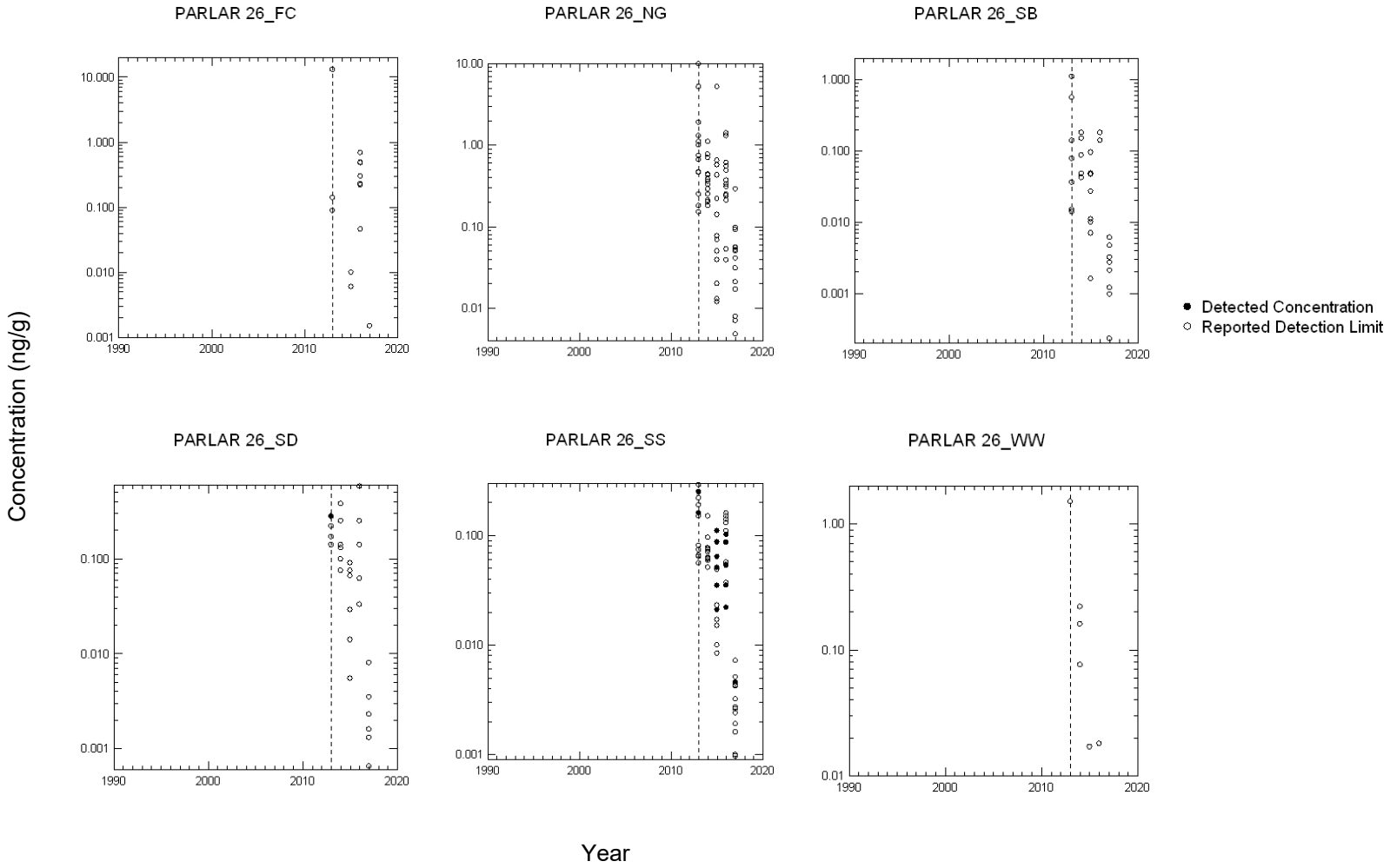
20. Methoxychlor (4,4'-Methoxychlor)



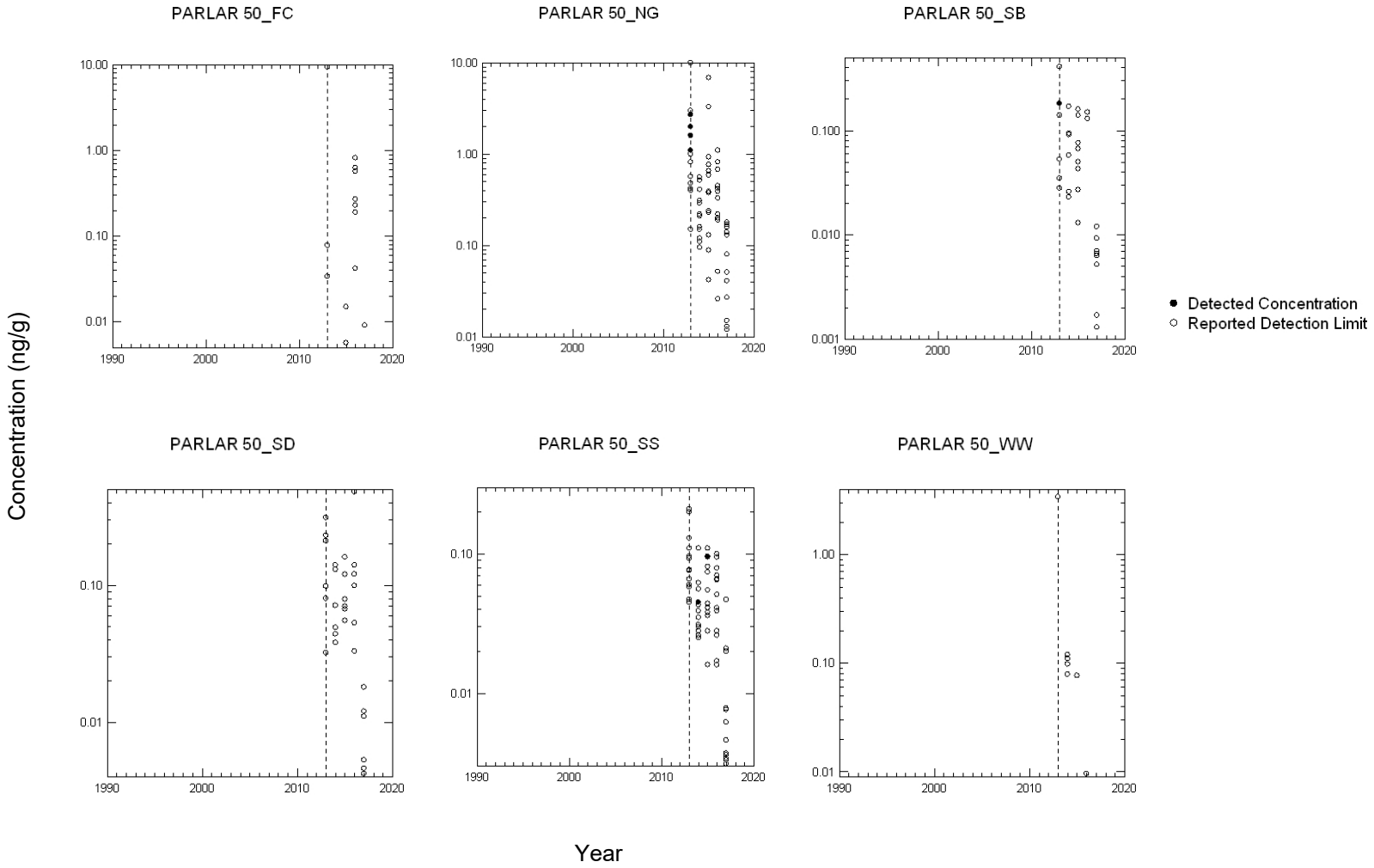
21. Mirex


Mirex_FC
Mirex_NG
Mirex_SB
Mirex_SD
Mirex_SS
Mirex_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

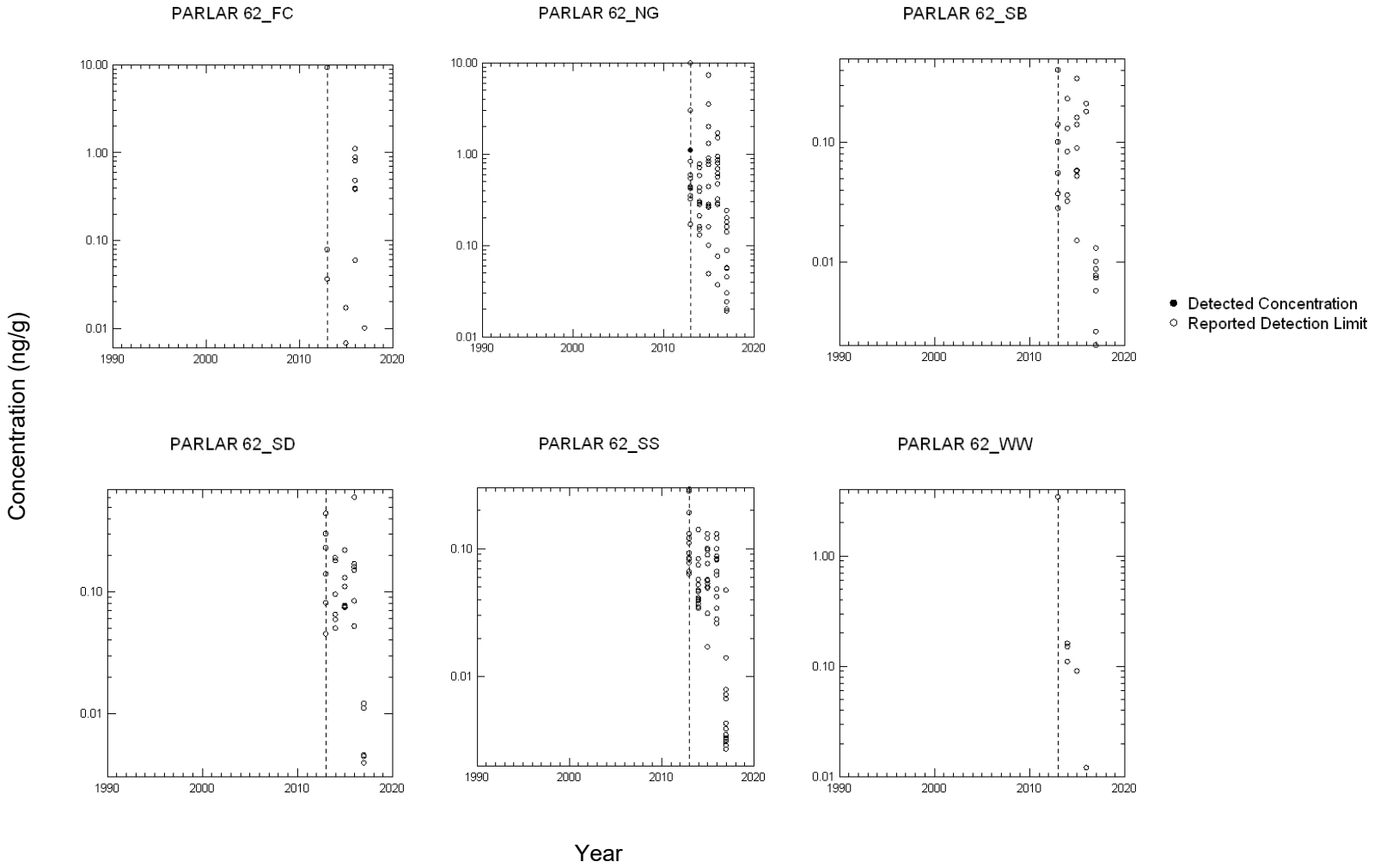
22. PARLAR 26


PARLAR 26_FC
PARLAR 26_NG
PARLAR 26_SB
PARLAR 26_SD
PARLAR 26_SS
PARLAR 26_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

23. PARLAR 50

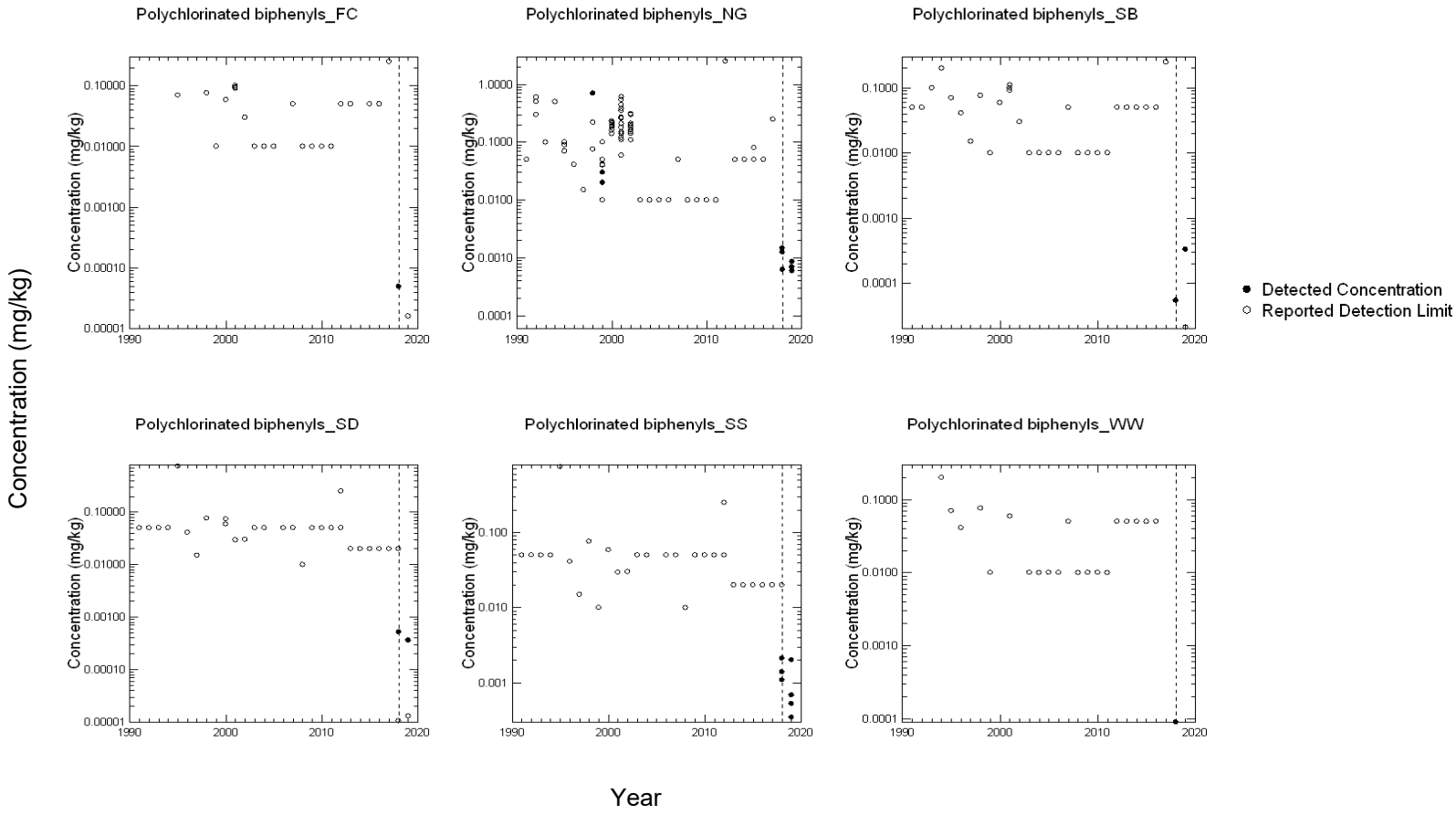

PARLAR 50_FC
PARLAR 50_NG
PARLAR 50_SB
PARLAR 50_SD
PARLAR 50_SS
PARLAR 50_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

24. PARLAR 62


PARLAR 62_FC
PARLAR 62_NG
PARLAR 62_SB
PARLAR 62_SD
PARLAR 62_SS
PARLAR 62_WW
Concentration (ng/g)
Year
Detected Concentration
Reported Detection Limit

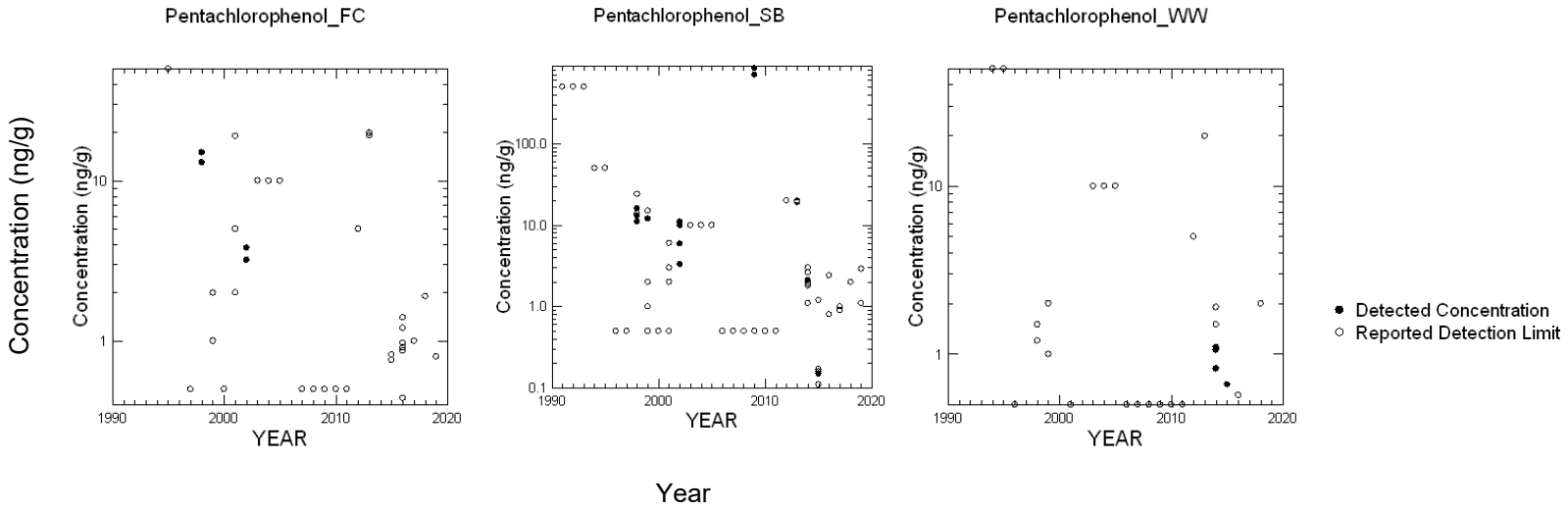
E.4.2 PCBs

1. Polychlorinated Biphenyls (PCBs)



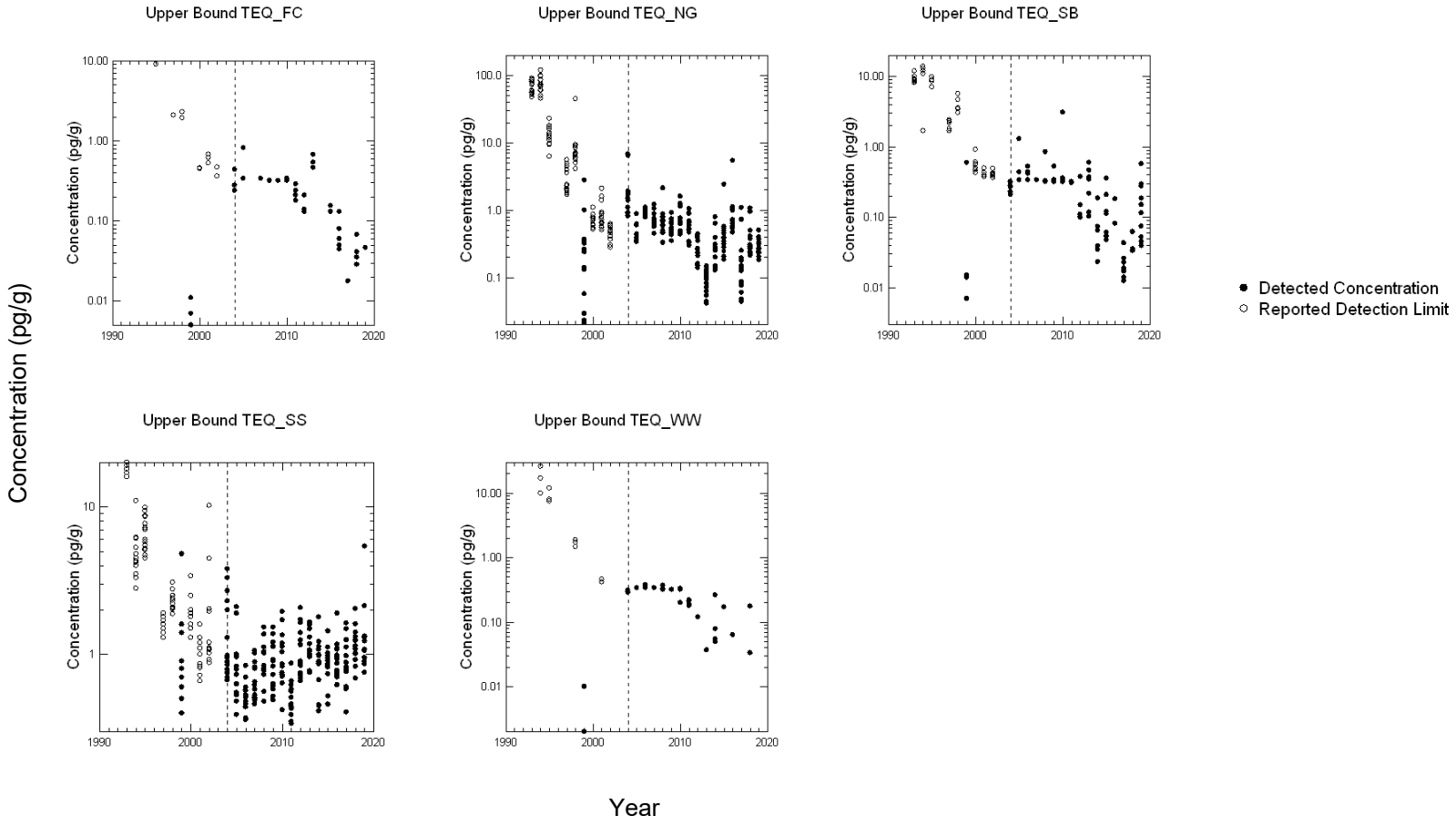
E.4.3 PCP

1. Pentachlorophenol



E.4.4 PCDD/DF

1. Upper Bound PCDD/F TEQ (WHO 2005)



E.5 FINAL RECOMMENDED START DATES FOR EACH ANALYTE-MATRIX PAIR (ORGANIC)

Analyte Group	Analyte	Matrix	Recommended Statistical Start Date
CH13_grp3_OCPs	Aldrin	FC	2013
CH13_grp3_OCPs	Aldrin	NG	2013
CH13_grp3_OCPs	Aldrin	SB	2013
CH13_grp3_OCPs	Aldrin	SD	2013
CH13_grp3_OCPs	Aldrin	SS	2013
CH13_grp3_OCPs	Aldrin	SU	2013
CH13_grp3_OCPs	Aldrin	WW	2013
CH13_grp3_OCPs	BHC, alpha-	FC	2013
CH13_grp3_OCPs	BHC, alpha-	NG	2013
CH13_grp3_OCPs	BHC, alpha-	SB	2013
CH13_grp3_OCPs	BHC, alpha-	SD	2013
CH13_grp3_OCPs	BHC, alpha-	SS	2013
CH13_grp3_OCPs	BHC, alpha-	SU	2013
CH13_grp3_OCPs	BHC, alpha-	WW	2013
CH13_grp3_OCPs	BHC, beta-	FC	2013
CH13_grp3_OCPs	BHC, beta-	NG	2013
CH13_grp3_OCPs	BHC, beta-	SB	2013
CH13_grp3_OCPs	BHC, beta-	SD	2013
CH13_grp3_OCPs	BHC, beta-	SS	2013
CH13_grp3_OCPs	BHC, beta-	SU	2013
CH13_grp3_OCPs	BHC, beta-	WW	2013
CH13_grp3_OCPs	BHC, delta-	FC	2013
CH13_grp3_OCPs	BHC, delta-	NG	2013
CH13_grp3_OCPs	BHC, delta-	SB	2013
CH13_grp3_OCPs	BHC, delta-	SD	2013
CH13_grp3_OCPs	BHC, delta-	SS	2013
CH13_grp3_OCPs	BHC, delta-	SU	2013
CH13_grp3_OCPs	BHC, delta-	WW	2013
CH13_grp3_OCPs	Chlordane, alpha-	FC	2013
CH13_grp3_OCPs	Chlordane, alpha-	NG	2013
CH13_grp3_OCPs	Chlordane, alpha-	SB	2013
CH13_grp3_OCPs	Chlordane, alpha-	SD	2013

Analyte Group	Analyte	Matrix	Recommended Statistical Start Date
CH13_grp3_OCPs	Chlordane, alpha-	SS	2013
CH13_grp3_OCPs	Chlordane, alpha-	SU	2013
CH13_grp3_OCPs	Chlordane, alpha-	WW	2013
CH13_grp3_OCPs	Chlordane, trans- (gamma-chlordane)	FC	2013
CH13_grp3_OCPs	Chlordane, trans- (gamma-chlordane)	NG	2013
CH13_grp3_OCPs	Chlordane, trans- (gamma-chlordane)	SB	2013
CH13_grp3_OCPs	Chlordane, trans- (gamma-chlordane)	SD	2013
CH13_grp3_OCPs	Chlordane, trans- (gamma-chlordane)	SS	2013
CH13_grp3_OCPs	Chlordane, trans- (gamma-chlordane)	SU	2013
CH13_grp3_OCPs	Chlordane, trans- (gamma-chlordane)	WW	2013
CH13_grp3_OCPs	DDD (p,p'-DDD)	FC	2013
CH13_grp3_OCPs	DDD (p,p'-DDD)	NG	2013
CH13_grp3_OCPs	DDD (p,p'-DDD)	SB	2013
CH13_grp3_OCPs	DDD (p,p'-DDD)	SD	2013
CH13_grp3_OCPs	DDD (p,p'-DDD)	SS	2013
CH13_grp3_OCPs	DDD (p,p'-DDD)	SU	2013
CH13_grp3_OCPs	DDD (p,p'-DDD)	WW	2013
CH13_grp3_OCPs	DDE (p,p'-DDE)	FC	2013
CH13_grp3_OCPs	DDE (p,p'-DDE)	NG	2013
CH13_grp3_OCPs	DDE (p,p'-DDE)	SB	2013
CH13_grp3_OCPs	DDE (p,p'-DDE)	SD	2013
CH13_grp3_OCPs	DDE (p,p'-DDE)	SS	2013
CH13_grp3_OCPs	DDE (p,p'-DDE)	SU	2013
CH13_grp3_OCPs	DDE (p,p'-DDE)	WW	2013
CH13_grp3_OCPs	DDT (p,p'-DDT)	FC	2013
CH13_grp3_OCPs	DDT (p,p'-DDT)	NG	2013
CH13_grp3_OCPs	DDT (p,p'-DDT)	SB	2013
CH13_grp3_OCPs	DDT (p,p'-DDT)	SD	2013
CH13_grp3_OCPs	DDT (p,p'-DDT)	SS	2013
CH13_grp3_OCPs	DDT (p,p'-DDT)	SU	2013
CH13_grp3_OCPs	DDT (p,p'-DDT)	WW	2013
CH13_grp3_OCPs	Dieldrin	FC	2013
CH13_grp3_OCPs	Dieldrin	NG	2013
CH13_grp3_OCPs	Dieldrin	SB	2013
CH13_grp3_OCPs	Dieldrin	SD	2013

Analyte Group	Analyte	Matrix	Recommended Statistical Start Date
CH13_grp3_OCPs	Dieldrin	SS	2013
CH13_grp3_OCPs	Dieldrin	SU	2013
CH13_grp3_OCPs	Dieldrin	WW	2013
CH13_grp3_OCPs	Endosulfan i	FC	2013
CH13_grp3_OCPs	Endosulfan i	NG	2013
CH13_grp3_OCPs	Endosulfan i	SB	2013
CH13_grp3_OCPs	Endosulfan i	SD	2013
CH13_grp3_OCPs	Endosulfan i	SS	2013
CH13_grp3_OCPs	Endosulfan i	SU	2013
CH13_grp3_OCPs	Endosulfan i	WW	2013
CH13_grp3_OCPs	Endosulfan ii	FC	2013
CH13_grp3_OCPs	Endosulfan ii	NG	2013
CH13_grp3_OCPs	Endosulfan ii	SB	2013
CH13_grp3_OCPs	Endosulfan ii	SD	2013
CH13_grp3_OCPs	Endosulfan ii	SS	2013
CH13_grp3_OCPs	Endosulfan ii	SU	2013
CH13_grp3_OCPs	Endosulfan ii	WW	2013
CH13_grp3_OCPs	Endosulfan sulfate	FC	2013
CH13_grp3_OCPs	Endosulfan sulfate	NG	2013
CH13_grp3_OCPs	Endosulfan sulfate	SB	2013
CH13_grp3_OCPs	Endosulfan sulfate	SD	2013
CH13_grp3_OCPs	Endosulfan sulfate	SS	2013
CH13_grp3_OCPs	Endosulfan sulfate	SU	2013
CH13_grp3_OCPs	Endosulfan sulfate	WW	2013
CH13_grp3_OCPs	Endrin aldehyde	FC	2013
CH13_grp3_OCPs	Endrin aldehyde	NG	2013
CH13_grp3_OCPs	Endrin aldehyde	SB	2013
CH13_grp3_OCPs	Endrin aldehyde	SD	2013
CH13_grp3_OCPs	Endrin aldehyde	SS	2013
CH13_grp3_OCPs	Endrin aldehyde	SU	2013
CH13_grp3_OCPs	Endrin aldehyde	WW	2013
CH13_grp3_OCPs	Endrin	FC	2013
CH13_grp3_OCPs	Endrin	NG	2013
CH13_grp3_OCPs	Endrin	SB	2013
CH13_grp3_OCPs	Endrin	SD	2013

Analyte Group	Analyte	Matrix	Recommended Statistical Start Date
CH13_grp3_OCPs	Endrin	SS	2013
CH13_grp3_OCPs	Endrin	SU	2013
CH13_grp3_OCPs	Endrin	WW	2013
CH13_grp3_OCPs	Heptachlor epoxide	FC	2013
CH13_grp3_OCPs	Heptachlor epoxide	NG	2013
CH13_grp3_OCPs	Heptachlor epoxide	SB	2013
CH13_grp3_OCPs	Heptachlor epoxide	SD	2013
CH13_grp3_OCPs	Heptachlor epoxide	SS	2013
CH13_grp3_OCPs	Heptachlor epoxide	SU	2013
CH13_grp3_OCPs	Heptachlor epoxide	WW	2013
CH13_grp3_OCPs	Heptachlor	FC	2013
CH13_grp3_OCPs	Heptachlor	NG	2013
CH13_grp3_OCPs	Heptachlor	SB	2013
CH13_grp3_OCPs	Heptachlor	SD	2013
CH13_grp3_OCPs	Heptachlor	SS	2013
CH13_grp3_OCPs	Heptachlor	SU	2013
CH13_grp3_OCPs	Heptachlor	WW	2013
CH13_grp3_OCPs	Lindane (hexachlorocyclohexane, gamma)	FC	2013
CH13_grp3_OCPs	Lindane (hexachlorocyclohexane, gamma)	NG	2013
CH13_grp3_OCPs	Lindane (hexachlorocyclohexane, gamma)	SB	2013
CH13_grp3_OCPs	Lindane (hexachlorocyclohexane, gamma)	SD	2013
CH13_grp3_OCPs	Lindane (hexachlorocyclohexane, gamma)	SS	2013
CH13_grp3_OCPs	Lindane (hexachlorocyclohexane, gamma)	SU	2013
CH13_grp3_OCPs	Lindane (hexachlorocyclohexane, gamma)	WW	2013
CH13_grp3_OCPs	Methoxychlor (4,4'-methoxychlor)	FC	2013
CH13_grp3_OCPs	Methoxychlor (4,4'-methoxychlor)	NG	2013
CH13_grp3_OCPs	Methoxychlor (4,4'-methoxychlor)	SB	2013
CH13_grp3_OCPs	Methoxychlor (4,4'-methoxychlor)	SD	2013
CH13_grp3_OCPs	Methoxychlor (4,4'-methoxychlor)	SS	2013
CH13_grp3_OCPs	Methoxychlor (4,4'-methoxychlor)	SU	2013
CH13_grp3_OCPs	Methoxychlor (4,4'-methoxychlor)	WW	2013
CH13_grp3_OCPs	Mirex	FC	2013
CH13_grp3_OCPs	Mirex	NG	2013
CH13_grp3_OCPs	Mirex	SB	2013
CH13_grp3_OCPs	Mirex	SD	2013

Analyte Group	Analyte	Matrix	Recommended Statistical Start Date
CH13_grp3_OCPs	Mirex	SS	2013
CH13_grp3_OCPs	Mirex	SU	2013
CH13_grp3_OCPs	Mirex	WW	2013
CH13_grp3_OCPs	Parlar 26	FC	2013
CH13_grp3_OCPs	Parlar 26	NG	2013
CH13_grp3_OCPs	Parlar 26	SB	2013
CH13_grp3_OCPs	Parlar 26	SD	2013
CH13_grp3_OCPs	Parlar 26	SS	2013
CH13_grp3_OCPs	Parlar 26	SU	2013
CH13_grp3_OCPs	Parlar 26	WW	2013
CH13_grp3_OCPs	Parlar 50	FC	2013
CH13_grp3_OCPs	Parlar 50	NG	2013
CH13_grp3_OCPs	Parlar 50	SB	2013
CH13_grp3_OCPs	Parlar 50	SD	2013
CH13_grp3_OCPs	Parlar 50	SS	2013
CH13_grp3_OCPs	Parlar 50	SU	2013
CH13_grp3_OCPs	Parlar 50	WW	2013
CH13_grp3_OCPs	Parlar 62	FC	2013
CH13_grp3_OCPs	Parlar 62	NG	2013
CH13_grp3_OCPs	Parlar 62	SB	2013
CH13_grp3_OCPs	Parlar 62	SD	2013
CH13_grp3_OCPs	Parlar 62	SS	2013
CH13_grp3_OCPs	Parlar 62	SU	2013
CH13_grp3_OCPs	Parlar 62	WW	2013
CH13_grp3_PCPs	Pentachlorophenol	FC	NA
CH13_grp3_PCPs	Pentachlorophenol	NG	NA
CH13_grp3_PCPs	Pentachlorophenol	SB	NA
CH13_grp3_PCPs	Pentachlorophenol	SD	NA
CH13_grp3_PCPs	Pentachlorophenol	SS	NA
CH13_grp3_PCPs	Pentachlorophenol	WW	NA
CH13_grp3_PCBs	Polychlorinated Biphenyls (PCBs)	FC	2018
CH13_grp3_PCBs	Polychlorinated Biphenyls (PCBs)	NG	2018
CH13_grp3_PCBs	Polychlorinated Biphenyls (PCBs)	SB	2018
CH13_grp3_PCBs	Polychlorinated Biphenyls (PCBs)	SD	2018
CH13_grp3_PCBs	Polychlorinated Biphenyls (PCBs)	SS	2018

Analyte Group	Analyte	Matrix	Recommended Statistical Start Date
CH13_grp3_PCBs	Polychlorinated Biphenyls (PCBs)	WW	2018
CH13_grp3_DIOXIN-FURAN	Upper Bound PCDD/F TEQ (WHO 2005)	FC	2004
CH13_grp3_DIOXIN-FURAN	Upper Bound PCDD/F TEQ (WHO 2005)	NG	2004
CH13_grp3_DIOXIN-FURAN	Upper Bound PCDD/F TEQ (WHO 2005)	SB	2004
CH13_grp3_DIOXIN-FURAN	Upper Bound PCDD/F TEQ (WHO 2005)	SD	2004
CH13_grp3_DIOXIN-FURAN	Upper Bound PCDD/F TEQ (WHO 2005)	SS	2004
CH13_grp3_DIOXIN-FURAN	Upper Bound PCDD/F TEQ (WHO 2005)	SU	2004
CH13_grp3_DIOXIN-FURAN	Upper Bound PCDD/F TEQ (WHO 2005)	WW	2004

Note(s):

NA: Not Available.

PCP has only been detected in 24 samples since 1991, with the most recent detection occurring in 2015. As such, trend analysis was not conducted for PCPs due to the low number of concentrations above the reporting detection limit and start date was not determined.

Appendix F INORGANIC SITE-SPECIFIC REGRESSION

F.1 TABLES

Table F-1
Suitability of Data for Site Specific Inorganic Regression Analysis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Aluminum	E1	FC	2005	2021	5	0	0.00	YES	YES	NO
Aluminum	E2	FC	2005	2019	4	0	0.00	YES	YES	NO
Aluminum	E5	FC	2005	2021	5	0	0.00	YES	YES	NO
Aluminum	E7	FC	2005	2021	1	0	0.00	YES	YES	NO
Aluminum	N2	FC	2005	2021	6	0	0.00	NO	YES	NO
Aluminum	N4	FC	2005	2020	5	0	0.00	YES	YES	NO
Aluminum	S2	FC	2005	2021	4	0	0.00	YES	YES	NO
Aluminum	E1	NG	2002	2021	20	20	1.00	NO	NO	YES
Aluminum	E2	NG	2002	2021	20	20	1.00	NO	NO	YES
Aluminum	E5	NG	2002	2021	20	20	1.00	NO	NO	YES
Aluminum	E6	NG	2002	2020	19	19	1.00	NO	NO	YES
Aluminum	E7	NG	2002	2021	3	3	1.00	YES	NO	NO
Aluminum	N2	NG	2002	2021	20	20	1.00	NO	NO	YES
Aluminum	N4	NG	2002	2021	20	19	0.95	NO	NO	YES
Aluminum	N5	NG	2002	2021	20	20	1.00	NO	NO	YES
Aluminum	S1	NG	2002	2019	17	17	1.00	NO	NO	YES
Aluminum	S2	NG	2002	2021	20	20	1.00	NO	NO	YES
Aluminum	S4	NG	2002	2021	20	20	1.00	NO	NO	YES
Aluminum	S8	NG	2002	2021	1	1	1.00	YES	NO	NO
Aluminum	W2	NG	2002	2021	20	20	1.00	NO	NO	YES
Aluminum	W4	NG	2002	2021	20	20	1.00	NO	NO	YES
Aluminum	E1	SB	2005	2020	10	0	0.00	NO	YES	NO
Aluminum	E2	SB	2005	2020	5	1	0.20	YES	YES	NO
Aluminum	E5	SB	2005	2020	10	2	0.20	NO	YES	NO
Aluminum	E7	SB	2005	2019	1	0	0.00	YES	YES	NO
Aluminum	N2	SB	2005	2019	6	1	0.17	NO	YES	NO
Aluminum	N4	SB	2005	2021	7	1	0.14	NO	YES	NO
Aluminum	S1	SB	2005	2019	10	1	0.10	NO	YES	NO
Aluminum	S2	SB	2005	2020	11	1	0.09	NO	YES	NO
Aluminum	S4	SB	2005	2020	11	3	0.27	NO	YES	NO
Aluminum	W2	SB	2005	2021	11	1	0.09	NO	YES	NO
Aluminum	W4	SB	2005	2020	8	2	0.25	NO	YES	NO
Aluminum	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Aluminum	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Aluminum	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Aluminum	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Aluminum	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Aluminum	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Aluminum	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Aluminum	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Aluminum	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Aluminum	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Aluminum	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Aluminum	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Aluminum	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Aluminum	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Aluminum	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Aluminum	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Aluminum	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Aluminum	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Aluminum	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Aluminum	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Aluminum	E7	WW	2005	2020	1	1	1.00	YES	NO	NO
Aluminum	N2	WW	2005	2020	4	2	0.50	YES	NO	NO
Aluminum	S4	WW	2005	2021	5	1	0.20	YES	YES	NO
Aluminum	W4	WW	2005	2021	4	1	0.25	YES	YES	NO
Arsenic	E1	FC	2003	2021	6	0	0.00	NO	YES	NO
Arsenic	E2	FC	2003	2019	5	0	0.00	YES	YES	NO
Arsenic	E5	FC	2003	2021	6	0	0.00	NO	YES	NO
Arsenic	E7	FC	2003	2021	1	0	0.00	YES	YES	NO
Arsenic	N2	FC	2003	2021	6	0	0.00	NO	YES	NO

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Suitability of Data for Site Specific Inorganic Regression Analysis
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2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Arsenic	N4	FC	2003	2020	6	0	0.00	NO	YES	NO
Arsenic	S2	FC	2003	2021	4	0	0.00	YES	YES	NO
Arsenic	E1	NG	2003	2021	19	4	0.21	NO	YES	NO
Arsenic	E2	NG	2003	2021	19	4	0.21	NO	YES	NO
Arsenic	E5	NG	2003	2021	19	6	0.32	NO	YES	NO
Arsenic	E6	NG	2003	2020	18	8	0.44	NO	YES	NO
Arsenic	E7	NG	2003	2021	3	3	1.00	YES	NO	NO
Arsenic	N2	NG	2003	2021	19	4	0.21	NO	YES	NO
Arsenic	N4	NG	2003	2021	19	6	0.32	NO	YES	NO
Arsenic	N5	NG	2003	2021	19	10	0.53	NO	NO	YES
Arsenic	S1	NG	2003	2019	17	3	0.18	NO	YES	NO
Arsenic	S2	NG	2003	2021	19	6	0.32	NO	YES	NO
Arsenic	S4	NG	2003	2021	19	4	0.21	NO	YES	NO
Arsenic	S8	NG	2003	2021	1	1	1.00	YES	NO	NO
Arsenic	W2	NG	2003	2021	19	6	0.32	NO	YES	NO
Arsenic	W4	NG	2003	2021	19	7	0.37	NO	YES	NO
Arsenic	E1	SB	2003	2020	10	0	0.00	NO	YES	NO
Arsenic	E2	SB	2003	2020	6	0	0.00	NO	YES	NO
Arsenic	E5	SB	2003	2020	10	0	0.00	NO	YES	NO
Arsenic	E7	SB	2003	2019	1	0	0.00	YES	YES	NO
Arsenic	N2	SB	2003	2019	7	0	0.00	NO	YES	NO
Arsenic	N4	SB	2003	2021	7	0	0.00	NO	YES	NO
Arsenic	S1	SB	2003	2019	12	0	0.00	NO	YES	NO
Arsenic	S2	SB	2003	2020	13	0	0.00	NO	YES	NO
Arsenic	S4	SB	2003	2020	13	0	0.00	NO	YES	NO
Arsenic	W2	SB	2003	2021	12	0	0.00	NO	YES	NO
Arsenic	W4	SB	2003	2020	9	0	0.00	NO	YES	NO
Arsenic	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Arsenic	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Arsenic	N5	SD	1991	2021	19	19	1.00	NO	NO	YES
Arsenic	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Arsenic	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Arsenic	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Arsenic	E1	SS	1991	2021	28	27	0.96	NO	NO	YES
Arsenic	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Arsenic	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Arsenic	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Arsenic	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Arsenic	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Arsenic	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Arsenic	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Arsenic	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Arsenic	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Arsenic	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Arsenic	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Arsenic	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Arsenic	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Arsenic	E7	WW	2003	2020	1	0	0.00	YES	YES	NO
Arsenic	N2	WW	2003	2020	5	0	0.00	YES	YES	NO
Arsenic	S4	WW	2003	2021	5	0	0.00	YES	YES	NO
Arsenic	W4	WW	2003	2021	4	0	0.00	YES	YES	NO
Barium	E1	FC	2005	2021	5	1	0.20	YES	YES	NO
Barium	E2	FC	2005	2019	4	0	0.00	YES	YES	NO
Barium	E5	FC	2005	2021	5	1	0.20	YES	YES	NO
Barium	E7	FC	2005	2021	1	0	0.00	YES	YES	NO
Barium	N2	FC	2005	2021	6	1	0.17	NO	YES	NO
Barium	N4	FC	2005	2020	5	2	0.40	YES	YES	NO
Barium	S2	FC	2005	2021	4	0	0.00	YES	YES	NO
Barium	E1	NG	1991	2021	31	31	1.00	NO	NO	YES
Barium	E2	NG	1991	2021	31	31	1.00	NO	NO	YES
Barium	E5	NG	1991	2021	30	30	1.00	NO	NO	YES

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Barium	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Barium	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Barium	N2	NG	1991	2021	32	32	1.00	NO	NO	YES
Barium	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Barium	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Barium	S1	NG	1991	2019	29	29	1.00	NO	NO	YES
Barium	S2	NG	1991	2021	32	32	1.00	NO	NO	YES
Barium	S4	NG	1991	2021	28	28	1.00	NO	NO	YES
Barium	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Barium	W2	NG	1991	2021	31	31	1.00	NO	NO	YES
Barium	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Barium	E1	SB	1991	2020	19	18	0.95	NO	NO	YES
Barium	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Barium	E5	SB	1991	2020	19	18	0.95	NO	NO	YES
Barium	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Barium	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Barium	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Barium	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Barium	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Barium	S4	SB	1991	2020	19	18	0.95	NO	NO	YES
Barium	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Barium	W4	SB	1991	2020	12	11	0.92	NO	NO	YES
Barium	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Barium	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Barium	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Barium	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Barium	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Barium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Barium	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Barium	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Barium	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Barium	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Barium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Barium	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Barium	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Barium	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Barium	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Barium	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Barium	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Barium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Barium	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Barium	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Barium	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Barium	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Barium	S4	WW	1991	2021	8	8	1.00	NO	NO	YES
Barium	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Beryllium	E1	FC	2003	2021	6	0	0.00	NO	YES	NO
Beryllium	E2	FC	2003	2019	5	0	0.00	YES	YES	NO
Beryllium	E5	FC	2003	2021	6	0	0.00	NO	YES	NO
Beryllium	E7	FC	2003	2021	1	0	0.00	YES	YES	NO
Beryllium	N2	FC	2003	2021	6	0	0.00	NO	YES	NO
Beryllium	N4	FC	2003	2020	6	0	0.00	NO	YES	NO
Beryllium	S2	FC	2003	2021	4	0	0.00	YES	YES	NO
Beryllium	E1	NG	2003	2021	19	0	0.00	NO	YES	NO
Beryllium	E2	NG	2003	2021	19	0	0.00	NO	YES	NO
Beryllium	E5	NG	2003	2021	19	1	0.05	NO	YES	NO
Beryllium	E6	NG	2003	2020	18	0	0.00	NO	YES	NO
Beryllium	E7	NG	2003	2021	3	0	0.00	YES	YES	NO
Beryllium	N2	NG	2003	2021	19	0	0.00	NO	YES	NO
Beryllium	N4	NG	2003	2021	19	1	0.05	NO	YES	NO
Beryllium	N5	NG	2003	2021	19	0	0.00	NO	YES	NO

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Beryllium	S1	NG	2003	2019	17	1	0.06	NO	YES	NO
Beryllium	S2	NG	2003	2021	19	1	0.05	NO	YES	NO
Beryllium	S4	NG	2003	2021	19	1	0.05	NO	YES	NO
Beryllium	S8	NG	2003	2021	1	1	1.00	YES	NO	NO
Beryllium	W2	NG	2003	2021	19	0	0.00	NO	YES	NO
Beryllium	W4	NG	2003	2021	19	0	0.00	NO	YES	NO
Beryllium	E1	SB	2003	2020	10	0	0.00	NO	YES	NO
Beryllium	E2	SB	2003	2020	6	0	0.00	NO	YES	NO
Beryllium	E5	SB	2003	2020	10	0	0.00	NO	YES	NO
Beryllium	E7	SB	2003	2019	1	0	0.00	YES	YES	NO
Beryllium	N2	SB	2003	2019	7	0	0.00	NO	YES	NO
Beryllium	N4	SB	2003	2021	7	0	0.00	NO	YES	NO
Beryllium	S1	SB	2003	2019	12	0	0.00	NO	YES	NO
Beryllium	S2	SB	2003	2020	13	0	0.00	NO	YES	NO
Beryllium	S4	SB	2003	2020	13	0	0.00	NO	YES	NO
Beryllium	W2	SB	2003	2021	12	0	0.00	NO	YES	NO
Beryllium	W4	SB	2003	2020	9	0	0.00	NO	YES	NO
Beryllium	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Beryllium	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Beryllium	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Beryllium	S1	SD	1991	2019	29	28	0.97	NO	NO	YES
Beryllium	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Beryllium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Beryllium	E1	SS	1991	2021	28	27	0.96	NO	NO	YES
Beryllium	E2	SS	1991	2021	28	27	0.96	NO	NO	YES
Beryllium	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Beryllium	E6	SS	1991	2020	21	20	0.95	NO	NO	YES
Beryllium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Beryllium	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Beryllium	N4	SS	1991	2021	21	20	0.95	NO	NO	YES
Beryllium	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Beryllium	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Beryllium	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Beryllium	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Beryllium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Beryllium	W2	SS	1991	2021	27	26	0.96	NO	NO	YES
Beryllium	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Beryllium	E7	WW	2003	2020	1	0	0.00	YES	YES	NO
Beryllium	N2	WW	2003	2020	5	0	0.00	YES	YES	NO
Beryllium	S4	WW	2003	2021	5	0	0.00	YES	YES	NO
Beryllium	W4	WW	2003	2021	4	0	0.00	YES	YES	NO
Boron	E1	FC	2005	2021	5	3	0.60	YES	NO	NO
Boron	E2	FC	2005	2019	4	2	0.50	YES	NO	NO
Boron	E5	FC	2005	2021	5	3	0.60	YES	NO	NO
Boron	E7	FC	2005	2021	1	1	1.00	YES	NO	NO
Boron	N2	FC	2005	2021	6	5	0.83	NO	NO	YES
Boron	N4	FC	2005	2020	5	3	0.60	YES	NO	NO
Boron	S2	FC	2005	2021	4	2	0.50	YES	NO	NO
Boron	E1	NG	1999	2021	23	23	1.00	NO	NO	YES
Boron	E2	NG	1999	2021	23	23	1.00	NO	NO	YES
Boron	E5	NG	1999	2021	23	23	1.00	NO	NO	YES
Boron	E6	NG	1999	2020	21	21	1.00	NO	NO	YES
Boron	E7	NG	1999	2021	3	3	1.00	YES	NO	NO
Boron	N2	NG	1999	2021	24	24	1.00	NO	NO	YES
Boron	N4	NG	1999	2021	21	21	1.00	NO	NO	YES
Boron	N5	NG	1999	2021	20	20	1.00	NO	NO	YES
Boron	S1	NG	1999	2019	21	21	1.00	NO	NO	YES
Boron	S2	NG	1999	2021	24	24	1.00	NO	NO	YES
Boron	S4	NG	1999	2021	23	23	1.00	NO	NO	YES
Boron	S8	NG	1999	2021	1	1	1.00	YES	NO	NO
Boron	W2	NG	1999	2021	23	23	1.00	NO	NO	YES

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Boron	W4	NG	1999	2021	23	22	0.96	NO	NO	YES
Boron	E1	SB	1991	2020	19	19	1.00	NO	NO	YES
Boron	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Boron	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Boron	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Boron	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Boron	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Boron	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Boron	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Boron	S4	SB	1991	2020	19	19	1.00	NO	NO	YES
Boron	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Boron	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Boron	E2	SD	1995	2021	27	27	1.00	NO	NO	YES
Boron	N2	SD	1995	2021	27	26	0.96	NO	NO	YES
Boron	N5	SD	1995	2021	20	20	1.00	NO	NO	YES
Boron	S1	SD	1995	2019	25	25	1.00	NO	NO	YES
Boron	S4	SD	1995	2021	27	27	1.00	NO	NO	YES
Boron	S8	SD	1995	2021	1	1	1.00	YES	NO	NO
Boron	E1	SS	1998	2021	22	22	1.00	NO	NO	YES
Boron	E2	SS	1998	2021	22	22	1.00	NO	NO	YES
Boron	E5	SS	1998	2021	22	22	1.00	NO	NO	YES
Boron	E6	SS	1998	2020	21	21	1.00	NO	NO	YES
Boron	E7	SS	1998	2021	3	3	1.00	YES	NO	NO
Boron	N2	SS	1998	2021	22	22	1.00	NO	NO	YES
Boron	N4	SS	1998	2021	21	21	1.00	NO	NO	YES
Boron	N5	SS	1998	2021	20	20	1.00	NO	NO	YES
Boron	S1	SS	1998	2019	21	21	1.00	NO	NO	YES
Boron	S2	SS	1998	2021	23	23	1.00	NO	NO	YES
Boron	S4	SS	1998	2021	22	22	1.00	NO	NO	YES
Boron	S8	SS	1998	2021	1	1	1.00	YES	NO	NO
Boron	W2	SS	1998	2021	20	20	1.00	NO	NO	YES
Boron	W4	SS	1998	2021	22	22	1.00	NO	NO	YES
Boron	E7	WW	2003	2020	1	1	1.00	YES	NO	NO
Boron	N2	WW	2003	2020	5	2	0.40	YES	YES	NO
Boron	S4	WW	2003	2021	5	0	0.00	YES	YES	NO
Boron	W4	WW	2003	2021	3	2	0.67	YES	NO	NO
Cadmium	E1	FC	2007	2021	5	1	0.20	YES	YES	NO
Cadmium	E2	FC	2007	2019	4	0	0.00	YES	YES	NO
Cadmium	E5	FC	2007	2021	5	0	0.00	YES	YES	NO
Cadmium	E7	FC	2007	2021	1	0	0.00	YES	YES	NO
Cadmium	N2	FC	2007	2021	5	2	0.40	YES	YES	NO
Cadmium	N4	FC	2007	2020	5	0	0.00	YES	YES	NO
Cadmium	S2	FC	2007	2021	3	0	0.00	YES	YES	NO
Cadmium	E1	NG	2001	2021	21	8	0.38	NO	YES	NO
Cadmium	E2	NG	2001	2021	21	8	0.38	NO	YES	NO
Cadmium	E5	NG	2001	2021	21	16	0.76	NO	NO	YES
Cadmium	E6	NG	2001	2020	20	17	0.85	NO	NO	YES
Cadmium	E7	NG	2001	2021	3	3	1.00	YES	NO	NO
Cadmium	N2	NG	2001	2021	22	8	0.36	NO	YES	NO
Cadmium	N4	NG	2001	2021	21	7	0.33	NO	YES	NO
Cadmium	N5	NG	2001	2021	20	17	0.85	NO	NO	YES
Cadmium	S1	NG	2001	2019	19	13	0.68	NO	NO	YES
Cadmium	S2	NG	2001	2021	22	15	0.68	NO	NO	YES
Cadmium	S4	NG	2001	2021	21	10	0.48	NO	YES	NO
Cadmium	S8	NG	2001	2021	1	1	1.00	YES	NO	NO
Cadmium	W2	NG	2001	2021	21	8	0.38	NO	YES	NO
Cadmium	W4	NG	2001	2021	21	20	0.95	NO	NO	YES
Cadmium	E1	SB	2005	2020	10	2	0.20	NO	YES	NO
Cadmium	E2	SB	2005	2020	5	2	0.40	YES	YES	NO
Cadmium	E5	SB	2005	2020	10	2	0.20	NO	YES	NO
Cadmium	E7	SB	2005	2019	1	1	1.00	YES	NO	NO

Table F-1
Suitability of Data for Site Specific Inorganic Regression Analysis
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2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Cadmium	N2	SB	2005	2019	6	3	0.50	NO	NO	YES
Cadmium	N4	SB	2005	2021	7	4	0.57	NO	NO	YES
Cadmium	S1	SB	2005	2019	10	2	0.20	NO	YES	NO
Cadmium	S2	SB	2005	2020	11	4	0.36	NO	YES	NO
Cadmium	S4	SB	2005	2020	11	4	0.36	NO	YES	NO
Cadmium	W2	SB	2005	2021	11	6	0.55	NO	NO	YES
Cadmium	W4	SB	2005	2020	8	7	0.88	NO	NO	YES
Cadmium	E2	SD	1991	2021	31	24	0.77	NO	NO	YES
Cadmium	N2	SD	1991	2021	31	29	0.94	NO	NO	YES
Cadmium	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Cadmium	S1	SD	1991	2019	29	27	0.93	NO	NO	YES
Cadmium	S4	SD	1991	2021	31	29	0.94	NO	NO	YES
Cadmium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Cadmium	E1	SS	1991	2021	28	24	0.86	NO	NO	YES
Cadmium	E2	SS	1991	2021	28	27	0.96	NO	NO	YES
Cadmium	E5	SS	1991	2021	28	25	0.89	NO	NO	YES
Cadmium	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Cadmium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Cadmium	N2	SS	1991	2021	28	26	0.93	NO	NO	YES
Cadmium	N4	SS	1991	2021	21	19	0.90	NO	NO	YES
Cadmium	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Cadmium	S1	SS	1991	2019	28	26	0.93	NO	NO	YES
Cadmium	S2	SS	1991	2021	30	28	0.93	NO	NO	YES
Cadmium	S4	SS	1991	2021	27	23	0.85	NO	NO	YES
Cadmium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Cadmium	W2	SS	1991	2021	27	26	0.96	NO	NO	YES
Cadmium	W4	SS	1991	2021	22	21	0.95	NO	NO	YES
Cadmium	E7	WW	2005	2020	1	1	1.00	YES	NO	NO
Cadmium	N2	WW	2005	2020	4	4	1.00	YES	NO	NO
Cadmium	S4	WW	2005	2021	5	5	1.00	YES	NO	NO
Cadmium	W4	WW	2005	2021	4	4	1.00	YES	NO	NO
Calcium	E1	FC	1991	2021	7	7	1.00	NO	NO	YES
Calcium	E2	FC	1991	2019	7	7	1.00	NO	NO	YES
Calcium	E5	FC	1991	2021	7	7	1.00	NO	NO	YES
Calcium	E7	FC	1991	2021	1	1	1.00	YES	NO	NO
Calcium	N2	FC	1991	2021	7	7	1.00	NO	NO	YES
Calcium	N4	FC	1991	2020	6	6	1.00	NO	NO	YES
Calcium	S2	FC	1991	2021	6	6	1.00	NO	NO	YES
Calcium	E1	NG	1991	2021	31	31	1.00	NO	NO	YES
Calcium	E2	NG	1991	2021	31	31	1.00	NO	NO	YES
Calcium	E5	NG	1991	2021	30	30	1.00	NO	NO	YES
Calcium	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Calcium	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Calcium	N2	NG	1991	2021	32	32	1.00	NO	NO	YES
Calcium	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Calcium	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Calcium	S1	NG	1991	2019	29	29	1.00	NO	NO	YES
Calcium	S2	NG	1991	2021	32	32	1.00	NO	NO	YES
Calcium	S4	NG	1991	2021	29	29	1.00	NO	NO	YES
Calcium	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Calcium	W2	NG	1991	2021	31	31	1.00	NO	NO	YES
Calcium	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Calcium	E1	SB	1991	2020	19	19	1.00	NO	NO	YES
Calcium	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Calcium	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Calcium	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Calcium	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Calcium	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Calcium	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Calcium	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Calcium	S4	SB	1991	2020	19	19	1.00	NO	NO	YES

Table F-1
Suitability of Data for Site Specific Inorganic Regression Analysis
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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Calcium	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Calcium	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Calcium	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Calcium	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Calcium	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Calcium	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Calcium	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Calcium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Calcium	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Calcium	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Calcium	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Calcium	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Calcium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Calcium	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Calcium	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Calcium	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Calcium	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Calcium	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Calcium	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Calcium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Calcium	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Calcium	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Calcium	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Calcium	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Calcium	S4	WW	1991	2021	8	8	1.00	NO	NO	YES
Calcium	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Chloride	E1	FC	1991	2021	7	7	1.00	NO	NO	YES
Chloride	E2	FC	1991	2019	6	6	1.00	NO	NO	YES
Chloride	E5	FC	1991	2021	7	7	1.00	NO	NO	YES
Chloride	E7	FC	1991	2021	1	1	1.00	YES	NO	NO
Chloride	N2	FC	1991	2021	7	7	1.00	NO	NO	YES
Chloride	N4	FC	1991	2020	6	6	1.00	NO	NO	YES
Chloride	S2	FC	1991	2021	6	6	1.00	NO	NO	YES
Chloride	E1	NG	1991	2021	26	26	1.00	NO	NO	YES
Chloride	E2	NG	1991	2021	26	26	1.00	NO	NO	YES
Chloride	E5	NG	1991	2021	26	26	1.00	NO	NO	YES
Chloride	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Chloride	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Chloride	N2	NG	1991	2021	27	27	1.00	NO	NO	YES
Chloride	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Chloride	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Chloride	S1	NG	1991	2019	24	24	1.00	NO	NO	YES
Chloride	S2	NG	1991	2021	27	27	1.00	NO	NO	YES
Chloride	S4	NG	1991	2021	26	26	1.00	NO	NO	YES
Chloride	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Chloride	W2	NG	1991	2021	26	26	1.00	NO	NO	YES
Chloride	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Chloride	E1	SB	1991	2020	15	12	0.80	NO	NO	YES
Chloride	E2	SB	1991	2020	10	9	0.90	NO	NO	YES
Chloride	E5	SB	1991	2020	16	12	0.75	NO	NO	YES
Chloride	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Chloride	N2	SB	1991	2019	12	9	0.75	NO	NO	YES
Chloride	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Chloride	S1	SB	1991	2019	17	15	0.88	NO	NO	YES
Chloride	S2	SB	1991	2020	18	16	0.89	NO	NO	YES
Chloride	S4	SB	1991	2020	17	16	0.94	NO	NO	YES
Chloride	W2	SB	1991	2021	19	16	0.84	NO	NO	YES
Chloride	W4	SB	1991	2020	12	11	0.92	NO	NO	YES
Chloride	E2	SD	1991	2021	25	25	1.00	NO	NO	YES
Chloride	N2	SD	1991	2021	26	26	1.00	NO	NO	YES
Chloride	N5	SD	1991	2021	20	20	1.00	NO	NO	YES

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Chloride	S1	SD	1991	2019	24	24	1.00	NO	NO	YES
Chloride	S4	SD	1991	2021	26	26	1.00	NO	NO	YES
Chloride	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Chloride	E1	SS	2009	2021	13	10	0.77	NO	NO	YES
Chloride	E2	SS	2009	2021	13	9	0.69	NO	NO	YES
Chloride	E5	SS	2009	2021	13	10	0.77	NO	NO	YES
Chloride	E6	SS	2009	2020	12	11	0.92	NO	NO	YES
Chloride	E7	SS	2009	2021	3	1	0.33	YES	YES	NO
Chloride	N2	SS	2009	2021	13	10	0.77	NO	NO	YES
Chloride	N4	SS	2009	2021	13	10	0.77	NO	NO	YES
Chloride	N5	SS	2009	2021	13	11	0.85	NO	NO	YES
Chloride	S1	SS	2009	2019	11	11	1.00	NO	NO	YES
Chloride	S2	SS	2009	2021	13	10	0.77	NO	NO	YES
Chloride	S4	SS	2009	2021	13	12	0.92	NO	NO	YES
Chloride	S8	SS	2009	2021	1	0	0.00	YES	YES	NO
Chloride	W2	SS	2009	2021	13	10	0.77	NO	NO	YES
Chloride	W4	SS	2009	2021	13	10	0.77	NO	NO	YES
Chloride	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Chloride	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Chloride	S4	WW	1991	2021	7	7	1.00	NO	NO	YES
Chloride	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Chromium	E1	FC	2003	2021	6	1	0.17	NO	YES	NO
Chromium	E2	FC	2003	2019	5	0	0.00	YES	YES	NO
Chromium	E5	FC	2003	2021	6	1	0.17	NO	YES	NO
Chromium	E7	FC	2003	2021	1	0	0.00	YES	YES	NO
Chromium	N2	FC	2003	2021	6	1	0.17	NO	YES	NO
Chromium	N4	FC	2003	2020	6	0	0.00	NO	YES	NO
Chromium	S2	FC	2003	2021	4	2	0.50	YES	NO	NO
Chromium	E1	NG	2002	2021	40	40	1.00	NO	NO	YES
Chromium	E2	NG	2002	2021	40	40	1.00	NO	NO	YES
Chromium	E5	NG	2002	2021	40	40	1.00	NO	NO	YES
Chromium	E6	NG	2002	2020	38	38	1.00	NO	NO	YES
Chromium	E7	NG	2002	2021	3	3	1.00	YES	NO	NO
Chromium	N2	NG	2002	2021	40	38	0.95	NO	NO	YES
Chromium	N4	NG	2002	2021	40	40	1.00	NO	NO	YES
Chromium	N5	NG	2002	2021	40	40	1.00	NO	NO	YES
Chromium	S1	NG	2002	2019	34	34	1.00	NO	NO	YES
Chromium	S2	NG	2002	2021	40	40	1.00	NO	NO	YES
Chromium	S4	NG	2002	2021	40	40	1.00	NO	NO	YES
Chromium	S8	NG	2002	2021	1	1	1.00	YES	NO	NO
Chromium	W2	NG	2002	2021	40	40	1.00	NO	NO	YES
Chromium	W4	NG	2002	2021	40	40	1.00	NO	NO	YES
Chromium	E1	SB	2002	2020	11	2	0.18	NO	YES	NO
Chromium	E2	SB	2002	2020	6	3	0.50	NO	NO	YES
Chromium	E5	SB	2002	2020	11	4	0.36	NO	YES	NO
Chromium	E7	SB	2002	2019	1	0	0.00	YES	YES	NO
Chromium	N2	SB	2002	2019	8	2	0.25	NO	YES	NO
Chromium	N4	SB	2002	2021	7	3	0.43	NO	YES	NO
Chromium	S1	SB	2002	2019	12	4	0.33	NO	YES	NO
Chromium	S2	SB	2002	2020	13	5	0.38	NO	YES	NO
Chromium	S4	SB	2002	2020	13	5	0.38	NO	YES	NO
Chromium	W2	SB	2002	2021	26	12	0.46	NO	YES	NO
Chromium	W4	SB	2002	2020	20	12	0.60	NO	NO	YES
Chromium	E2	SD	1991	2021	62	62	1.00	NO	NO	YES
Chromium	N2	SD	1991	2021	62	62	1.00	NO	NO	YES
Chromium	N5	SD	1991	2021	40	40	1.00	NO	NO	YES
Chromium	S1	SD	1991	2019	58	58	1.00	NO	NO	YES
Chromium	S4	SD	1991	2021	62	62	1.00	NO	NO	YES
Chromium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Chromium	E1	SS	1991	2021	56	56	1.00	NO	NO	YES
Chromium	E2	SS	1991	2021	56	56	1.00	NO	NO	YES

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Chromium	E5	SS	1991	2021	56	56	1.00	NO	NO	YES
Chromium	E6	SS	1991	2020	42	42	1.00	NO	NO	YES
Chromium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Chromium	N2	SS	1991	2021	56	56	1.00	NO	NO	YES
Chromium	N4	SS	1991	2021	42	42	1.00	NO	NO	YES
Chromium	N5	SS	1991	2021	40	40	1.00	NO	NO	YES
Chromium	S1	SS	1991	2019	56	56	1.00	NO	NO	YES
Chromium	S2	SS	1991	2021	60	60	1.00	NO	NO	YES
Chromium	S4	SS	1991	2021	54	54	1.00	NO	NO	YES
Chromium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Chromium	W2	SS	1991	2021	54	54	1.00	NO	NO	YES
Chromium	W4	SS	1991	2021	44	44	1.00	NO	NO	YES
Chromium	E7	WW	2003	2020	1	1	1.00	YES	NO	NO
Chromium	N2	WW	2003	2020	5	5	1.00	YES	NO	NO
Chromium	S4	WW	2003	2021	5	4	0.80	YES	NO	NO
Chromium	W4	WW	2003	2021	4	3	0.75	YES	NO	NO
Cobalt	E1	FC	2005	2021	5	0	0.00	YES	YES	NO
Cobalt	E2	FC	2005	2019	4	0	0.00	YES	YES	NO
Cobalt	E5	FC	2005	2021	5	0	0.00	YES	YES	NO
Cobalt	E7	FC	2005	2021	1	0	0.00	YES	YES	NO
Cobalt	N2	FC	2005	2021	6	0	0.00	NO	YES	NO
Cobalt	N4	FC	2005	2020	5	0	0.00	YES	YES	NO
Cobalt	S2	FC	2005	2021	4	0	0.00	YES	YES	NO
Cobalt	E1	NG	2003	2021	19	7	0.37	NO	YES	NO
Cobalt	E2	NG	2003	2021	19	7	0.37	NO	YES	NO
Cobalt	E5	NG	2003	2021	19	11	0.58	NO	NO	YES
Cobalt	E6	NG	2003	2020	18	11	0.61	NO	NO	YES
Cobalt	E7	NG	2003	2021	3	3	1.00	YES	NO	NO
Cobalt	N2	NG	2003	2021	19	10	0.53	NO	NO	YES
Cobalt	N4	NG	2003	2021	19	11	0.58	NO	NO	YES
Cobalt	N5	NG	2003	2021	19	13	0.68	NO	NO	YES
Cobalt	S1	NG	2003	2019	17	12	0.71	NO	NO	YES
Cobalt	S2	NG	2003	2021	19	12	0.63	NO	NO	YES
Cobalt	S4	NG	2003	2021	19	9	0.47	NO	YES	NO
Cobalt	S8	NG	2003	2021	1	1	1.00	YES	NO	NO
Cobalt	W2	NG	2003	2021	19	11	0.58	NO	NO	YES
Cobalt	W4	NG	2003	2021	19	12	0.63	NO	NO	YES
Cobalt	E1	SB	2005	2020	10	2	0.20	NO	YES	NO
Cobalt	E2	SB	2005	2020	5	3	0.60	YES	NO	NO
Cobalt	E5	SB	2005	2020	10	3	0.30	NO	YES	NO
Cobalt	E7	SB	2005	2019	1	1	1.00	YES	NO	NO
Cobalt	N2	SB	2005	2019	6	1	0.17	NO	YES	NO
Cobalt	N4	SB	2005	2021	7	3	0.43	NO	YES	NO
Cobalt	S1	SB	2005	2019	10	2	0.20	NO	YES	NO
Cobalt	S2	SB	2005	2020	11	5	0.45	NO	YES	NO
Cobalt	S4	SB	2005	2020	11	4	0.36	NO	YES	NO
Cobalt	W2	SB	2005	2021	11	3	0.27	NO	YES	NO
Cobalt	W4	SB	2005	2020	8	3	0.38	NO	YES	NO
Cobalt	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Cobalt	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Cobalt	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Cobalt	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Cobalt	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Cobalt	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Cobalt	E1	SS	1991	2021	28	27	0.96	NO	NO	YES
Cobalt	E2	SS	1991	2021	28	26	0.93	NO	NO	YES
Cobalt	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Cobalt	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Cobalt	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Cobalt	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Cobalt	N4	SS	1991	2021	21	21	1.00	NO	NO	YES

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Cobalt	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Cobalt	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Cobalt	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Cobalt	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Cobalt	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Cobalt	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Cobalt	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Cobalt	E7	WW	2005	2020	1	0	0.00	YES	YES	NO
Cobalt	N2	WW	2005	2020	4	0	0.00	YES	YES	NO
Cobalt	S4	WW	2005	2021	5	0	0.00	YES	YES	NO
Cobalt	W4	WW	2005	2021	4	0	0.00	YES	YES	NO
Copper	E1	FC	2002	2021	6	6	1.00	NO	NO	YES
Copper	E2	FC	2002	2019	5	5	1.00	YES	NO	NO
Copper	E5	FC	2002	2021	6	6	1.00	NO	NO	YES
Copper	E7	FC	2002	2021	1	1	1.00	YES	NO	NO
Copper	N2	FC	2002	2021	6	6	1.00	NO	NO	YES
Copper	N4	FC	2002	2020	6	6	1.00	NO	NO	YES
Copper	S2	FC	2002	2021	5	5	1.00	YES	NO	NO
Copper	E1	NG	2002	2021	20	20	1.00	NO	NO	YES
Copper	E2	NG	2002	2021	20	20	1.00	NO	NO	YES
Copper	E5	NG	2002	2021	20	20	1.00	NO	NO	YES
Copper	E6	NG	2002	2020	19	19	1.00	NO	NO	YES
Copper	E7	NG	2002	2021	3	3	1.00	YES	NO	NO
Copper	N2	NG	2002	2021	20	20	1.00	NO	NO	YES
Copper	N4	NG	2002	2021	20	20	1.00	NO	NO	YES
Copper	N5	NG	2002	2021	20	20	1.00	NO	NO	YES
Copper	S1	NG	2002	2019	18	18	1.00	NO	NO	YES
Copper	S2	NG	2002	2021	20	20	1.00	NO	NO	YES
Copper	S4	NG	2002	2021	20	20	1.00	NO	NO	YES
Copper	S8	NG	2002	2021	1	1	1.00	YES	NO	NO
Copper	W2	NG	2002	2021	20	20	1.00	NO	NO	YES
Copper	W4	NG	2002	2021	20	20	1.00	NO	NO	YES
Copper	E1	SB	1991	2020	19	18	0.95	NO	NO	YES
Copper	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Copper	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Copper	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Copper	N2	SB	1991	2019	17	16	0.94	NO	NO	YES
Copper	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Copper	S1	SB	1991	2019	21	20	0.95	NO	NO	YES
Copper	S2	SB	1991	2020	22	20	0.91	NO	NO	YES
Copper	S4	SB	1991	2020	19	18	0.95	NO	NO	YES
Copper	W2	SB	1991	2021	22	21	0.95	NO	NO	YES
Copper	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Copper	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Copper	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Copper	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Copper	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Copper	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Copper	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Copper	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Copper	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Copper	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Copper	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Copper	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Copper	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Copper	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Copper	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Copper	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Copper	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Copper	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Copper	S8	SS	1991	2021	1	1	1.00	YES	NO	NO

Table F-1
Suitability of Data for Site Specific Inorganic Regression Analysis
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2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Copper	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Copper	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Copper	E7	WW	2003	2020	1	1	1.00	YES	NO	NO
Copper	N2	WW	2003	2020	5	5	1.00	YES	NO	NO
Copper	S4	WW	2003	2021	5	5	1.00	YES	NO	NO
Copper	W4	WW	2003	2021	4	4	1.00	YES	NO	NO
Iron	E1	FC	1991	2021	7	7	1.00	NO	NO	YES
Iron	E2	FC	1991	2019	7	7	1.00	NO	NO	YES
Iron	E5	FC	1991	2021	7	7	1.00	NO	NO	YES
Iron	E7	FC	1991	2021	1	1	1.00	YES	NO	NO
Iron	N2	FC	1991	2021	7	7	1.00	NO	NO	YES
Iron	N4	FC	1991	2020	6	6	1.00	NO	NO	YES
Iron	S2	FC	1991	2021	6	6	1.00	NO	NO	YES
Iron	E1	NG	1991	2021	31	31	1.00	NO	NO	YES
Iron	E2	NG	1991	2021	31	31	1.00	NO	NO	YES
Iron	E5	NG	1991	2021	30	30	1.00	NO	NO	YES
Iron	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Iron	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Iron	N2	NG	1991	2021	32	32	1.00	NO	NO	YES
Iron	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Iron	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Iron	S1	NG	1991	2019	28	28	1.00	NO	NO	YES
Iron	S2	NG	1991	2021	32	32	1.00	NO	NO	YES
Iron	S4	NG	1991	2021	29	29	1.00	NO	NO	YES
Iron	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Iron	W2	NG	1991	2021	31	31	1.00	NO	NO	YES
Iron	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Iron	E1	SB	1991	2020	19	19	1.00	NO	NO	YES
Iron	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Iron	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Iron	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Iron	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Iron	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Iron	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Iron	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Iron	S4	SB	1991	2020	19	19	1.00	NO	NO	YES
Iron	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Iron	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Iron	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Iron	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Iron	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Iron	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Iron	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Iron	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Iron	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Iron	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Iron	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Iron	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Iron	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Iron	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Iron	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Iron	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Iron	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Iron	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Iron	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Iron	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Iron	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Iron	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Iron	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Iron	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Iron	S4	WW	1991	2021	8	8	1.00	NO	NO	YES

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Suitability of Data for Site Specific Inorganic Regression Analysis
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2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Iron	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Lead	E1	FC	2010	2021	4	0	0.00	YES	YES	NO
Lead	E2	FC	2010	2019	3	0	0.00	YES	YES	NO
Lead	E5	FC	2010	2021	4	0	0.00	YES	YES	NO
Lead	E7	FC	2010	2021	1	0	0.00	YES	YES	NO
Lead	N2	FC	2010	2021	4	0	0.00	YES	YES	NO
Lead	N4	FC	2010	2020	4	0	0.00	YES	YES	NO
Lead	S2	FC	2010	2021	3	0	0.00	YES	YES	NO
Lead	E1	NG	2003	2021	19	18	0.95	NO	NO	YES
Lead	E2	NG	2003	2021	19	18	0.95	NO	NO	YES
Lead	E5	NG	2003	2021	19	19	1.00	NO	NO	YES
Lead	E6	NG	2003	2020	18	18	1.00	NO	NO	YES
Lead	E7	NG	2003	2021	3	3	1.00	YES	NO	NO
Lead	N2	NG	2003	2021	19	17	0.89	NO	NO	YES
Lead	N4	NG	2003	2021	19	16	0.84	NO	NO	YES
Lead	N5	NG	2003	2021	19	19	1.00	NO	NO	YES
Lead	S1	NG	2003	2019	17	16	0.94	NO	NO	YES
Lead	S2	NG	2003	2021	19	18	0.95	NO	NO	YES
Lead	S4	NG	2003	2021	19	17	0.89	NO	NO	YES
Lead	S8	NG	2003	2021	1	1	1.00	YES	NO	NO
Lead	W2	NG	2003	2021	19	19	1.00	NO	NO	YES
Lead	W4	NG	2003	2021	19	19	1.00	NO	NO	YES
Lead	E1	SB	2010	2020	6	2	0.33	NO	YES	NO
Lead	E2	SB	2010	2020	4	0	0.00	YES	YES	NO
Lead	E5	SB	2010	2020	6	0	0.00	NO	YES	NO
Lead	E7	SB	2010	2019	1	0	0.00	YES	YES	NO
Lead	N2	SB	2010	2019	4	0	0.00	YES	YES	NO
Lead	N4	SB	2010	2021	5	1	0.20	YES	YES	NO
Lead	S1	SB	2010	2019	7	0	0.00	NO	YES	NO
Lead	S2	SB	2010	2020	8	0	0.00	NO	YES	NO
Lead	S4	SB	2010	2020	8	0	0.00	NO	YES	NO
Lead	W2	SB	2010	2021	8	2	0.25	NO	YES	NO
Lead	W4	SB	2010	2020	5	0	0.00	YES	YES	NO
Lead	E2	SD	1991	2021	31	24	0.77	NO	NO	YES
Lead	N2	SD	1991	2021	31	27	0.87	NO	NO	YES
Lead	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Lead	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Lead	S4	SD	1991	2021	31	28	0.90	NO	NO	YES
Lead	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Lead	E1	SS	1991	2021	28	26	0.93	NO	NO	YES
Lead	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Lead	E5	SS	1991	2021	28	27	0.96	NO	NO	YES
Lead	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Lead	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Lead	N2	SS	1991	2021	28	27	0.96	NO	NO	YES
Lead	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Lead	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Lead	S1	SS	1991	2019	28	26	0.93	NO	NO	YES
Lead	S2	SS	1991	2021	30	29	0.97	NO	NO	YES
Lead	S4	SS	1991	2021	27	25	0.93	NO	NO	YES
Lead	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Lead	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Lead	W4	SS	1991	2021	22	21	0.95	NO	NO	YES
Lead	E7	WW	2010	2020	1	0	0.00	YES	YES	NO
Lead	N2	WW	2010	2020	3	0	0.00	YES	YES	NO
Lead	S4	WW	2010	2021	3	0	0.00	YES	YES	NO
Lead	W4	WW	2010	2021	2	1	0.50	YES	NO	NO
Magnesium	E1	FC	1991	2021	7	7	1.00	NO	NO	YES
Magnesium	E2	FC	1991	2019	7	7	1.00	NO	NO	YES
Magnesium	E5	FC	1991	2021	7	7	1.00	NO	NO	YES
Magnesium	E7	FC	1991	2021	1	1	1.00	YES	NO	NO

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Suitability of Data for Site Specific Inorganic Regression Analysis
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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Magnesium	N2	FC	1991	2021	7	7	1.00	NO	NO	YES
Magnesium	N4	FC	1991	2020	6	6	1.00	NO	NO	YES
Magnesium	S2	FC	1991	2021	6	6	1.00	NO	NO	YES
Magnesium	E1	NG	1991	2021	31	31	1.00	NO	NO	YES
Magnesium	E2	NG	1991	2021	31	31	1.00	NO	NO	YES
Magnesium	E5	NG	1991	2021	30	30	1.00	NO	NO	YES
Magnesium	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Magnesium	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Magnesium	N2	NG	1991	2021	32	32	1.00	NO	NO	YES
Magnesium	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Magnesium	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Magnesium	S1	NG	1991	2019	29	29	1.00	NO	NO	YES
Magnesium	S2	NG	1991	2021	32	32	1.00	NO	NO	YES
Magnesium	S4	NG	1991	2021	29	29	1.00	NO	NO	YES
Magnesium	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Magnesium	W2	NG	1991	2021	31	31	1.00	NO	NO	YES
Magnesium	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Magnesium	E1	SB	1991	2020	19	19	1.00	NO	NO	YES
Magnesium	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Magnesium	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Magnesium	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Magnesium	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Magnesium	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Magnesium	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Magnesium	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Magnesium	S4	SB	1991	2020	19	19	1.00	NO	NO	YES
Magnesium	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Magnesium	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Magnesium	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Magnesium	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Magnesium	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Magnesium	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Magnesium	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Magnesium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Magnesium	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Magnesium	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Magnesium	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Magnesium	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Magnesium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Magnesium	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Magnesium	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Magnesium	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Magnesium	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Magnesium	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Magnesium	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Magnesium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Magnesium	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Magnesium	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Magnesium	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Magnesium	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Magnesium	S4	WW	1991	2021	8	8	1.00	NO	NO	YES
Magnesium	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Manganese	E1	FC	2002	2021	6	6	1.00	NO	NO	YES
Manganese	E2	FC	2002	2019	5	5	1.00	YES	NO	NO
Manganese	E5	FC	2002	2021	6	6	1.00	NO	NO	YES
Manganese	E7	FC	2002	2021	1	1	1.00	YES	NO	NO
Manganese	N2	FC	2002	2021	6	6	1.00	NO	NO	YES
Manganese	N4	FC	2002	2020	6	6	1.00	NO	NO	YES
Manganese	S2	FC	2002	2021	5	5	1.00	YES	NO	NO
Manganese	E1	NG	1991	2021	31	31	1.00	NO	NO	YES
Manganese	E2	NG	1991	2021	31	30	0.97	NO	NO	YES

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Suitability of Data for Site Specific Inorganic Regression Analysis
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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Manganese	E5	NG	1991	2021	30	30	1.00	NO	NO	YES
Manganese	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Manganese	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Manganese	N2	NG	1991	2021	32	32	1.00	NO	NO	YES
Manganese	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Manganese	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Manganese	S1	NG	1991	2019	28	28	1.00	NO	NO	YES
Manganese	S2	NG	1991	2021	32	32	1.00	NO	NO	YES
Manganese	S4	NG	1991	2021	28	28	1.00	NO	NO	YES
Manganese	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Manganese	W2	NG	1991	2021	31	30	0.97	NO	NO	YES
Manganese	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Manganese	E1	SB	1991	2020	19	19	1.00	NO	NO	YES
Manganese	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Manganese	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Manganese	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Manganese	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Manganese	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Manganese	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Manganese	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Manganese	S4	SB	1991	2020	19	19	1.00	NO	NO	YES
Manganese	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Manganese	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Manganese	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Manganese	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Manganese	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Manganese	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Manganese	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Manganese	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Manganese	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Manganese	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Manganese	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Manganese	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Manganese	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Manganese	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Manganese	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Manganese	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Manganese	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Manganese	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Manganese	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Manganese	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Manganese	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Manganese	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Manganese	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Manganese	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Manganese	S4	WW	1991	2021	8	8	1.00	NO	NO	YES
Manganese	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Mercury	E1	FC	2005	2021	5	0	0.00	YES	YES	NO
Mercury	E2	FC	2005	2019	4	0	0.00	YES	YES	NO
Mercury	E5	FC	2005	2021	5	1	0.20	YES	YES	NO
Mercury	E7	FC	2005	2021	1	0	0.00	YES	YES	NO
Mercury	N2	FC	2005	2021	6	1	0.17	NO	YES	NO
Mercury	N4	FC	2005	2020	5	0	0.00	YES	YES	NO
Mercury	S2	FC	2005	2021	4	0	0.00	YES	YES	NO
Mercury	E1	NG	2004	2021	18	14	0.78	NO	NO	YES
Mercury	E2	NG	2004	2021	18	13	0.72	NO	NO	YES
Mercury	E5	NG	2004	2021	18	12	0.67	NO	NO	YES
Mercury	E6	NG	2004	2020	17	16	0.94	NO	NO	YES
Mercury	E7	NG	2004	2021	3	3	1.00	YES	NO	NO
Mercury	N2	NG	2004	2021	18	12	0.67	NO	NO	YES
Mercury	N4	NG	2004	2021	18	12	0.67	NO	NO	YES

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Mercury	N5	NG	2004	2021	18	18	1.00	NO	NO	YES
Mercury	S1	NG	2004	2019	16	13	0.81	NO	NO	YES
Mercury	S2	NG	2004	2021	18	12	0.67	NO	NO	YES
Mercury	S4	NG	2004	2021	18	9	0.50	NO	NO	YES
Mercury	S8	NG	2004	2021	1	1	1.00	YES	NO	NO
Mercury	W2	NG	2004	2021	18	14	0.78	NO	NO	YES
Mercury	W4	NG	2004	2021	18	14	0.78	NO	NO	YES
Mercury	E1	SB	2005	2020	10	0	0.00	NO	YES	NO
Mercury	E2	SB	2005	2020	5	0	0.00	YES	YES	NO
Mercury	E5	SB	2005	2020	10	0	0.00	NO	YES	NO
Mercury	E7	SB	2005	2019	1	0	0.00	YES	YES	NO
Mercury	N2	SB	2005	2019	6	0	0.00	NO	YES	NO
Mercury	N4	SB	2005	2021	7	0	0.00	NO	YES	NO
Mercury	S1	SB	2005	2019	10	0	0.00	NO	YES	NO
Mercury	S2	SB	2005	2020	11	0	0.00	NO	YES	NO
Mercury	S4	SB	2005	2020	11	0	0.00	NO	YES	NO
Mercury	W2	SB	2005	2021	11	0	0.00	NO	YES	NO
Mercury	W4	SB	2005	2020	8	0	0.00	NO	YES	NO
Mercury	E2	SD	2003	2021	19	6	0.32	NO	YES	NO
Mercury	N2	SD	2003	2021	19	13	0.68	NO	NO	YES
Mercury	N5	SD	2003	2021	19	16	0.84	NO	NO	YES
Mercury	S1	SD	2003	2019	17	10	0.59	NO	NO	YES
Mercury	S4	SD	2003	2021	19	4	0.21	NO	YES	NO
Mercury	S8	SD	2003	2021	1	1	1.00	YES	NO	NO
Mercury	E1	SS	2002	2021	19	6	0.32	NO	YES	NO
Mercury	E2	SS	2002	2021	20	14	0.70	NO	NO	YES
Mercury	E5	SS	2002	2021	19	5	0.26	NO	YES	NO
Mercury	E6	SS	2002	2020	19	15	0.79	NO	NO	YES
Mercury	E7	SS	2002	2021	3	3	1.00	YES	NO	NO
Mercury	N2	SS	2002	2021	19	12	0.63	NO	NO	YES
Mercury	N4	SS	2002	2021	20	7	0.35	NO	YES	NO
Mercury	N5	SS	2002	2021	20	17	0.85	NO	NO	YES
Mercury	S1	SS	2002	2019	18	5	0.28	NO	YES	NO
Mercury	S2	SS	2002	2021	20	5	0.25	NO	YES	NO
Mercury	S4	SS	2002	2021	19	8	0.42	NO	YES	NO
Mercury	S8	SS	2002	2021	1	1	1.00	YES	NO	NO
Mercury	W2	SS	2002	2021	19	7	0.37	NO	YES	NO
Mercury	W4	SS	2002	2021	20	11	0.55	NO	NO	YES
Mercury	E7	WW	2005	2020	1	0	0.00	YES	YES	NO
Mercury	N2	WW	2005	2020	4	1	0.25	YES	YES	NO
Mercury	S4	WW	2005	2021	5	2	0.40	YES	YES	NO
Mercury	W4	WW	2005	2021	4	0	0.00	YES	YES	NO
Molybdenum	E1	FC	2003	2021	6	6	1.00	NO	NO	YES
Molybdenum	E2	FC	2003	2019	5	5	1.00	YES	NO	NO
Molybdenum	E5	FC	2003	2021	6	6	1.00	NO	NO	YES
Molybdenum	E7	FC	2003	2021	1	1	1.00	YES	NO	NO
Molybdenum	N2	FC	2003	2021	6	6	1.00	NO	NO	YES
Molybdenum	N4	FC	2003	2020	6	6	1.00	NO	NO	YES
Molybdenum	S2	FC	2003	2021	4	4	1.00	YES	NO	NO
Molybdenum	E1	NG	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	E2	NG	2002	2021	20	19	0.95	NO	NO	YES
Molybdenum	E5	NG	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	E6	NG	2002	2020	19	19	1.00	NO	NO	YES
Molybdenum	E7	NG	2002	2021	3	3	1.00	YES	NO	NO
Molybdenum	N2	NG	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	N4	NG	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	N5	NG	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	S1	NG	2002	2019	18	18	1.00	NO	NO	YES
Molybdenum	S2	NG	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	S4	NG	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	S8	NG	2002	2021	1	1	1.00	YES	NO	NO

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Molybdenum	W2	NG	2002	2021	19	19	1.00	NO	NO	YES
Molybdenum	W4	NG	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	E1	SB	1991	2020	19	19	1.00	NO	NO	YES
Molybdenum	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Molybdenum	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Molybdenum	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Molybdenum	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Molybdenum	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Molybdenum	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Molybdenum	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Molybdenum	S4	SB	1991	2020	19	19	1.00	NO	NO	YES
Molybdenum	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Molybdenum	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Molybdenum	E2	SD	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	N2	SD	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	N5	SD	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	S1	SD	2002	2019	18	18	1.00	NO	NO	YES
Molybdenum	S4	SD	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	S8	SD	2002	2021	1	1	1.00	YES	NO	NO
Molybdenum	E1	SS	2002	2021	19	19	1.00	NO	NO	YES
Molybdenum	E2	SS	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	E5	SS	2002	2021	19	19	1.00	NO	NO	YES
Molybdenum	E6	SS	2002	2020	19	19	1.00	NO	NO	YES
Molybdenum	E7	SS	2002	2021	3	3	1.00	YES	NO	NO
Molybdenum	N2	SS	2002	2021	19	19	1.00	NO	NO	YES
Molybdenum	N4	SS	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	N5	SS	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	S1	SS	2002	2019	18	18	1.00	NO	NO	YES
Molybdenum	S2	SS	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	S4	SS	2002	2021	19	19	1.00	NO	NO	YES
Molybdenum	S8	SS	2002	2021	1	1	1.00	YES	NO	NO
Molybdenum	W2	SS	2002	2021	19	19	1.00	NO	NO	YES
Molybdenum	W4	SS	2002	2021	20	20	1.00	NO	NO	YES
Molybdenum	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Molybdenum	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Molybdenum	S4	WW	1991	2021	8	6	0.75	NO	NO	YES
Molybdenum	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Nickel	E1	FC	2005	2021	5	3	0.60	YES	NO	NO
Nickel	E2	FC	2005	2019	4	3	0.75	YES	NO	NO
Nickel	E5	FC	2005	2021	5	2	0.40	YES	YES	NO
Nickel	E7	FC	2005	2021	1	0	0.00	YES	YES	NO
Nickel	N2	FC	2005	2021	6	5	0.83	NO	NO	YES
Nickel	N4	FC	2005	2020	5	4	0.80	YES	NO	NO
Nickel	S2	FC	2005	2021	4	1	0.25	YES	YES	NO
Nickel	E1	NG	2002	2021	20	20	1.00	NO	NO	YES
Nickel	E2	NG	2002	2021	20	19	0.95	NO	NO	YES
Nickel	E5	NG	2002	2021	20	20	1.00	NO	NO	YES
Nickel	E6	NG	2002	2020	19	19	1.00	NO	NO	YES
Nickel	E7	NG	2002	2021	3	3	1.00	YES	NO	NO
Nickel	N2	NG	2002	2021	20	20	1.00	NO	NO	YES
Nickel	N4	NG	2002	2021	20	20	1.00	NO	NO	YES
Nickel	N5	NG	2002	2021	20	20	1.00	NO	NO	YES
Nickel	S1	NG	2002	2019	17	17	1.00	NO	NO	YES
Nickel	S2	NG	2002	2021	20	20	1.00	NO	NO	YES
Nickel	S4	NG	2002	2021	20	19	0.95	NO	NO	YES
Nickel	S8	NG	2002	2021	1	1	1.00	YES	NO	NO
Nickel	W2	NG	2002	2021	20	20	1.00	NO	NO	YES
Nickel	W4	NG	2002	2021	20	20	1.00	NO	NO	YES
Nickel	E1	SB	2002	2020	11	11	1.00	NO	NO	YES
Nickel	E2	SB	2002	2020	6	6	1.00	NO	NO	YES
Nickel	E5	SB	2002	2020	11	11	1.00	NO	NO	YES

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Nickel	E7	SB	2002	2019	1	1	1.00	YES	NO	NO
Nickel	N2	SB	2002	2019	8	8	1.00	NO	NO	YES
Nickel	N4	SB	2002	2021	7	7	1.00	NO	NO	YES
Nickel	S1	SB	2002	2019	12	12	1.00	NO	NO	YES
Nickel	S2	SB	2002	2020	13	13	1.00	NO	NO	YES
Nickel	S4	SB	2002	2020	13	13	1.00	NO	NO	YES
Nickel	W2	SB	2002	2021	13	13	1.00	NO	NO	YES
Nickel	W4	SB	2002	2020	10	10	1.00	NO	NO	YES
Nickel	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Nickel	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Nickel	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Nickel	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Nickel	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Nickel	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Nickel	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Nickel	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Nickel	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Nickel	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Nickel	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Nickel	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Nickel	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Nickel	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Nickel	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Nickel	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Nickel	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Nickel	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Nickel	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Nickel	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Nickel	E7	WW	2003	2020	1	1	1.00	YES	NO	NO
Nickel	N2	WW	2003	2020	5	5	1.00	YES	NO	NO
Nickel	S4	WW	2003	2021	5	4	0.80	YES	NO	NO
Nickel	W4	WW	2003	2021	4	4	1.00	YES	NO	NO
Phosphorus	E1	FC	1991	2021	7	7	1.00	NO	NO	YES
Phosphorus	E2	FC	1991	2019	7	7	1.00	NO	NO	YES
Phosphorus	E5	FC	1991	2021	7	7	1.00	NO	NO	YES
Phosphorus	E7	FC	1991	2021	1	1	1.00	YES	NO	NO
Phosphorus	N2	FC	1991	2021	7	7	1.00	NO	NO	YES
Phosphorus	N4	FC	1991	2020	6	6	1.00	NO	NO	YES
Phosphorus	S2	FC	1991	2021	6	6	1.00	NO	NO	YES
Phosphorus	E1	NG	1991	2021	31	31	1.00	NO	NO	YES
Phosphorus	E2	NG	1991	2021	31	31	1.00	NO	NO	YES
Phosphorus	E5	NG	1991	2021	30	30	1.00	NO	NO	YES
Phosphorus	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Phosphorus	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Phosphorus	N2	NG	1991	2021	32	32	1.00	NO	NO	YES
Phosphorus	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Phosphorus	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Phosphorus	S1	NG	1991	2019	29	29	1.00	NO	NO	YES
Phosphorus	S2	NG	1991	2021	32	32	1.00	NO	NO	YES
Phosphorus	S4	NG	1991	2021	29	29	1.00	NO	NO	YES
Phosphorus	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Phosphorus	W2	NG	1991	2021	31	31	1.00	NO	NO	YES
Phosphorus	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Phosphorus	E1	SB	1991	2020	18	18	1.00	NO	NO	YES
Phosphorus	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Phosphorus	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Phosphorus	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Phosphorus	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Phosphorus	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Phosphorus	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Phosphorus	S2	SB	1991	2020	22	22	1.00	NO	NO	YES

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Phosphorus	S4	SB	1991	2020	19	19	1.00	NO	NO	YES
Phosphorus	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Phosphorus	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Phosphorus	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Phosphorus	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Phosphorus	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Phosphorus	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Phosphorus	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Phosphorus	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Phosphorus	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Phosphorus	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Phosphorus	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Phosphorus	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Phosphorus	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Phosphorus	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Phosphorus	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Phosphorus	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Phosphorus	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Phosphorus	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Phosphorus	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Phosphorus	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Phosphorus	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Phosphorus	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Phosphorus	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Phosphorus	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Phosphorus	S4	WW	1991	2021	8	8	1.00	NO	NO	YES
Phosphorus	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Potassium	E1	FC	1991	2021	7	7	1.00	NO	NO	YES
Potassium	E2	FC	1991	2019	7	7	1.00	NO	NO	YES
Potassium	E5	FC	1991	2021	7	7	1.00	NO	NO	YES
Potassium	E7	FC	1991	2021	1	1	1.00	YES	NO	NO
Potassium	N2	FC	1991	2021	7	7	1.00	NO	NO	YES
Potassium	N4	FC	1991	2020	6	6	1.00	NO	NO	YES
Potassium	S2	FC	1991	2021	6	6	1.00	NO	NO	YES
Potassium	E1	NG	1991	2021	31	31	1.00	NO	NO	YES
Potassium	E2	NG	1991	2021	31	31	1.00	NO	NO	YES
Potassium	E5	NG	1991	2021	30	30	1.00	NO	NO	YES
Potassium	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Potassium	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Potassium	N2	NG	1991	2021	32	32	1.00	NO	NO	YES
Potassium	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Potassium	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Potassium	S1	NG	1991	2019	29	29	1.00	NO	NO	YES
Potassium	S2	NG	1991	2021	32	32	1.00	NO	NO	YES
Potassium	S4	NG	1991	2021	29	29	1.00	NO	NO	YES
Potassium	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Potassium	W2	NG	1991	2021	31	31	1.00	NO	NO	YES
Potassium	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Potassium	E1	SB	1991	2020	19	19	1.00	NO	NO	YES
Potassium	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Potassium	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Potassium	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Potassium	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Potassium	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Potassium	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Potassium	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Potassium	S4	SB	1991	2020	19	19	1.00	NO	NO	YES
Potassium	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Potassium	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Potassium	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Potassium	N2	SD	1991	2021	31	31	1.00	NO	NO	YES

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Potassium	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Potassium	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Potassium	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Potassium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Potassium	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Potassium	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Potassium	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Potassium	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Potassium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Potassium	N2	SS	1991	2021	27	27	1.00	NO	NO	YES
Potassium	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Potassium	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Potassium	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Potassium	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Potassium	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Potassium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Potassium	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Potassium	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Potassium	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Potassium	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Potassium	S4	WW	1991	2021	8	8	1.00	NO	NO	YES
Potassium	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Silicon	E1	FC	2006	2021	5	4	0.80	YES	NO	NO
Silicon	E2	FC	2006	2019	4	4	1.00	YES	NO	NO
Silicon	E5	FC	2006	2021	5	4	0.80	YES	NO	NO
Silicon	E7	FC	2006	2021	1	0	0.00	YES	YES	NO
Silicon	N2	FC	2006	2021	5	4	0.80	YES	NO	NO
Silicon	N4	FC	2006	2020	5	5	1.00	YES	NO	NO
Silicon	S2	FC	2006	2021	3	2	0.67	YES	NO	NO
Silicon	E1	NG	2003	2021	19	19	1.00	NO	NO	YES
Silicon	E2	NG	2003	2021	19	19	1.00	NO	NO	YES
Silicon	E5	NG	2003	2021	19	19	1.00	NO	NO	YES
Silicon	E6	NG	2003	2020	17	17	1.00	NO	NO	YES
Silicon	E7	NG	2003	2021	3	3	1.00	YES	NO	NO
Silicon	N2	NG	2003	2021	18	18	1.00	NO	NO	YES
Silicon	N4	NG	2003	2021	19	19	1.00	NO	NO	YES
Silicon	N5	NG	2003	2021	19	19	1.00	NO	NO	YES
Silicon	S1	NG	2003	2019	17	17	1.00	NO	NO	YES
Silicon	S2	NG	2003	2021	19	19	1.00	NO	NO	YES
Silicon	S4	NG	2003	2021	19	19	1.00	NO	NO	YES
Silicon	S8	NG	2003	2021	1	1	1.00	YES	NO	NO
Silicon	W2	NG	2003	2021	19	19	1.00	NO	NO	YES
Silicon	W4	NG	2003	2021	19	19	1.00	NO	NO	YES
Silicon	E1	SB	2003	2020	10	10	1.00	NO	NO	YES
Silicon	E2	SB	2003	2020	6	5	0.83	NO	NO	YES
Silicon	E5	SB	2003	2020	10	10	1.00	NO	NO	YES
Silicon	E7	SB	2003	2019	1	1	1.00	YES	NO	NO
Silicon	N2	SB	2003	2019	6	6	1.00	NO	NO	YES
Silicon	N4	SB	2003	2021	7	5	0.71	NO	NO	YES
Silicon	S1	SB	2003	2019	12	10	0.83	NO	NO	YES
Silicon	S2	SB	2003	2019	12	11	0.92	NO	NO	YES
Silicon	S4	SB	2003	2020	12	12	1.00	NO	NO	YES
Silicon	W2	SB	2003	2021	12	9	0.75	NO	NO	YES
Silicon	W4	SB	2003	2020	9	8	0.89	NO	NO	YES
Silicon	E2	SD	2010	2021	12	12	1.00	NO	NO	YES
Silicon	N2	SD	2010	2021	12	12	1.00	NO	NO	YES
Silicon	N5	SD	2010	2021	12	12	1.00	NO	NO	YES
Silicon	S1	SD	2010	2019	10	10	1.00	NO	NO	YES
Silicon	S4	SD	2010	2021	12	12	1.00	NO	NO	YES
Silicon	S8	SD	2010	2021	1	1	1.00	YES	NO	NO
Silicon	E1	SS	2010	2021	12	12	1.00	NO	NO	YES

Table F-1
Suitability of Data for Site Specific Inorganic Regression Analysis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Silicon	E2	SS	2010	2021	12	12	1.00	NO	NO	YES
Silicon	E5	SS	2010	2021	12	12	1.00	NO	NO	YES
Silicon	E6	SS	2010	2020	11	11	1.00	NO	NO	YES
Silicon	E7	SS	2010	2021	3	3	1.00	YES	NO	NO
Silicon	N2	SS	2010	2021	12	12	1.00	NO	NO	YES
Silicon	N4	SS	2010	2021	12	12	1.00	NO	NO	YES
Silicon	N5	SS	2010	2021	12	12	1.00	NO	NO	YES
Silicon	S1	SS	2010	2019	10	10	1.00	NO	NO	YES
Silicon	S2	SS	2010	2021	12	12	1.00	NO	NO	YES
Silicon	S4	SS	2010	2021	12	12	1.00	NO	NO	YES
Silicon	S8	SS	2010	2021	1	1	1.00	YES	NO	NO
Silicon	W2	SS	2010	2021	12	12	1.00	NO	NO	YES
Silicon	W4	SS	2010	2021	12	12	1.00	NO	NO	YES
Silicon	E7	WW	2003	2020	1	1	1.00	YES	NO	NO
Silicon	N2	WW	2003	2020	5	5	1.00	YES	NO	NO
Silicon	S4	WW	2003	2021	5	5	1.00	YES	NO	NO
Silicon	W4	WW	2003	2021	4	4	1.00	YES	NO	NO
Silver	E1	FC	2005	2021	5	0	0.00	YES	YES	NO
Silver	E2	FC	2005	2019	4	0	0.00	YES	YES	NO
Silver	E5	FC	2005	2021	5	0	0.00	YES	YES	NO
Silver	E7	FC	2005	2021	1	0	0.00	YES	YES	NO
Silver	N2	FC	2005	2021	6	0	0.00	NO	YES	NO
Silver	N4	FC	2005	2020	5	0	0.00	YES	YES	NO
Silver	S2	FC	2005	2021	4	0	0.00	YES	YES	NO
Silver	E1	NG	2005	2021	17	0	0.00	NO	YES	NO
Silver	E2	NG	2005	2021	17	0	0.00	NO	YES	NO
Silver	E5	NG	2005	2021	17	2	0.12	NO	YES	NO
Silver	E6	NG	2005	2020	16	3	0.19	NO	YES	NO
Silver	E7	NG	2005	2021	3	0	0.00	YES	YES	NO
Silver	N2	NG	2005	2021	17	0	0.00	NO	YES	NO
Silver	N4	NG	2005	2021	17	1	0.06	NO	YES	NO
Silver	N5	NG	2005	2021	17	2	0.12	NO	YES	NO
Silver	S1	NG	2005	2019	15	0	0.00	NO	YES	NO
Silver	S2	NG	2005	2021	17	1	0.06	NO	YES	NO
Silver	S4	NG	2005	2021	17	0	0.00	NO	YES	NO
Silver	S8	NG	2005	2021	1	1	1.00	YES	NO	NO
Silver	W2	NG	2005	2021	17	1	0.06	NO	YES	NO
Silver	W4	NG	2005	2021	17	1	0.06	NO	YES	NO
Silver	E1	SB	2005	2020	10	0	0.00	NO	YES	NO
Silver	E2	SB	2005	2020	5	0	0.00	YES	YES	NO
Silver	E5	SB	2005	2020	10	0	0.00	NO	YES	NO
Silver	E7	SB	2005	2019	1	0	0.00	YES	YES	NO
Silver	N2	SB	2005	2019	6	0	0.00	NO	YES	NO
Silver	N4	SB	2005	2021	7	0	0.00	NO	YES	NO
Silver	S1	SB	2005	2019	10	0	0.00	NO	YES	NO
Silver	S2	SB	2005	2020	11	0	0.00	NO	YES	NO
Silver	S4	SB	2005	2020	11	0	0.00	NO	YES	NO
Silver	W2	SB	2005	2021	11	0	0.00	NO	YES	NO
Silver	W4	SB	2005	2020	8	0	0.00	NO	YES	NO
Silver	E2	SD	2003	2021	19	0	0.00	NO	YES	NO
Silver	N2	SD	2003	2021	19	0	0.00	NO	YES	NO
Silver	N5	SD	2003	2021	19	1	0.05	NO	YES	NO
Silver	S1	SD	2003	2019	17	0	0.00	NO	YES	NO
Silver	S4	SD	2003	2021	19	0	0.00	NO	YES	NO
Silver	S8	SD	2003	2021	1	0	0.00	YES	YES	NO
Silver	E1	SS	2003	2021	18	0	0.00	NO	YES	NO
Silver	E2	SS	2003	2021	19	0	0.00	NO	YES	NO
Silver	E5	SS	2003	2021	18	0	0.00	NO	YES	NO
Silver	E6	SS	2003	2020	18	0	0.00	NO	YES	NO
Silver	E7	SS	2003	2021	3	0	0.00	YES	YES	NO
Silver	N2	SS	2003	2021	18	2	0.11	NO	YES	NO

Table F-1
Suitability of Data for Site Specific Inorganic Regression Analysis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Silver	N4	SS	2003	2021	19	0	0.00	NO	YES	NO
Silver	N5	SS	2003	2021	19	0	0.00	NO	YES	NO
Silver	S1	SS	2003	2019	17	0	0.00	NO	YES	NO
Silver	S2	SS	2003	2021	19	1	0.05	NO	YES	NO
Silver	S4	SS	2003	2021	19	0	0.00	NO	YES	NO
Silver	S8	SS	2003	2021	1	0	0.00	YES	YES	NO
Silver	W2	SS	2003	2021	18	0	0.00	NO	YES	NO
Silver	W4	SS	2003	2021	19	0	0.00	NO	YES	NO
Silver	E7	WW	2005	2020	1	0	0.00	YES	YES	NO
Silver	N2	WW	2005	2020	4	0	0.00	YES	YES	NO
Silver	S4	WW	2005	2021	5	0	0.00	YES	YES	NO
Silver	W4	WW	2005	2021	4	0	0.00	YES	YES	NO
Sodium	E1	FC	2005	2021	5	1	0.20	YES	YES	NO
Sodium	E2	FC	2005	2019	4	0	0.00	YES	YES	NO
Sodium	E5	FC	2005	2021	5	0	0.00	YES	YES	NO
Sodium	E7	FC	2005	2021	1	0	0.00	YES	YES	NO
Sodium	N2	FC	2005	2021	6	1	0.17	NO	YES	NO
Sodium	N4	FC	2005	2020	5	2	0.40	YES	YES	NO
Sodium	S2	FC	2005	2021	4	0	0.00	YES	YES	NO
Sodium	E1	NG	2002	2021	20	15	0.75	NO	NO	YES
Sodium	E2	NG	2002	2021	20	15	0.75	NO	NO	YES
Sodium	E5	NG	2002	2021	20	18	0.90	NO	NO	YES
Sodium	E6	NG	2002	2020	19	18	0.95	NO	NO	YES
Sodium	E7	NG	2002	2021	3	3	1.00	YES	NO	NO
Sodium	N2	NG	2002	2021	20	15	0.75	NO	NO	YES
Sodium	N4	NG	2002	2021	20	17	0.85	NO	NO	YES
Sodium	N5	NG	2002	2021	20	19	0.95	NO	NO	YES
Sodium	S1	NG	2002	2019	18	16	0.89	NO	NO	YES
Sodium	S2	NG	2002	2021	20	16	0.80	NO	NO	YES
Sodium	S4	NG	2002	2021	20	16	0.80	NO	NO	YES
Sodium	S8	NG	2002	2021	1	1	1.00	YES	NO	NO
Sodium	W2	NG	2002	2021	20	17	0.85	NO	NO	YES
Sodium	W4	NG	2002	2021	20	18	0.90	NO	NO	YES
Sodium	E1	SB	2005	2020	10	0	0.00	NO	YES	NO
Sodium	E2	SB	2005	2020	5	2	0.40	YES	YES	NO
Sodium	E5	SB	2005	2020	10	0	0.00	NO	YES	NO
Sodium	E7	SB	2005	2019	1	0	0.00	YES	YES	NO
Sodium	N2	SB	2005	2019	6	1	0.17	NO	YES	NO
Sodium	N4	SB	2005	2021	7	2	0.29	NO	YES	NO
Sodium	S1	SB	2005	2019	10	2	0.20	NO	YES	NO
Sodium	S2	SB	2005	2020	11	1	0.09	NO	YES	NO
Sodium	S4	SB	2005	2020	11	0	0.00	NO	YES	NO
Sodium	W2	SB	2005	2021	11	1	0.09	NO	YES	NO
Sodium	W4	SB	2005	2020	8	0	0.00	NO	YES	NO
Sodium	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Sodium	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Sodium	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Sodium	S1	SD	1991	2019	29	28	0.97	NO	NO	YES
Sodium	S4	SD	1991	2021	31	30	0.97	NO	NO	YES
Sodium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Sodium	E1	SS	2003	2021	18	9	0.50	NO	NO	YES
Sodium	E2	SS	2003	2021	19	12	0.63	NO	NO	YES
Sodium	E5	SS	2003	2021	18	9	0.50	NO	NO	YES
Sodium	E6	SS	2003	2020	18	11	0.61	NO	NO	YES
Sodium	E7	SS	2003	2021	3	3	1.00	YES	NO	NO
Sodium	N2	SS	2003	2021	18	10	0.56	NO	NO	YES
Sodium	N4	SS	2003	2021	19	10	0.53	NO	NO	YES
Sodium	N5	SS	2003	2021	19	17	0.89	NO	NO	YES
Sodium	S1	SS	2003	2019	17	9	0.53	NO	NO	YES
Sodium	S2	SS	2003	2021	19	11	0.58	NO	NO	YES
Sodium	S4	SS	2003	2021	19	13	0.68	NO	NO	YES

Table F-1
Suitability of Data for Site Specific Inorganic Regression Analysis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Sodium	S8	SS	2003	2021	1	1	1.00	YES	NO	NO
Sodium	W2	SS	2003	2021	18	10	0.56	NO	NO	YES
Sodium	W4	SS	2003	2021	19	12	0.63	NO	NO	YES
Sodium	E7	WW	2005	2020	1	0	0.00	YES	YES	NO
Sodium	N2	WW	2005	2020	4	2	0.50	YES	NO	NO
Sodium	S4	WW	2005	2021	4	1	0.25	YES	YES	NO
Sodium	W4	WW	2005	2021	4	0	0.00	YES	YES	NO
Strontium	E1	FC	1991	2021	7	3	0.43	NO	YES	NO
Strontium	E2	FC	1991	2019	7	3	0.43	NO	YES	NO
Strontium	E5	FC	1991	2021	7	4	0.57	NO	NO	YES
Strontium	E7	FC	1991	2021	1	1	1.00	YES	NO	NO
Strontium	N2	FC	1991	2021	7	1	0.14	NO	YES	NO
Strontium	N4	FC	1991	2020	6	5	0.83	NO	NO	YES
Strontium	S2	FC	1991	2021	6	2	0.33	NO	YES	NO
Strontium	E1	NG	1991	2021	31	31	1.00	NO	NO	YES
Strontium	E2	NG	1991	2021	31	31	1.00	NO	NO	YES
Strontium	E5	NG	1991	2021	30	30	1.00	NO	NO	YES
Strontium	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Strontium	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Strontium	N2	NG	1991	2021	32	32	1.00	NO	NO	YES
Strontium	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Strontium	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Strontium	S1	NG	1991	2019	29	29	1.00	NO	NO	YES
Strontium	S2	NG	1991	2021	32	32	1.00	NO	NO	YES
Strontium	S4	NG	1991	2021	28	28	1.00	NO	NO	YES
Strontium	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Strontium	W2	NG	1991	2021	31	31	1.00	NO	NO	YES
Strontium	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Strontium	E1	SB	1991	2020	19	19	1.00	NO	NO	YES
Strontium	E2	SB	1991	2020	13	12	0.92	NO	NO	YES
Strontium	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Strontium	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Strontium	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Strontium	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Strontium	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Strontium	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Strontium	S4	SB	1991	2020	19	19	1.00	NO	NO	YES
Strontium	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Strontium	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Strontium	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Strontium	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Strontium	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Strontium	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Strontium	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Strontium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Strontium	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Strontium	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Strontium	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Strontium	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Strontium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Strontium	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Strontium	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Strontium	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Strontium	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Strontium	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Strontium	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Strontium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Strontium	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Strontium	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Strontium	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Strontium	N2	WW	1991	2020	6	6	1.00	NO	NO	YES

Table F-1
Suitability of Data for Site Specific Inorganic Regression Analysis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Strontium	S4	WW	1991	2021	8	8	1.00	NO	NO	YES
Strontium	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Sulfur	E1	FC	1991	2021	7	7	1.00	NO	NO	YES
Sulfur	E2	FC	1991	2019	7	7	1.00	NO	NO	YES
Sulfur	E5	FC	1991	2021	7	7	1.00	NO	NO	YES
Sulfur	E7	FC	1991	2021	1	1	1.00	YES	NO	NO
Sulfur	N2	FC	1991	2021	7	7	1.00	NO	NO	YES
Sulfur	N4	FC	1991	2020	6	6	1.00	NO	NO	YES
Sulfur	S2	FC	1991	2021	6	6	1.00	NO	NO	YES
Sulfur	E1	NG	1991	2021	31	31	1.00	NO	NO	YES
Sulfur	E2	NG	1991	2021	31	31	1.00	NO	NO	YES
Sulfur	E5	NG	1991	2021	30	30	1.00	NO	NO	YES
Sulfur	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Sulfur	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Sulfur	N2	NG	1991	2021	32	32	1.00	NO	NO	YES
Sulfur	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Sulfur	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Sulfur	S1	NG	1991	2019	29	29	1.00	NO	NO	YES
Sulfur	S2	NG	1991	2021	32	32	1.00	NO	NO	YES
Sulfur	S4	NG	1991	2021	29	29	1.00	NO	NO	YES
Sulfur	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Sulfur	W2	NG	1991	2021	31	31	1.00	NO	NO	YES
Sulfur	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Sulfur	E1	SB	1991	2020	19	18	0.95	NO	NO	YES
Sulfur	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Sulfur	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Sulfur	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Sulfur	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Sulfur	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Sulfur	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Sulfur	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Sulfur	S4	SB	1991	2020	19	19	1.00	NO	NO	YES
Sulfur	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Sulfur	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Sulfur	E2	SD	1991	2021	31	25	0.81	NO	NO	YES
Sulfur	N2	SD	1991	2021	31	27	0.87	NO	NO	YES
Sulfur	N5	SD	1991	2021	20	17	0.85	NO	NO	YES
Sulfur	S1	SD	1991	2019	29	27	0.93	NO	NO	YES
Sulfur	S4	SD	1991	2021	31	25	0.81	NO	NO	YES
Sulfur	S8	SD	1991	2021	1	0	0.00	YES	YES	NO
Sulfur	E1	SS	1991	2021	28	22	0.79	NO	NO	YES
Sulfur	E2	SS	1991	2021	28	23	0.82	NO	NO	YES
Sulfur	E5	SS	1991	2021	28	23	0.82	NO	NO	YES
Sulfur	E6	SS	1991	2020	21	17	0.81	NO	NO	YES
Sulfur	E7	SS	1991	2021	3	0	0.00	YES	YES	NO
Sulfur	N2	SS	1991	2021	28	22	0.79	NO	NO	YES
Sulfur	N4	SS	1991	2021	21	16	0.76	NO	NO	YES
Sulfur	N5	SS	1991	2021	20	16	0.80	NO	NO	YES
Sulfur	S1	SS	1991	2019	28	24	0.86	NO	NO	YES
Sulfur	S2	SS	1991	2021	30	24	0.80	NO	NO	YES
Sulfur	S4	SS	1991	2021	27	21	0.78	NO	NO	YES
Sulfur	S8	SS	1991	2021	1	0	0.00	YES	YES	NO
Sulfur	W2	SS	1991	2021	27	22	0.81	NO	NO	YES
Sulfur	W4	SS	1991	2021	22	17	0.77	NO	NO	YES
Sulfur	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Sulfur	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Sulfur	S4	WW	1991	2021	8	8	1.00	NO	NO	YES
Sulfur	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Thallium	E1	FC	2005	2021	5	0	0.00	YES	YES	NO
Thallium	E2	FC	2005	2019	4	0	0.00	YES	YES	NO
Thallium	E5	FC	2005	2021	5	0	0.00	YES	YES	NO

Table F-1
Suitability of Data for Site Specific Inorganic Regression Analysis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Thallium	E7	FC	2005	2021	1	0	0.00	YES	YES	NO
Thallium	N2	FC	2005	2021	6	0	0.00	NO	YES	NO
Thallium	N4	FC	2005	2020	5	0	0.00	YES	YES	NO
Thallium	S2	FC	2005	2021	4	0	0.00	YES	YES	NO
Thallium	E1	NG	2005	2021	17	0	0.00	NO	YES	NO
Thallium	E2	NG	2005	2021	17	1	0.06	NO	YES	NO
Thallium	E5	NG	2005	2021	17	5	0.29	NO	YES	NO
Thallium	E6	NG	2005	2020	16	7	0.44	NO	YES	NO
Thallium	E7	NG	2005	2021	3	2	0.67	YES	NO	NO
Thallium	N2	NG	2005	2021	17	3	0.18	NO	YES	NO
Thallium	N4	NG	2005	2021	17	2	0.12	NO	YES	NO
Thallium	N5	NG	2005	2021	17	9	0.53	NO	NO	YES
Thallium	S1	NG	2005	2019	15	3	0.20	NO	YES	NO
Thallium	S2	NG	2005	2021	17	3	0.18	NO	YES	NO
Thallium	S4	NG	2005	2021	17	2	0.12	NO	YES	NO
Thallium	S8	NG	2005	2021	1	1	1.00	YES	NO	NO
Thallium	W2	NG	2005	2021	17	0	0.00	NO	YES	NO
Thallium	W4	NG	2005	2021	17	3	0.18	NO	YES	NO
Thallium	E1	SB	2005	2020	10	1	0.10	NO	YES	NO
Thallium	E2	SB	2005	2020	5	0	0.00	YES	YES	NO
Thallium	E5	SB	2005	2020	10	2	0.20	NO	YES	NO
Thallium	E7	SB	2005	2019	1	0	0.00	YES	YES	NO
Thallium	N2	SB	2005	2019	6	0	0.00	NO	YES	NO
Thallium	N4	SB	2005	2021	7	0	0.00	NO	YES	NO
Thallium	S1	SB	2005	2019	10	1	0.10	NO	YES	NO
Thallium	S2	SB	2005	2020	11	1	0.09	NO	YES	NO
Thallium	S4	SB	2005	2020	11	0	0.00	NO	YES	NO
Thallium	W2	SB	2005	2021	11	0	0.00	NO	YES	NO
Thallium	W4	SB	2005	2020	8	0	0.00	NO	YES	NO
Thallium	E2	SD	2002	2021	20	20	1.00	NO	NO	YES
Thallium	N2	SD	2002	2021	20	20	1.00	NO	NO	YES
Thallium	N5	SD	2002	2021	20	20	1.00	NO	NO	YES
Thallium	S1	SD	2002	2019	18	18	1.00	NO	NO	YES
Thallium	S4	SD	2002	2021	20	19	0.95	NO	NO	YES
Thallium	S8	SD	2002	2021	1	1	1.00	YES	NO	NO
Thallium	E1	SS	2002	2021	19	17	0.89	NO	NO	YES
Thallium	E2	SS	2002	2021	20	19	0.95	NO	NO	YES
Thallium	E5	SS	2002	2021	19	19	1.00	NO	NO	YES
Thallium	E6	SS	2002	2020	19	18	0.95	NO	NO	YES
Thallium	E7	SS	2002	2021	3	3	1.00	YES	NO	NO
Thallium	N2	SS	2002	2021	19	18	0.95	NO	NO	YES
Thallium	N4	SS	2002	2021	20	18	0.90	NO	NO	YES
Thallium	N5	SS	2002	2021	20	19	0.95	NO	NO	YES
Thallium	S1	SS	2002	2019	18	17	0.94	NO	NO	YES
Thallium	S2	SS	2002	2021	20	19	0.95	NO	NO	YES
Thallium	S4	SS	2002	2021	19	18	0.95	NO	NO	YES
Thallium	S8	SS	2002	2021	1	1	1.00	YES	NO	NO
Thallium	W2	SS	2002	2021	19	18	0.95	NO	NO	YES
Thallium	W4	SS	2002	2021	20	20	1.00	NO	NO	YES
Thallium	E7	WW	2005	2020	1	0	0.00	YES	YES	NO
Thallium	N2	WW	2005	2020	4	0	0.00	YES	YES	NO
Thallium	S4	WW	2005	2021	5	0	0.00	YES	YES	NO
Thallium	W4	WW	2005	2021	4	0	0.00	YES	YES	NO
Titanium	E1	FC	2007	2021	5	0	0.00	YES	YES	NO
Titanium	E2	FC	2007	2019	4	0	0.00	YES	YES	NO
Titanium	E5	FC	2007	2021	5	0	0.00	YES	YES	NO
Titanium	E7	FC	2007	2021	1	0	0.00	YES	YES	NO
Titanium	N2	FC	2007	2021	5	1	0.20	YES	YES	NO
Titanium	N4	FC	2007	2020	5	0	0.00	YES	YES	NO
Titanium	S2	FC	2007	2021	3	0	0.00	YES	YES	NO
Titanium	E1	NG	2002	2021	20	19	0.95	NO	NO	YES

Table F-1
Suitability of Data for Site Specific Inorganic Regression Analysis
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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Titanium	E2	NG	2002	2021	20	19	0.95	NO	NO	YES
Titanium	E5	NG	2002	2021	20	19	0.95	NO	NO	YES
Titanium	E6	NG	2002	2020	19	19	1.00	NO	NO	YES
Titanium	E7	NG	2002	2021	3	2	0.67	YES	NO	NO
Titanium	N2	NG	2002	2021	20	19	0.95	NO	NO	YES
Titanium	N4	NG	2002	2021	20	18	0.90	NO	NO	YES
Titanium	N5	NG	2002	2021	20	20	1.00	NO	NO	YES
Titanium	S1	NG	2002	2019	17	17	1.00	NO	NO	YES
Titanium	S2	NG	2002	2021	20	20	1.00	NO	NO	YES
Titanium	S4	NG	2002	2021	20	19	0.95	NO	NO	YES
Titanium	S8	NG	2002	2021	1	1	1.00	YES	NO	NO
Titanium	W2	NG	2002	2021	20	20	1.00	NO	NO	YES
Titanium	W4	NG	2002	2021	20	20	1.00	NO	NO	YES
Titanium	E1	SB	2007	2020	8	0	0.00	NO	YES	NO
Titanium	E2	SB	2007	2020	5	1	0.20	YES	YES	NO
Titanium	E5	SB	2007	2020	8	2	0.25	NO	YES	NO
Titanium	E7	SB	2007	2019	1	0	0.00	YES	YES	NO
Titanium	N2	SB	2007	2019	5	1	0.20	YES	YES	NO
Titanium	N4	SB	2007	2021	6	2	0.33	NO	YES	NO
Titanium	S1	SB	2007	2019	9	1	0.11	NO	YES	NO
Titanium	S2	SB	2007	2020	10	1	0.10	NO	YES	NO
Titanium	S4	SB	2007	2020	10	3	0.30	NO	YES	NO
Titanium	W2	SB	2007	2021	10	1	0.10	NO	YES	NO
Titanium	W4	SB	2007	2020	7	1	0.14	NO	YES	NO
Titanium	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Titanium	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Titanium	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Titanium	S1	SD	1991	2019	29	28	0.97	NO	NO	YES
Titanium	S4	SD	1991	2021	31	30	0.97	NO	NO	YES
Titanium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Titanium	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Titanium	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Titanium	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Titanium	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Titanium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Titanium	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Titanium	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Titanium	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Titanium	S1	SS	1991	2019	28	27	0.96	NO	NO	YES
Titanium	S2	SS	1991	2021	30	29	0.97	NO	NO	YES
Titanium	S4	SS	1991	2021	27	26	0.96	NO	NO	YES
Titanium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Titanium	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Titanium	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Titanium	E7	WW	2010	2020	1	0	0.00	YES	YES	NO
Titanium	N2	WW	2010	2020	3	0	0.00	YES	YES	NO
Titanium	S4	WW	2010	2021	3	0	0.00	YES	YES	NO
Titanium	W4	WW	2010	2021	2	0	0.00	YES	YES	NO
Vanadium	E1	FC	2010	2021	4	0	0.00	YES	YES	NO
Vanadium	E2	FC	2010	2019	3	0	0.00	YES	YES	NO
Vanadium	E5	FC	2010	2021	4	0	0.00	YES	YES	NO
Vanadium	E7	FC	2010	2021	1	0	0.00	YES	YES	NO
Vanadium	N2	FC	2010	2021	4	0	0.00	YES	YES	NO
Vanadium	N4	FC	2010	2020	4	0	0.00	YES	YES	NO
Vanadium	S2	FC	2010	2021	3	0	0.00	YES	YES	NO
Vanadium	E1	NG	2010	2021	12	3	0.25	NO	YES	NO
Vanadium	E2	NG	2010	2021	12	4	0.33	NO	YES	NO
Vanadium	E5	NG	2010	2021	12	8	0.67	NO	NO	YES
Vanadium	E6	NG	2010	2020	11	5	0.45	NO	YES	NO
Vanadium	E7	NG	2010	2021	3	2	0.67	YES	NO	NO
Vanadium	N2	NG	2010	2021	12	6	0.50	NO	NO	YES

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Vanadium	N4	NG	2010	2021	12	3	0.25	NO	YES	NO
Vanadium	N5	NG	2010	2021	12	5	0.42	NO	YES	NO
Vanadium	S1	NG	2010	2019	10	5	0.50	NO	NO	YES
Vanadium	S2	NG	2010	2021	12	6	0.50	NO	NO	YES
Vanadium	S4	NG	2010	2021	12	4	0.33	NO	YES	NO
Vanadium	S8	NG	2010	2021	1	1	1.00	YES	NO	NO
Vanadium	W2	NG	2010	2021	12	6	0.50	NO	NO	YES
Vanadium	W4	NG	2010	2021	12	9	0.75	NO	NO	YES
Vanadium	E1	SB	2010	2020	6	0	0.00	NO	YES	NO
Vanadium	E2	SB	2010	2020	4	0	0.00	YES	YES	NO
Vanadium	E5	SB	2010	2020	6	0	0.00	NO	YES	NO
Vanadium	E7	SB	2010	2019	1	0	0.00	YES	YES	NO
Vanadium	N2	SB	2010	2019	4	0	0.00	YES	YES	NO
Vanadium	N4	SB	2010	2021	5	1	0.20	YES	YES	NO
Vanadium	S1	SB	2010	2019	7	0	0.00	NO	YES	NO
Vanadium	S2	SB	2010	2020	8	0	0.00	NO	YES	NO
Vanadium	S4	SB	2010	2020	8	0	0.00	NO	YES	NO
Vanadium	W2	SB	2010	2021	8	0	0.00	NO	YES	NO
Vanadium	W4	SB	2010	2020	5	1	0.20	YES	YES	NO
Vanadium	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Vanadium	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Vanadium	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Vanadium	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Vanadium	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Vanadium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Vanadium	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Vanadium	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Vanadium	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Vanadium	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Vanadium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Vanadium	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Vanadium	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Vanadium	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Vanadium	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Vanadium	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Vanadium	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Vanadium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Vanadium	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Vanadium	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Vanadium	E7	WW	2010	2020	1	0	0.00	YES	YES	NO
Vanadium	N2	WW	2010	2020	3	0	0.00	YES	YES	NO
Vanadium	S4	WW	2010	2021	3	0	0.00	YES	YES	NO
Vanadium	W4	WW	2010	2021	2	0	0.00	YES	YES	NO
Zinc	E1	FC	1991	2021	7	7	1.00	NO	NO	YES
Zinc	E2	FC	1991	2019	7	7	1.00	NO	NO	YES
Zinc	E5	FC	1991	2021	7	7	1.00	NO	NO	YES
Zinc	E7	FC	1991	2021	1	1	1.00	YES	NO	NO
Zinc	N2	FC	1991	2021	7	7	1.00	NO	NO	YES
Zinc	N4	FC	1991	2020	6	6	1.00	NO	NO	YES
Zinc	S2	FC	1991	2021	6	6	1.00	NO	NO	YES
Zinc	E1	NG	1991	2021	31	31	1.00	NO	NO	YES
Zinc	E2	NG	1991	2021	31	31	1.00	NO	NO	YES
Zinc	E5	NG	1991	2021	30	29	0.97	NO	NO	YES
Zinc	E6	NG	1991	2020	21	21	1.00	NO	NO	YES
Zinc	E7	NG	1991	2021	3	3	1.00	YES	NO	NO
Zinc	N2	NG	1991	2021	32	32	1.00	NO	NO	YES
Zinc	N4	NG	1991	2021	21	21	1.00	NO	NO	YES
Zinc	N5	NG	1991	2021	20	20	1.00	NO	NO	YES
Zinc	S1	NG	1991	2019	29	29	1.00	NO	NO	YES
Zinc	S2	NG	1991	2021	32	32	1.00	NO	NO	YES
Zinc	S4	NG	1991	2021	29	28	0.97	NO	NO	YES

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Suitability of Data for Site Specific Inorganic Regression Analysis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Zinc	S8	NG	1991	2021	1	1	1.00	YES	NO	NO
Zinc	W2	NG	1991	2021	31	31	1.00	NO	NO	YES
Zinc	W4	NG	1991	2021	25	25	1.00	NO	NO	YES
Zinc	E1	SB	1991	2020	19	19	1.00	NO	NO	YES
Zinc	E2	SB	1991	2020	13	13	1.00	NO	NO	YES
Zinc	E5	SB	1991	2020	19	19	1.00	NO	NO	YES
Zinc	E7	SB	1991	2019	1	1	1.00	YES	NO	NO
Zinc	N2	SB	1991	2019	17	17	1.00	NO	NO	YES
Zinc	N4	SB	1991	2021	7	7	1.00	NO	NO	YES
Zinc	S1	SB	1991	2019	21	21	1.00	NO	NO	YES
Zinc	S2	SB	1991	2020	22	22	1.00	NO	NO	YES
Zinc	S4	SB	1991	2020	19	19	1.00	NO	NO	YES
Zinc	W2	SB	1991	2021	22	22	1.00	NO	NO	YES
Zinc	W4	SB	1991	2020	12	12	1.00	NO	NO	YES
Zinc	E2	SD	1991	2021	31	31	1.00	NO	NO	YES
Zinc	N2	SD	1991	2021	31	31	1.00	NO	NO	YES
Zinc	N5	SD	1991	2021	20	20	1.00	NO	NO	YES
Zinc	S1	SD	1991	2019	29	29	1.00	NO	NO	YES
Zinc	S4	SD	1991	2021	31	31	1.00	NO	NO	YES
Zinc	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Zinc	E1	SS	1991	2021	28	28	1.00	NO	NO	YES
Zinc	E2	SS	1991	2021	28	28	1.00	NO	NO	YES
Zinc	E5	SS	1991	2021	28	28	1.00	NO	NO	YES
Zinc	E6	SS	1991	2020	21	21	1.00	NO	NO	YES
Zinc	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Zinc	N2	SS	1991	2021	28	28	1.00	NO	NO	YES
Zinc	N4	SS	1991	2021	21	21	1.00	NO	NO	YES
Zinc	N5	SS	1991	2021	20	20	1.00	NO	NO	YES
Zinc	S1	SS	1991	2019	28	28	1.00	NO	NO	YES
Zinc	S2	SS	1991	2021	30	30	1.00	NO	NO	YES
Zinc	S4	SS	1991	2021	27	27	1.00	NO	NO	YES
Zinc	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Zinc	W2	SS	1991	2021	27	27	1.00	NO	NO	YES
Zinc	W4	SS	1991	2021	22	22	1.00	NO	NO	YES
Zinc	E7	WW	1991	2020	1	1	1.00	YES	NO	NO
Zinc	N2	WW	1991	2020	6	6	1.00	NO	NO	YES
Zinc	S4	WW	1991	2021	8	8	1.00	NO	NO	YES
Zinc	W4	WW	1991	2021	4	4	1.00	YES	NO	NO
Zirconium	E1	FC	2003	2021	6	0	0.00	NO	YES	NO
Zirconium	E2	FC	2003	2019	5	0	0.00	YES	YES	NO
Zirconium	E5	FC	2003	2021	6	0	0.00	NO	YES	NO
Zirconium	E7	FC	2003	2021	1	0	0.00	YES	YES	NO
Zirconium	N2	FC	2003	2021	6	0	0.00	NO	YES	NO
Zirconium	N4	FC	2003	2020	6	0	0.00	NO	YES	NO
Zirconium	S2	FC	2003	2021	4	0	0.00	YES	YES	NO
Zirconium	E1	NG	2003	2021	19	1	0.05	NO	YES	NO
Zirconium	E2	NG	2003	2021	19	0	0.00	NO	YES	NO
Zirconium	E5	NG	2003	2021	19	1	0.05	NO	YES	NO
Zirconium	E6	NG	2003	2020	18	0	0.00	NO	YES	NO
Zirconium	E7	NG	2003	2021	3	0	0.00	YES	YES	NO
Zirconium	N2	NG	2003	2021	19	0	0.00	NO	YES	NO
Zirconium	N4	NG	2003	2021	19	1	0.05	NO	YES	NO
Zirconium	N5	NG	2003	2021	19	0	0.00	NO	YES	NO
Zirconium	S1	NG	2003	2019	17	0	0.00	NO	YES	NO
Zirconium	S2	NG	2003	2021	19	1	0.05	NO	YES	NO
Zirconium	S4	NG	2003	2021	19	1	0.05	NO	YES	NO
Zirconium	S8	NG	2003	2021	1	1	1.00	YES	NO	NO
Zirconium	W2	NG	2003	2021	19	0	0.00	NO	YES	NO
Zirconium	W4	NG	2003	2021	19	1	0.05	NO	YES	NO
Zirconium	E1	SB	2003	2020	10	0	0.00	NO	YES	NO
Zirconium	E2	SB	2003	2020	6	0	0.00	NO	YES	NO

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Suitability of Data for Site Specific Inorganic Regression Analysis
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	Number of Detected Samples	Proportion Detected	n<6 ?	<50% Detected	Suitable for Regression
Zirconium	E5	SB	2003	2020	10	0	0.00	NO	YES	NO
Zirconium	E7	SB	2003	2019	1	0	0.00	YES	YES	NO
Zirconium	N2	SB	2003	2019	7	0	0.00	NO	YES	NO
Zirconium	N4	SB	2003	2021	7	0	0.00	NO	YES	NO
Zirconium	S1	SB	2003	2019	12	0	0.00	NO	YES	NO
Zirconium	S2	SB	2003	2020	13	0	0.00	NO	YES	NO
Zirconium	S4	SB	2003	2020	13	0	0.00	NO	YES	NO
Zirconium	W2	SB	2003	2021	12	0	0.00	NO	YES	NO
Zirconium	W4	SB	2003	2020	9	0	0.00	NO	YES	NO
Zirconium	E2	SD	1991	2021	31	21	0.68	NO	NO	YES
Zirconium	N2	SD	1991	2021	31	15	0.48	NO	YES	NO
Zirconium	N5	SD	1991	2021	20	15	0.75	NO	NO	YES
Zirconium	S1	SD	1991	2019	29	14	0.48	NO	YES	NO
Zirconium	S4	SD	1991	2021	31	18	0.58	NO	NO	YES
Zirconium	S8	SD	1991	2021	1	1	1.00	YES	NO	NO
Zirconium	E1	SS	1991	2021	28	10	0.36	NO	YES	NO
Zirconium	E2	SS	1991	2021	28	11	0.39	NO	YES	NO
Zirconium	E5	SS	1991	2021	28	11	0.39	NO	YES	NO
Zirconium	E6	SS	1991	2020	21	10	0.48	NO	YES	NO
Zirconium	E7	SS	1991	2021	3	3	1.00	YES	NO	NO
Zirconium	N2	SS	1991	2021	28	21	0.75	NO	NO	YES
Zirconium	N4	SS	1991	2021	21	13	0.62	NO	NO	YES
Zirconium	N5	SS	1991	2021	20	12	0.60	NO	NO	YES
Zirconium	S1	SS	1991	2019	28	14	0.50	NO	NO	YES
Zirconium	S2	SS	1991	2021	30	12	0.40	NO	YES	NO
Zirconium	S4	SS	1991	2021	27	14	0.52	NO	NO	YES
Zirconium	S8	SS	1991	2021	1	1	1.00	YES	NO	NO
Zirconium	W2	SS	1991	2021	27	11	0.41	NO	YES	NO
Zirconium	W4	SS	1991	2021	22	14	0.64	NO	NO	YES
Zirconium	E7	WW	1991	2020	1	0	0.00	YES	YES	NO
Zirconium	N2	WW	1991	2020	6	0	0.00	NO	YES	NO
Zirconium	S4	WW	1991	2021	8	0	0.00	NO	YES	NO
Zirconium	W4	WW	1991	2021	4	0	0.00	YES	YES	NO

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Aluminum	E1	NG	2002	2021	20	0.032	-0.009	20.003	0.451		
Aluminum	E2	NG	2002	2021	20	0.033	0.013	-24.897	0.441		
Aluminum	E5	NG	2002	2021	20	0.311	0.058	-113.896	0.011		
Aluminum	E6	NG	2002	2020	19	0.015	-0.006	14.468	0.622		
Aluminum	N2	NG	2002	2021	20	0.096	-0.022	46.547	0.183		
Aluminum	N4	NG	2002	2021	20	0.004	-0.006	13.141	0.788		
Aluminum	N5	NG	2002	2021	20	0.008	-0.006	13.896	0.712		
Aluminum	S1	NG	2002	2019	17	0.006	0.006	-10.405	0.766		
Aluminum	S2	NG	2002	2021	20	<0.001	<0.001	1.64	0.99		
Aluminum	S4	NG	2002	2021	20	0.197	0.036	-69.98	0.05		
Aluminum	W2	NG	2002	2021	20	<0.001	<0.001	1.746	0.995		
Aluminum	W4	NG	2002	2021	20	0.013	-0.009	20.582	0.635		
Aluminum	E2	SD	1991	2021	31	0.213	0.006	-7.143	0.009		
Aluminum	N2	SD	1991	2021	31	0.343	0.01	-15.081	0.001	*	Increasing
Aluminum	N5	SD	1991	2021	20	0.031	0.004	-3.682	0.457		
Aluminum	S1	SD	1991	2019	29	0.032	0.002	-0.031	0.351		
Aluminum	S4	SD	1991	2021	31	0.161	0.003	-1.199	0.025		
Aluminum	E1	SS	1991	2021	28	0.072	0.003	-1.153	0.169		
Aluminum	E2	SS	1991	2021	28	0.254	0.006	-8.673	0.006		
Aluminum	E5	SS	1991	2021	28	0.075	0.003	-1.651	0.158		
Aluminum	E6	SS	1991	2020	21	0.091	0.005	-5.344	0.184		
Aluminum	N2	SS	1991	2021	28	0.351	0.007	-9.406	0.001	*	Increasing
Aluminum	N4	SS	1991	2021	21	0.189	0.006	-7.108	0.049		
Aluminum	N5	SS	1991	2021	20	0.105	0.003	-1.402	0.164		
Aluminum	S1	SS	1991	2019	28	0.301	0.005	-6.581	0.003		
Aluminum	S2	SS	1991	2021	30	0.296	0.005	-6.156	0.002	*	Increasing
Aluminum	S4	SS	1991	2021	27	0.459	0.009	-13.614	<0.001	*	Increasing
Aluminum	W2	SS	1991	2021	27	0.451	0.006	-7.087	<0.001	*	Increasing
Aluminum	W4	SS	1991	2021	22	0.204	0.004	-4.212	0.035		
Arsenic	N5	NG	2003	2021	19	0.423	-0.042	83.734	0.003		
Arsenic	E2	SD	1991	2021	31	0.072	0.002	-2.987	0.144		
Arsenic	N2	SD	1991	2021	31	0.149	0.005	-9.431	0.032		
Arsenic	N5	SD	1991	2021	19	0.042	0.004	-6.865	0.402		
Arsenic	S1	SD	1991	2019	29	0.002	0.001	-0.388	0.839		
Arsenic	S4	SD	1991	2021	31	0.285	0.005	-9.57	0.002	*	Increasing
Arsenic	E1	SS	1991	2021	28	0.122	0.009	-17.491	0.069		
Arsenic	E2	SS	1991	2021	28	0.185	0.005	-9.123	0.022		
Arsenic	E5	SS	1991	2021	28	0.036	0.001	-2.16	0.335		
Arsenic	E6	SS	1991	2020	21	0.076	0.005	-8.376	0.227		
Arsenic	N2	SS	1991	2021	28	0.356	0.005	-9.271	0.001	*	Increasing
Arsenic	N4	SS	1991	2021	21	0.24	0.005	-8.843	0.024		
Arsenic	N5	SS	1991	2021	20	0.359	0.005	-9.297	0.005		
Arsenic	S1	SS	1991	2019	28	0.108	0.003	-4.535	0.088		
Arsenic	S2	SS	1991	2021	30	0.164	0.003	-5.151	0.026		
Arsenic	S4	SS	1991	2021	27	0.029	0.001	-2.23	0.398		
Arsenic	W2	SS	1991	2021	27	0.434	0.004	-7.384	<0.001	*	Increasing
Arsenic	W4	SS	1991	2021	22	0.261	0.005	-9.41	0.015		
Barium	E1	NG	1991	2021	31	0.083	-0.009	19.113	0.116		
Barium	E2	NG	1991	2021	31	<0.001	-0.001	2.477	0.911		
Barium	E5	NG	1991	2021	30	0.005	-0.002	5.678	0.724		
Barium	E6	NG	1991	2020	21	0.043	-0.011	22.193	0.367		
Barium	N2	NG	1991	2021	32	0.117	-0.013	27.14	0.055		
Barium	N4	NG	1991	2021	21	0.067	0.007	-13.809	0.256		
Barium	N5	NG	1991	2021	20	0.028	-0.004	10.107	0.48		
Barium	S1	NG	1991	2019	29	0.019	0.006	-10.705	0.471		
Barium	S2	NG	1991	2021	32	0.059	-0.008	17.168	0.181		
Barium	S4	NG	1991	2021	28	0.205	-0.015	30.767	0.015		
Barium	W2	NG	1991	2021	31	0.004	0.002	-2.681	0.747		
Barium	W4	NG	1991	2021	25	0.006	0.003	-4.901	0.721		
Barium	E1	SB	1991	2020	19	0.411	0.014	-27.288	0.003		
Barium	E2	SB	1991	2020	13	0.02	-0.008	15.631	0.649		

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Barium	E5	SB	1991	2020	19	0.013	0.002	-4.041	0.641		
Barium	N2	SB	1991	2019	17	0.031	-0.009	17.968	0.497		
Barium	N4	SB	1991	2021	7	0.027	0.014	-28.02	0.725		
Barium	S1	SB	1991	2019	21	0.118	0.007	-13.777	0.127		
Barium	S2	SB	1991	2020	22	0.171	0.008	-16.76	0.055		
Barium	S4	SB	1991	2020	19	0.073	0.005	-10.844	0.265		
Barium	W2	SB	1991	2021	22	0.32	0.012	-23.826	0.006		
Barium	W4	SB	1991	2020	12	0.03	0.004	-7.149	0.59		
Barium	E2	SD	1991	2021	31	0.06	0.003	-3.551	0.185		
Barium	N2	SD	1991	2021	31	0.272	0.007	-11.915	0.003		
Barium	N5	SD	1991	2021	20	<0.001	<0.001	2.29	0.983		
Barium	S1	SD	1991	2019	29	0.039	-0.002	5.884	0.303		
Barium	S4	SD	1991	2021	31	0.068	0.002	-1.019	0.158		
Barium	E1	SS	1991	2021	28	0.031	-0.002	5.909	0.368		
Barium	E2	SS	1991	2021	28	0.061	0.003	-3.519	0.207		
Barium	E5	SS	1991	2021	28	0.002	<0.001	0.987	0.836		
Barium	E6	SS	1991	2020	21	<0.001	<0.001	1.438	0.965		
Barium	N2	SS	1991	2021	28	0.121	0.003	-4.57	0.07		
Barium	N4	SS	1991	2021	21	0.003	0.001	0.627	0.828		
Barium	N5	SS	1991	2021	20	0.119	-0.003	8.406	0.136		
Barium	S1	SS	1991	2019	28	0.116	0.003	-4.075	0.077		
Barium	S2	SS	1991	2021	30	0.058	0.002	-1.716	0.199		
Barium	S4	SS	1991	2021	27	0.497	0.011	-19.229	<0.001	*	Increasing
Barium	W2	SS	1991	2021	27	0.049	0.001	-0.282	0.269		
Barium	W4	SS	1991	2021	22	<0.001	<0.001	1.776	0.953		
Barium	N2	WW	1991	2020	6	0.296	0.012	-23.308	0.264		
Barium	S4	WW	1991	2021	8	0.311	0.012	-23.584	0.151		
Beryllium	E2	SD	1991	2021	31	0.291	0.008	-15.367	0.002	*	Increasing
Beryllium	N2	SD	1991	2021	31	0.347	0.009	-18.916	<0.001	*	Increasing
Beryllium	N5	SD	1991	2021	20	0.039	0.004	-8.494	0.407		
Beryllium	S1	SD	1991	2019	29	0.029	0.002	-3.933	0.377		
Beryllium	S4	SD	1991	2021	31	0.253	0.004	-7.215	0.004		
Beryllium	E1	SS	1991	2021	28	<0.001	<0.001	-0.587	0.935		
Beryllium	E2	SS	1991	2021	28	0.108	0.005	-10.227	0.088		
Beryllium	E5	SS	1991	2021	28	0.01	0.001	-2.223	0.611		
Beryllium	E6	SS	1991	2020	21	0.021	0.002	-5.023	0.534		
Beryllium	N2	SS	1991	2021	28	0.207	0.004	-7.601	0.015		
Beryllium	N4	SS	1991	2021	21	0.17	0.005	-10.545	0.063		
Beryllium	N5	SS	1991	2021	20	0.001	<0.001	0.265	0.923		
Beryllium	S1	SS	1991	2019	28	0.095	0.003	-5.578	0.11		
Beryllium	S2	SS	1991	2021	30	0.16	0.004	-7.887	0.028		
Beryllium	S4	SS	1991	2021	27	0.476	0.009	-17.987	<0.001	*	Increasing
Beryllium	W2	SS	1991	2021	27	0.208	0.004	-7.386	0.017		
Beryllium	W4	SS	1991	2021	22	0.013	0.001	-2.428	0.62		
Boron	N2	FC	2005	2021	6	0.653	0.005	-9.962	0.052		
Boron	E1	NG	1999	2021	23	0.001	0.001	-1.006	0.887		
Boron	E2	NG	1999	2021	23	0.03	0.008	-15.36	0.431		
Boron	E5	NG	1999	2021	23	0.028	0.011	-21.003	0.445		
Boron	E6	NG	1999	2020	21	0.12	0.027	-53.073	0.124		
Boron	N2	NG	1999	2021	24	0.054	0.009	-17.053	0.277		
Boron	N4	NG	1999	2021	21	0.01	0.006	-10.319	0.669		
Boron	N5	NG	1999	2021	20	0.044	0.013	-25.487	0.373		
Boron	S1	NG	1999	2019	21	0.103	0.022	-42.886	0.155		
Boron	S2	NG	1999	2021	24	0.033	0.01	-19.493	0.399		
Boron	S4	NG	1999	2021	23	0.039	-0.011	22.153	0.365		
Boron	W2	NG	1999	2021	23	0.005	-0.003	7.899	0.747		
Boron	W4	NG	1999	2021	23	0.016	0.007	-13.225	0.569		
Boron	E1	SB	1991	2020	19	0.011	0.001	-1.056	0.663		
Boron	E2	SB	1991	2020	13	0.038	0.001	-0.872	0.524		
Boron	E5	SB	1991	2020	19	0.015	0.001	-1.034	0.616		
Boron	N2	SB	1991	2019	17	0.005	-0.001	3.01	0.798		

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Boron	N4	SB	1991	2021	7	0.039	0.009	-16.993	0.673		
Boron	S1	SB	1991	2019	21	0.153	0.004	-5.873	0.08		
Boron	S2	SB	1991	2020	22	0.197	0.004	-7.369	0.039		
Boron	S4	SB	1991	2020	19	0.251	0.005	-9.567	0.029		
Boron	W2	SB	1991	2021	22	0.012	0.001	-1.068	0.629		
Boron	W4	SB	1991	2020	12	0.162	0.004	-5.651	0.195		
Boron	E2	SD	1995	2021	27	0.163	0.007	-13.061	0.037		
Boron	N2	SD	1995	2021	27	0.179	0.008	-14.955	0.028		
Boron	N5	SD	1995	2021	20	0.081	0.007	-12.415	0.224		
Boron	S1	SD	1995	2019	25	0.016	0.002	-3.209	0.546		
Boron	S4	SD	1995	2021	27	0.202	0.01	-18.015	0.019		
Boron	E1	SS	1998	2021	22	0.025	0.004	-7.281	0.478		
Boron	E2	SS	1998	2021	22	0.011	-0.002	5.77	0.646		
Boron	E5	SS	1998	2021	22	0.019	0.003	-6.077	0.537		
Boron	E6	SS	1998	2020	21	0.098	0.006	-11.923	0.167		
Boron	N2	SS	1998	2021	22	0.06	0.006	-10.62	0.274		
Boron	N4	SS	1998	2021	21	0.156	0.013	-24.41	0.077		
Boron	N5	SS	1998	2021	20	0.004	0.001	-0.725	0.787		
Boron	S1	SS	1998	2019	21	0.041	0.005	-9.001	0.381		
Boron	S2	SS	1998	2021	23	0.063	0.006	-11.211	0.249		
Boron	S4	SS	1998	2021	22	0.184	0.012	-22.507	0.046		
Boron	W2	SS	1998	2021	20	0.224	0.012	-22.839	0.035		
Boron	W4	SS	1998	2021	22	0.041	0.005	-9.548	0.366		
Cadmium	E5	NG	2001	2021	21	0.033	-0.009	17.309	0.432		
Cadmium	E6	NG	2001	2020	20	0.093	0.015	-31.521	0.192		
Cadmium	N5	NG	2001	2021	20	0.281	-0.025	49.545	0.016		
Cadmium	S1	NG	2001	2019	19	0.043	-0.012	22.505	0.393		
Cadmium	S2	NG	2001	2021	22	0.048	-0.01	19.622	0.325		
Cadmium	W4	NG	2001	2021	21	0.023	-0.006	11.476	0.508		
Cadmium	N2	SB	2005	2019	6	0.137	0.009	-18.427	0.47		
Cadmium	N4	SB	2005	2021	7	0.471	0.006	-14.044	0.089		
Cadmium	W2	SB	2005	2021	11	0.415	-0.037	74.075	0.032		
Cadmium	W4	SB	2005	2020	8	0.156	0.021	-44.117	0.334		
Cadmium	E2	SD	1991	2021	31	0.059	-0.006	11.523	0.187		
Cadmium	N2	SD	1991	2021	31	0.007	0.002	-3.755	0.643		
Cadmium	N5	SD	1991	2021	20	0.113	-0.013	26.467	0.148		
Cadmium	S1	SD	1991	2019	29	0.026	-0.004	6.964	0.407		
Cadmium	S4	SD	1991	2021	31	0.31	-0.013	24.851	0.001	*	Decreasing
Cadmium	E1	SS	1991	2021	28	0.002	-0.001	1	0.832		
Cadmium	E2	SS	1991	2021	28	0.007	-0.001	1.57	0.674		
Cadmium	E5	SS	1991	2021	28	0.057	-0.004	8.247	0.222		
Cadmium	E6	SS	1991	2020	21	0.131	-0.007	13.966	0.107		
Cadmium	N2	SS	1991	2021	28	0.009	-0.001	2.387	0.633		
Cadmium	N4	SS	1991	2021	21	0.117	0.006	-12.357	0.129		
Cadmium	N5	SS	1991	2021	20	0.23	-0.006	12.643	0.032		
Cadmium	S1	SS	1991	2019	28	<0.001	<0.001	-0.997	0.918		
Cadmium	S2	SS	1991	2021	30	0.128	-0.009	16.921	0.052		
Cadmium	S4	SS	1991	2021	27	<0.001	<0.001	-0.279	0.974		
Cadmium	W2	SS	1991	2021	27	0.202	-0.005	8.863	0.019		
Cadmium	W4	SS	1991	2021	22	0.02	-0.002	3.842	0.527		
Calcium	E1	FC	1991	2021	7	0.683	-0.024	49.776	0.022		
Calcium	E2	FC	1991	2019	7	0.344	-0.011	24.677	0.166		
Calcium	E5	FC	1991	2021	7	0.661	-0.015	31.772	0.026		
Calcium	N2	FC	1991	2021	7	0.448	-0.017	36.673	0.1		
Calcium	N4	FC	1991	2020	6	0.756	-0.017	36.578	0.024		
Calcium	S2	FC	1991	2021	6	0.012	-0.001	4.325	0.836		
Calcium	E1	NG	1991	2021	31	0.003	0.001	2.007	0.758		
Calcium	E2	NG	1991	2021	31	0.002	0.001	2.605	0.815		
Calcium	E5	NG	1991	2021	30	0.186	0.012	-20.184	0.017		
Calcium	E6	NG	1991	2020	21	0.038	0.006	-8.766	0.395		
Calcium	N2	NG	1991	2021	32	0.011	-0.002	8.192	0.567		

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Calcium	N4	NG	1991	2021	21	0.029	-0.006	15.691	0.464		
Calcium	N5	NG	1991	2021	20	0.001	0.001	1.89	0.882		
Calcium	S1	NG	1991	2019	29	0.094	0.008	-13.203	0.105		
Calcium	S2	NG	1991	2021	32	0.001	0.001	2.351	0.864		
Calcium	S4	NG	1991	2021	29	0.045	0.005	-5.892	0.269		
Calcium	W2	NG	1991	2021	31	0.013	0.002	-0.062	0.542		
Calcium	W4	NG	1991	2021	25	0.103	-0.011	26.874	0.118		
Calcium	E1	SB	1991	2020	19	0.192	0.005	-7.69	0.061		
Calcium	E2	SB	1991	2020	13	0.132	0.003	-2.432	0.223		
Calcium	E5	SB	1991	2020	19	0.15	0.003	-3.515	0.101		
Calcium	N2	SB	1991	2019	17	<0.001	<0.001	3.127	0.978		
Calcium	N4	SB	1991	2021	7	0.004	-0.002	7.437	0.897		
Calcium	S1	SB	1991	2019	21	0.258	0.006	-8.309	0.019		
Calcium	S2	SB	1991	2020	22	0.412	0.007	-11.101	0.001	*	Increasing
Calcium	S4	SB	1991	2020	19	0.591	0.01	-17.441	<0.001	*	Increasing
Calcium	W2	SB	1991	2021	22	0.01	0.002	-0.845	0.657		
Calcium	W4	SB	1991	2020	12	0.135	0.007	-9.934	0.24		
Calcium	E2	SD	1991	2021	31	0.055	-0.003	10.009	0.205		
Calcium	N2	SD	1991	2021	31	0.081	-0.004	13.335	0.121		
Calcium	N5	SD	1991	2021	20	0.082	-0.009	22.81	0.222		
Calcium	S1	SD	1991	2019	29	0.001	0.001	2.28	0.843		
Calcium	S4	SD	1991	2021	31	<0.001	<0.001	4.256	0.936		
Calcium	E1	SS	1991	2021	28	0.119	-0.005	13.291	0.073		
Calcium	E2	SS	1991	2021	28	0.01	0.002	-0.024	0.608		
Calcium	E5	SS	1991	2021	28	0.214	-0.007	18.227	0.013		
Calcium	E6	SS	1991	2020	21	0.094	-0.006	15.564	0.175		
Calcium	N2	SS	1991	2021	28	0.08	-0.002	7.908	0.146		
Calcium	N4	SS	1991	2021	21	0.074	0.015	-25.331	0.234		
Calcium	N5	SS	1991	2021	20	0.001	-0.001	6.887	0.894		
Calcium	S1	SS	1991	2019	28	0.001	<0.001	3.221	0.902		
Calcium	S2	SS	1991	2021	30	0.174	0.006	-8.004	0.022		
Calcium	S4	SS	1991	2021	27	0.816	0.026	-47.885	<0.001	*	Increasing
Calcium	W2	SS	1991	2021	27	0.003	0.001	2.656	0.773		
Calcium	W4	SS	1991	2021	22	0.107	-0.002	8.429	0.137		
Calcium	N2	WW	1991	2020	6	0.254	0.007	-12.272	0.309		
Calcium	S4	WW	1991	2021	8	0.391	0.009	-15.299	0.097		
Chloride	E1	FC	1991	2021	7	0.519	0.013	-22.782	0.068		
Chloride	E2	FC	1991	2019	6	0.333	-0.009	21.669	0.23		
Chloride	E5	FC	1991	2021	7	<0.001	<0.001	2.962	0.996		
Chloride	N2	FC	1991	2021	7	0.42	0.007	-10.815	0.116		
Chloride	N4	FC	1991	2020	6	0.575	0.011	-19.431	0.08		
Chloride	S2	FC	1991	2021	6	0.059	-0.005	12.664	0.642		
Chloride	E1	NG	1991	2021	26	0.036	0.006	-8.086	0.353		
Chloride	E2	NG	1991	2021	26	0.035	-0.007	18.064	0.36		
Chloride	E5	NG	1991	2021	26	0.092	0.017	-30.566	0.133		
Chloride	E6	NG	1991	2020	21	0.033	0.017	-29.352	0.433		
Chloride	N2	NG	1991	2021	27	0.089	0.013	-22.241	0.131		
Chloride	N4	NG	1991	2021	21	0.062	0.01	-16.503	0.277		
Chloride	N5	NG	1991	2021	20	0.068	-0.008	20.516	0.267		
Chloride	S1	NG	1991	2019	24	0.02	0.013	-21.666	0.507		
Chloride	S2	NG	1991	2021	27	0.076	0.009	-14.58	0.165		
Chloride	S4	NG	1991	2021	26	0.216	0.022	-40.184	0.017		
Chloride	W2	NG	1991	2021	26	0.033	0.007	-10.34	0.376		
Chloride	W4	NG	1991	2021	25	0.16	0.026	-48.444	0.047		
Chloride	E1	SB	1991	2020	15	0.162	0.035	-68.056	0.136		
Chloride	E2	SB	1991	2020	10	0.053	0.018	-34.703	0.522		
Chloride	E5	SB	1991	2020	16	0.211	0.046	-91.18	0.073		
Chloride	N2	SB	1991	2019	12	0.014	0.01	-17.701	0.715		
Chloride	N4	SB	1991	2021	7	0.596	-0.052	106.677	0.042		
Chloride	S1	SB	1991	2019	17	0.014	0.009	-16.733	0.648		
Chloride	S2	SB	1991	2020	18	0.016	0.009	-16.366	0.621		

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Chloride	S4	SB	1991	2020	17	0.056	0.018	-34.328	0.36		
Chloride	W2	SB	1991	2021	19	0.109	0.029	-56.423	0.167		
Chloride	W4	SB	1991	2020	12	0.124	0.026	-50.931	0.261		
Chloride	E2	SD	1991	2021	25	0.143	0.016	-31.201	0.063		
Chloride	N2	SD	1991	2021	26	0.003	0.003	-3.349	0.794		
Chloride	N5	SD	1991	2021	20	0.28	-0.037	75.945	0.017		
Chloride	S1	SD	1991	2019	24	0.001	-0.003	6.509	0.902		
Chloride	S4	SD	1991	2021	26	0.012	-0.005	10.639	0.593		
Chloride	E1	SS	2009	2021	13	0.309	0.066	-132.149	0.048		
Chloride	E2	SS	2009	2021	13	0.33	0.048	-95.805	0.04		
Chloride	E5	SS	2009	2021	13	0.198	0.058	-115.778	0.127		
Chloride	E6	SS	2009	2020	12	0.009	0.006	-11.228	0.763		
Chloride	N2	SS	2009	2021	13	0.285	0.048	-96.254	0.06		
Chloride	N4	SS	2009	2021	13	0.265	0.051	-102.265	0.072		
Chloride	N5	SS	2009	2021	13	0.155	-0.017	34.475	0.183		
Chloride	S1	SS	2009	2019	11	0.036	0.016	-31.359	0.576		
Chloride	S2	SS	2009	2021	13	0.04	0.011	-22.364	0.512		
Chloride	S4	SS	2009	2021	13	0.186	0.039	-77.924	0.141		
Chloride	W2	SS	2009	2021	13	0.01	0.009	-18.027	0.741		
Chloride	W4	SS	2009	2021	13	0.484	0.063	-126.986	0.008		
Chloride	N2	WW	1991	2020	6	0.409	0.015	-27.225	0.171		
Chloride	S4	WW	1991	2021	7	0.217	-0.014	31.496	0.292		
Chromium	E1	NG	2002	2021	40	0.417	-0.049	99.397	<0.001	*	Decreasing
Chromium	E2	NG	2002	2021	40	0.196	-0.033	66.599	0.004		
Chromium	E5	NG	2002	2021	40	0.063	-0.02	39.771	0.118		
Chromium	E6	NG	2002	2020	38	0.146	-0.019	37.762	0.018		
Chromium	N2	NG	2002	2021	40	0.195	-0.036	73.31	0.004		
Chromium	N4	NG	2002	2021	40	0.193	-0.035	69.806	0.005		
Chromium	N5	NG	2002	2021	40	0.289	-0.039	78.843	<0.001	*	Decreasing
Chromium	S1	NG	2002	2019	34	0.002	-0.002	5.09	0.825		
Chromium	S2	NG	2002	2021	40	0.16	-0.025	50.358	0.011		
Chromium	S4	NG	2002	2021	40	0.154	-0.03	60.971	0.012		
Chromium	W2	NG	2002	2021	40	0.037	-0.013	26.765	0.237		
Chromium	W4	NG	2002	2021	40	0.134	-0.031	62.576	0.02		
Chromium	E2	SB	2002	2020	6	0.657	-0.052	104.722	0.051		
Chromium	W4	SB	2002	2020	20	0.205	-0.04	78.972	0.045		
Chromium	E2	SD	1991	2021	62	0.137	0.003	-5.265	0.003		
Chromium	N2	SD	1991	2021	62	0.396	0.008	-14.144	<0.001	*	Increasing
Chromium	N5	SD	1991	2021	40	0.01	0.002	-2.236	0.544		
Chromium	S1	SD	1991	2019	58	0.049	-0.003	7.034	0.095		
Chromium	S4	SD	1991	2021	62	0.157	0.002	-3.389	0.001	*	Increasing
Chromium	E1	SS	1991	2021	56	0.005	0.001	0.056	0.603		
Chromium	E2	SS	1991	2021	56	0.153	0.004	-7.603	0.003		
Chromium	E5	SS	1991	2021	56	0.028	0.001	-1.486	0.215		
Chromium	E6	SS	1991	2020	42	0.002	0.001	0.049	0.766		
Chromium	N2	SS	1991	2021	56	0.147	0.004	-5.7	0.004		
Chromium	N4	SS	1991	2021	42	0.151	0.005	-8.617	0.011		
Chromium	N5	SS	1991	2021	40	0.01	0.001	-0.013	0.533		
Chromium	S1	SS	1991	2019	56	0.204	0.003	-4.681	<0.001	*	Increasing
Chromium	S2	SS	1991	2021	60	0.161	0.003	-4.118	0.001	*	Increasing
Chromium	S4	SS	1991	2021	54	0.463	0.007	-12.883	<0.001	*	Increasing
Chromium	W2	SS	1991	2021	54	0.328	0.003	-5.118	<0.001	*	Increasing
Chromium	W4	SS	1991	2021	44	0.099	0.002	-3.405	0.037		
Cobalt	E5	NG	2003	2021	19	0.021	0.008	-17.944	0.558		
Cobalt	E6	NG	2003	2020	18	0.143	0.016	-33.124	0.122		
Cobalt	N2	NG	2003	2021	19	0.331	-0.015	29.334	0.01		
Cobalt	N4	NG	2003	2021	19	0.158	-0.018	35.999	0.092		
Cobalt	N5	NG	2003	2021	19	0.096	-0.013	25.035	0.198		
Cobalt	S1	NG	2003	2019	17	<0.001	0.002	-4.026	0.933		
Cobalt	S2	NG	2003	2021	19	0.005	-0.003	6.062	0.767		
Cobalt	W2	NG	2003	2021	19	0.277	-0.03	59.115	0.021		

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Cobalt	W4	NG	2003	2021	19	0.14	-0.023	44.919	0.115		
Cobalt	E2	SD	1991	2021	31	0.002	<0.001	0.423	0.82		
Cobalt	N2	SD	1991	2021	31	0.419	0.004	-7.9	<0.001	*	Increasing
Cobalt	N5	SD	1991	2021	20	0.002	-0.001	2.232	0.857		
Cobalt	S1	SD	1991	2019	29	0.132	-0.003	6.731	0.052		
Cobalt	S4	SD	1991	2021	31	0.082	0.001	-1.828	0.118		
Cobalt	E1	SS	1991	2021	28	0.02	-0.002	4.506	0.476		
Cobalt	E2	SS	1991	2021	28	0.012	0.001	-1.742	0.586		
Cobalt	E5	SS	1991	2021	28	0.007	-0.001	2.586	0.682		
Cobalt	E6	SS	1991	2020	21	0.047	0.004	-7.569	0.348		
Cobalt	N2	SS	1991	2021	28	0.029	0.001	-1.517	0.385		
Cobalt	N4	SS	1991	2021	21	0.071	0.003	-4.164	0.244		
Cobalt	N5	SS	1991	2021	20	0.082	0.003	-4.439	0.222		
Cobalt	S1	SS	1991	2019	28	0.087	0.003	-4.696	0.127		
Cobalt	S2	SS	1991	2021	30	0.033	0.002	-2.562	0.336		
Cobalt	S4	SS	1991	2021	27	0.01	0.001	-1.24	0.621		
Cobalt	W2	SS	1991	2021	27	0.17	0.003	-4.453	0.032		
Cobalt	W4	SS	1991	2021	22	0.007	-0.001	2.266	0.716		
Copper	E1	FC	2002	2021	6	0.026	-0.005	10.325	0.759		
Copper	E5	FC	2002	2021	6	0.68	0.013	-26.919	0.043		
Copper	N2	FC	2002	2021	6	0.033	0.003	-6.127	0.731		
Copper	N4	FC	2002	2020	6	0.162	0.01	-20.298	0.43		
Copper	E1	NG	2002	2021	20	0.171	0.005	-9.401	0.07		
Copper	E2	NG	2002	2021	20	0.124	0.008	-15.454	0.127		
Copper	E5	NG	2002	2021	20	0.018	0.003	-4.91	0.576		
Copper	E6	NG	2002	2020	19	0.09	-0.012	25.278	0.213		
Copper	N2	NG	2002	2021	20	0.013	-0.003	7.106	0.63		
Copper	N4	NG	2002	2021	20	0.01	-0.002	4.799	0.678		
Copper	N5	NG	2002	2021	20	0.051	-0.006	13.478	0.336		
Copper	S1	NG	2002	2019	18	0.052	-0.007	14.096	0.365		
Copper	S2	NG	2002	2021	20	0.044	-0.005	10.212	0.376		
Copper	S4	NG	2002	2021	20	0.038	-0.006	13.83	0.413		
Copper	W2	NG	2002	2021	20	0.008	-0.002	5.806	0.704		
Copper	W4	NG	2002	2021	20	0.19	0.009	-17.784	0.055		
Copper	E1	SB	1991	2020	19	0.046	0.003	-4.21	0.379		
Copper	E2	SB	1991	2020	13	0.134	-0.008	17.747	0.218		
Copper	E5	SB	1991	2020	19	0.016	0.001	-1.386	0.607		
Copper	N2	SB	1991	2019	17	<0.001	<0.001	1.645	0.951		
Copper	N4	SB	1991	2021	7	0.63	0.003	-5.289	0.033		
Copper	S1	SB	1991	2019	21	0.049	0.002	-3.682	0.336		
Copper	S2	SB	1991	2020	22	0.068	0.003	-5.81	0.241		
Copper	S4	SB	1991	2020	19	0.103	0.005	-8.075	0.18		
Copper	W2	SB	1991	2021	22	0.028	0.002	-3.736	0.456		
Copper	W4	SB	1991	2020	12	0.135	0.004	-6.263	0.239		
Copper	E2	SD	1991	2021	31	0.054	-0.002	5.649	0.209		
Copper	N2	SD	1991	2021	31	0.059	0.002	-2.85	0.187		
Copper	N5	SD	1991	2021	20	0.013	-0.002	5.518	0.634		
Copper	S1	SD	1991	2019	29	0.18	-0.006	14.074	0.022		
Copper	S4	SD	1991	2021	31	0.344	-0.004	9.031	0.001	*	Decreasing
Copper	E1	SS	1991	2021	28	0.303	-0.007	15.692	0.002	*	Decreasing
Copper	E2	SS	1991	2021	28	<0.001	<0.001	1.464	0.931		
Copper	E5	SS	1991	2021	28	0.135	-0.004	9.075	0.054		
Copper	E6	SS	1991	2020	21	0.052	-0.003	6.861	0.319		
Copper	N2	SS	1991	2021	28	<0.001	<0.001	1.494	0.991		
Copper	N4	SS	1991	2021	21	0.187	0.009	-17.738	0.05		
Copper	N5	SS	1991	2021	20	0.156	-0.003	7.86	0.085		
Copper	S1	SS	1991	2019	28	0.159	-0.003	7.341	0.036		
Copper	S2	SS	1991	2021	30	0.097	-0.003	6.541	0.095		
Copper	S4	SS	1991	2021	27	0.269	0.007	-12.318	0.006		
Copper	W2	SS	1991	2021	27	0.398	-0.004	8.737	<0.001	*	Decreasing
Copper	W4	SS	1991	2021	22	0.073	0.005	-8.168	0.224		

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Iron	E1	FC	1991	2021	7	0.016	-0.003	6.854	0.785		
Iron	E2	FC	1991	2019	7	0.073	-0.004	8.966	0.558		
Iron	E5	FC	1991	2021	7	0.108	0.008	-15.805	0.472		
Iron	N2	FC	1991	2021	7	0.409	-0.006	12.712	0.122		
Iron	N4	FC	1991	2020	6	0.017	0.002	-2.601	0.806		
Iron	S2	FC	1991	2021	6	0.011	-0.002	4.971	0.847		
Iron	E1	NG	1991	2021	31	0.081	-0.007	15.335	0.122		
Iron	E2	NG	1991	2021	31	0.043	0.005	-7.886	0.262		
Iron	E5	NG	1991	2021	30	0.006	0.003	-4.087	0.694		
Iron	E6	NG	1991	2020	21	<0.001	0.001	0.801	0.938		
Iron	N2	NG	1991	2021	32	0.038	0.005	-7.475	0.286		
Iron	N4	NG	1991	2021	21	0.024	0.007	-11.369	0.504		
Iron	N5	NG	1991	2021	20	0.009	-0.004	10.008	0.697		
Iron	S1	NG	1991	2019	28	0.246	0.018	-33.029	0.007		
Iron	S2	NG	1991	2021	32	0.053	0.007	-12.096	0.206		
Iron	S4	NG	1991	2021	29	0.003	-0.002	6.41	0.769		
Iron	W2	NG	1991	2021	31	0.108	0.009	-15.772	0.07		
Iron	W4	NG	1991	2021	25	0.011	0.005	-8.182	0.613		
Iron	E1	SB	1991	2020	19	0.001	<0.001	2.173	0.908		
Iron	E2	SB	1991	2020	13	0.002	<0.001	1.067	0.895		
Iron	E5	SB	1991	2020	19	0.016	-0.001	3.864	0.608		
Iron	N2	SB	1991	2019	17	0.082	0.004	-5.655	0.266		
Iron	N4	SB	1991	2021	7	0.007	0.005	-7.593	0.859		
Iron	S1	SB	1991	2019	21	0.048	0.002	-2.987	0.338		
Iron	S2	SB	1991	2020	22	0.05	0.002	-2.571	0.32		
Iron	S4	SB	1991	2020	19	0.019	-0.001	4.403	0.574		
Iron	W2	SB	1991	2021	22	0.006	0.001	0.166	0.724		
Iron	W4	SB	1991	2020	12	<0.001	<0.001	1.307	0.951		
Iron	E2	SD	1991	2021	31	0.048	0.002	1.119	0.236		
Iron	N2	SD	1991	2021	31	0.326	0.005	-6.152	0.001	*	Increasing
Iron	N5	SD	1991	2021	20	0.007	0.002	0.918	0.732		
Iron	S1	SD	1991	2019	29	0.022	-0.001	6.742	0.441		
Iron	S4	SD	1991	2021	31	0.077	0.001	1.395	0.13		
Iron	E1	SS	1991	2021	28	<0.001	<0.001	4.477	0.929		
Iron	E2	SS	1991	2021	28	0.106	0.004	-3.187	0.09		
Iron	E5	SS	1991	2021	28	<0.001	<0.001	4.537	0.927		
Iron	E6	SS	1991	2020	21	0.004	0.001	2.251	0.793		
Iron	N2	SS	1991	2021	28	0.123	0.003	-1.318	0.067		
Iron	N4	SS	1991	2021	21	0.002	<0.001	3.571	0.856		
Iron	N5	SS	1991	2021	20	0.011	0.001	2.143	0.661		
Iron	S1	SS	1991	2019	28	0.103	0.002	-0.573	0.096		
Iron	S2	SS	1991	2021	30	0.043	0.001	1.522	0.273		
Iron	S4	SS	1991	2021	27	0.072	0.002	-0.105	0.176		
Iron	W2	SS	1991	2021	27	0.202	0.002	-0.468	0.019		
Iron	W4	SS	1991	2021	22	0.002	<0.001	4.983	0.835		
Iron	N2	WW	1991	2020	6	0.449	-0.02	42.202	0.145		
Iron	S4	WW	1991	2021	8	0.018	0.001	-1.149	0.754		
Lead	E1	NG	2003	2021	19	0.107	-0.017	34.464	0.173		
Lead	E2	NG	2003	2021	19	0.016	-0.006	10.814	0.609		
Lead	E5	NG	2003	2021	19	0.126	0.023	-46.624	0.136		
Lead	E6	NG	2003	2020	18	0.076	0.023	-46.16	0.269		
Lead	N2	NG	2003	2021	19	0.231	-0.022	44.189	0.037		
Lead	N4	NG	2003	2021	19	0.302	-0.027	53.938	0.015		
Lead	N5	NG	2003	2021	19	0.523	-0.045	90.635	<0.001	*	Decreasing
Lead	S1	NG	2003	2019	17	0.019	0.009	-19.37	0.597		
Lead	S2	NG	2003	2021	19	<0.001	0.001	-2.056	0.944		
Lead	S4	NG	2003	2021	19	<0.001	0.001	-2.288	0.947		
Lead	W2	NG	2003	2021	19	0.001	0.001	-2.966	0.908		
Lead	W4	NG	2003	2021	19	0.089	-0.016	31.748	0.215		
Lead	E2	SD	1991	2021	31	0.133	-0.005	10.638	0.044		
Lead	N2	SD	1991	2021	31	0.017	0.002	-2.016	0.48		

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Site Specific Inorganic Regression Analysis Results Summary
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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Lead	N5	SD	1991	2021	20	0.1	-0.009	19.034	0.175		
Lead	S1	SD	1991	2019	29	0.111	-0.004	8.616	0.078		
Lead	S4	SD	1991	2021	31	0.179	-0.004	9.81	0.018		
Lead	E1	SS	1991	2021	28	0.113	-0.004	8.568	0.08		
Lead	E2	SS	1991	2021	28	0.103	0.005	-9.451	0.095		
Lead	E5	SS	1991	2021	28	0.058	-0.002	5.66	0.216		
Lead	E6	SS	1991	2020	21	0.101	-0.004	10.115	0.161		
Lead	N2	SS	1991	2021	28	0.002	<0.001	2.192	0.811		
Lead	N4	SS	1991	2021	21	0.002	<0.001	1.823	0.867		
Lead	N5	SS	1991	2021	20	0.081	-0.005	10.886	0.223		
Lead	S1	SS	1991	2019	28	0.014	-0.001	3.573	0.551		
Lead	S2	SS	1991	2021	30	0.008	-0.001	3.084	0.636		
Lead	S4	SS	1991	2021	27	0.05	0.002	-3.33	0.264		
Lead	W2	SS	1991	2021	27	0.028	-0.001	3.463	0.402		
Lead	W4	SS	1991	2021	22	0.01	0.001	-0.801	0.658		
Magnesium	E1	FC	1991	2021	7	0.013	-0.002	7.197	0.81		
Magnesium	E2	FC	1991	2019	7	0.361	0.007	-11.295	0.154		
Magnesium	E5	FC	1991	2021	7	0.204	0.013	-23.94	0.309		
Magnesium	N2	FC	1991	2021	7	<0.001	<0.001	2.97	0.998		
Magnesium	N4	FC	1991	2020	6	0.029	0.003	-2.73	0.745		
Magnesium	S2	FC	1991	2021	6	0.175	0.008	-12.126	0.409		
Magnesium	E1	NG	1991	2021	31	0.033	-0.003	8.599	0.327		
Magnesium	E2	NG	1991	2021	31	0.02	0.002	-0.238	0.443		
Magnesium	E5	NG	1991	2021	30	0.207	0.011	-18.738	0.012		
Magnesium	E6	NG	1991	2020	21	0.13	0.006	-8.451	0.108		
Magnesium	N2	NG	1991	2021	32	0.053	0.003	-1.733	0.206		
Magnesium	N4	NG	1991	2021	21	0.029	-0.003	9.166	0.464		
Magnesium	N5	NG	1991	2021	20	0.001	<0.001	4.223	0.922		
Magnesium	S1	NG	1991	2019	29	0.022	0.003	-2.464	0.441		
Magnesium	S2	NG	1991	2021	32	0.016	0.003	-2.267	0.491		
Magnesium	S4	NG	1991	2021	29	0.338	0.014	-24.044	0.001	*	Increasing
Magnesium	W2	NG	1991	2021	31	0.018	0.002	0.259	0.467		
Magnesium	W4	NG	1991	2021	25	0.002	-0.001	6.382	0.825		
Magnesium	E1	SB	1991	2020	19	0.149	0.004	-3.9	0.103		
Magnesium	E2	SB	1991	2020	13	0.196	0.002	-0.897	0.13		
Magnesium	E5	SB	1991	2020	19	0.261	0.004	-4.28	0.025		
Magnesium	N2	SB	1991	2019	17	0.139	0.003	-1.922	0.14		
Magnesium	N4	SB	1991	2021	7	0.301	0.006	-7.919	0.202		
Magnesium	S1	SB	1991	2019	21	0.227	0.003	-3.171	0.029		
Magnesium	S2	SB	1991	2020	22	0.369	0.005	-6.974	0.003		
Magnesium	S4	SB	1991	2020	19	0.35	0.004	-4.979	0.008		
Magnesium	W2	SB	1991	2021	22	0.19	0.005	-6.885	0.043		
Magnesium	W4	SB	1991	2020	12	0.389	0.005	-6.017	0.03		
Magnesium	E2	SD	1991	2021	31	0.019	-0.001	5.901	0.454		
Magnesium	N2	SD	1991	2021	31	0.029	-0.002	7.569	0.357		
Magnesium	N5	SD	1991	2021	20	0.004	-0.001	6.799	0.779		
Magnesium	S1	SD	1991	2019	29	<0.001	<0.001	3.938	0.963		
Magnesium	S4	SD	1991	2021	31	0.01	-0.001	6.521	0.584		
Magnesium	E1	SS	1991	2021	28	0.001	<0.001	2.837	0.861		
Magnesium	E2	SS	1991	2021	28	0.08	0.004	-5.204	0.145		
Magnesium	E5	SS	1991	2021	28	0.021	-0.001	6.591	0.466		
Magnesium	E6	SS	1991	2020	21	0.013	-0.002	7.141	0.629		
Magnesium	N2	SS	1991	2021	28	0.134	0.003	-1.748	0.055		
Magnesium	N4	SS	1991	2021	21	0.065	0.008	-12.217	0.263		
Magnesium	N5	SS	1991	2021	20	0.006	-0.002	8.205	0.751		
Magnesium	S1	SS	1991	2019	28	0.095	0.004	-3.219	0.11		
Magnesium	S2	SS	1991	2021	30	0.172	0.004	-3.814	0.023		
Magnesium	S4	SS	1991	2021	27	0.616	0.01	-15.672	<0.001	*	Increasing
Magnesium	W2	SS	1991	2021	27	0.236	0.004	-4.441	0.01		
Magnesium	W4	SS	1991	2021	22	0.009	0.001	2.38	0.669		
Magnesium	N2	WW	1991	2020	6	0.001	<0.001	2.666	0.954		

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Magnesium	S4	WW	1991	2021	8	0.231	0.003	-2.735	0.228		
Manganese	E1	FC	2002	2021	6	0.033	-0.005	9.624	0.731		
Manganese	E5	FC	2002	2021	6	0.29	0.022	-43.149	0.27		
Manganese	N2	FC	2002	2021	6	0.099	0.003	-6.515	0.545		
Manganese	N4	FC	2002	2020	6	<0.001	<0.001	-0.146	0.974		
Manganese	E1	NG	1991	2021	31	0.076	-0.005	11.063	0.133		
Manganese	E2	NG	1991	2021	31	0.175	0.011	-19.903	0.019		
Manganese	E5	NG	1991	2021	30	0.004	-0.002	5.013	0.755		
Manganese	E6	NG	1991	2020	21	0.002	0.002	-1.626	0.855		
Manganese	N2	NG	1991	2021	32	0.24	0.012	-23.241	0.004		
Manganese	N4	NG	1991	2021	21	0.239	0.02	-39.17	0.025		
Manganese	N5	NG	1991	2021	20	0.093	-0.006	12.607	0.191		
Manganese	S1	NG	1991	2019	28	0.254	0.014	-26.255	0.006		
Manganese	S2	NG	1991	2021	32	0.002	0.001	-0.028	0.821		
Manganese	S4	NG	1991	2021	28	<0.001	<0.001	1.975	0.944		
Manganese	W2	NG	1991	2021	31	0.14	0.01	-17.993	0.038		
Manganese	W4	NG	1991	2021	25	0.283	0.024	-47.562	0.006		
Manganese	E1	SB	1991	2020	19	0.149	0.004	-6.38	0.103		
Manganese	E2	SB	1991	2020	13	0.24	0.004	-6.834	0.089		
Manganese	E5	SB	1991	2020	19	0.042	0.002	-2.105	0.398		
Manganese	N2	SB	1991	2019	17	0.255	0.005	-8.018	0.039		
Manganese	N4	SB	1991	2021	7	0.143	0.01	-18.405	0.403		
Manganese	S1	SB	1991	2019	21	0.199	0.004	-7.575	0.043		
Manganese	S2	SB	1991	2020	22	0.351	0.007	-13.121	0.004		
Manganese	S4	SB	1991	2020	19	0.029	0.002	-3.139	0.489		
Manganese	W2	SB	1991	2021	22	0.079	0.004	-6.152	0.206		
Manganese	W4	SB	1991	2020	12	0.18	0.003	-5.358	0.169		
Manganese	E2	SD	1991	2021	31	0.001	<0.001	2.112	0.901		
Manganese	N2	SD	1991	2021	31	0.046	0.002	-0.667	0.246		
Manganese	N5	SD	1991	2021	20	0.027	-0.002	7.589	0.489		
Manganese	S1	SD	1991	2019	29	0.021	-0.003	8.028	0.455		
Manganese	S4	SD	1991	2021	31	0.332	0.006	-10.03	0.001	*	Increasing
Manganese	E1	SS	1991	2021	28	0.007	-0.002	5.799	0.677		
Manganese	E2	SS	1991	2021	28	0.104	0.005	-8.067	0.095		
Manganese	E5	SS	1991	2021	28	0.026	0.002	-2.236	0.412		
Manganese	E6	SS	1991	2020	21	0.145	0.01	-18.172	0.088		
Manganese	N2	SS	1991	2021	28	0.039	0.002	-1.347	0.311		
Manganese	N4	SS	1991	2021	21	0.111	0.005	-6.647	0.14		
Manganese	N5	SS	1991	2021	20	0.135	0.005	-7.619	0.111		
Manganese	S1	SS	1991	2019	28	0.114	0.006	-8.931	0.078		
Manganese	S2	SS	1991	2021	30	0.077	0.004	-6.299	0.138		
Manganese	S4	SS	1991	2021	27	0.352	0.012	-21.973	0.001	*	Increasing
Manganese	W2	SS	1991	2021	27	0.253	0.005	-7.7	0.007		
Manganese	W4	SS	1991	2021	22	0.001	<0.001	3.243	0.918		
Manganese	N2	WW	1991	2020	6	0.542	-0.006	13.678	0.095		
Manganese	S4	WW	1991	2021	8	0.485	-0.013	27.379	0.055		
Mercury	E1	NG	2004	2021	18	0.648	-0.042	82.191	<0.001	*	Decreasing
Mercury	E2	NG	2004	2021	18	0.678	-0.031	59.854	<0.001	*	Decreasing
Mercury	E5	NG	2004	2021	18	0.244	-0.021	41.105	0.037		
Mercury	E6	NG	2004	2020	17	0.047	0.012	-26.305	0.405		
Mercury	N2	NG	2004	2021	18	0.468	-0.028	55.545	0.002	*	Decreasing
Mercury	N4	NG	2004	2021	18	0.749	-0.035	68.984	<0.001	*	Decreasing
Mercury	N5	NG	2004	2021	18	0.616	-0.049	97.742	<0.001	*	Decreasing
Mercury	S1	NG	2004	2019	16	0.321	-0.024	45.905	0.022		
Mercury	S2	NG	2004	2021	18	0.619	-0.033	63.906	<0.001	*	Decreasing
Mercury	S4	NG	2004	2021	18	0.669	-0.037	72.449	<0.001	*	Decreasing
Mercury	W2	NG	2004	2021	18	0.408	-0.023	45.197	0.004		
Mercury	W4	NG	2004	2021	18	0.514	-0.034	66.766	0.001	*	Decreasing
Mercury	N2	SD	2003	2021	19	0.288	-0.016	30.534	0.018		
Mercury	N5	SD	2003	2021	19	<0.001	-0.001	1.156	0.942		
Mercury	S1	SD	2003	2019	17	0.042	-0.006	11.293	0.432		

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Mercury	E2	SS	2002	2021	20	0.167	0.007	-15.405	0.073		
Mercury	E6	SS	2002	2020	19	0.012	0.002	-4.326	0.658		
Mercury	N2	SS	2002	2021	19	0.001	<0.001	-1.78	0.915		
Mercury	N5	SS	2002	2021	20	0.032	0.004	-8.687	0.449		
Mercury	W4	SS	2002	2021	20	0.155	-0.002	2.285	0.086		
Molybdenum	E1	FC	2003	2021	6	0.025	0.004	-8.301	0.765		
Molybdenum	E5	FC	2003	2021	6	0.877	0.022	-45.377	0.006		
Molybdenum	N2	FC	2003	2021	6	0.13	0.004	-8.498	0.482		
Molybdenum	N4	FC	2003	2020	6	0.023	0.002	-4.658	0.773		
Molybdenum	E1	NG	2002	2021	20	0.015	0.006	-10.782	0.601		
Molybdenum	E2	NG	2002	2021	20	0.52	0.03	-60.04	<0.001	*	Increasing
Molybdenum	E5	NG	2002	2021	20	0.134	0.017	-33.699	0.113		
Molybdenum	E6	NG	2002	2020	19	0.615	0.048	-96.078	<0.001	*	Increasing
Molybdenum	N2	NG	2002	2021	20	0.001	-0.002	3.92	0.911		
Molybdenum	N4	NG	2002	2021	20	0.001	0.002	-2.534	0.872		
Molybdenum	N5	NG	2002	2021	20	0.003	-0.002	4.665	0.818		
Molybdenum	S1	NG	2002	2019	18	0.248	0.025	-49.208	0.035		
Molybdenum	S2	NG	2002	2021	20	0.14	0.016	-31.425	0.105		
Molybdenum	S4	NG	2002	2021	20	0.597	0.05	-100.588	<0.001	*	Increasing
Molybdenum	W2	NG	2002	2021	19	0.486	0.025	-49.503	0.001	*	Increasing
Molybdenum	W4	NG	2002	2021	20	0.009	0.003	-4.67	0.685		
Molybdenum	E1	SB	1991	2020	19	0.091	0.009	-16.788	0.21		
Molybdenum	E2	SB	1991	2020	13	0.023	0.003	-4.313	0.622		
Molybdenum	E5	SB	1991	2020	19	0.113	0.008	-14.364	0.16		
Molybdenum	N2	SB	1991	2019	17	0.007	0.001	-1.63	0.752		
Molybdenum	N4	SB	1991	2021	7	0.018	0.004	-6.809	0.774		
Molybdenum	S1	SB	1991	2019	21	0.025	-0.003	6.854	0.493		
Molybdenum	S2	SB	1991	2020	22	0.004	-0.001	2.944	0.791		
Molybdenum	S4	SB	1991	2020	19	0.554	0.027	-53.953	<0.001	*	Increasing
Molybdenum	W2	SB	1991	2021	22	0.012	0.002	-3.64	0.634		
Molybdenum	W4	SB	1991	2020	12	0.269	0.007	-12.358	0.084		
Molybdenum	E2	SD	2002	2021	20	0.562	0.015	-30.316	<0.001	*	Increasing
Molybdenum	N2	SD	2002	2021	20	0.629	0.025	-50.055	<0.001	*	Increasing
Molybdenum	N5	SD	2002	2021	20	0.418	0.017	-34.46	0.002	*	Increasing
Molybdenum	S1	SD	2002	2019	18	0.014	0.004	-7.369	0.645		
Molybdenum	S4	SD	2002	2021	20	0.357	0.011	-23.017	0.005		
Molybdenum	E1	SS	2002	2021	19	0.158	0.009	-18.986	0.092		
Molybdenum	E2	SS	2002	2021	20	0.058	0.007	-13.102	0.307		
Molybdenum	E5	SS	2002	2021	19	0.063	0.005	-8.937	0.3		
Molybdenum	E6	SS	2002	2020	19	0.139	0.01	-19.593	0.116		
Molybdenum	N2	SS	2002	2021	19	0.194	0.009	-17.545	0.059		
Molybdenum	N4	SS	2002	2021	20	0.224	0.009	-17.958	0.035		
Molybdenum	N5	SS	2002	2021	20	0.281	0.011	-20.929	0.016		
Molybdenum	S1	SS	2002	2019	18	0.179	0.008	-16.53	0.08		
Molybdenum	S2	SS	2002	2021	20	0.064	0.005	-8.939	0.281		
Molybdenum	S4	SS	2002	2021	19	0.092	0.005	-9.208	0.206		
Molybdenum	W2	SS	2002	2021	19	0.108	0.005	-9.453	0.169		
Molybdenum	W4	SS	2002	2021	20	0.238	0.009	-17.582	0.029		
Molybdenum	N2	WW	1991	2020	6	0.485	-0.013	26.643	0.124		
Molybdenum	S4	WW	1991	2021	8	0.017	0.001	-2.748	0.756		
Nickel	N2	FC	2005	2021	6	0.832	-0.022	43.626	0.011		
Nickel	E1	NG	2002	2021	20	0.131	-0.019	38.659	0.117		
Nickel	E2	NG	2002	2021	20	0.223	-0.028	56.113	0.035		
Nickel	E5	NG	2002	2021	20	0.013	-0.008	16.717	0.633		
Nickel	E6	NG	2002	2020	19	0.016	-0.004	8.751	0.608		
Nickel	N2	NG	2002	2021	20	0.059	-0.011	22.702	0.302		
Nickel	N4	NG	2002	2021	20	0.092	-0.014	27.358	0.193		
Nickel	N5	NG	2002	2021	20	0.142	-0.019	39.289	0.101		
Nickel	S1	NG	2002	2019	17	0.053	0.011	-21.23	0.373		
Nickel	S2	NG	2002	2021	20	0.052	-0.01	20.423	0.331		
Nickel	S4	NG	2002	2021	20	0.01	-0.006	12.304	0.672		

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Nickel	W2	NG	2002	2021	20	0.012	-0.007	14.562	0.644		
Nickel	W4	NG	2002	2021	20	<0.001	<0.001	1.235	0.971		
Nickel	E1	SB	2002	2020	11	0.038	0.006	-12.713	0.568		
Nickel	E2	SB	2002	2020	6	0.297	0.016	-31.171	0.264		
Nickel	E5	SB	2002	2020	11	0.051	0.003	-6.87	0.503		
Nickel	N2	SB	2002	2019	8	0.147	0.007	-13.17	0.348		
Nickel	N4	SB	2002	2021	7	0.171	0.009	-18.714	0.357		
Nickel	S1	SB	2002	2019	12	0.01	-0.002	4.052	0.76		
Nickel	S2	SB	2002	2020	13	0.003	-0.001	2.517	0.849		
Nickel	S4	SB	2002	2020	13	0.065	0.008	-16.058	0.401		
Nickel	W2	SB	2002	2021	13	0.102	0.008	-15.872	0.288		
Nickel	W4	SB	2002	2020	10	0.003	0.001	-1.044	0.88		
Nickel	E2	SD	1991	2021	31	0.046	0.001	-1.499	0.247		
Nickel	N2	SD	1991	2021	31	0.393	0.005	-9.067	<0.001	*	Increasing
Nickel	N5	SD	1991	2021	20	0.005	0.001	-0.816	0.771		
Nickel	S1	SD	1991	2019	29	0.041	-0.002	5.101	0.294		
Nickel	S4	SD	1991	2021	31	0.029	0.001	-0.088	0.357		
Nickel	E1	SS	1991	2021	28	0.052	-0.002	5.777	0.245		
Nickel	E2	SS	1991	2021	28	0.065	0.003	-4.249	0.191		
Nickel	E5	SS	1991	2021	28	0.042	-0.002	5.052	0.294		
Nickel	E6	SS	1991	2020	21	0.001	0.001	0.277	0.881		
Nickel	N2	SS	1991	2021	28	0.032	0.001	-1.462	0.361		
Nickel	N4	SS	1991	2021	21	0.065	0.003	-5.261	0.265		
Nickel	N5	SS	1991	2021	20	<0.001	<0.001	1.342	0.999		
Nickel	S1	SS	1991	2019	28	0.084	0.002	-2.796	0.136		
Nickel	S2	SS	1991	2021	30	0.034	0.001	-0.958	0.329		
Nickel	S4	SS	1991	2021	27	0.279	0.005	-8.271	0.005		
Nickel	W2	SS	1991	2021	27	0.119	0.001	-1.459	0.077		
Nickel	W4	SS	1991	2021	22	0.021	0.001	-0.325	0.516		
Phosphorus	E1	FC	1991	2021	7	0.045	-0.003	10.04	0.648		
Phosphorus	E2	FC	1991	2019	7	0.526	0.009	-15.076	0.065		
Phosphorus	E5	FC	1991	2021	7	0.319	0.013	-23.18	0.187		
Phosphorus	N2	FC	1991	2021	7	0.161	0.005	-5.818	0.373		
Phosphorus	N4	FC	1991	2020	6	0.137	0.005	-7.302	0.471		
Phosphorus	S2	FC	1991	2021	6	0.233	0.008	-13.232	0.332		
Phosphorus	E1	NG	1991	2021	31	0.207	0.008	-13.476	0.01		
Phosphorus	E2	NG	1991	2021	31	0.128	0.008	-13.045	0.048		
Phosphorus	E5	NG	1991	2021	30	0.016	0.003	-1.884	0.505		
Phosphorus	E6	NG	1991	2020	21	0.316	-0.013	28.747	0.008		
Phosphorus	N2	NG	1991	2021	32	<0.001	<0.001	3.105	0.95		
Phosphorus	N4	NG	1991	2021	21	0.007	-0.002	6.805	0.72		
Phosphorus	N5	NG	1991	2021	20	0.047	-0.006	14.498	0.357		
Phosphorus	S1	NG	1991	2019	29	0.09	0.006	-8.373	0.114		
Phosphorus	S2	NG	1991	2021	32	0.063	0.004	-4.321	0.167		
Phosphorus	S4	NG	1991	2021	29	0.105	0.006	-9.551	0.087		
Phosphorus	W2	NG	1991	2021	31	0.001	<0.001	4.061	0.901		
Phosphorus	W4	NG	1991	2021	25	0.302	0.011	-18.435	0.004		
Phosphorus	E1	SB	1991	2020	18	0.077	0.003	-2.469	0.264		
Phosphorus	E2	SB	1991	2020	13	0.407	0.005	-5.769	0.019		
Phosphorus	E5	SB	1991	2020	19	0.166	0.004	-3.833	0.083		
Phosphorus	N2	SB	1991	2019	17	0.247	0.007	-9.48	0.042		
Phosphorus	N4	SB	1991	2021	7	0.083	0.008	-12.375	0.53		
Phosphorus	S1	SB	1991	2019	21	0.286	0.005	-6.498	0.013		
Phosphorus	S2	SB	1991	2020	22	0.352	0.008	-11.641	0.004		
Phosphorus	S4	SB	1991	2020	19	0.562	0.013	-21.45	<0.001	*	Increasing
Phosphorus	W2	SB	1991	2021	22	0.289	0.006	-7.823	0.01		
Phosphorus	W4	SB	1991	2020	12	0.235	0.005	-6.018	0.11		
Phosphorus	E2	SD	1991	2021	31	0.07	0.003	-3.847	0.15		
Phosphorus	N2	SD	1991	2021	31	0.175	0.007	-10.374	0.019		
Phosphorus	N5	SD	1991	2021	20	0.008	-0.003	8.249	0.714		
Phosphorus	S1	SD	1991	2019	29	0.074	-0.003	8.105	0.152		

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Phosphorus	S4	SD	1991	2021	31	0.032	0.002	-0.392	0.339		
Phosphorus	E1	SS	1991	2021	28	0.003	<0.001	3.663	0.789		
Phosphorus	E2	SS	1991	2021	28	0.142	0.004	-5.546	0.048		
Phosphorus	E5	SS	1991	2021	28	0.005	0.001	1.422	0.714		
Phosphorus	E6	SS	1991	2020	21	0.014	0.001	-0.061	0.613		
Phosphorus	N2	SS	1991	2021	28	0.461	0.004	-5.914	<0.001	*	Increasing
Phosphorus	N4	SS	1991	2021	21	0.477	0.01	-17.74	0.001	*	Increasing
Phosphorus	N5	SS	1991	2021	20	0.229	-0.006	14.154	0.033		
Phosphorus	S1	SS	1991	2019	28	0.293	0.004	-4.279	0.003		
Phosphorus	S2	SS	1991	2021	30	0.284	0.006	-10.163	0.002	*	Increasing
Phosphorus	S4	SS	1991	2021	27	0.701	0.016	-28.988	<0.001	*	Increasing
Phosphorus	W2	SS	1991	2021	27	0.145	0.002	-2.108	0.05		
Phosphorus	W4	SS	1991	2021	22	0.01	0.001	1.131	0.655		
Phosphorus	N2	WW	1991	2020	6	0.615	-0.008	19.468	0.065		
Phosphorus	S4	WW	1991	2021	8	0.069	0.001	1.409	0.53		
Potassium	E1	FC	1991	2021	7	0.061	-0.004	12.052	0.592		
Potassium	E2	FC	1991	2019	7	0.704	0.01	-15.566	0.018		
Potassium	E5	FC	1991	2021	7	0.628	0.011	-18.471	0.034		
Potassium	N2	FC	1991	2021	7	0.103	0.004	-4.935	0.482		
Potassium	N4	FC	1991	2020	6	0.004	0.001	1.561	0.911		
Potassium	S2	FC	1991	2021	6	0.178	0.005	-6.003	0.404		
Potassium	E1	NG	1991	2021	31	0.028	-0.003	10.937	0.369		
Potassium	E2	NG	1991	2021	31	0.062	-0.005	14.769	0.176		
Potassium	E5	NG	1991	2021	30	0.003	-0.001	6.2	0.791		
Potassium	E6	NG	1991	2020	21	0.012	0.003	-1.088	0.641		
Potassium	N2	NG	1991	2021	32	0.184	-0.008	19.727	0.014		
Potassium	N4	NG	1991	2021	21	<0.001	0.001	3.055	0.939		
Potassium	N5	NG	1991	2021	20	0.003	-0.002	8.067	0.831		
Potassium	S1	NG	1991	2019	29	0.031	-0.004	11.573	0.363		
Potassium	S2	NG	1991	2021	32	<0.001	<0.001	3.497	0.905		
Potassium	S4	NG	1991	2021	29	<0.001	<0.001	4.109	0.98		
Potassium	W2	NG	1991	2021	31	0.201	-0.008	19.492	0.011		
Potassium	W4	NG	1991	2021	25	0.035	0.007	-8.833	0.372		
Potassium	E1	SB	1991	2020	19	0.081	0.002	-0.054	0.238		
Potassium	E2	SB	1991	2020	13	0.226	0.003	-1.007	0.1		
Potassium	E5	SB	1991	2020	19	0.076	0.002	0.801	0.253		
Potassium	N2	SB	1991	2019	17	0.065	0.002	-0.087	0.323		
Potassium	N4	SB	1991	2021	7	0.32	0.005	-5.256	0.186		
Potassium	S1	SB	1991	2019	21	0.098	0.002	-0.475	0.167		
Potassium	S2	SB	1991	2020	22	0.275	0.004	-4.273	0.012		
Potassium	S4	SB	1991	2020	19	0.125	0.003	-1.552	0.138		
Potassium	W2	SB	1991	2021	22	0.108	0.003	-2.681	0.135		
Potassium	W4	SB	1991	2020	12	0.325	0.004	-4.499	0.053		
Potassium	E2	SD	1991	2021	31	0.29	0.007	-11.257	0.002	*	Increasing
Potassium	N2	SD	1991	2021	31	0.47	0.011	-18.589	<0.001	*	Increasing
Potassium	N5	SD	1991	2021	20	0.033	0.004	-3.781	0.445		
Potassium	S1	SD	1991	2019	29	0.123	0.004	-5.454	0.063		
Potassium	S4	SD	1991	2021	31	0.397	0.008	-12.704	<0.001	*	Increasing
Potassium	E1	SS	1991	2021	28	0.166	0.007	-10.574	0.032		
Potassium	E2	SS	1991	2021	28	0.088	0.005	-6.542	0.126		
Potassium	E5	SS	1991	2021	28	0.134	0.006	-8.243	0.055		
Potassium	E6	SS	1991	2020	21	0.018	0.002	-1.455	0.565		
Potassium	N2	SS	1991	2021	27	0.386	0.009	-14.141	0.001	*	Increasing
Potassium	N4	SS	1991	2021	21	0.115	0.007	-10.472	0.133		
Potassium	N5	SS	1991	2021	20	0.104	-0.003	10.291	0.165		
Potassium	S1	SS	1991	2019	28	0.306	0.01	-15.753	0.002	*	Increasing
Potassium	S2	SS	1991	2021	30	0.354	0.01	-16.014	0.001	*	Increasing
Potassium	S4	SS	1991	2021	27	0.528	0.013	-21.784	<0.001	*	Increasing
Potassium	W2	SS	1991	2021	27	0.445	0.009	-15.101	<0.001	*	Increasing
Potassium	W4	SS	1991	2021	22	0.095	0.005	-5.633	0.162		
Potassium	N2	WW	1991	2020	6	0.142	0.004	-4.969	0.461		

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Potassium	S4	WW	1991	2021	8	0.039	-0.002	7.718	0.641		
Silicon	E1	NG	2003	2021	19	0.343	-0.033	69.501	0.008		
Silicon	E2	NG	2003	2021	19	0.303	-0.032	69.219	0.015		
Silicon	E5	NG	2003	2021	19	0.168	-0.033	69.864	0.082		
Silicon	E6	NG	2003	2020	17	<0.001	0.001	1.499	0.962		
Silicon	N2	NG	2003	2021	18	0.426	-0.029	61.998	0.003		
Silicon	N4	NG	2003	2021	19	0.217	-0.023	51.286	0.044		
Silicon	N5	NG	2003	2021	19	0.162	-0.026	56.939	0.088		
Silicon	S1	NG	2003	2019	17	0.201	-0.044	92.288	0.071		
Silicon	S2	NG	2003	2021	19	0.067	-0.02	43.798	0.286		
Silicon	S4	NG	2003	2021	19	0.152	-0.019	41.406	0.099		
Silicon	W2	NG	2003	2021	19	0.065	-0.01	23.538	0.293		
Silicon	W4	NG	2003	2021	19	0.039	-0.014	32.503	0.417		
Silicon	E1	SB	2003	2020	10	0.015	-0.011	23.493	0.732		
Silicon	E2	SB	2003	2020	6	0.047	0.031	-61.155	0.681		
Silicon	E5	SB	2003	2020	10	0.319	-0.057	116.112	0.089		
Silicon	N2	SB	2003	2019	6	0.513	-0.075	151.969	0.109		
Silicon	N4	SB	2003	2021	7	0.017	0.013	-23.673	0.783		
Silicon	S1	SB	2003	2019	12	0.072	-0.039	80.185	0.401		
Silicon	S2	SB	2003	2019	12	0.47	-0.072	146.804	0.014		
Silicon	S4	SB	2003	2020	12	0.236	-0.045	92.272	0.109		
Silicon	W2	SB	2003	2021	12	0.009	0.013	-23.649	0.775		
Silicon	W4	SB	2003	2020	9	0.305	-0.055	112.726	0.123		
Silicon	E2	SD	2010	2021	12	0.034	-0.003	10.678	0.564		
Silicon	N2	SD	2010	2021	12	0.127	0.003	-0.061	0.256		
Silicon	N5	SD	2010	2021	12	0.426	0.011	-16.853	0.022		
Silicon	S1	SD	2010	2019	10	0.022	-0.002	9.195	0.683		
Silicon	S4	SD	2010	2021	12	0.002	-0.001	6.81	0.877		
Silicon	E1	SS	2010	2021	12	0.006	-0.001	6.635	0.817		
Silicon	E2	SS	2010	2021	12	0.116	-0.004	14.168	0.279		
Silicon	E5	SS	2010	2021	12	0.033	-0.002	9.054	0.571		
Silicon	E6	SS	2010	2020	11	0.18	-0.003	11.33	0.193		
Silicon	N2	SS	2010	2021	12	0.014	0.001	4.427	0.719		
Silicon	N4	SS	2010	2021	12	0.197	0.007	-9.525	0.149		
Silicon	N5	SS	2010	2021	12	0.129	0.005	-4.234	0.252		
Silicon	S1	SS	2010	2019	10	0.377	-0.006	18.1	0.059		
Silicon	S2	SS	2010	2021	12	0.11	-0.002	10.296	0.293		
Silicon	S4	SS	2010	2021	12	0.065	-0.002	9.639	0.422		
Silicon	W2	SS	2010	2021	12	0.012	-0.001	7.509	0.737		
Silicon	W4	SS	2010	2021	12	0.12	0.003	-0.317	0.271		
Sodium	E1	NG	2002	2021	20	0.043	-0.007	15.535	0.378		
Sodium	E2	NG	2002	2021	20	0.014	0.005	-9.083	0.623		
Sodium	E5	NG	2002	2021	20	0.201	0.017	-31.862	0.048		
Sodium	E6	NG	2002	2020	19	0.058	0.021	-41.147	0.321		
Sodium	N2	NG	2002	2021	20	0.02	0.006	-10.254	0.549		
Sodium	N4	NG	2002	2021	20	0.041	-0.009	19.75	0.394		
Sodium	N5	NG	2002	2021	20	0.061	-0.013	28.781	0.293		
Sodium	S1	NG	2002	2019	18	0.018	-0.006	13.823	0.6		
Sodium	S2	NG	2002	2021	20	0.055	-0.008	18.519	0.322		
Sodium	S4	NG	2002	2021	20	0.11	-0.012	25.174	0.154		
Sodium	W2	NG	2002	2021	20	0.061	0.007	-12.841	0.294		
Sodium	W4	NG	2002	2021	20	0.008	-0.007	16.814	0.701		
Sodium	E2	SD	1991	2021	31	0.171	0.006	-10.469	0.021		
Sodium	N2	SD	1991	2021	31	0.146	0.007	-11.076	0.034		
Sodium	N5	SD	1991	2021	20	0.486	-0.023	49.064	0.001	*	Decreasing
Sodium	S1	SD	1991	2019	29	0.03	0.004	-5.46	0.366		
Sodium	S4	SD	1991	2021	31	0.085	0.005	-7.568	0.112		
Sodium	E1	SS	2003	2021	18	0.46	-0.017	36.943	0.002	*	Decreasing
Sodium	E2	SS	2003	2021	19	0.687	-0.026	55.26	<0.001	*	Decreasing
Sodium	E5	SS	2003	2021	18	0.515	-0.028	58.483	0.001	*	Decreasing
Sodium	E6	SS	2003	2020	18	0.428	-0.024	50.321	0.003		

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Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Sodium	N2	SS	2003	2021	18	0.624	-0.022	46.152	<0.001	*	Decreasing
Sodium	N4	SS	2003	2021	19	0.489	-0.026	54.008	0.001	*	Decreasing
Sodium	N5	SS	2003	2021	19	0.709	-0.026	53.861	<0.001	*	Decreasing
Sodium	S1	SS	2003	2019	17	0.357	-0.023	47.66	0.011		
Sodium	S2	SS	2003	2021	19	0.528	-0.027	55.743	<0.001	*	Decreasing
Sodium	S4	SS	2003	2021	19	0.218	-0.009	21.073	0.044		
Sodium	W2	SS	2003	2021	18	0.413	-0.016	33.416	0.004		
Sodium	W4	SS	2003	2021	19	0.573	-0.019	40.039	<0.001	*	Decreasing
Strontium	E5	FC	1991	2021	7	0.573	-0.018	35.565	0.049		
Strontium	N4	FC	1991	2020	6	0.814	-0.027	52.689	0.014		
Strontium	E1	NG	1991	2021	31	0.051	0.004	-7.225	0.221		
Strontium	E2	NG	1991	2021	31	<0.001	<0.001	1.199	0.995		
Strontium	E5	NG	1991	2021	30	0.112	0.009	-17.046	0.071		
Strontium	E6	NG	1991	2020	21	0.01	0.003	-4.416	0.665		
Strontium	N2	NG	1991	2021	32	0.002	-0.001	3.427	0.807		
Strontium	N4	NG	1991	2021	21	0.015	0.003	-5.736	0.6		
Strontium	N5	NG	1991	2021	20	0.112	0.013	-25.444	0.149		
Strontium	S1	NG	1991	2019	29	0.015	0.003	-4.722	0.529		
Strontium	S2	NG	1991	2021	32	0.001	0.001	-0.025	0.84		
Strontium	S4	NG	1991	2021	28	0.004	-0.002	4.61	0.745		
Strontium	W2	NG	1991	2021	31	0.003	0.001	-0.225	0.766		
Strontium	W4	NG	1991	2021	25	0.138	-0.011	22.382	0.067		
Strontium	E1	SB	1991	2020	19	0.344	0.011	-22.177	0.008		
Strontium	E2	SB	1991	2020	13	0.067	0.011	-21.82	0.394		
Strontium	E5	SB	1991	2020	19	0.01	0.002	-3.6	0.685		
Strontium	N2	SB	1991	2019	17	0.039	-0.003	5.945	0.448		
Strontium	N4	SB	1991	2021	7	<0.001	-0.001	2.359	0.969		
Strontium	S1	SB	1991	2019	21	0.109	0.007	-13.794	0.144		
Strontium	S2	SB	1991	2020	22	0.258	0.007	-13.18	0.016		
Strontium	S4	SB	1991	2020	19	0.326	0.012	-22.733	0.011		
Strontium	W2	SB	1991	2021	22	0.248	0.009	-17.234	0.018		
Strontium	W4	SB	1991	2020	12	0.092	0.008	-15.696	0.339		
Strontium	E2	SD	1991	2021	31	0.008	0.001	0.358	0.63		
Strontium	N2	SD	1991	2021	31	0.003	0.001	0.699	0.768		
Strontium	N5	SD	1991	2021	20	0.051	-0.004	10.301	0.337		
Strontium	S1	SD	1991	2019	29	0.033	0.003	-5.182	0.345		
Strontium	S4	SD	1991	2021	31	0.075	0.004	-5.544	0.137		
Strontium	E1	SS	1991	2021	28	0.005	-0.001	2.406	0.731		
Strontium	E2	SS	1991	2021	28	0.03	0.002	-2.493	0.375		
Strontium	E5	SS	1991	2021	28	0.027	-0.001	4.18	0.405		
Strontium	E6	SS	1991	2020	21	0.093	0.007	-13.332	0.179		
Strontium	N2	SS	1991	2021	28	0.118	0.003	-4.72	0.073		
Strontium	N4	SS	1991	2021	21	0.135	0.008	-14.799	0.101		
Strontium	N5	SS	1991	2021	20	0.006	0.001	-1.132	0.741		
Strontium	S1	SS	1991	2019	28	0.04	0.002	-2.748	0.31		
Strontium	S2	SS	1991	2021	30	0.157	0.004	-6.411	0.03		
Strontium	S4	SS	1991	2021	27	0.639	0.015	-28.281	<0.001	*	Increasing
Strontium	W2	SS	1991	2021	27	0.028	0.001	-0.646	0.408		
Strontium	W4	SS	1991	2021	22	0.015	0.001	-1.346	0.583		
Strontium	N2	WW	1991	2020	6	0.191	0.006	-12.244	0.386		
Strontium	S4	WW	1991	2021	8	0.563	0.01	-19.802	0.032		
Sulfur	E1	FC	1991	2021	7	0.009	-0.002	6.704	0.842		
Sulfur	E2	FC	1991	2019	7	0.359	0.005	-6.354	0.155		
Sulfur	E5	FC	1991	2021	7	0.328	0.009	-14.465	0.179		
Sulfur	N2	FC	1991	2021	7	0.243	0.004	-4.39	0.261		
Sulfur	N4	FC	1991	2020	6	0.033	0.002	-1.943	0.729		
Sulfur	S2	FC	1991	2021	6	0.082	0.003	-2.7	0.581		
Sulfur	E1	NG	1991	2021	31	0.042	0.004	-4.371	0.268		
Sulfur	E2	NG	1991	2021	31	0.035	0.004	-4.221	0.313		
Sulfur	E5	NG	1991	2021	30	0.031	0.004	-5.077	0.354		
Sulfur	E6	NG	1991	2020	21	0.039	0.003	-2.908	0.391		

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Sulfur	N2	NG	1991	2021	32	0.061	0.011	-18.167	0.174		
Sulfur	N4	NG	1991	2021	21	0.03	-0.003	10.486	0.456		
Sulfur	N5	NG	1991	2021	20	0.027	-0.004	11.523	0.493		
Sulfur	S1	NG	1991	2019	29	0.023	-0.002	8.25	0.432		
Sulfur	S2	NG	1991	2021	32	0.029	-0.002	8.281	0.35		
Sulfur	S4	NG	1991	2021	29	0.018	0.003	-1.995	0.49		
Sulfur	W2	NG	1991	2021	31	0.002	<0.001	4.44	0.821		
Sulfur	W4	NG	1991	2021	25	0.014	-0.002	7.078	0.571		
Sulfur	E1	SB	1991	2020	19	0.109	0.02	-36.271	0.166		
Sulfur	E2	SB	1991	2020	13	0.553	0.004	-4.611	0.004		
Sulfur	E5	SB	1991	2020	19	0.287	0.004	-3.851	0.018		
Sulfur	N2	SB	1991	2019	17	0.181	0.005	-6.11	0.088		
Sulfur	N4	SB	1991	2021	7	0.519	0.01	-16.624	0.068		
Sulfur	S1	SB	1991	2019	21	0.293	0.004	-4.248	0.011		
Sulfur	S2	SB	1991	2020	22	0.268	0.005	-7.298	0.014		
Sulfur	S4	SB	1991	2020	19	0.161	0.004	-4.516	0.088		
Sulfur	W2	SB	1991	2021	22	0.082	0.002	-1.429	0.196		
Sulfur	W4	SB	1991	2020	12	0.656	0.008	-11.642	0.001	*	Increasing
Sulfur	E2	SD	1991	2021	31	0.001	-0.001	5.179	0.844		
Sulfur	N2	SD	1991	2021	31	0.009	0.002	-1.694	0.621		
Sulfur	N5	SD	1991	2021	20	0.176	0.018	-32.645	0.066		
Sulfur	S1	SD	1991	2019	29	<0.001	<0.001	2.054	0.944		
Sulfur	S4	SD	1991	2021	31	0.014	-0.004	10.728	0.52		
Sulfur	E1	SS	1991	2021	28	0.074	0.007	-10.84	0.16		
Sulfur	E2	SS	1991	2021	28	0.057	0.005	-6.943	0.222		
Sulfur	E5	SS	1991	2021	28	0.133	0.011	-19.117	0.057		
Sulfur	E6	SS	1991	2020	21	0.178	0.017	-30.681	0.056		
Sulfur	N2	SS	1991	2021	28	0.061	0.006	-8.912	0.204		
Sulfur	N4	SS	1991	2021	21	0.433	0.03	-56.802	0.001	*	Increasing
Sulfur	N5	SS	1991	2021	20	0.269	0.014	-25.16	0.019		
Sulfur	S1	SS	1991	2019	28	0.013	0.003	-3.45	0.559		
Sulfur	S2	SS	1991	2021	30	0.204	0.013	-24.396	0.012		
Sulfur	S4	SS	1991	2021	27	0.412	0.021	-40.681	<0.001	*	Increasing
Sulfur	W2	SS	1991	2021	27	0.107	0.008	-13.937	0.095		
Sulfur	W4	SS	1991	2021	22	0.18	0.014	-25.166	0.049		
Sulfur	N2	WW	1991	2020	6	0.156	0.004	-4.436	0.438		
Sulfur	S4	WW	1991	2021	8	0.294	0.004	-5.414	0.165		
Thallium	N5	NG	2005	2021	17	0.662	-0.099	197.389	<0.001	*	Decreasing
Thallium	E2	SD	2002	2021	20	0.204	-0.015	28.958	0.046		
Thallium	N2	SD	2002	2021	20	0.102	-0.009	17.542	0.169		
Thallium	N5	SD	2002	2021	20	0.15	-0.011	22.178	0.091		
Thallium	S1	SD	2002	2019	18	0.33	-0.027	52.881	0.013		
Thallium	S4	SD	2002	2021	20	0.084	-0.013	24.883	0.215		
Thallium	E1	SS	2002	2021	19	0.103	-0.013	25.886	0.179		
Thallium	E2	SS	2002	2021	20	0.116	-0.013	25.169	0.142		
Thallium	E5	SS	2002	2021	19	0.175	-0.016	30.864	0.075		
Thallium	E6	SS	2002	2020	19	0.157	-0.013	26.305	0.093		
Thallium	N2	SS	2002	2021	19	0.072	-0.011	21.868	0.268		
Thallium	N4	SS	2002	2021	20	0.072	-0.01	19.669	0.251		
Thallium	N5	SS	2002	2021	20	0.072	-0.009	16.664	0.253		
Thallium	S1	SS	2002	2019	18	0.081	-0.014	28.403	0.253		
Thallium	S2	SS	2002	2021	20	0.065	-0.01	19.343	0.28		
Thallium	S4	SS	2002	2021	19	0.041	0.006	-13.083	0.406		
Thallium	W2	SS	2002	2021	19	0.078	-0.011	22.335	0.248		
Thallium	W4	SS	2002	2021	20	0.036	-0.007	13.879	0.423		
Titanium	E1	NG	2002	2021	20	0.211	-0.027	55.141	0.042		
Titanium	E2	NG	2002	2021	20	0.058	-0.016	31.704	0.308		
Titanium	E5	NG	2002	2021	20	0.142	0.031	-62.537	0.101		
Titanium	E6	NG	2002	2020	19	0.072	-0.016	32.314	0.268		
Titanium	N2	NG	2002	2021	20	0.278	-0.034	68.867	0.017		
Titanium	N4	NG	2002	2021	20	0.06	-0.021	43.09	0.299		

Table F-2
Site Specific Inorganic Regression Analysis Results Summary
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Titanium	N5	NG	2002	2021	20	0.077	-0.021	42.251	0.237		
Titanium	S1	NG	2002	2019	17	0.014	-0.008	16.474	0.648		
Titanium	S2	NG	2002	2021	20	0.097	-0.019	39.453	0.181		
Titanium	S4	NG	2002	2021	20	0.003	0.004	-8.571	0.814		
Titanium	W2	NG	2002	2021	20	0.044	-0.013	27.504	0.372		
Titanium	W4	NG	2002	2021	20	0.095	-0.025	51.266	0.186		
Titanium	E2	SD	1991	2021	31	0.033	-0.003	8.658	0.328		
Titanium	N2	SD	1991	2021	31	0.025	-0.003	9.127	0.393		
Titanium	N5	SD	1991	2021	20	0.002	0.001	-0.879	0.86		
Titanium	S1	SD	1991	2019	29	0.011	0.004	-5.499	0.585		
Titanium	S4	SD	1991	2021	31	0.044	0.007	-12.334	0.255		
Titanium	E1	SS	1991	2021	28	0.102	0.005	-7.766	0.098		
Titanium	E2	SS	1991	2021	28	0.049	-0.005	11.424	0.26		
Titanium	E5	SS	1991	2021	28	0.001	0.001	0.587	0.871		
Titanium	E6	SS	1991	2020	21	0.031	-0.004	10.277	0.447		
Titanium	N2	SS	1991	2021	28	0.006	0.002	-0.995	0.689		
Titanium	N4	SS	1991	2021	21	0.143	-0.008	18.22	0.091		
Titanium	N5	SS	1991	2021	20	0.001	-0.001	3.155	0.898		
Titanium	S1	SS	1991	2019	28	0.047	0.008	-14.192	0.266		
Titanium	S2	SS	1991	2021	30	0.036	0.006	-10.738	0.313		
Titanium	S4	SS	1991	2021	27	0.001	-0.001	4.1	0.899		
Titanium	W2	SS	1991	2021	27	0.001	-0.001	3.171	0.875		
Titanium	W4	SS	1991	2021	22	0.104	-0.011	23.411	0.143		
Vanadium	E5	NG	2010	2021	12	0.009	-0.01	20.668	0.764		
Vanadium	N2	NG	2010	2021	12	0.643	-0.059	118.889	0.002	*	Decreasing
Vanadium	S1	NG	2010	2019	10	0.292	-0.077	155.039	0.107		
Vanadium	S2	NG	2010	2021	12	0.044	-0.019	37.106	0.513		
Vanadium	W2	NG	2010	2021	12	0.758	-0.092	184.361	<0.001	*	Decreasing
Vanadium	W4	NG	2010	2021	12	0.815	-0.122	245.049	<0.001	*	Decreasing
Vanadium	E2	SD	1991	2021	31	0.261	0.005	-8.978	0.003		
Vanadium	N2	SD	1991	2021	31	0.459	0.009	-16.779	<0.001	*	Increasing
Vanadium	N5	SD	1991	2021	20	0.077	0.006	-9.613	0.235		
Vanadium	S1	SD	1991	2019	29	0.037	0.002	-1.968	0.319		
Vanadium	S4	SD	1991	2021	31	0.309	0.004	-6.001	0.001	*	Increasing
Vanadium	E1	SS	1991	2021	28	0.146	0.004	-5.835	0.045		
Vanadium	E2	SS	1991	2021	28	0.191	0.005	-8.926	0.02		
Vanadium	E5	SS	1991	2021	28	0.097	0.003	-3.945	0.106		
Vanadium	E6	SS	1991	2020	21	0.055	0.004	-6.24	0.307		
Vanadium	N2	SS	1991	2021	28	0.277	0.005	-9.233	0.004		
Vanadium	N4	SS	1991	2021	21	0.145	0.004	-6.972	0.088		
Vanadium	N5	SS	1991	2021	20	0.174	0.003	-5.102	0.067		
Vanadium	S1	SS	1991	2019	28	0.259	0.005	-8.373	0.006		
Vanadium	S2	SS	1991	2021	30	0.227	0.004	-6.593	0.008		
Vanadium	S4	SS	1991	2021	27	0.281	0.006	-9.484	0.004		
Vanadium	W2	SS	1991	2021	27	0.402	0.005	-8.868	<0.001	*	Increasing
Vanadium	W4	SS	1991	2021	22	0.13	0.004	-5.907	0.099		
Zinc	E1	FC	1991	2021	7	0.094	-0.006	12.609	0.503		
Zinc	E2	FC	1991	2019	7	0.004	0.001	-0.866	0.89		
Zinc	E5	FC	1991	2021	7	0.152	0.009	-16.385	0.388		
Zinc	N2	FC	1991	2021	7	0.205	0.006	-10.51	0.308		
Zinc	N4	FC	1991	2020	6	0.002	0.001	-0.067	0.934		
Zinc	S2	FC	1991	2021	6	0.035	0.002	-2.61	0.724		
Zinc	E1	NG	1991	2021	31	0.095	-0.009	18.806	0.091		
Zinc	E2	NG	1991	2021	31	0.073	0.004	-6.419	0.143		
Zinc	E5	NG	1991	2021	30	0.006	0.002	-2.027	0.686		
Zinc	E6	NG	1991	2020	21	0.002	-0.001	4.491	0.853		
Zinc	N2	NG	1991	2021	32	0.002	0.001	0.199	0.816		
Zinc	N4	NG	1991	2021	21	0.092	0.007	-11.898	0.181		
Zinc	N5	NG	1991	2021	20	0.031	-0.004	10.14	0.458		
Zinc	S1	NG	1991	2019	29	0.009	0.002	-2.236	0.632		
Zinc	S2	NG	1991	2021	32	0.022	-0.003	7.116	0.419		

Table F-2
Site Specific Inorganic Regression Analysis Results Summary
Lambton Facility 2022 Annual Landfill Report Biomonitoring Program
2021 Field Year

Analyte	Site	Matrix	Regression Start Year	Year of Most Recent Sampling Event	Number of Samples (n)	R^2	Slope	Intercept	p-value	P<0.003	Direction of Significant Trend
Zinc	S4	NG	1991	2021	29	0.002	-0.001	3.179	0.833		
Zinc	W2	NG	1991	2021	31	0.02	-0.002	4.59	0.45		
Zinc	W4	NG	1991	2021	25	0.001	0.001	-0.205	0.865		
Zinc	E1	SB	1991	2020	19	0.061	0.003	-3.516	0.307		
Zinc	E2	SB	1991	2020	13	0.14	-0.003	8.5	0.207		
Zinc	E5	SB	1991	2020	19	0.088	0.003	-4.554	0.217		
Zinc	N2	SB	1991	2019	17	0.018	-0.002	5.047	0.612		
Zinc	N4	SB	1991	2021	7	0.593	0.009	-16.594	0.043		
Zinc	S1	SB	1991	2019	21	0.088	0.003	-4.606	0.191		
Zinc	S2	SB	1991	2020	22	0.058	0.002	-3.522	0.28		
Zinc	S4	SB	1991	2020	19	0.065	0.003	-4.684	0.294		
Zinc	W2	SB	1991	2021	22	0.03	0.003	-3.846	0.44		
Zinc	W4	SB	1991	2020	12	0.022	0.001	-1.425	0.645		
Zinc	E2	SD	1991	2021	31	0.035	0.003	-3.576	0.315		
Zinc	N2	SD	1991	2021	31	0.079	0.005	-7.306	0.125		
Zinc	N5	SD	1991	2021	20	0.101	-0.01	21.426	0.173		
Zinc	S1	SD	1991	2019	29	<0.001	<0.001	1.404	0.941		
Zinc	S4	SD	1991	2021	31	0.049	-0.002	5.273	0.233		
Zinc	E1	SS	1991	2021	28	0.03	-0.002	5.116	0.375		
Zinc	E2	SS	1991	2021	28	0.045	0.002	-2.695	0.278		
Zinc	E5	SS	1991	2021	28	0.011	0.001	0.029	0.598		
Zinc	E6	SS	1991	2020	21	0.157	-0.006	13.365	0.076		
Zinc	N2	SS	1991	2021	28	0.011	0.001	0.521	0.595		
Zinc	N4	SS	1991	2021	21	0.134	0.005	-7.495	0.103		
Zinc	N5	SS	1991	2021	20	0.422	-0.007	15.914	0.002	*	Decreasing
Zinc	S1	SS	1991	2019	28	0.052	0.002	-1.859	0.243		
Zinc	S2	SS	1991	2021	30	0.017	0.001	-0.578	0.492		
Zinc	S4	SS	1991	2021	27	0.253	0.004	-6.932	0.008		
Zinc	W2	SS	1991	2021	27	0.082	0.002	-2.005	0.147		
Zinc	W4	SS	1991	2021	22	0.021	0.001	-0.509	0.516		
Zinc	N2	WW	1991	2020	6	0.2	-0.002	4.874	0.374		
Zinc	S4	WW	1991	2021	8	0.179	-0.003	7.224	0.296		
Zirconium	E2	SD	1991	2021	31	0.026	-0.004	8.494	0.385		
Zirconium	N5	SD	1991	2021	20	0.211	-0.021	42.118	0.042		
Zirconium	S4	SD	1991	2021	31	0.022	-0.004	8.421	0.428		
Zirconium	N2	SS	1991	2021	28	0.004	-0.001	3.295	0.748		
Zirconium	N4	SS	1991	2021	21	0.265	-0.019	38.262	0.017		
Zirconium	N5	SS	1991	2021	20	0.421	-0.029	59.225	0.002	*	Decreasing
Zirconium	S1	SS	1991	2019	28	0.015	-0.003	6.201	0.533		
Zirconium	S4	SS	1991	2021	27	0.058	-0.005	11.801	0.226		
Zirconium	W4	SS	1991	2021	22	0.357	-0.02	40.699	0.003		

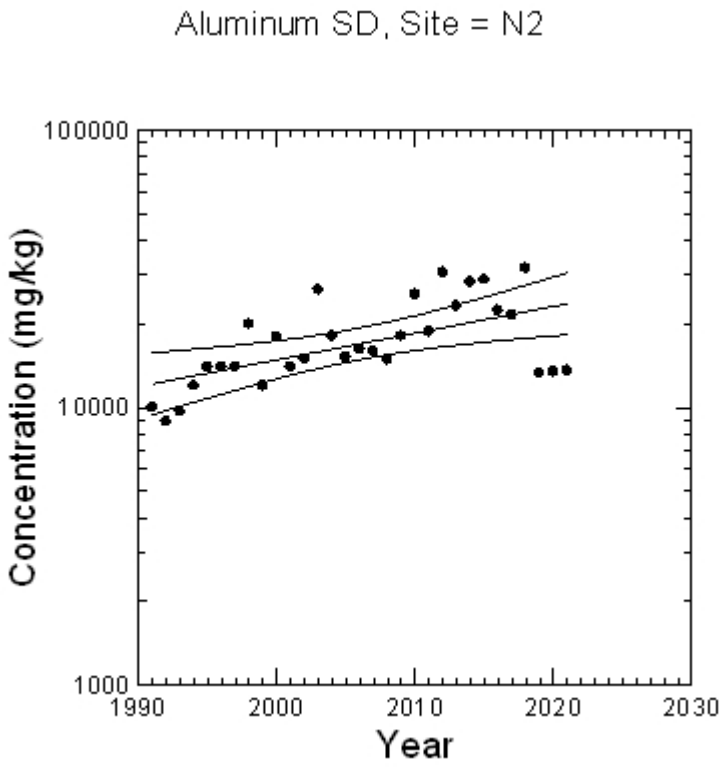
F.2 SITE-SPECIFIC INORGANIC TREND LINE GRAPHS (P<0.003)

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



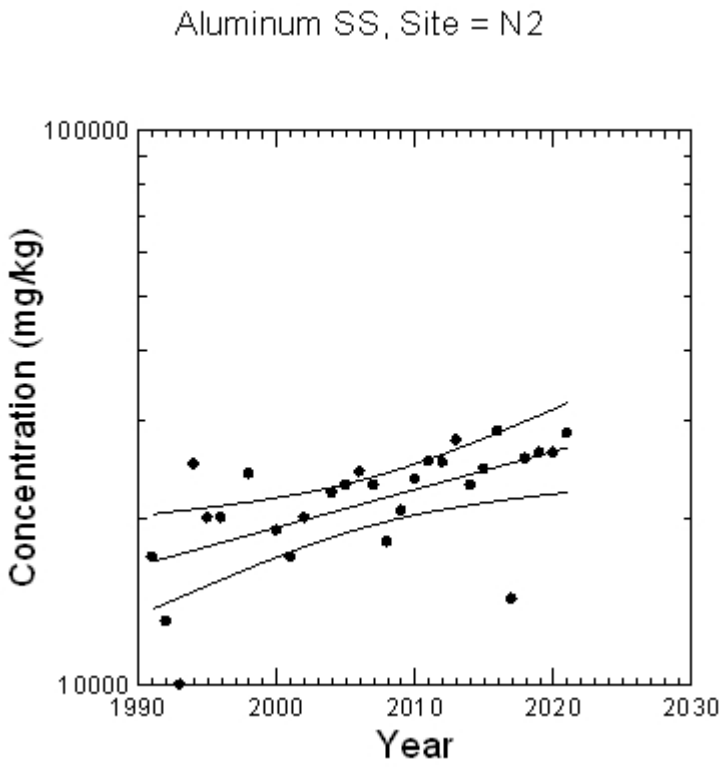
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Aluminum	N2	SD	1991	31	0.343	0.01	-15.081	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



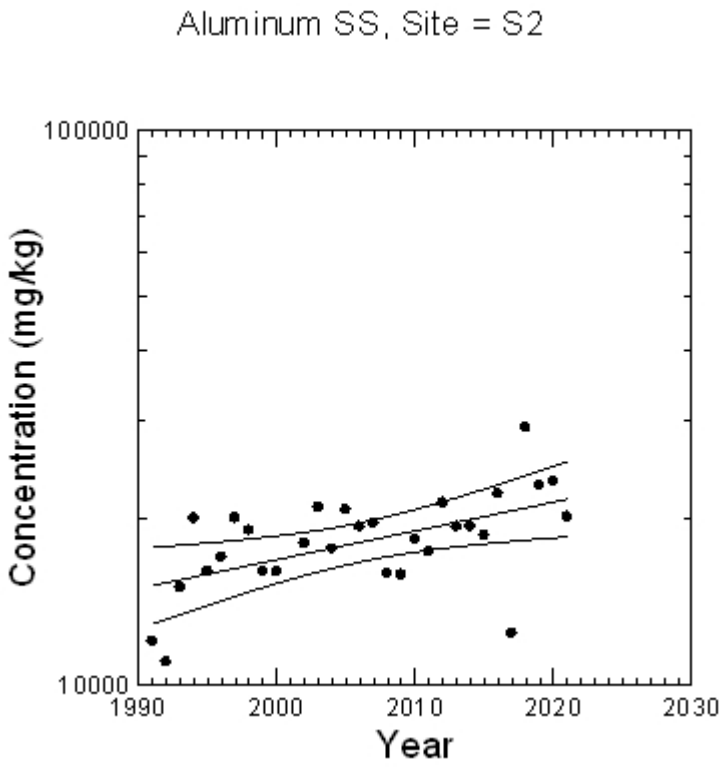
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Aluminum	N2	SS	1991	28	0.351	0.007	-9.406	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



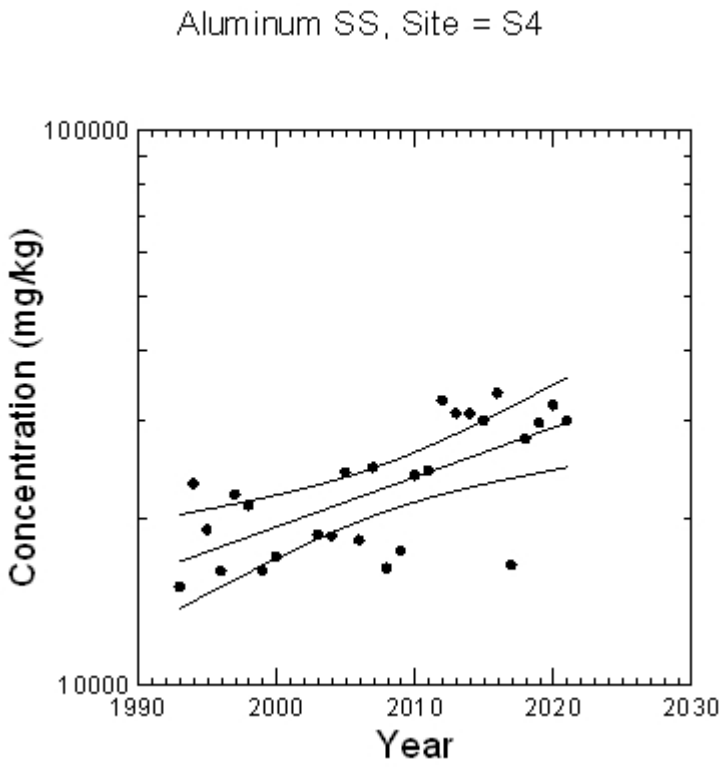
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Aluminum	S2	SS	1991	30	0.296	0.005	-6.156	0.002	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



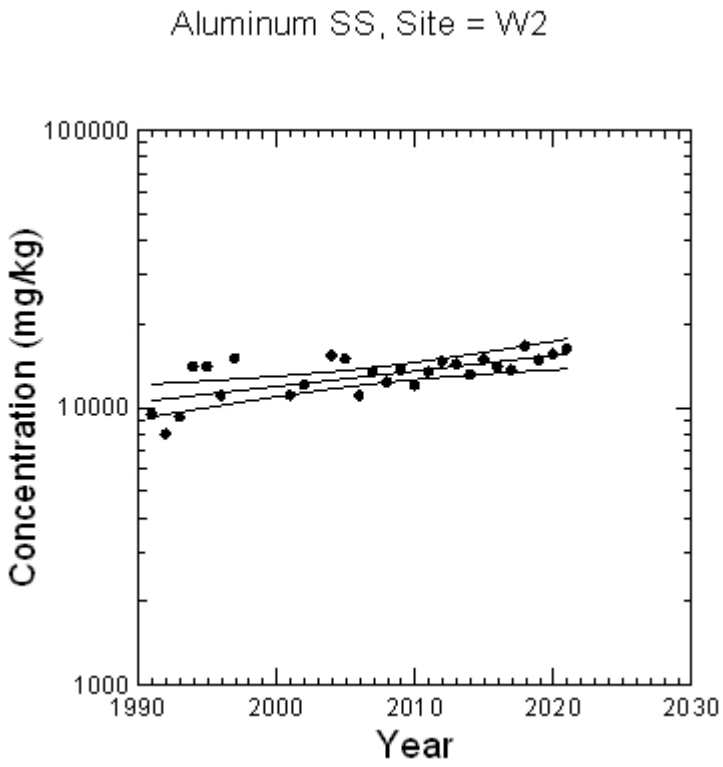
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Aluminum	S4	SS	1991	27	0.459	0.009	-13.614	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



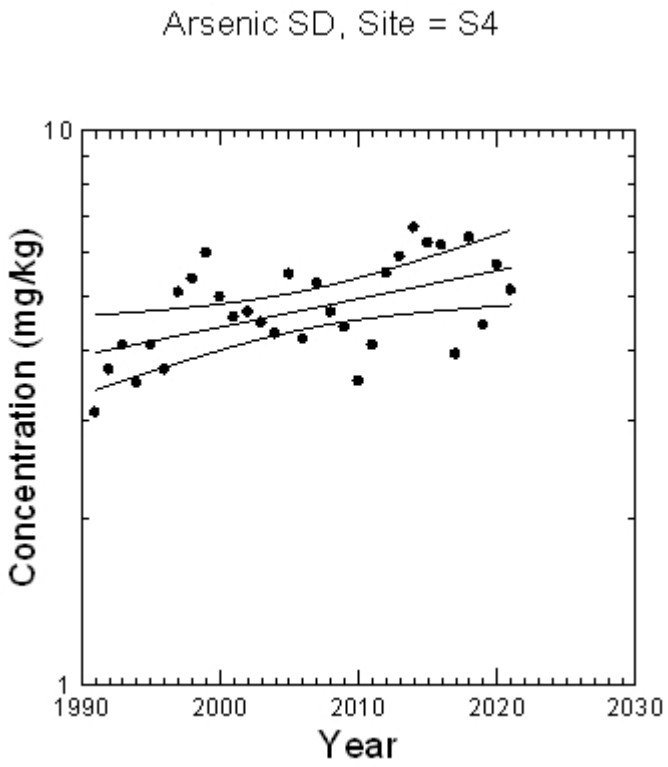
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Aluminum	W2	SS	1991	27	0.451	0.006	-7.087	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



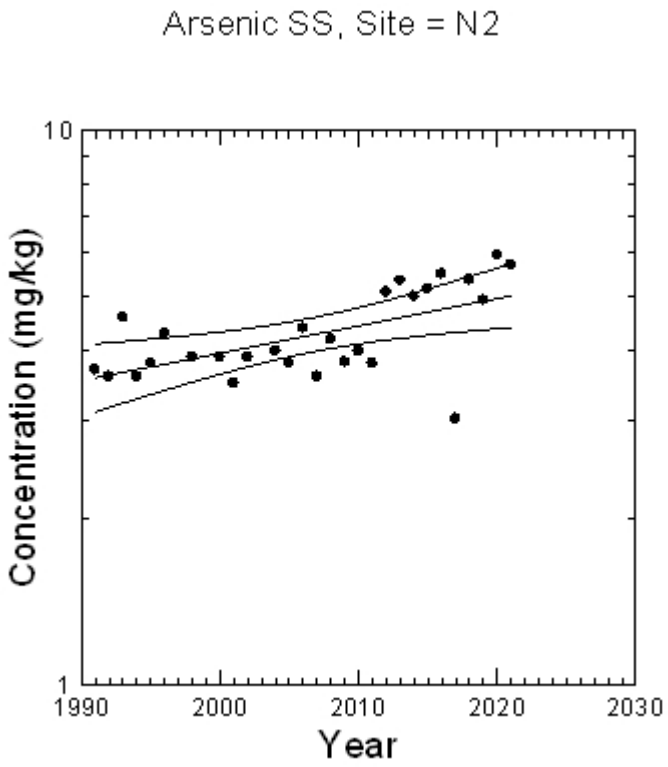
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Arsenic	S4	SD	1991	31	0.285	0.005	-9.57	0.002	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



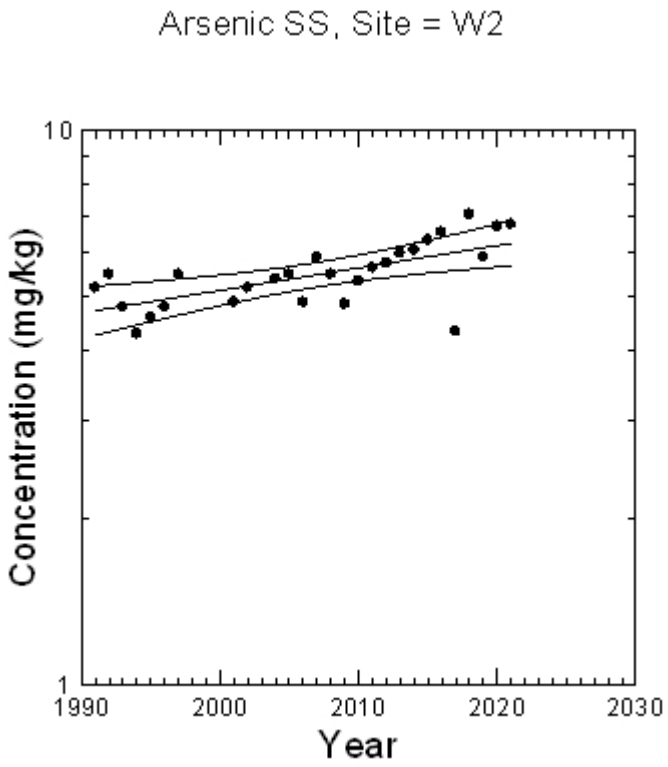
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Arsenic	N2	SS	1991	28	0.356	0.005	-9.271	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



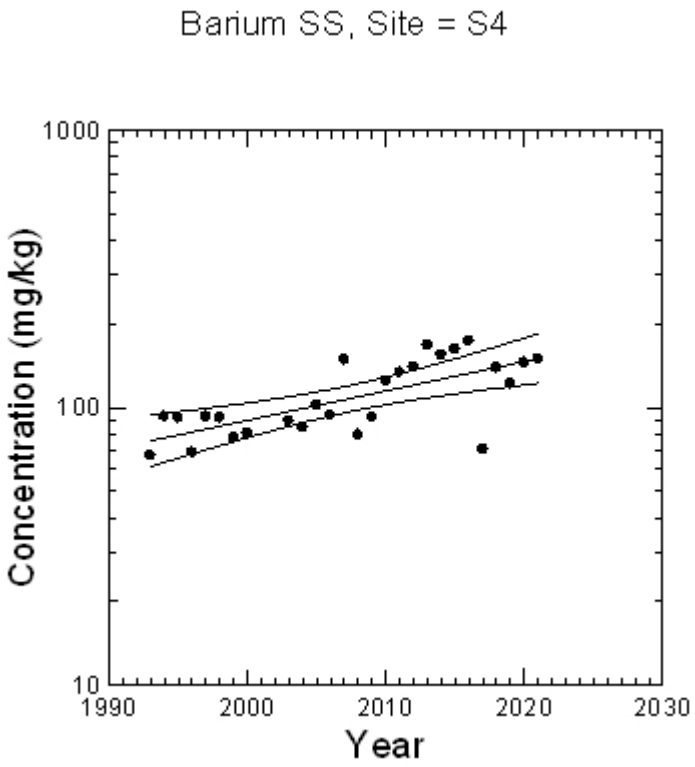
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Arsenic	W2	SS	1991	27	0.434	0.004	-7.384	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



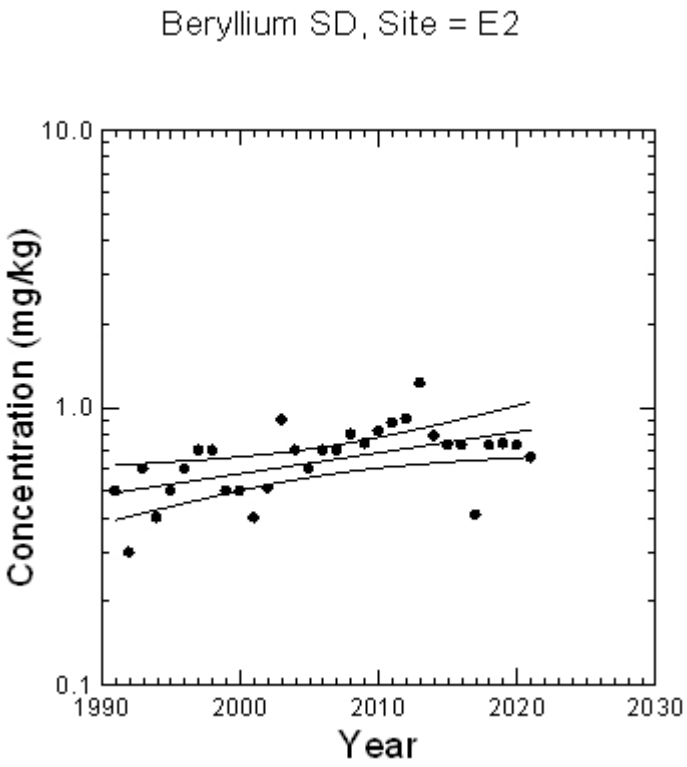
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Barium	S4	SS	1991	27	0.497	0.011	-19.229	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



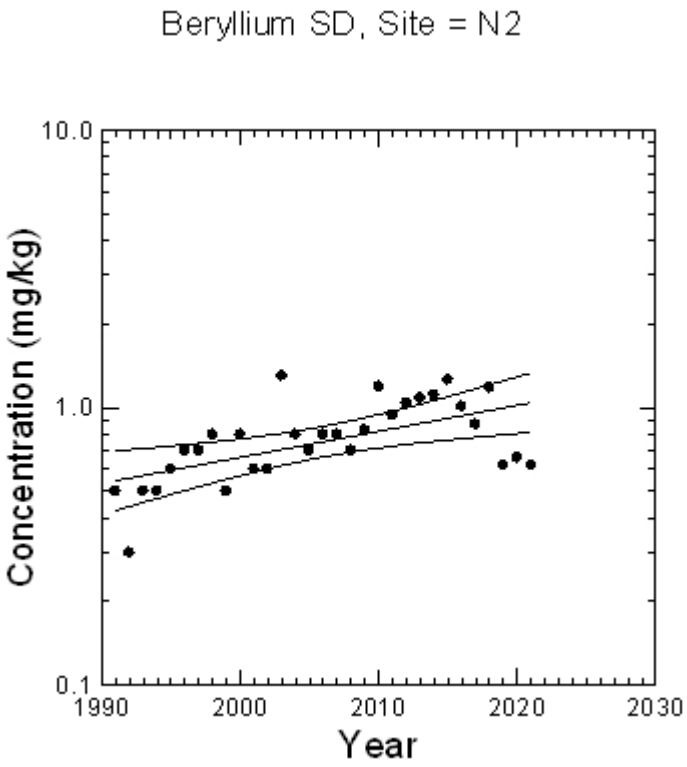
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Beryllium	E2	SD	1991	31	0.291	0.008	-15.367	0.002	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



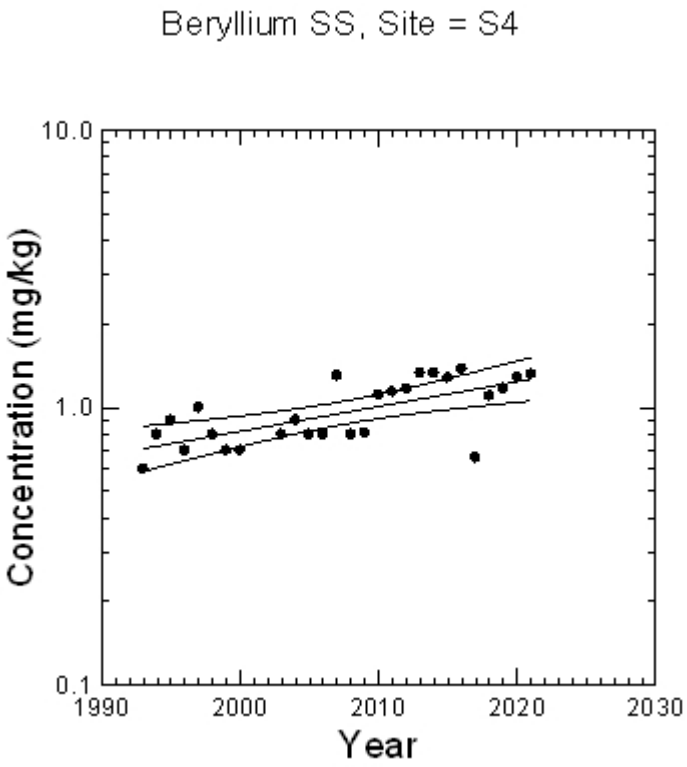
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Beryllium	N2	SD	1991	31	0.347	0.009	-18.916	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



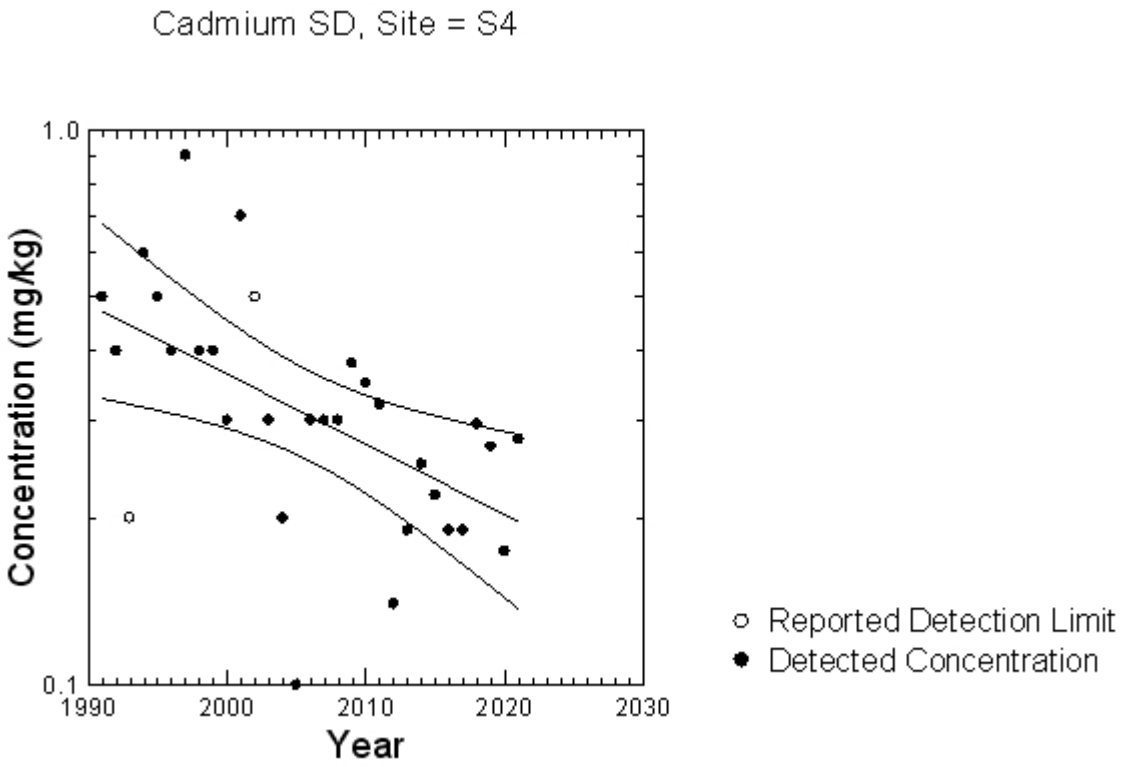
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Beryllium	S4	SS	1991	27	0.476	0.009	-17.987	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



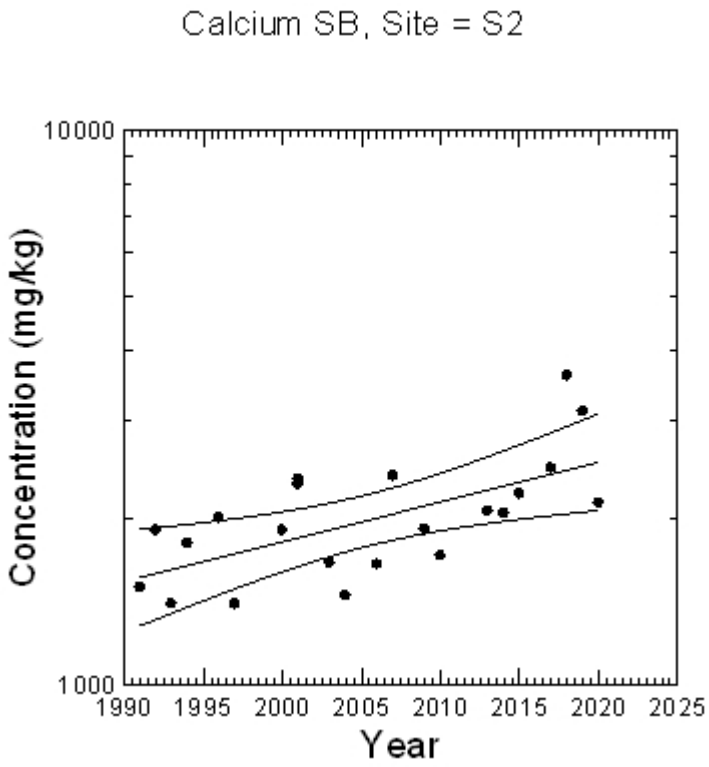
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Cadmium	S4	SD	1991	31	0.31	-0.013	24.851	0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



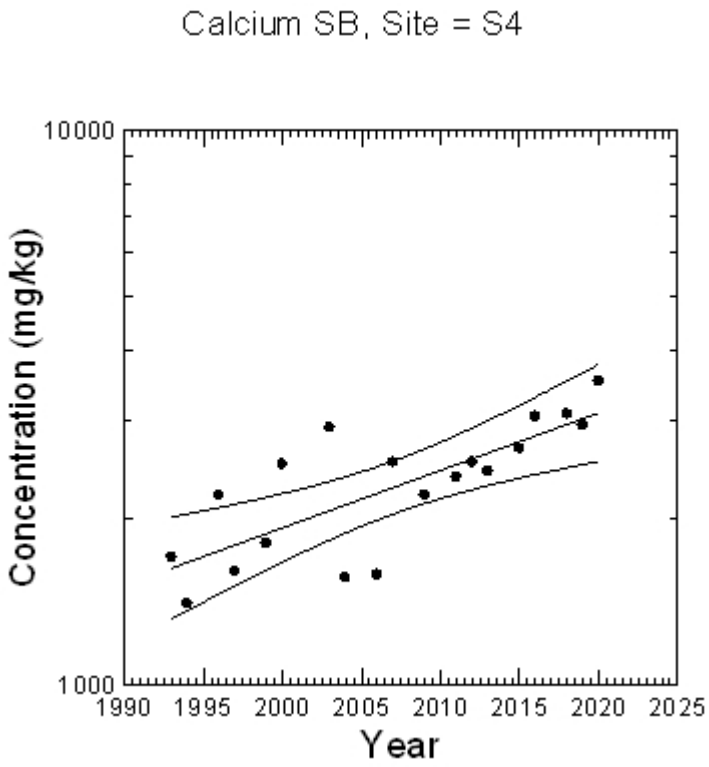
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Calcium	S2	SB	1991	22	0.412	0.007	-11.101	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



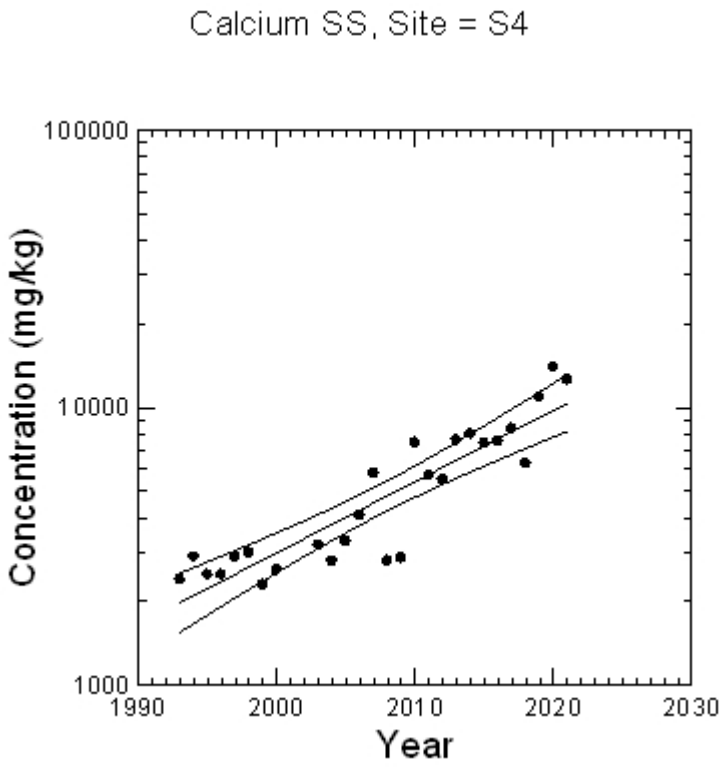
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Calcium	S4	SB	1991	19	0.591	0.01	-17.441	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



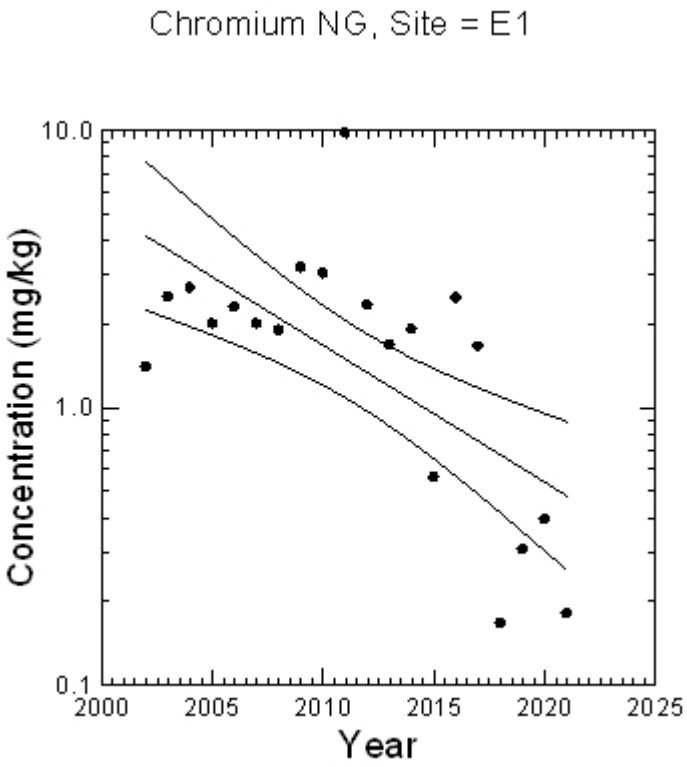
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Calcium	S4	SS	1991	27	0.816	0.026	-47.885	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



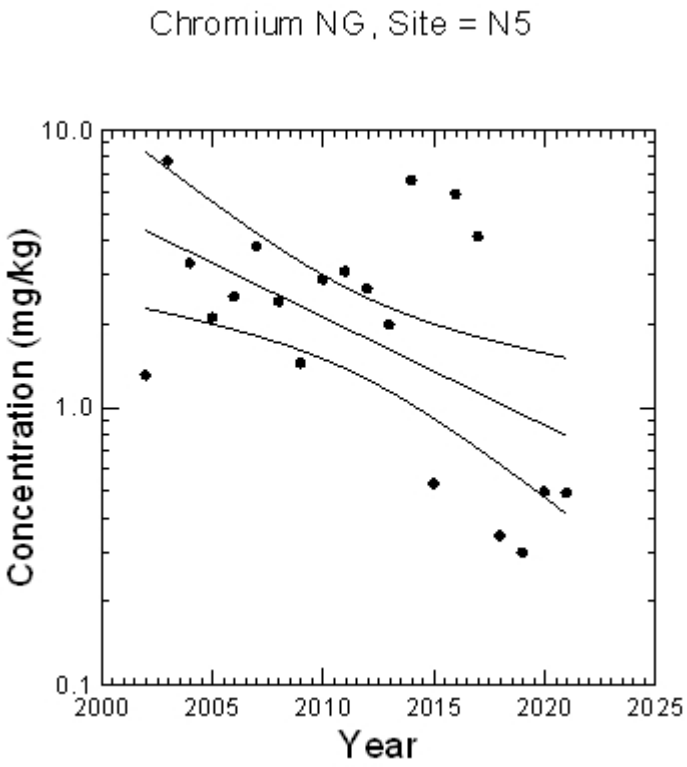
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Chromium	E1	NG	2002	40	0.417	-0.049	99.397	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



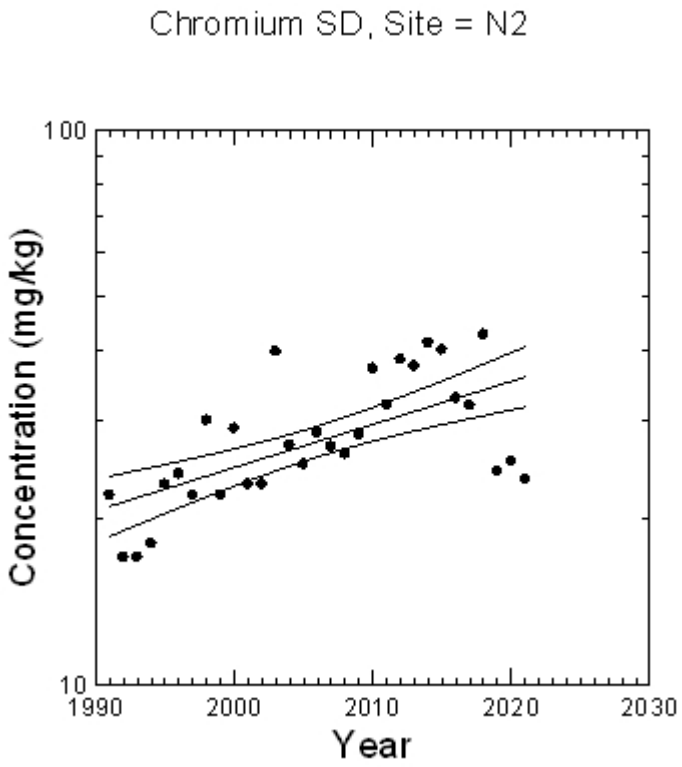
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Chromium	N5	NG	2002	40	0.289	-0.039	78.843	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



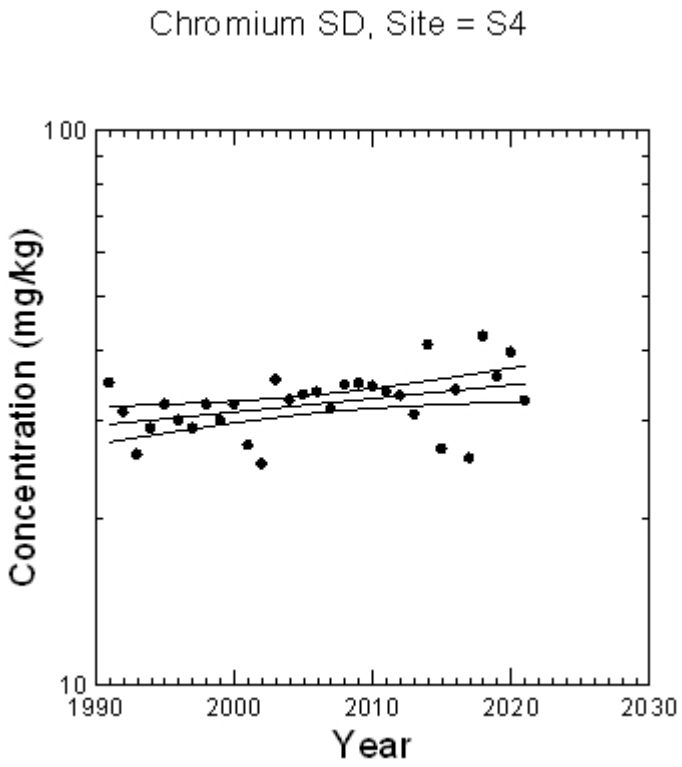
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Chromium	N2	SD	1991	62	0.396	0.008	-14.144	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



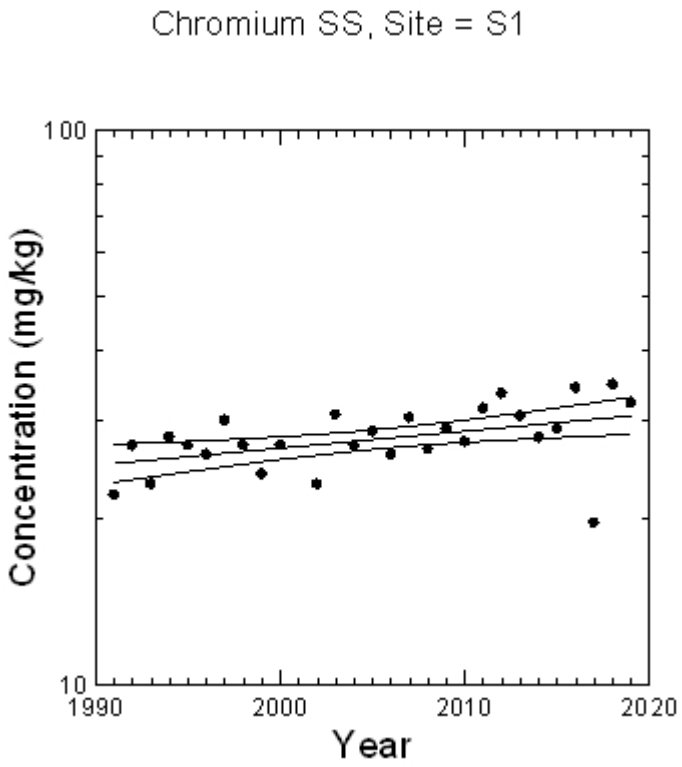
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Chromium	S4	SD	1991	62	0.157	0.002	-3.389	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



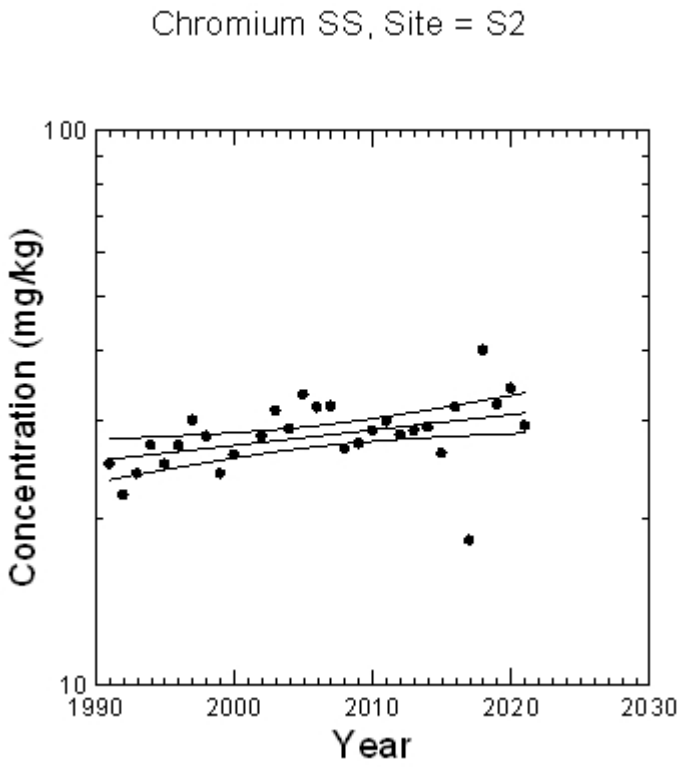
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Chromium	S1	SS	1991	56	0.204	0.003	-4.681	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



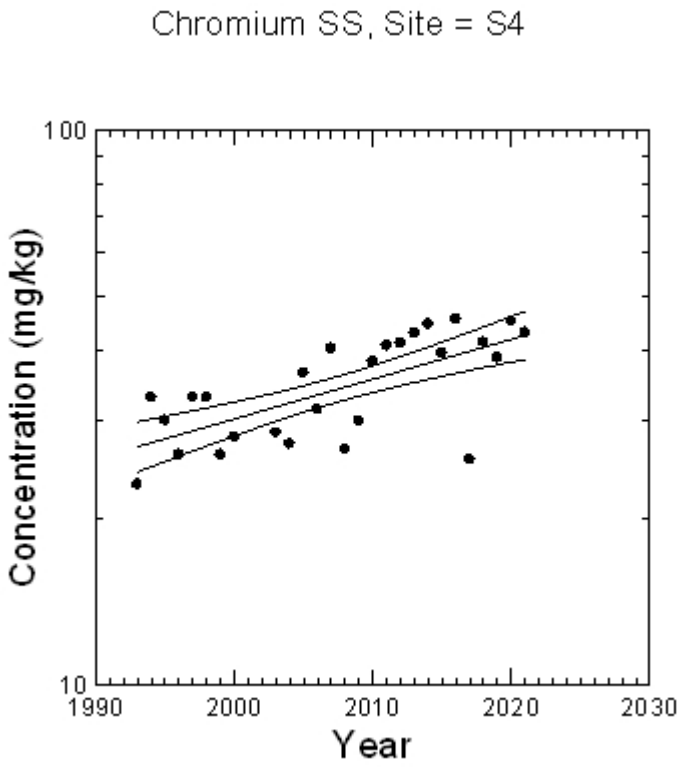
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Chromium	S2	SS	1991	60	0.161	0.003	-4.118	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



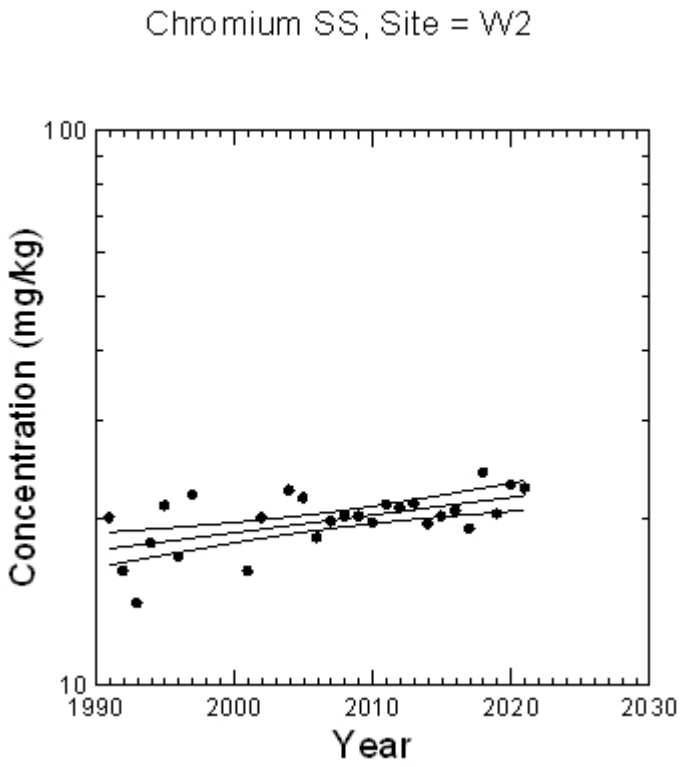
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Chromium	S4	SS	1991	54	0.463	0.007	-12.883	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



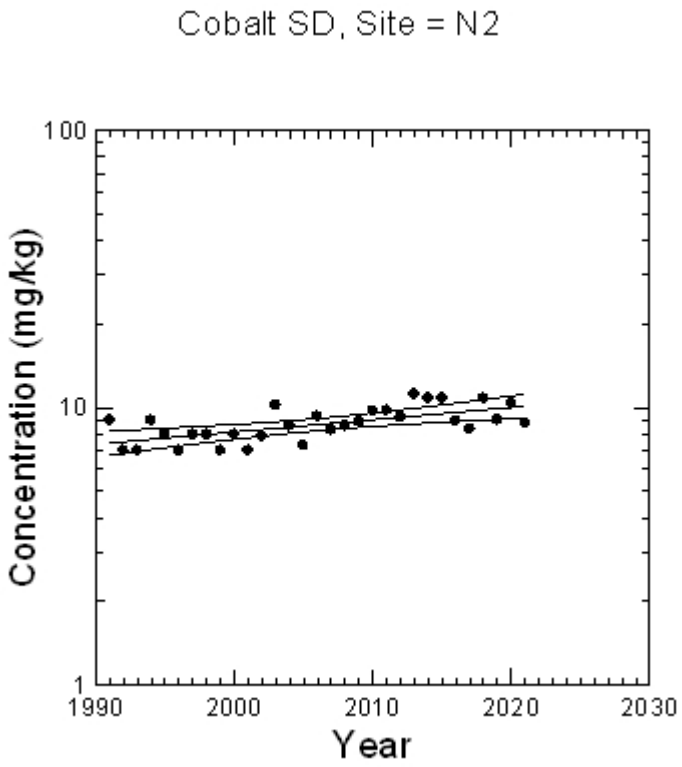
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Chromium	W2	SS	1991	54	0.328	0.003	-5.118	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



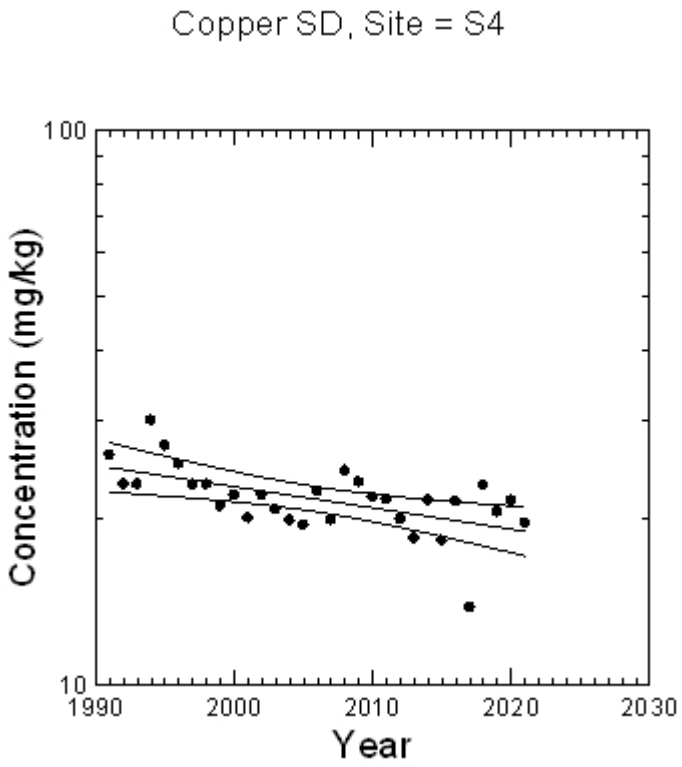
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Cobalt	N2	SD	1991	31	0.419	0.004	-7.9	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



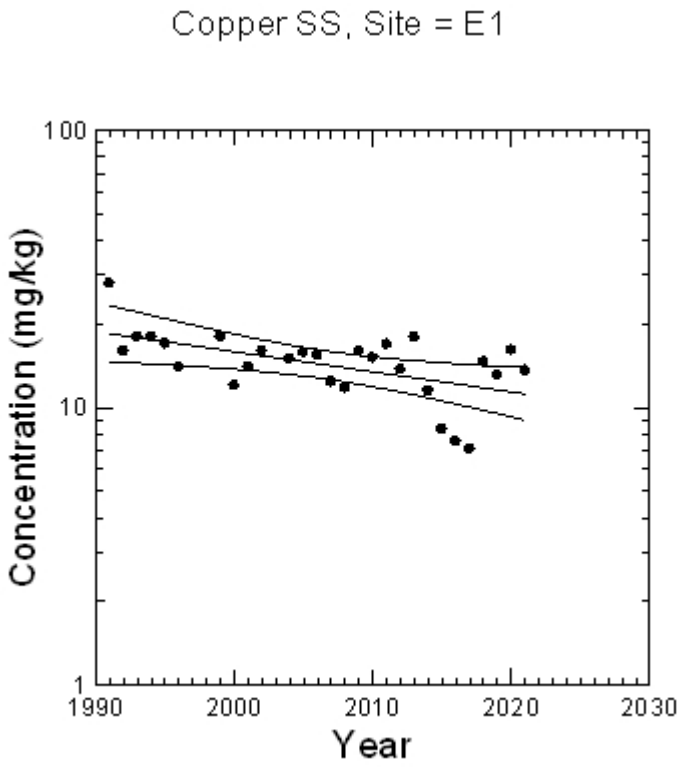
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Copper	S4	SD	1991	31	0.344	-0.004	9.031	0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



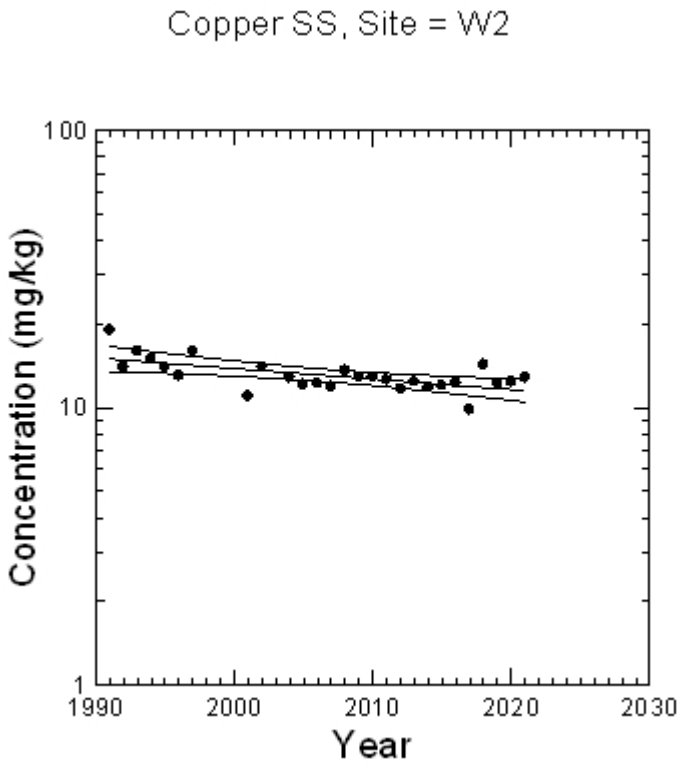
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Copper	E1	SS	1991	28	0.303	-0.007	15.692	0.002	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



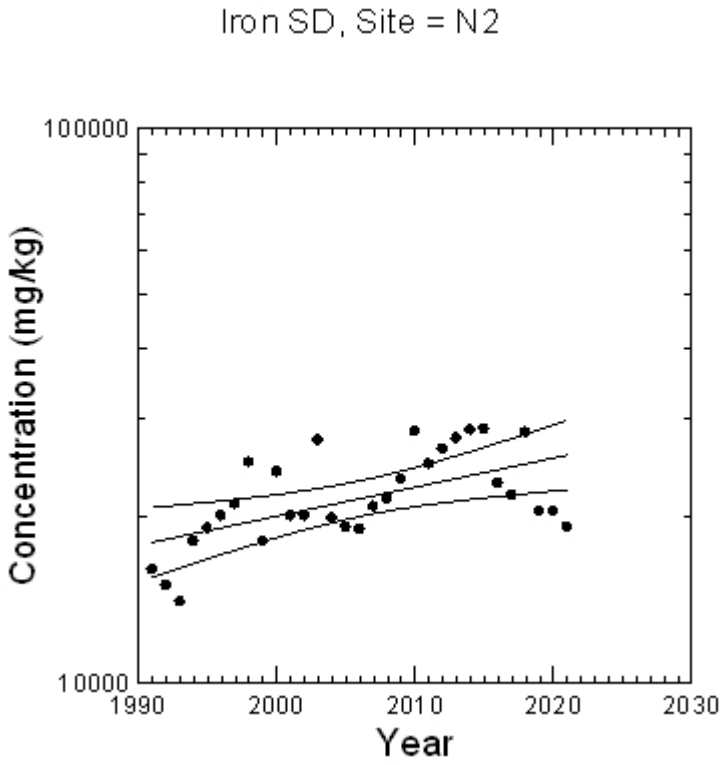
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Copper	W2	SS	1991	27	0.398	-0.004	8.737	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



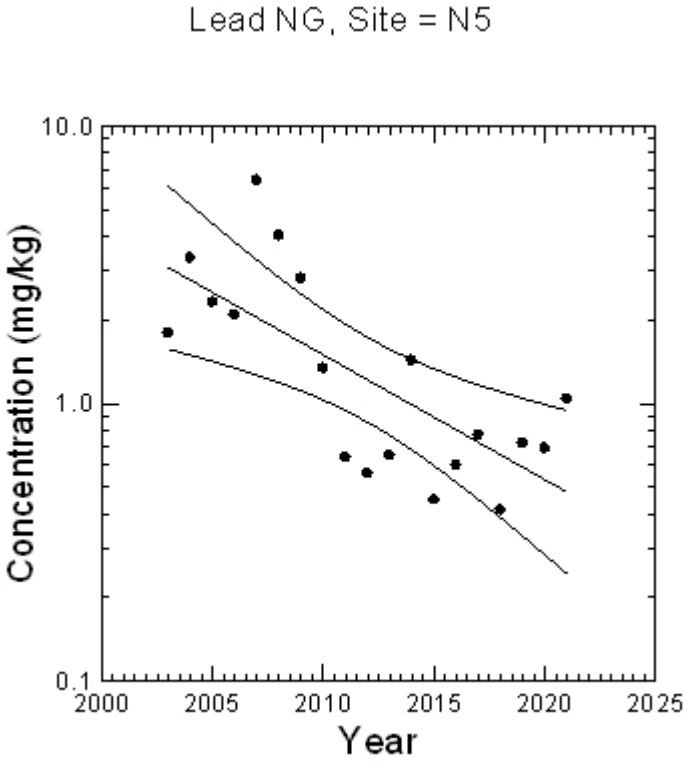
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Iron	N2	SD	1991	31	0.326	0.005	-6.152	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



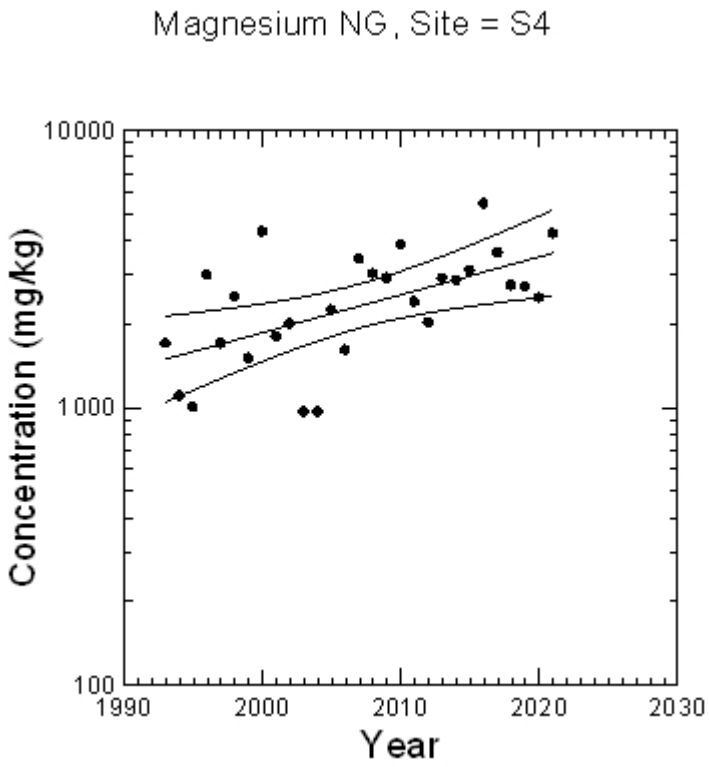
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Lead	N5	NG	2003	19	0.523	-0.045	90.635	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



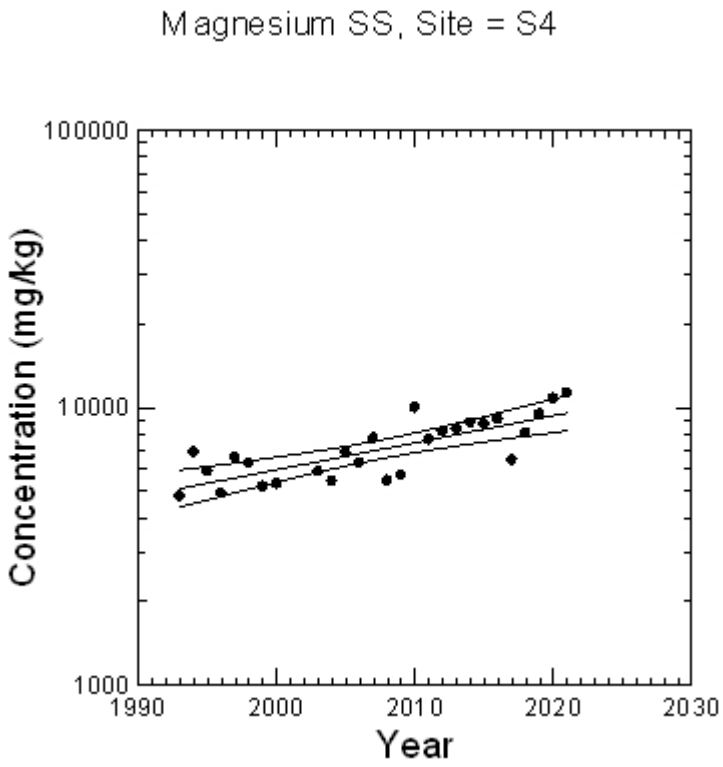
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Magnesium	S4	NG	1991	29	0.338	0.014	-24.044	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



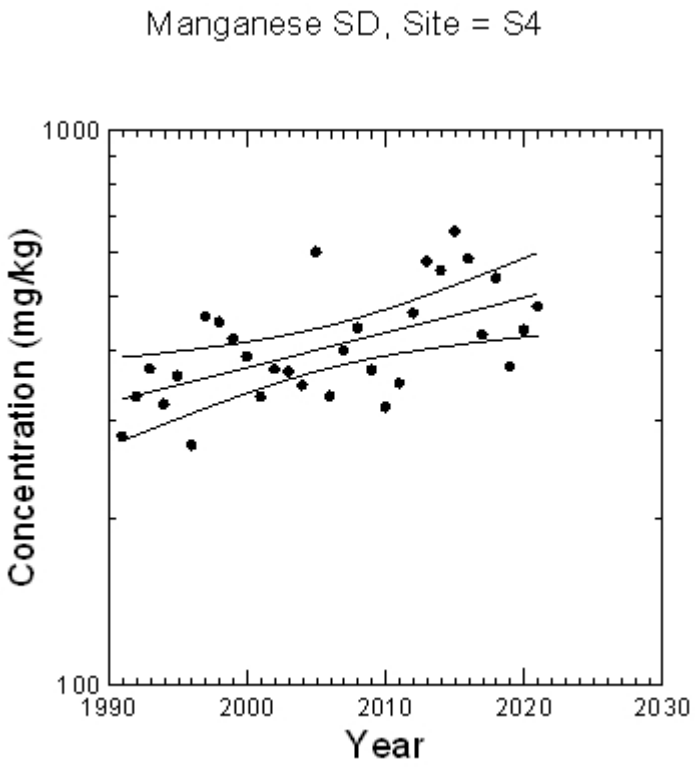
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Magnesium	S4	SS	1991	27	0.616	0.01	-15.672	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



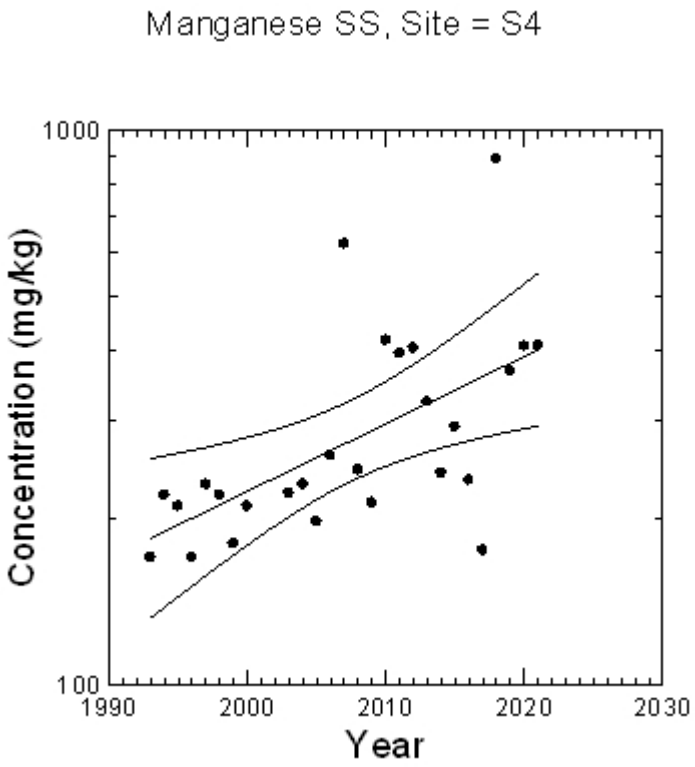
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Manganese	S4	SD	1991	31	0.332	0.006	-10.03	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



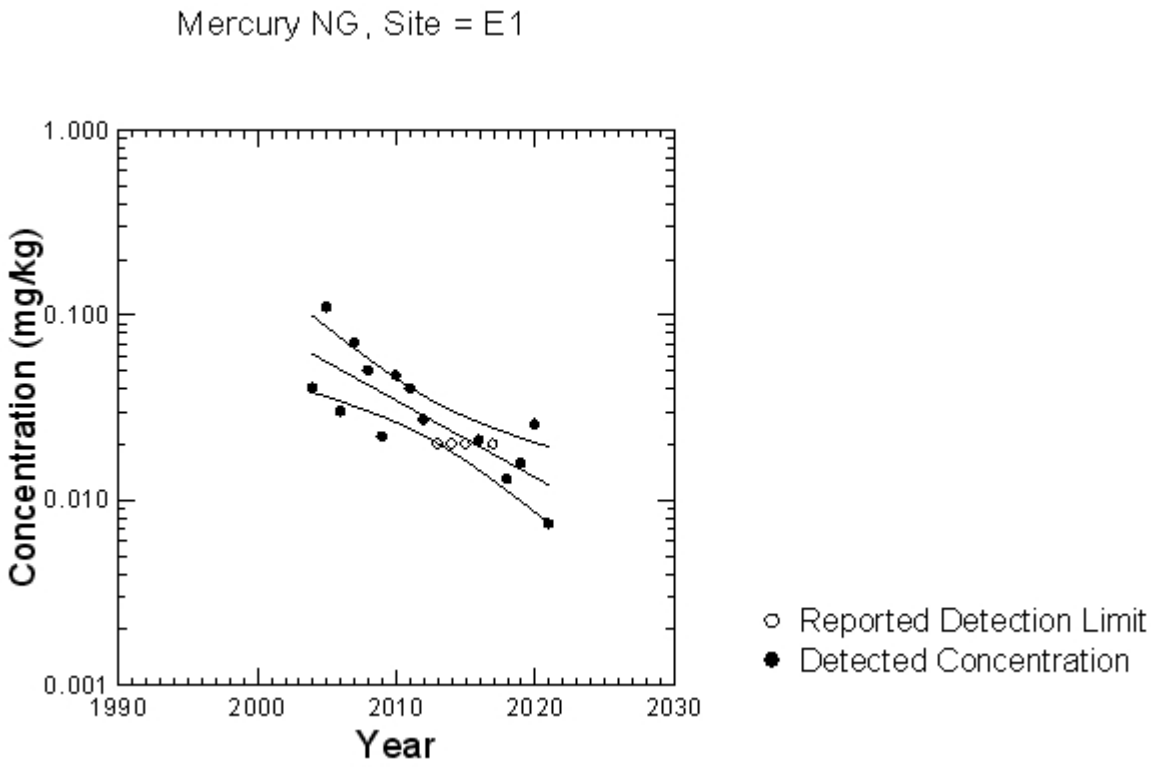
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Manganese	S4	SS	1991	27	0.352	0.012	-21.973	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



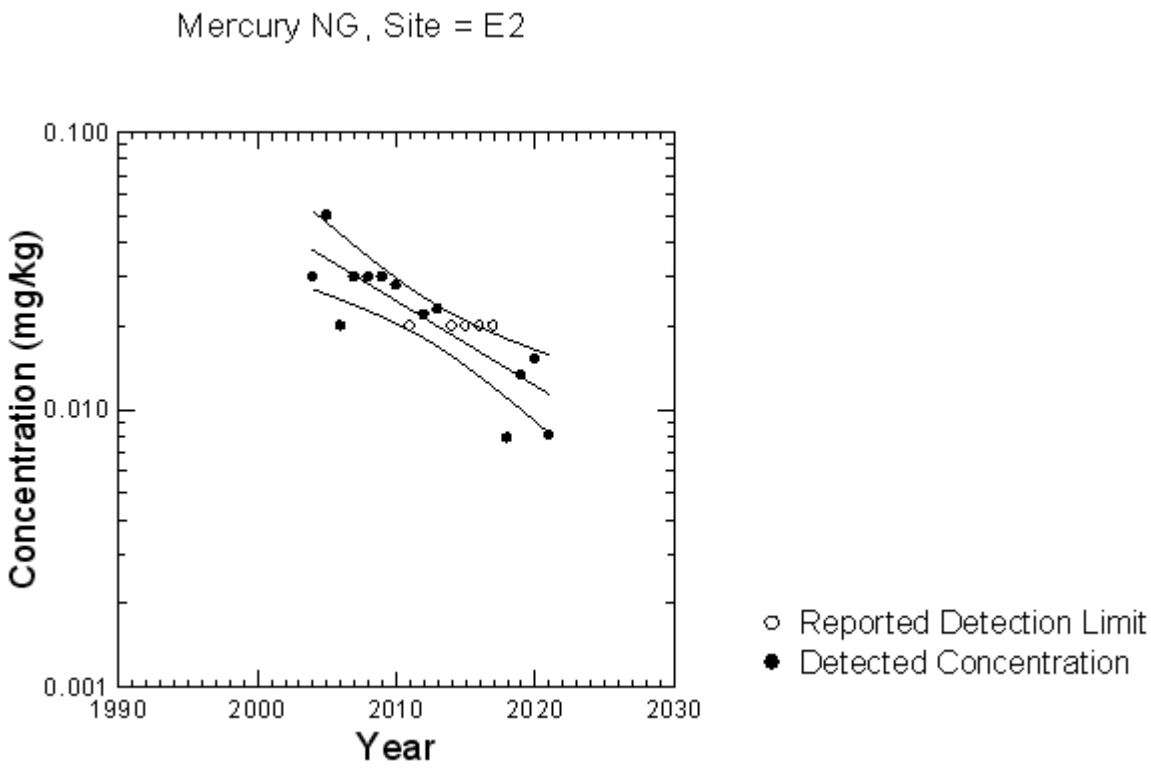
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Mercury	E1	NG	2004	18	0.648	-0.042	82.191	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



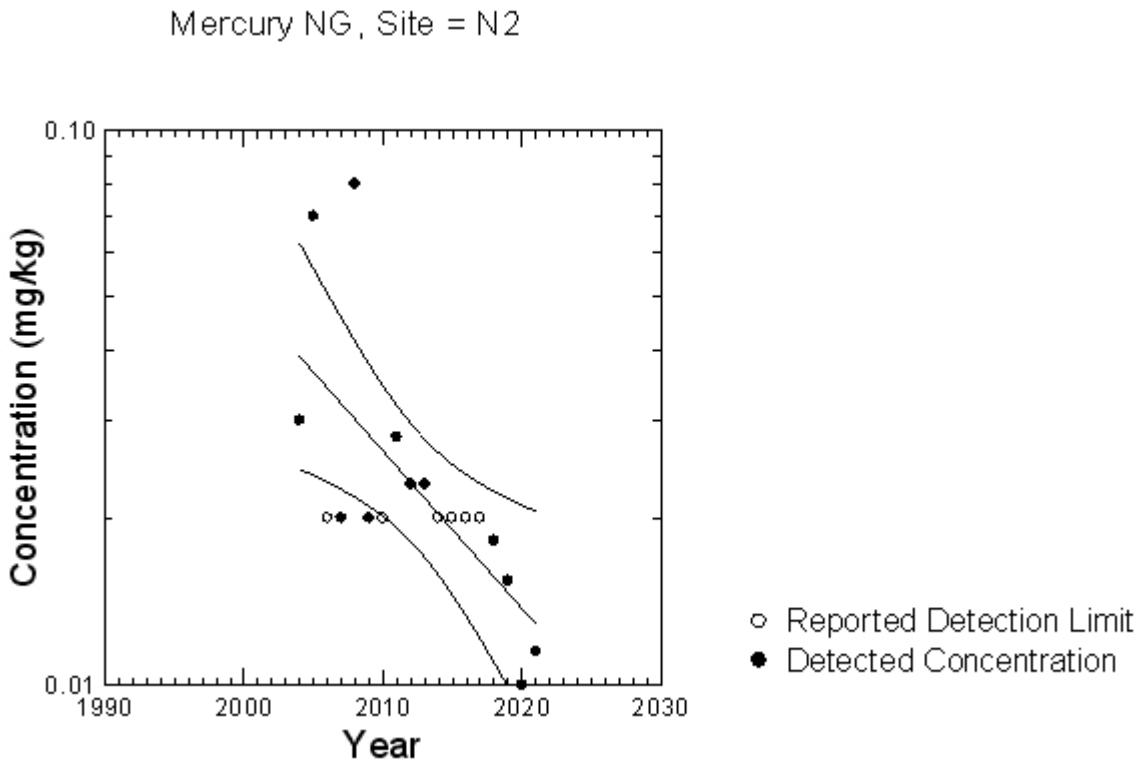
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Mercury	E2	NG	2004	18	0.678	-0.031	59.854	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



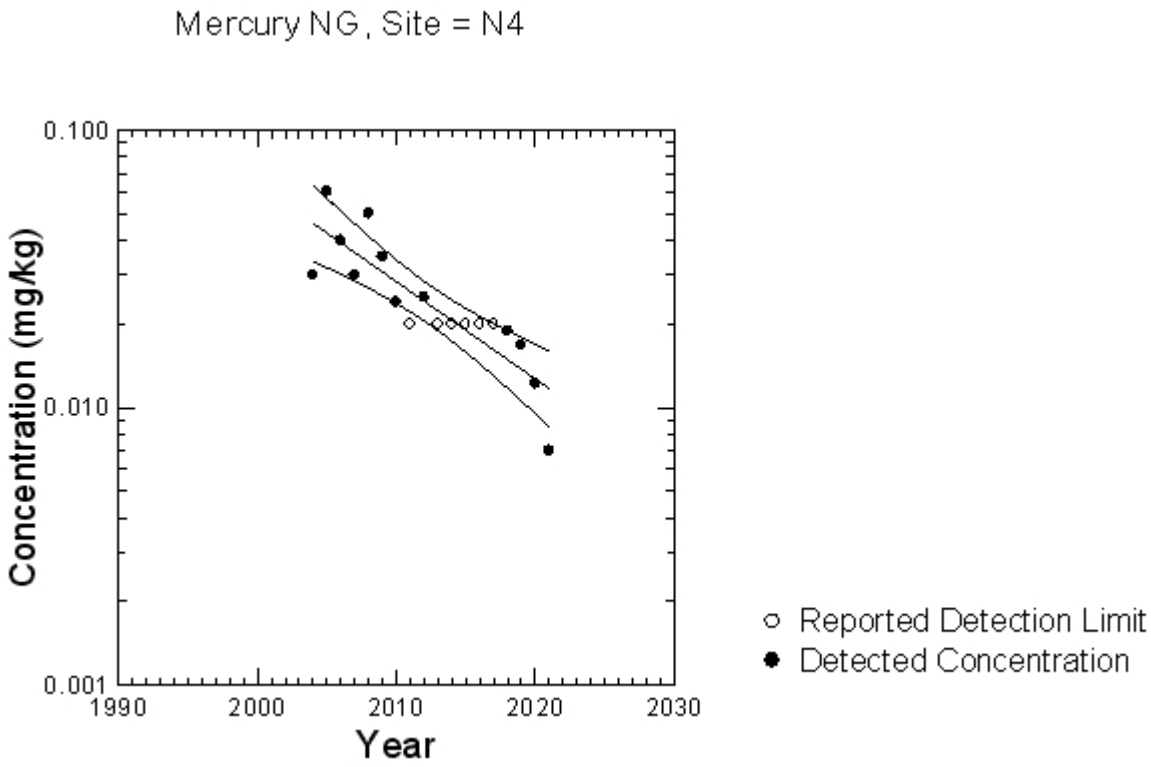
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Mercury	N2	NG	2004	18	0.468	-0.028	55.545	0.002	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



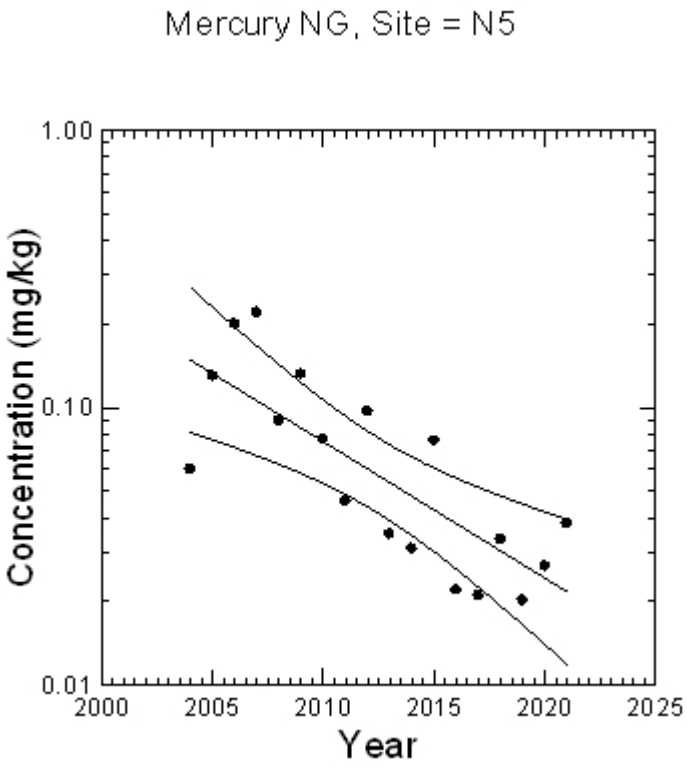
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Mercury	N4	NG	2004	18	0.749	-0.035	68.984	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



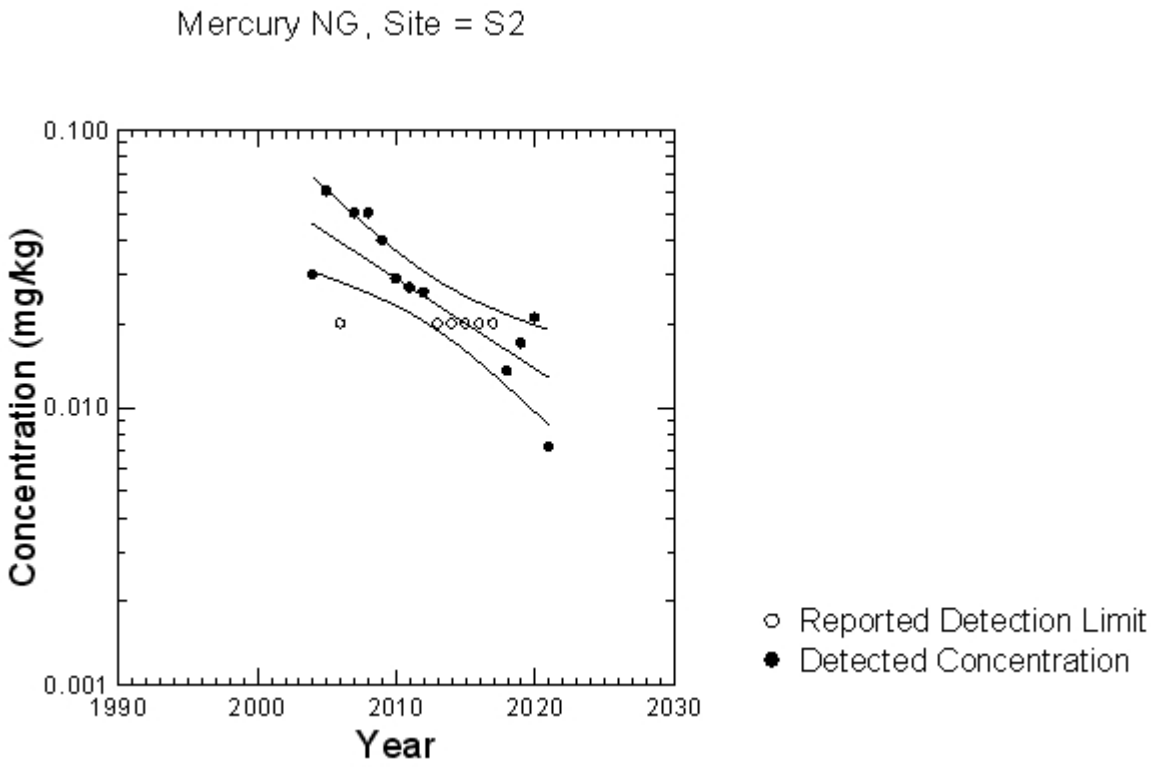
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Mercury	N5	NG	2004	18	0.616	-0.049	97.742	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



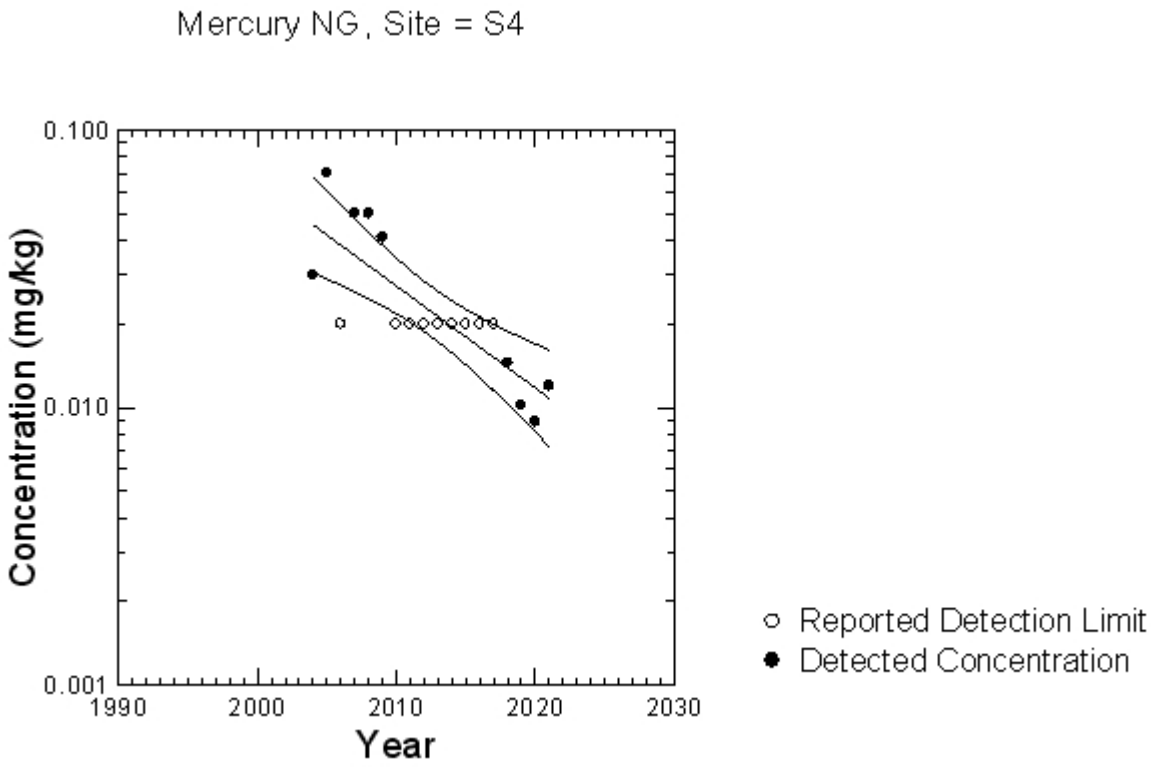
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Mercury	S2	NG	2004	18	0.619	-0.033	63.906	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



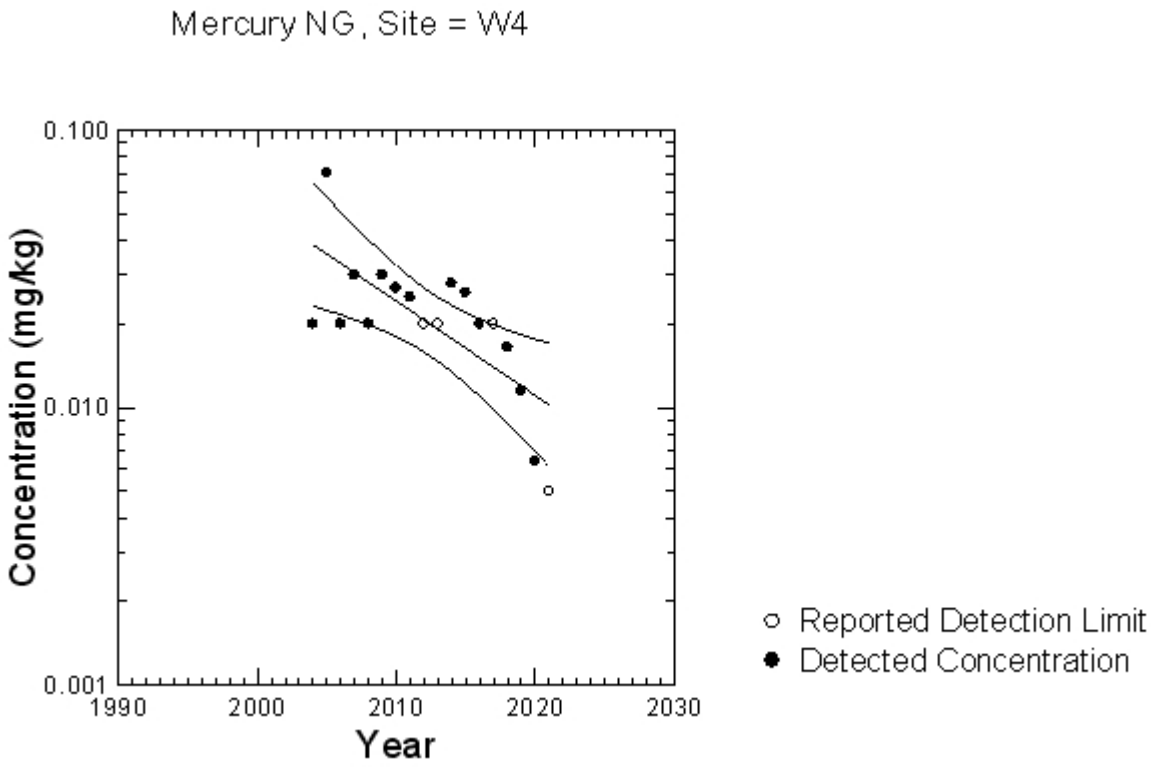
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Mercury	S4	NG	2004	18	0.669	-0.037	72.449	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



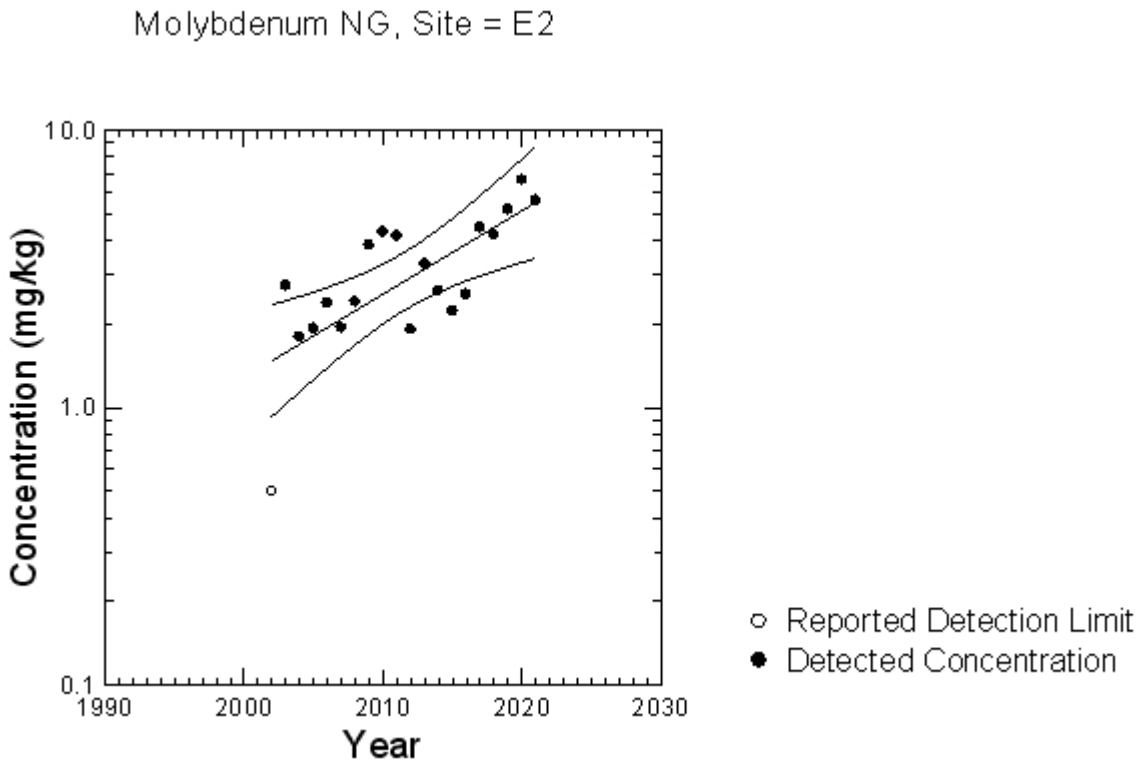
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Mercury	W4	NG	2004	18	0.514	-0.034	66.766	0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



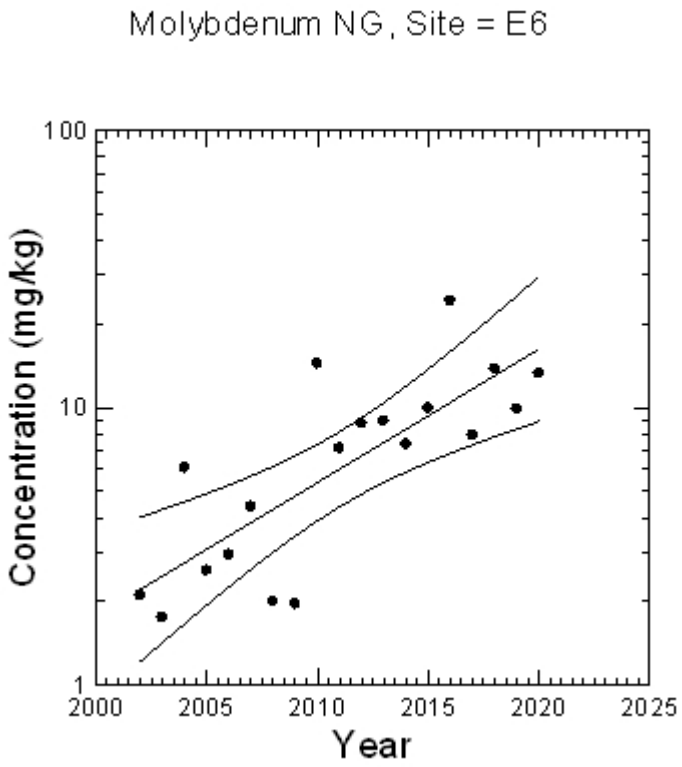
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Molybdenum	E2	NG	2002	20	0.52	0.03	-60.04	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



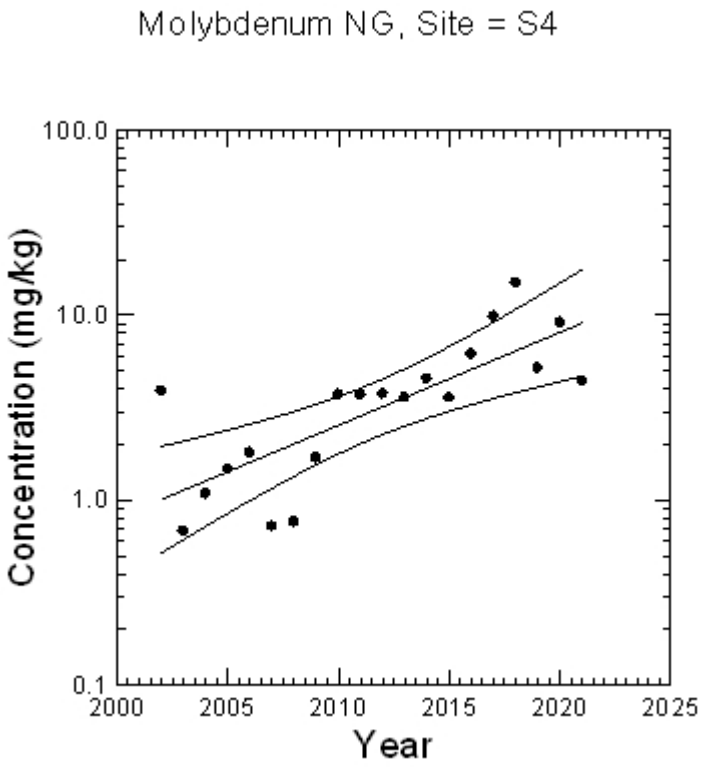
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Molybdenum	E6	NG	2002	19	0.615	0.048	-96.078	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



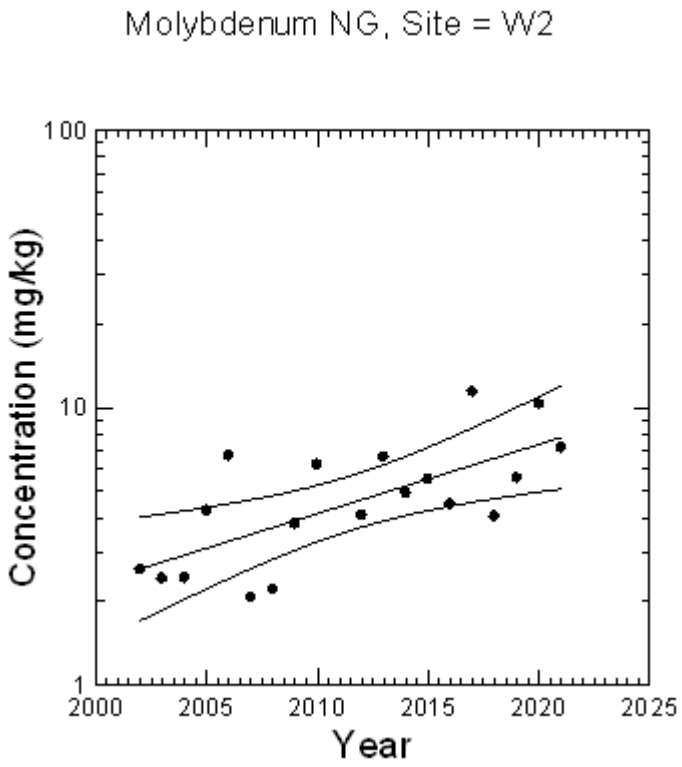
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Molybdenum	S4	NG	2002	20	0.597	0.05	-100.588	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



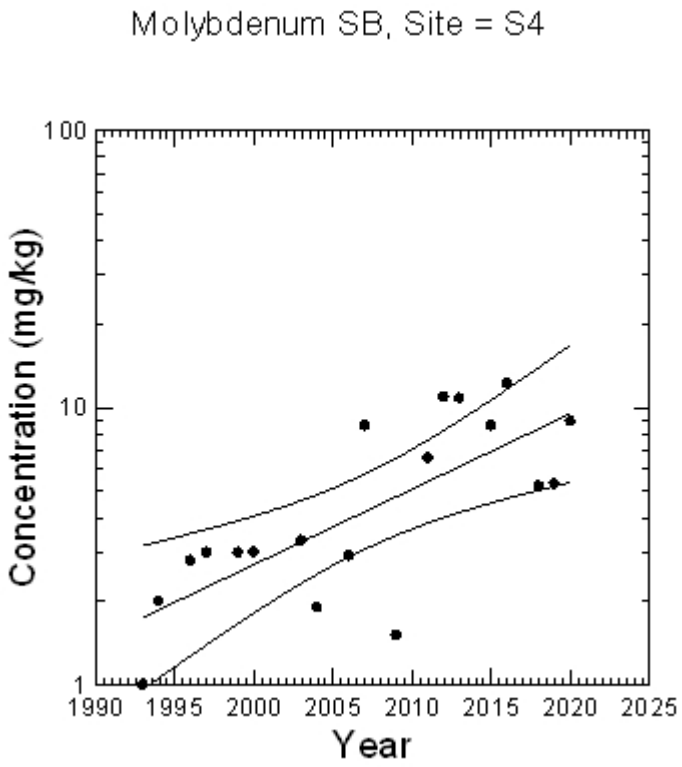
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Molybdenum	W2	NG	2002	19	0.486	0.025	-49.503	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



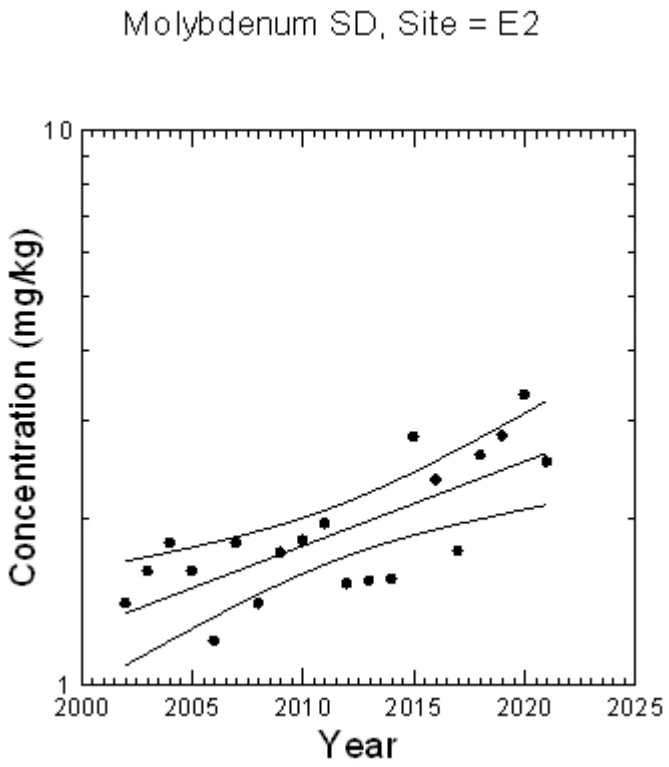
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Molybdenum	S4	SB	1991	19	0.554	0.027	-53.953	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



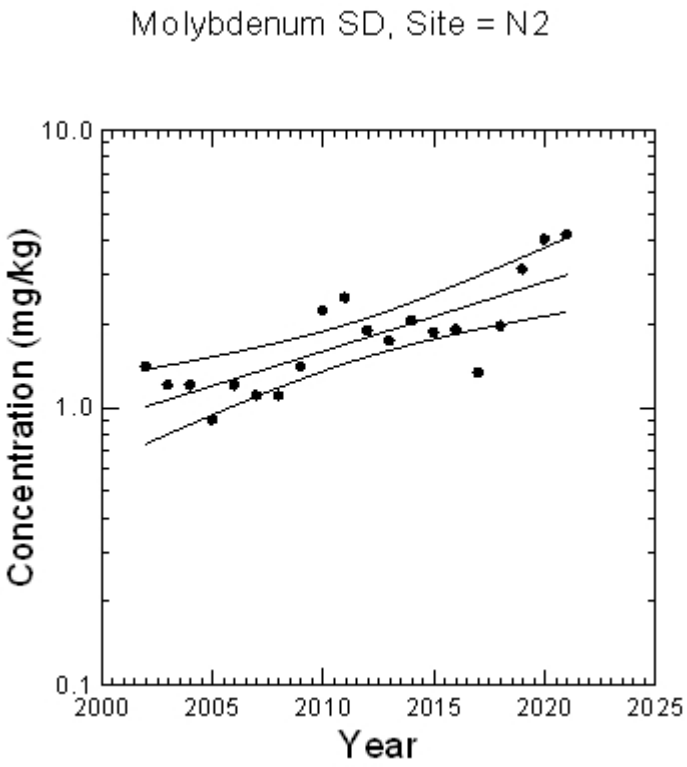
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Molybdenum	E2	SD	2002	20	0.562	0.015	-30.316	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



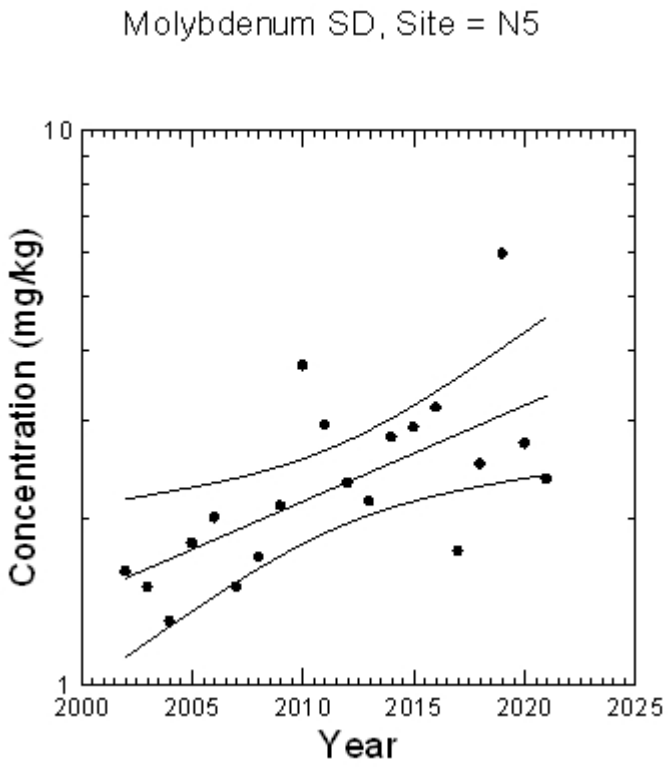
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Molybdenum	N2	SD	2002	20	0.629	0.025	-50.055	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



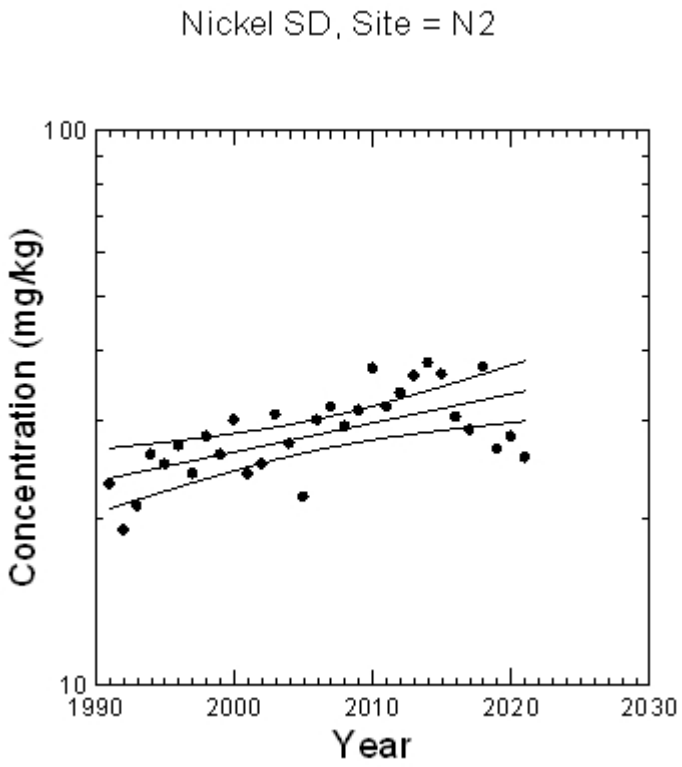
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Molybdenum	N5	SD	2002	20	0.418	0.017	-34.46	0.002	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



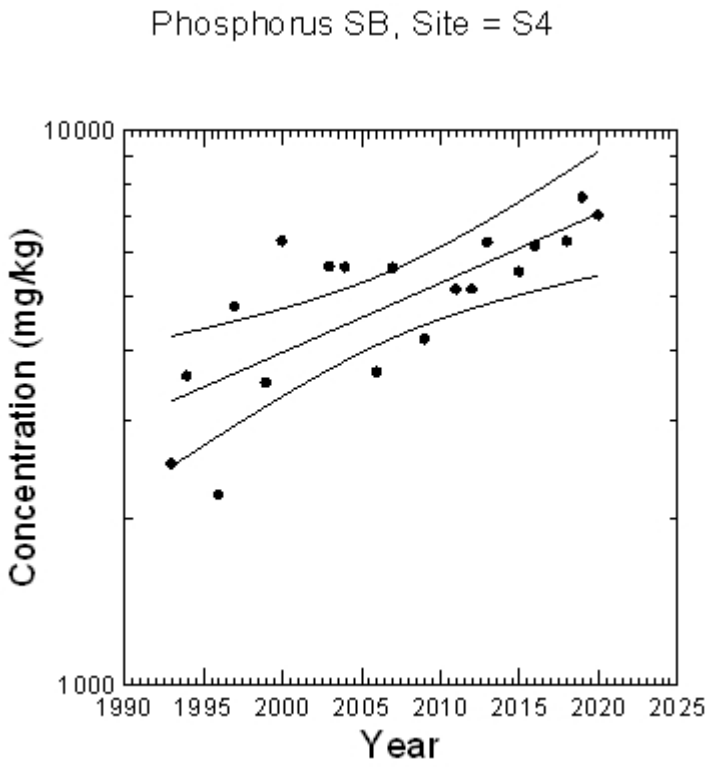
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Nickel	N2	SD	1991	31	0.393	0.005	-9.067	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



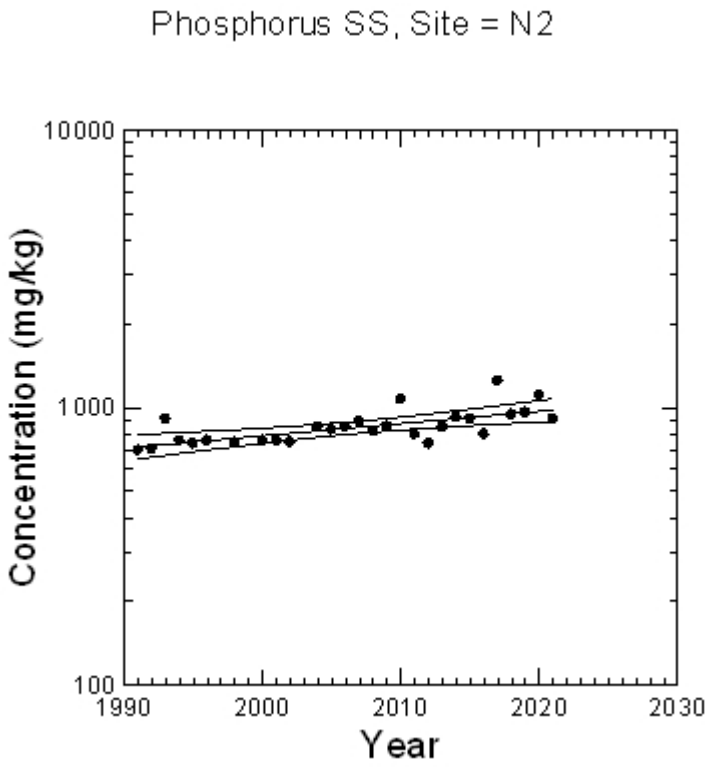
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Phosphorus	S4	SB	1991	19	0.562	0.013	-21.45	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



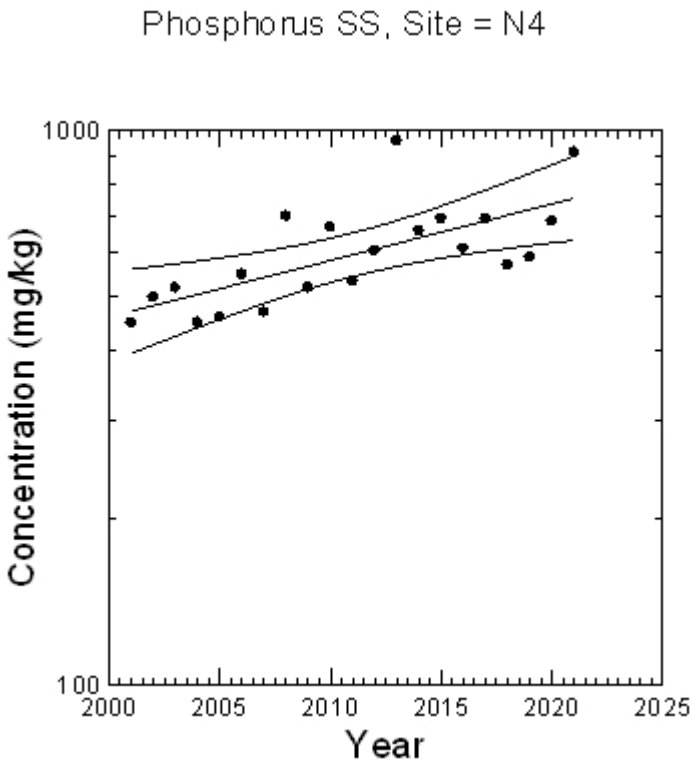
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Phosphorus	N2	SS	1991	28	0.461	0.004	-5.914	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



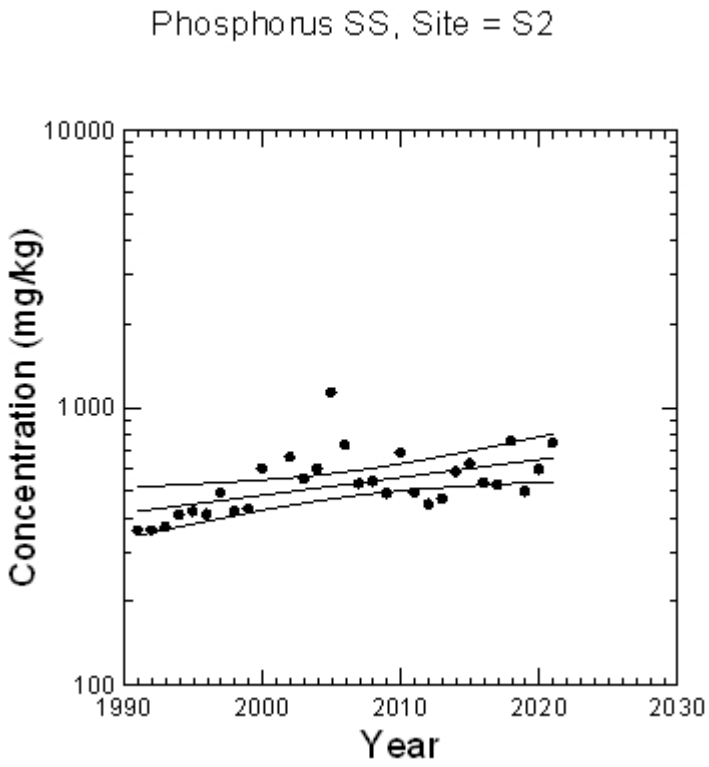
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Phosphorus	N4	SS	1991	21	0.477	0.01	-17.74	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



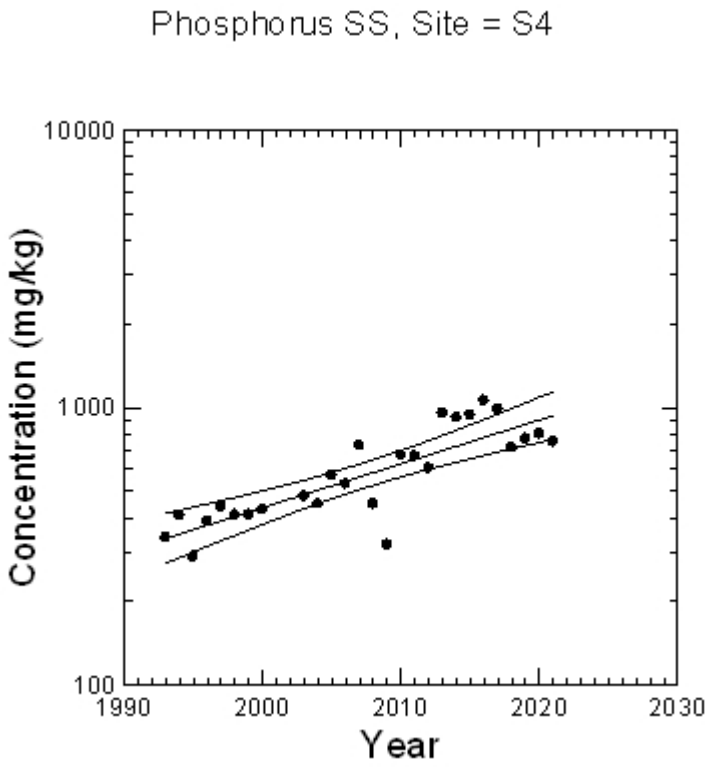
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Phosphorus	S2	SS	1991	30	0.284	0.006	-10.163	0.002	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



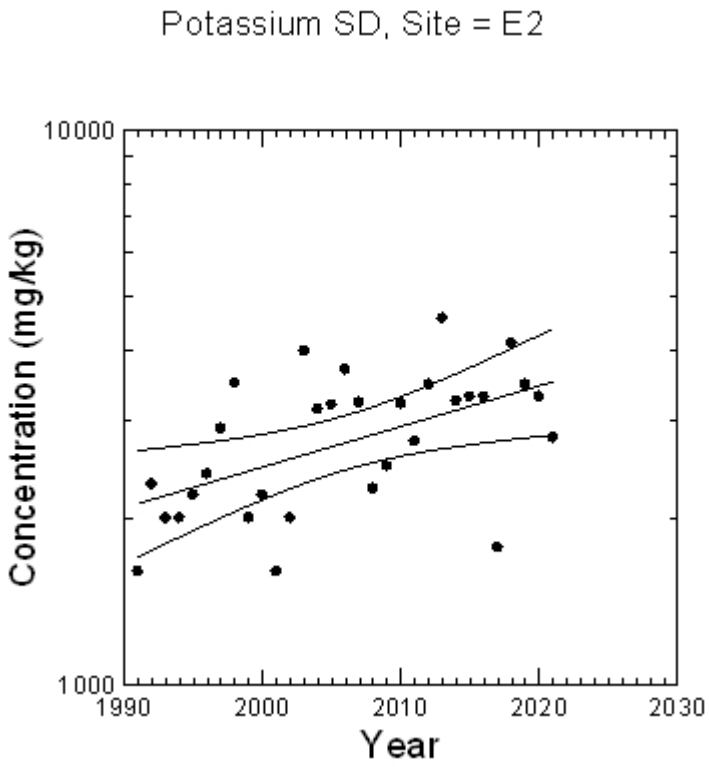
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Phosphorus	S4	SS	1991	27	0.701	0.016	-28.988	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



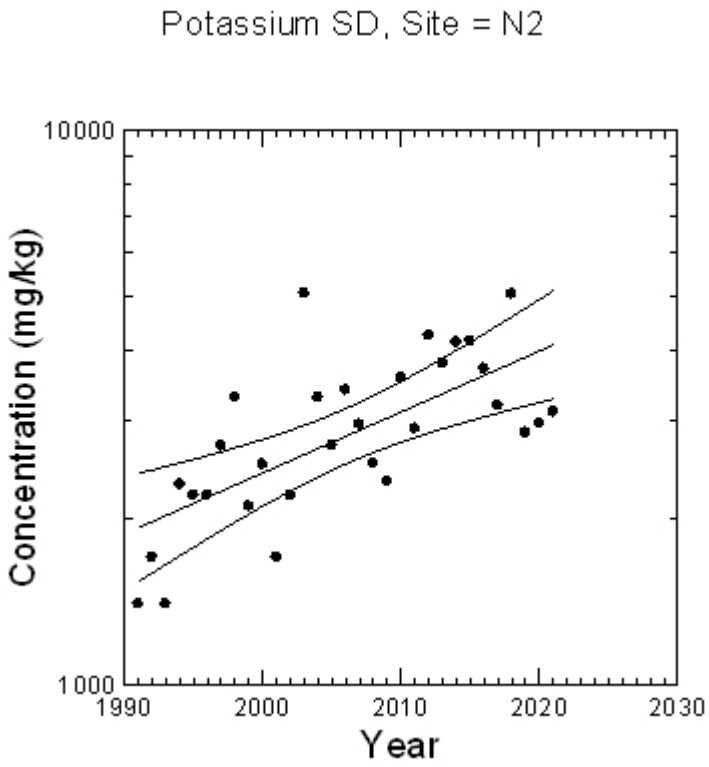
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Potassium	E2	SD	1991	31	0.29	0.007	-11.257	0.002	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



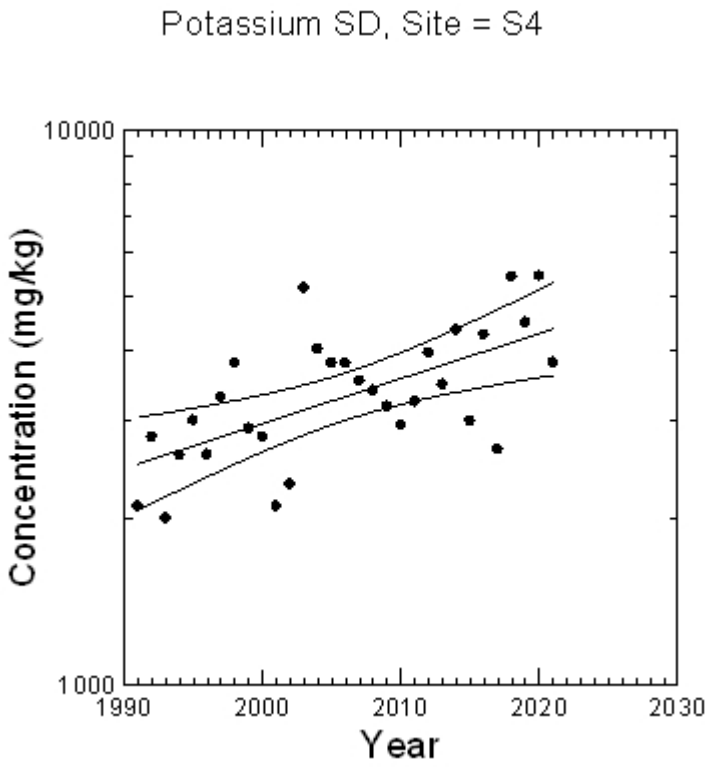
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Potassium	N2	SD	1991	31	0.47	0.011	-18.589	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



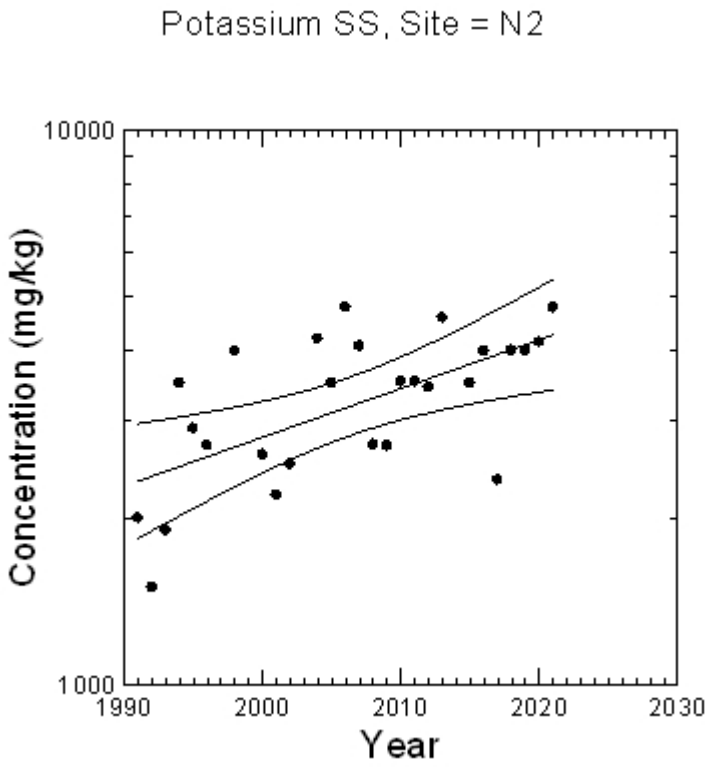
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Potassium	S4	SD	1991	31	0.397	0.008	-12.704	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



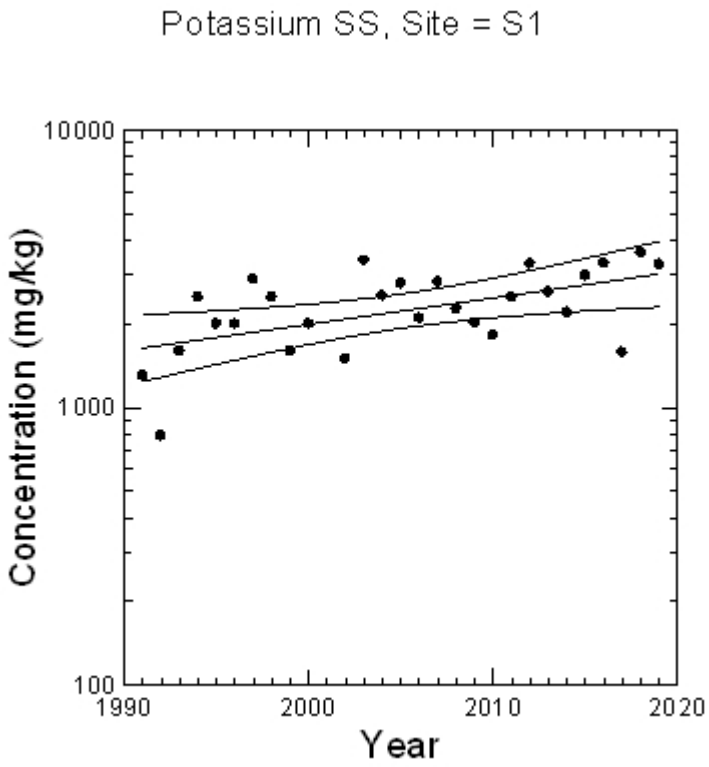
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Potassium	N2	SS	1991	27	0.386	0.009	-14.141	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



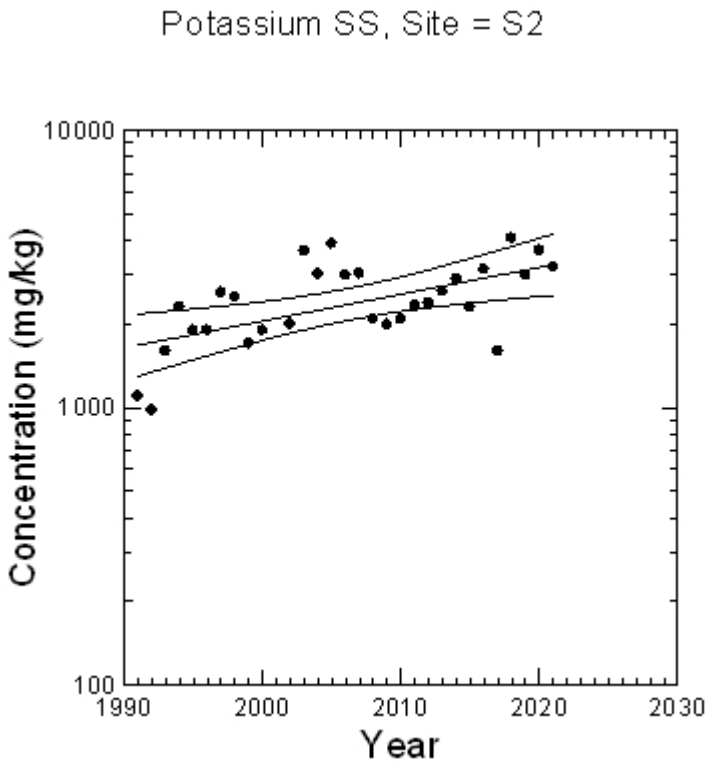
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Potassium	S1	SS	1991	28	0.306	0.01	-15.753	0.002	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



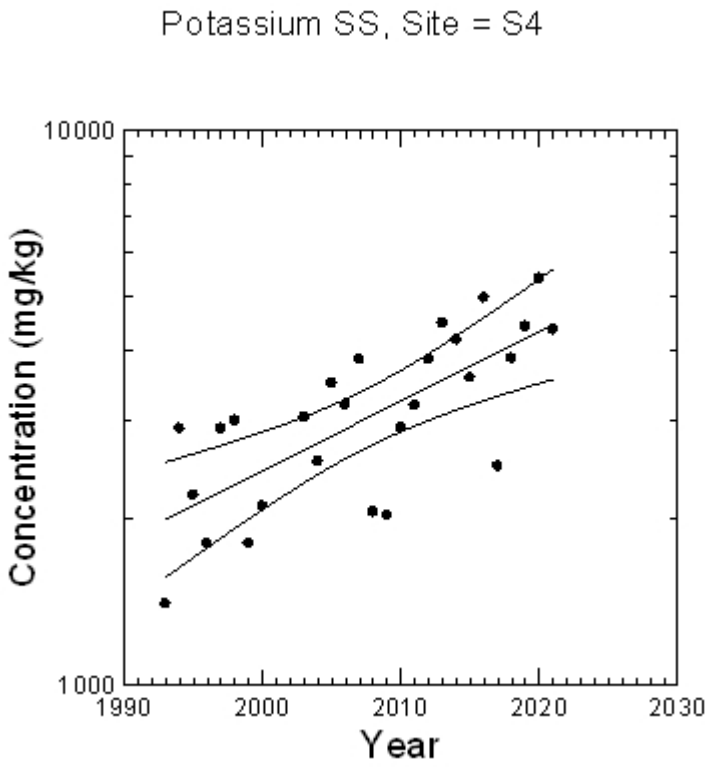
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Potassium	S2	SS	1991	30	0.354	0.01	-16.014	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



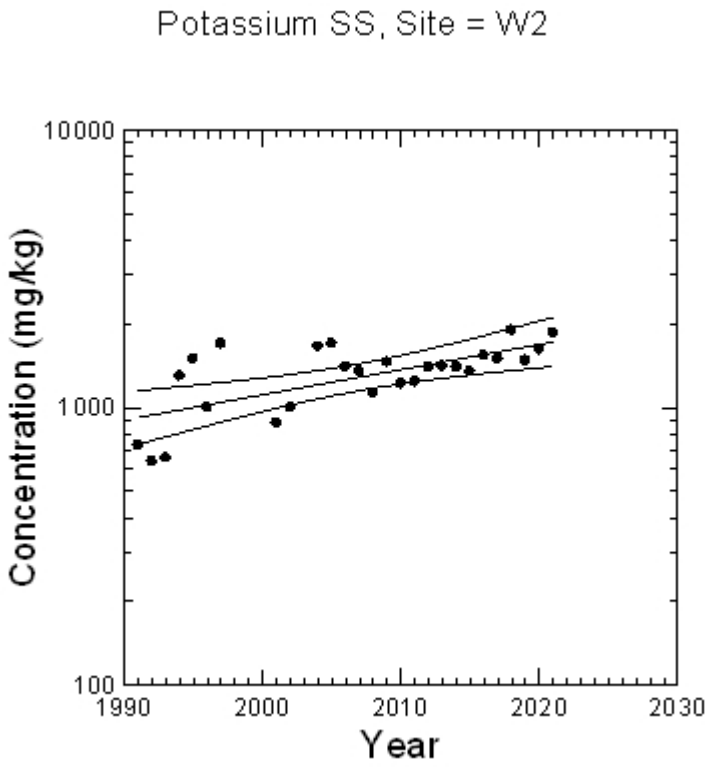
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Potassium	S4	SS	1991	27	0.528	0.013	-21.784	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



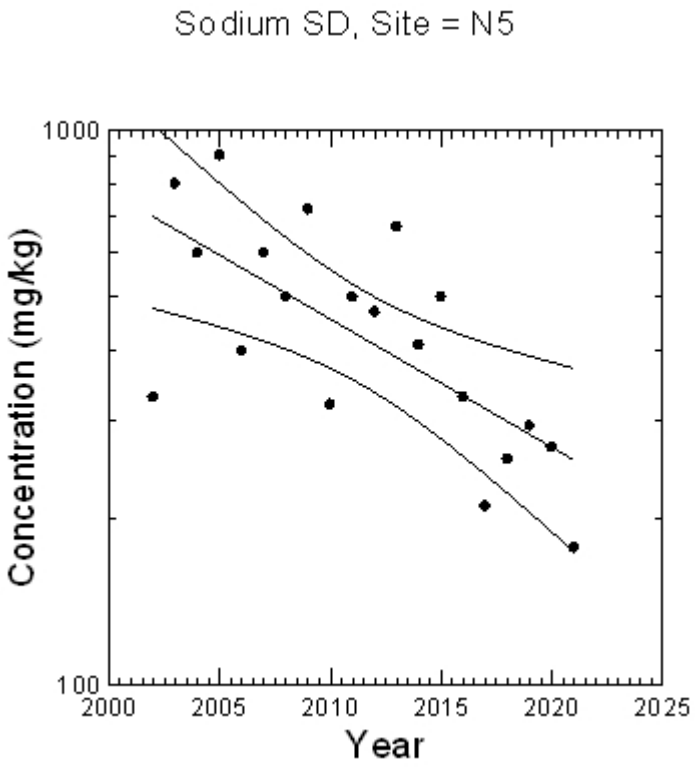
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Potassium	W2	SS	1991	27	0.445	0.009	-15.101	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



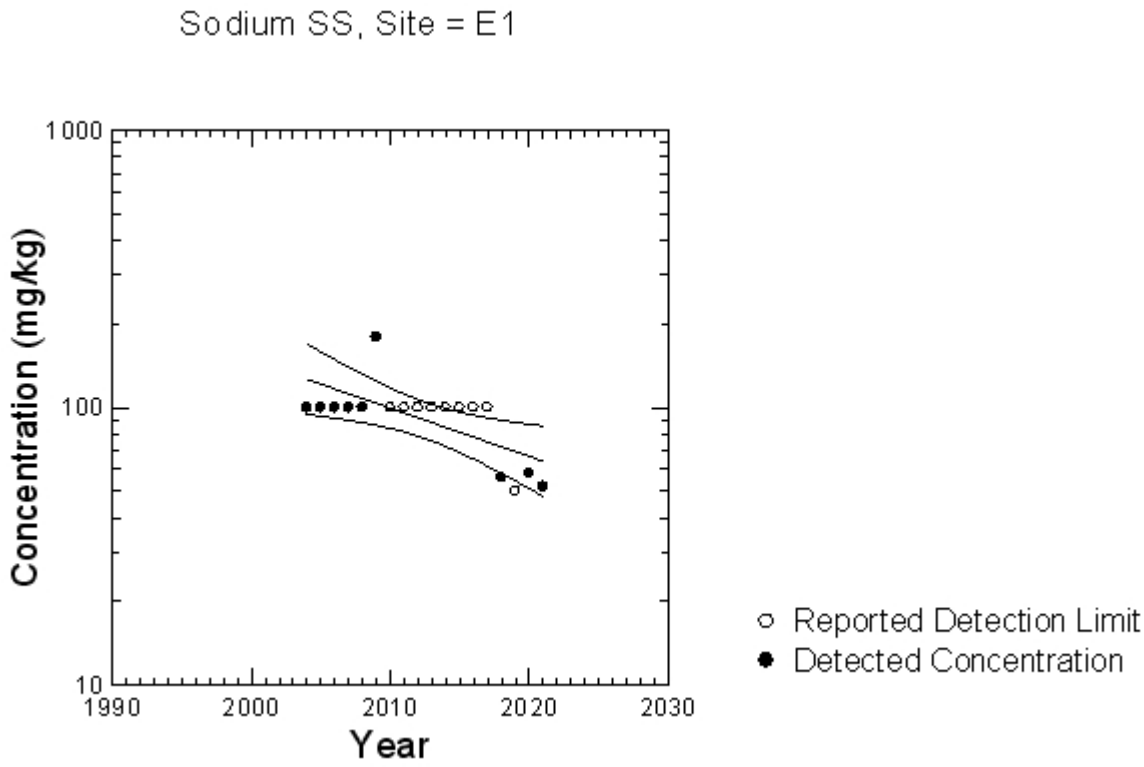
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sodium	N5	SD	1991	20	0.486	-0.023	49.064	0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



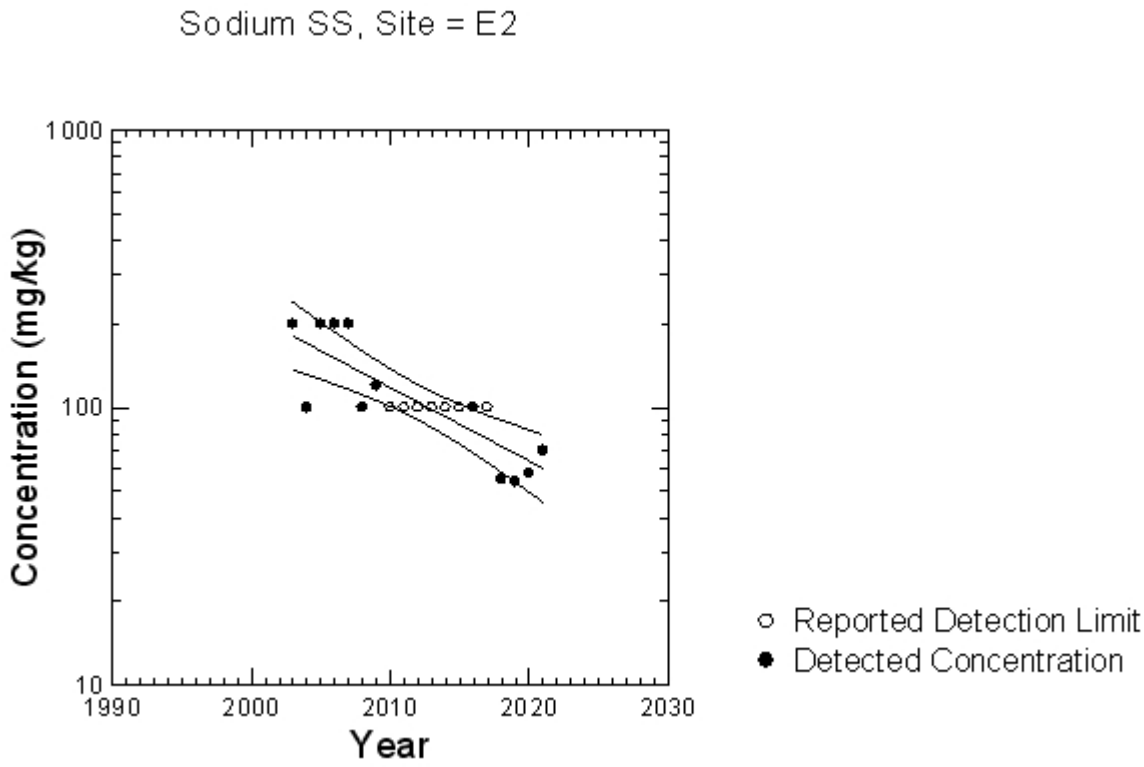
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sodium	E1	SS	2003	18	0.46	-0.017	36.943	0.002	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



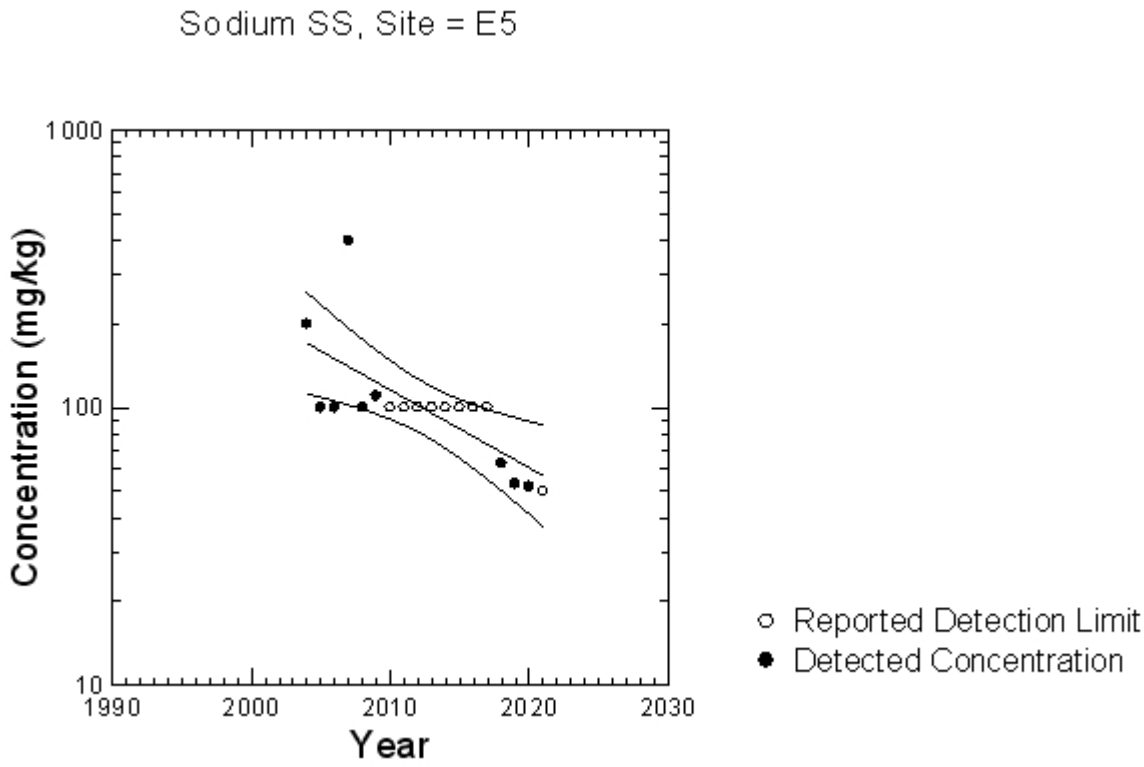
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sodium	E2	SS	2003	19	0.687	-0.026	55.26	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



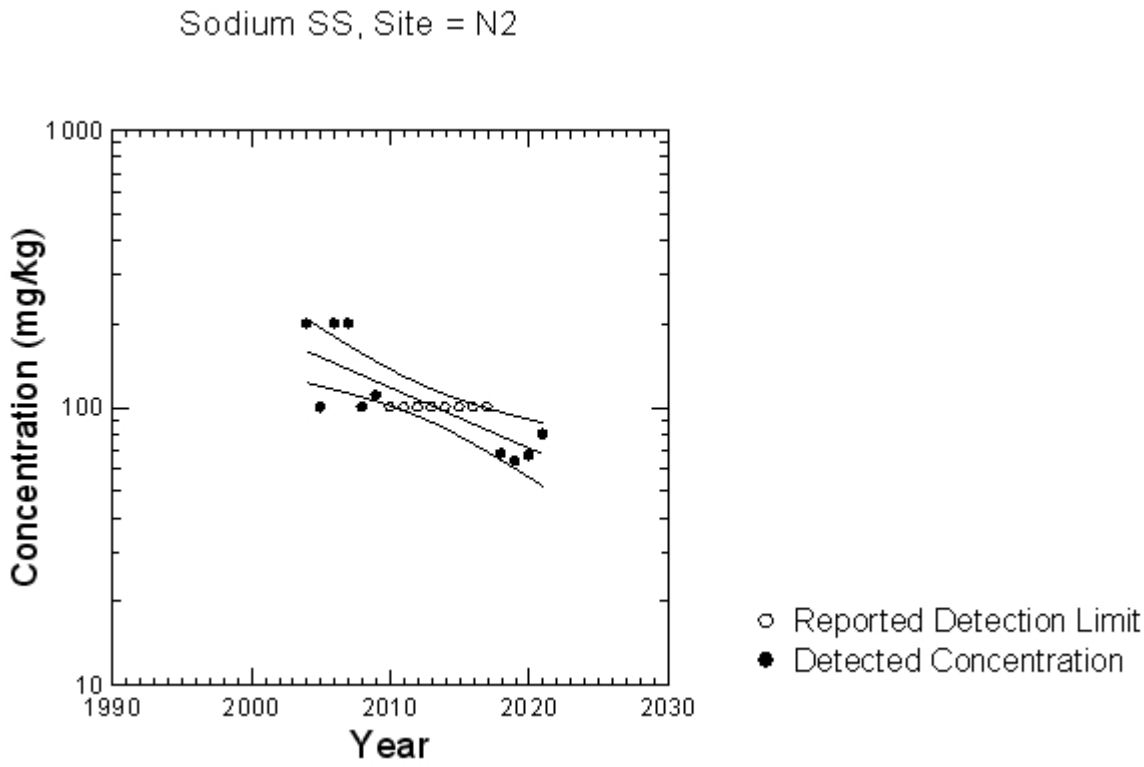
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sodium	E5	SS	2003	18	0.515	-0.028	58.483	0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



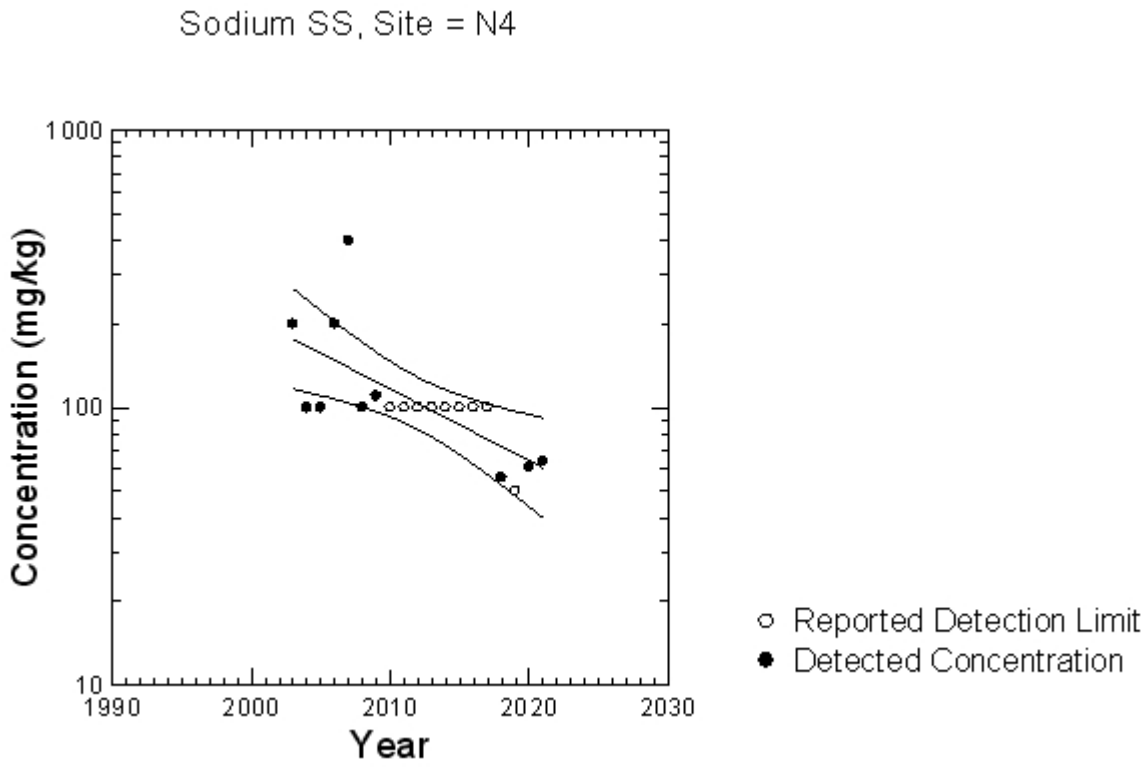
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sodium	N2	SS	2003	18	0.624	-0.022	46.152	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



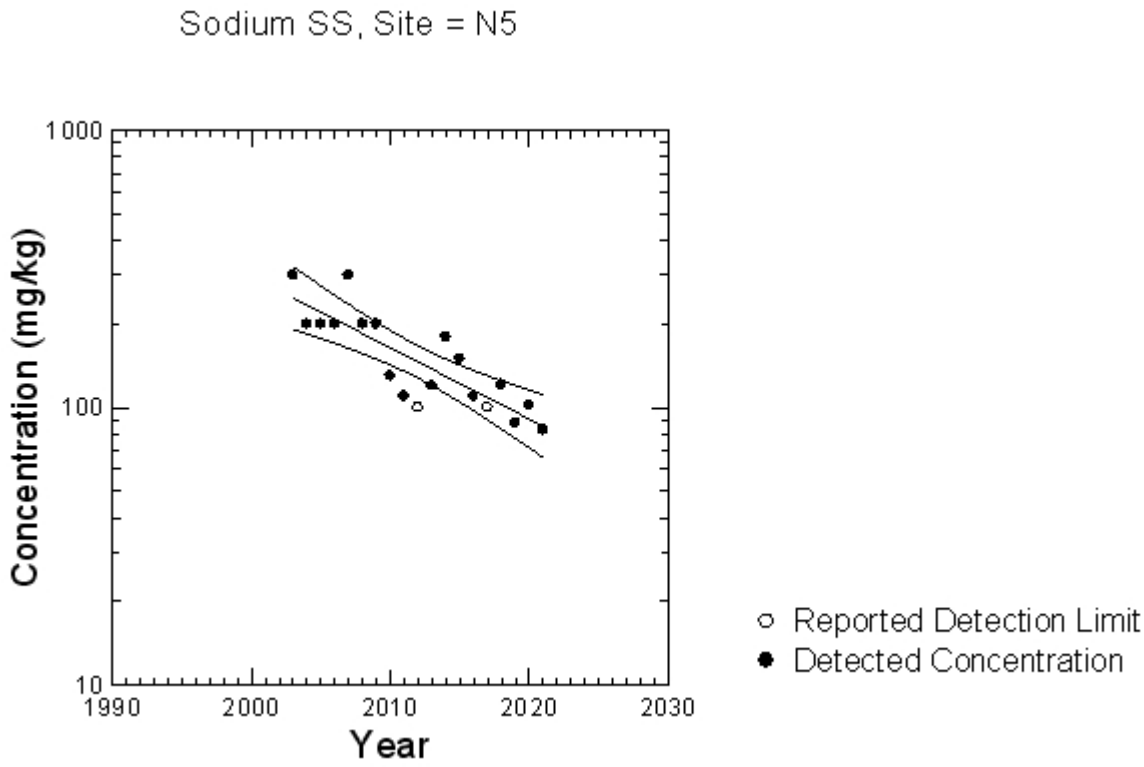
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sodium	N4	SS	2003	19	0.489	-0.026	54.008	0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



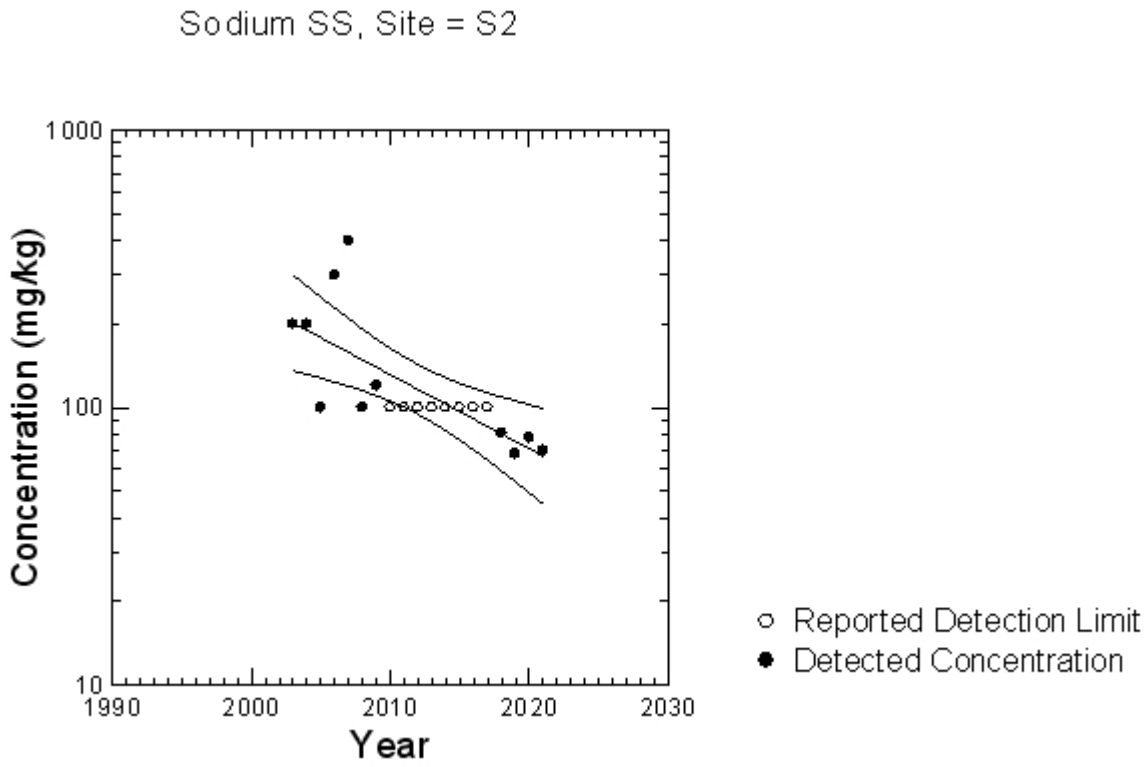
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sodium	N5	SS	2003	19	0.709	-0.026	53.861	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



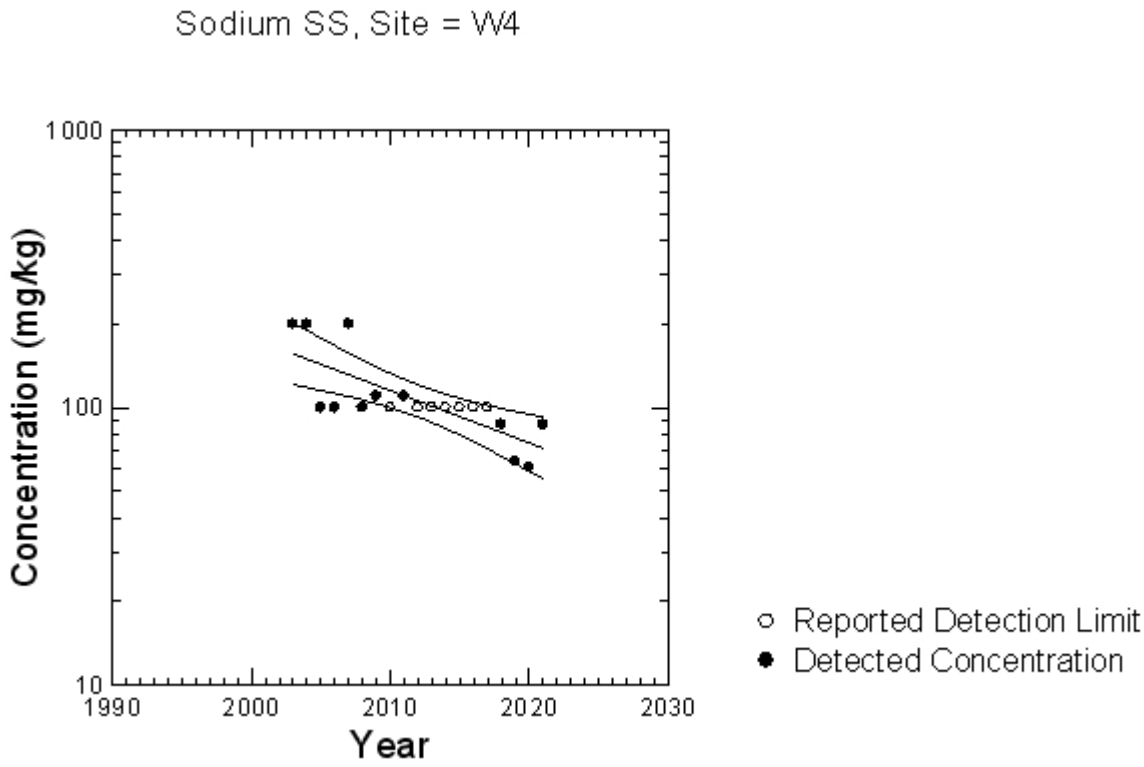
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sodium	S2	SS	2003	19	0.528	-0.027	55.743	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



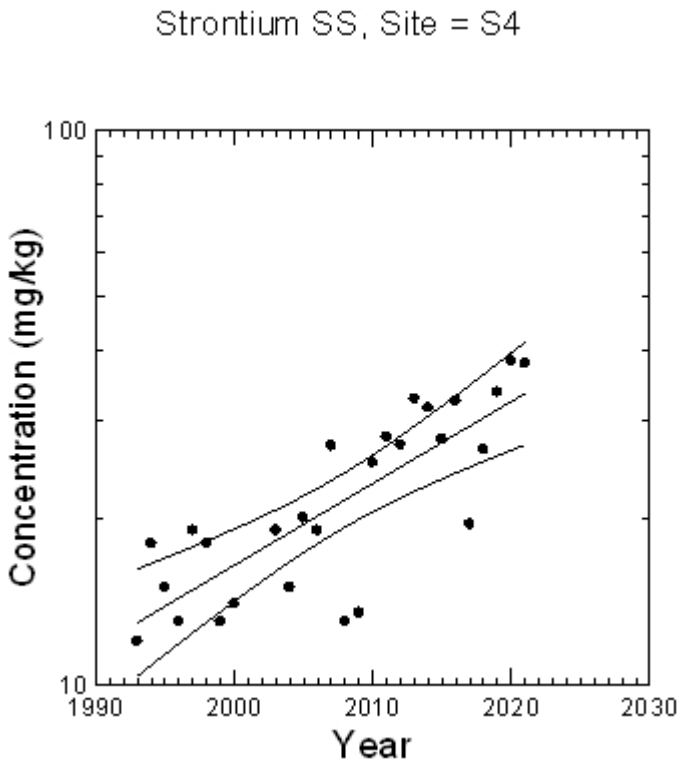
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sodium	W4	SS	2003	19	0.573	-0.019	40.039	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



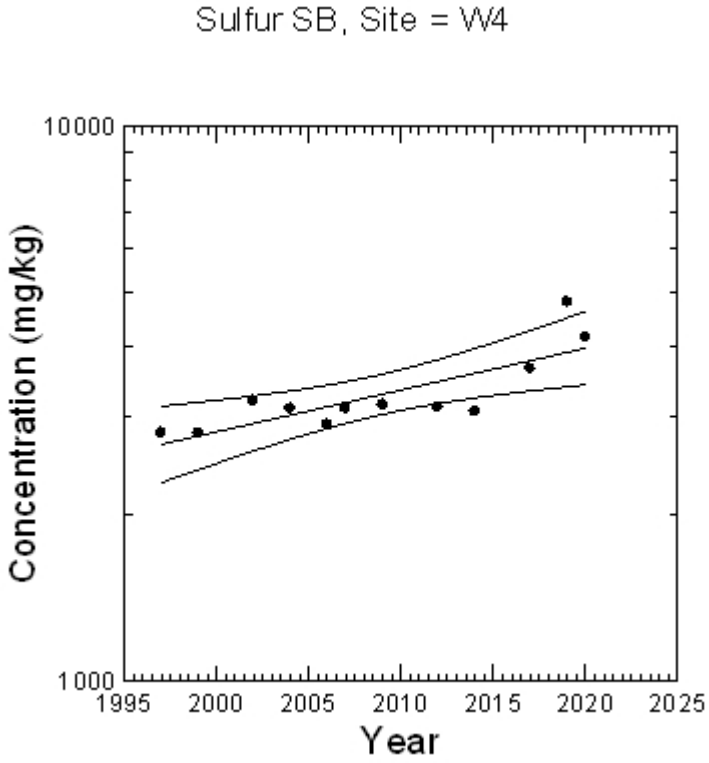
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Strontium	S4	SS	1991	27	0.639	0.015	-28.281	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



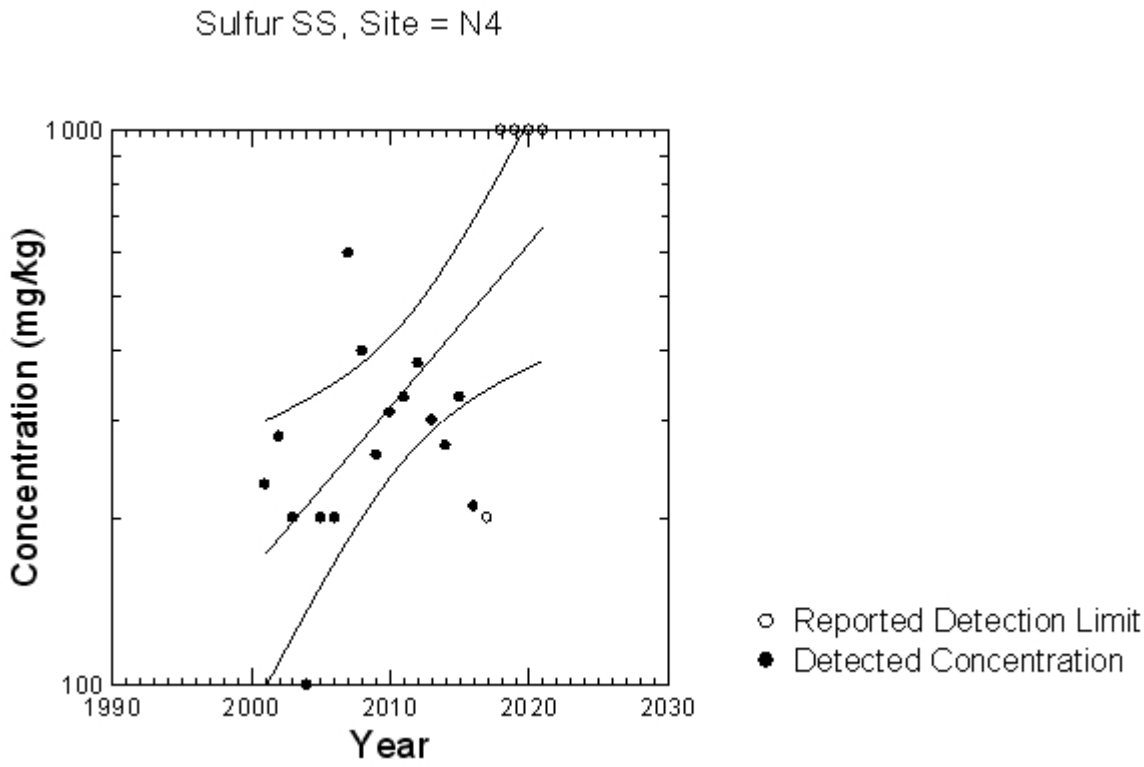
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sulfur	W4	SB	1991	12	0.656	0.008	-11.642	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



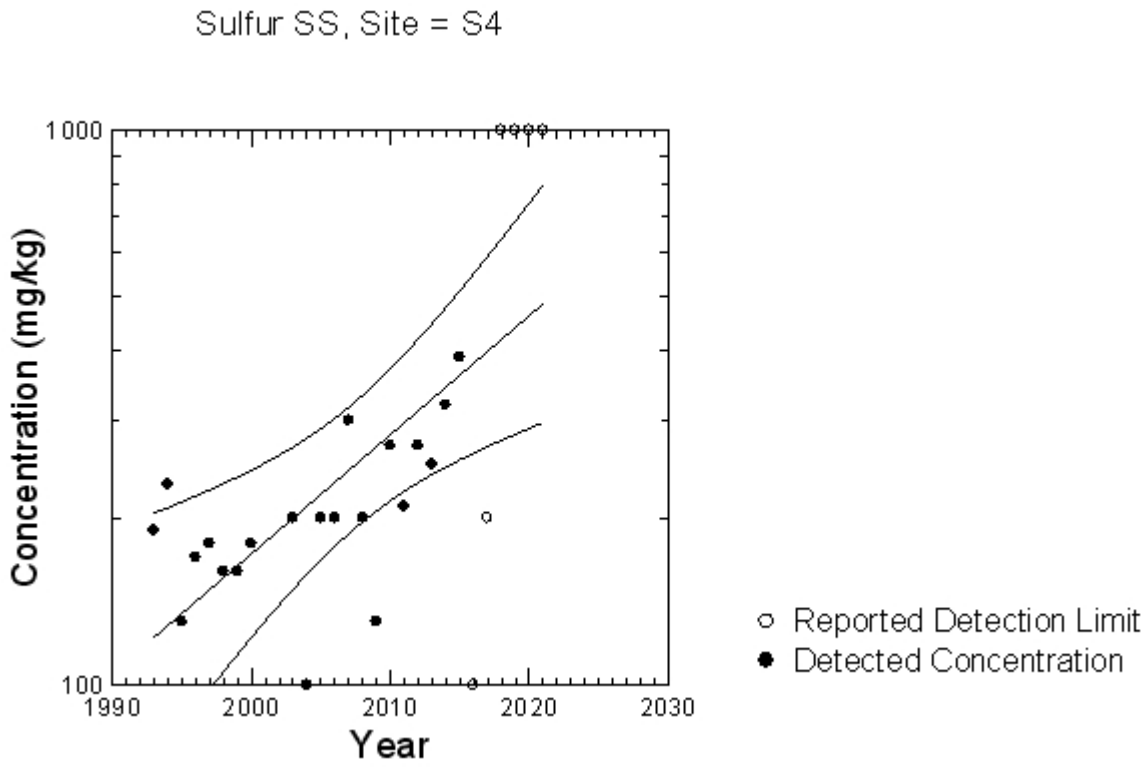
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sulfur	N4	SS	1991	21	0.433	0.03	-56.802	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



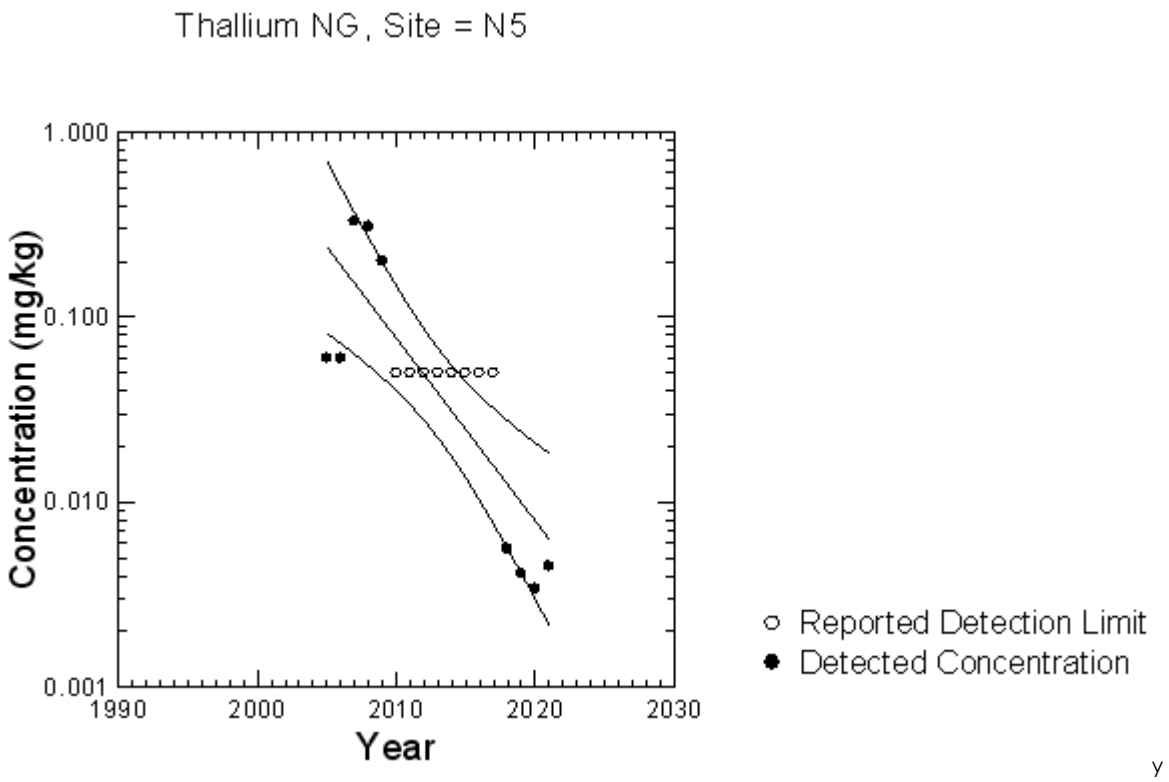
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Sulfur	S4	SS	1991	27	0.412	0.021	-40.681	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



y

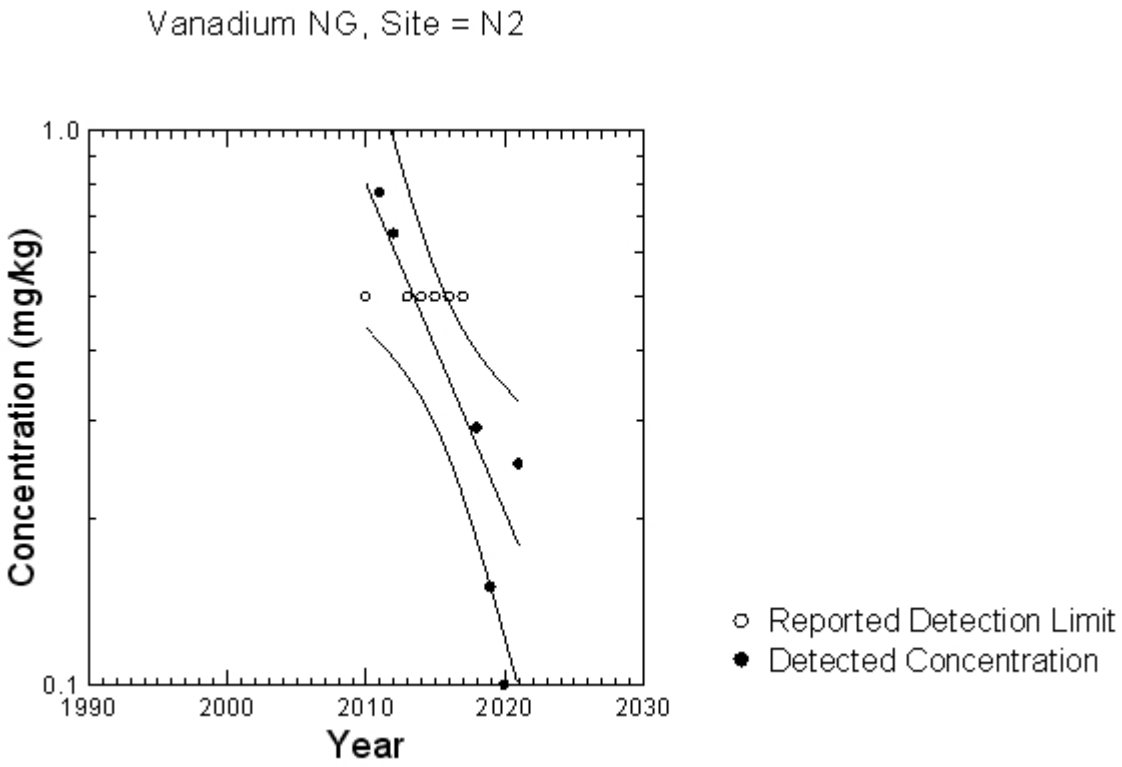
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Thallium	N5	NG	2005	17	0.662	-0.099	197.389	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



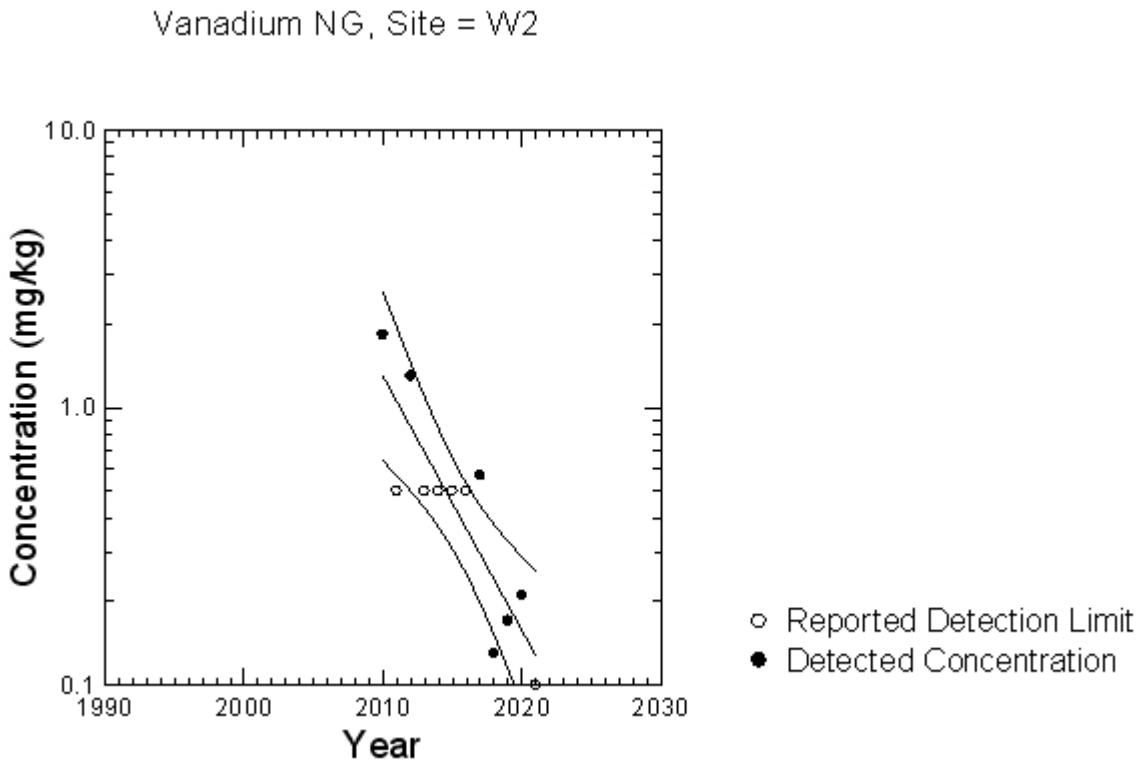
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Vanadium	N2	NG	2010	12	0.643	-0.059	118.889	0.002	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



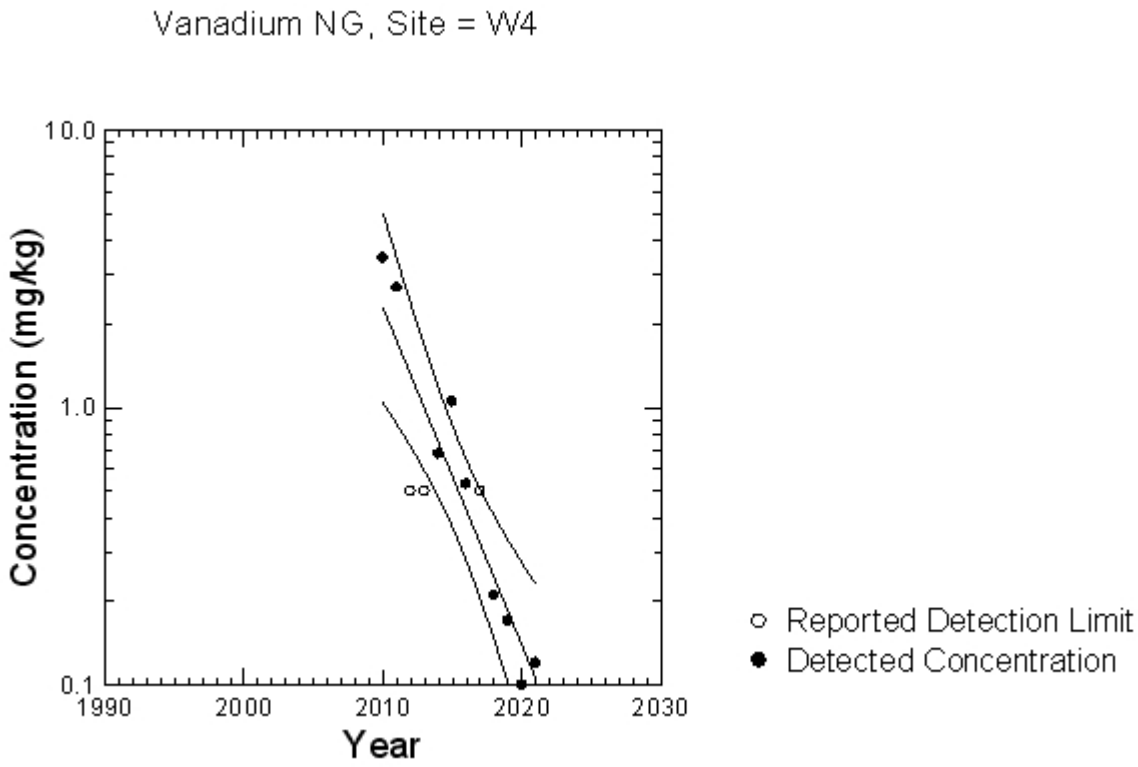
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Vanadium	W2	NG	2010	12	0.758	-0.092	184.361	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



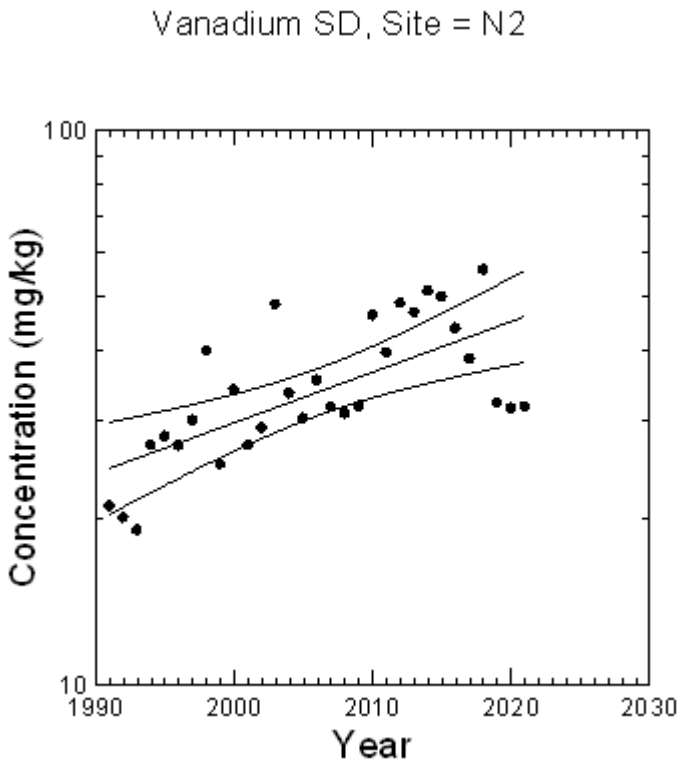
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Vanadium	W4	NG	2010	12	0.815	-0.122	245.049	<0.001	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



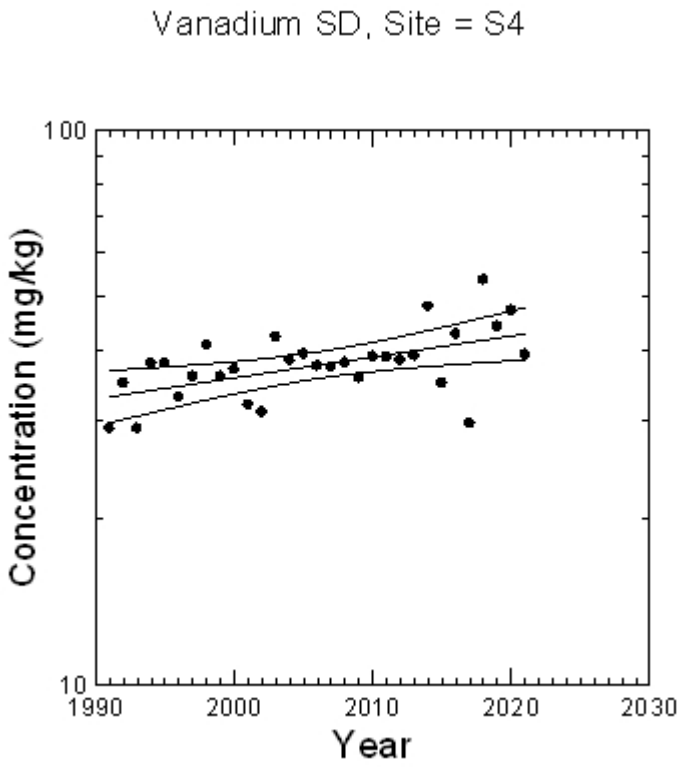
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Vanadium	N2	SD	1991	31	0.459	0.009	-16.779	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



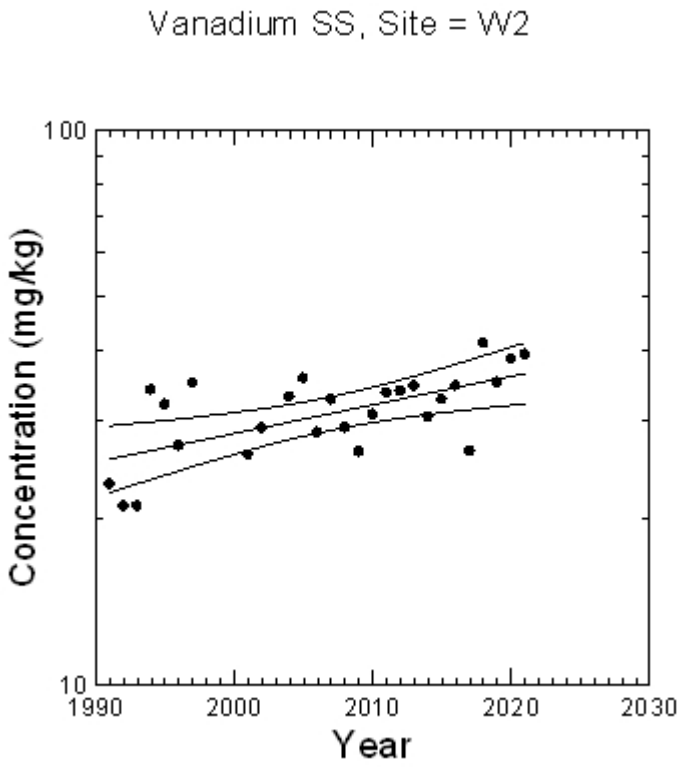
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Vanadium	S4	SD	1991	31	0.309	0.004	-6.001	0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



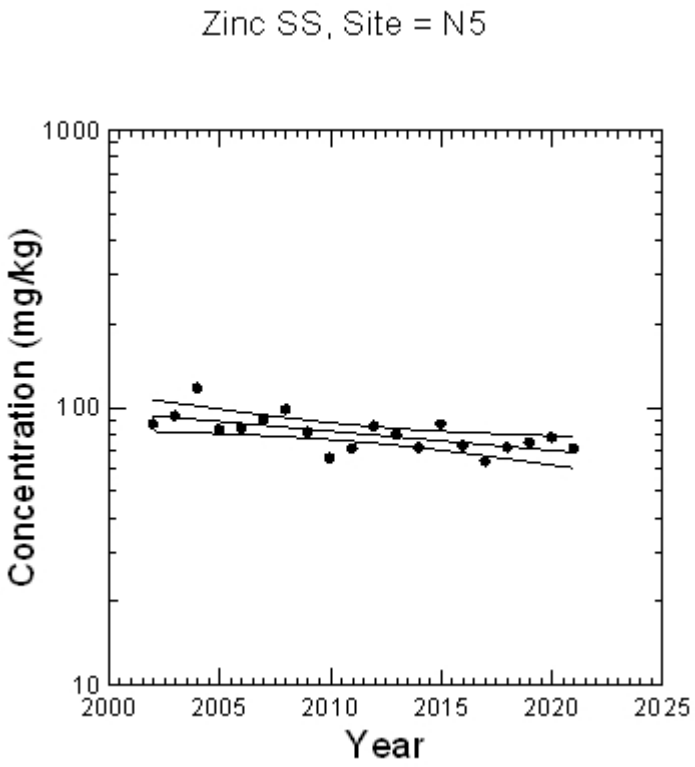
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Vanadium	W2	SS	1991	27	0.402	0.005	-8.868	<0.001	Increasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



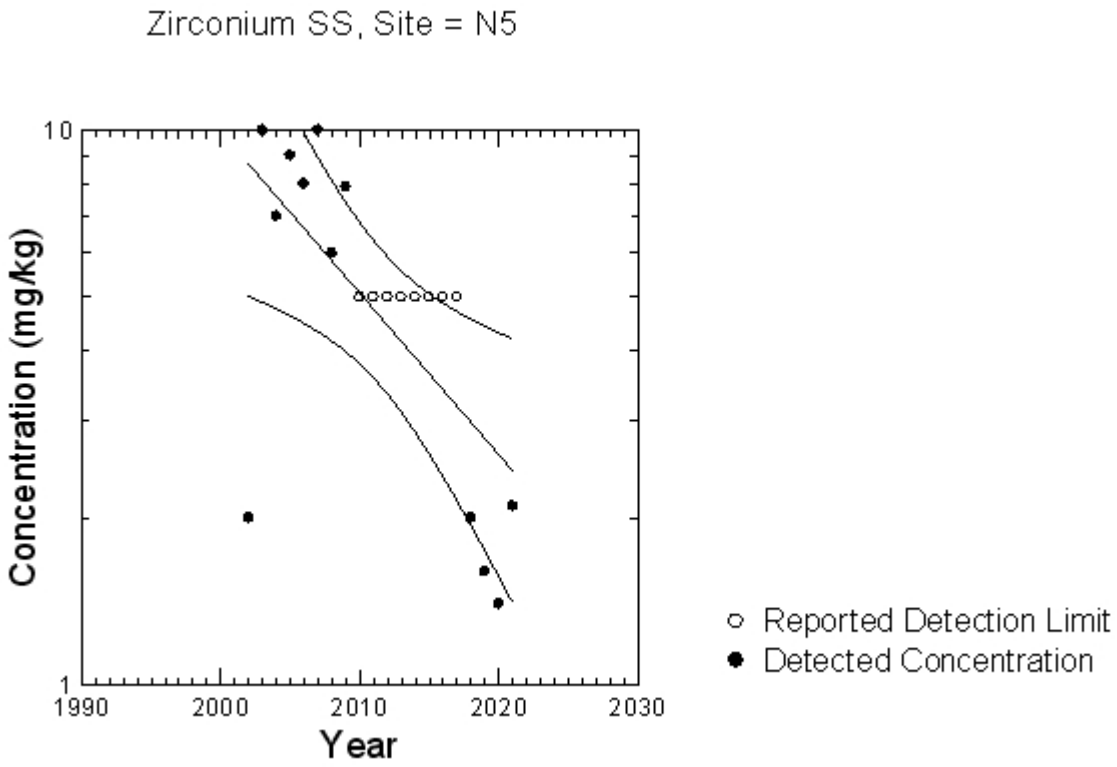
Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Zinc	N5	SS	1991	20	0.422	-0.007	15.914	0.002	Decreasing

Appendix F-2

Site-Specific Inorganic Trend Line Graphs p<0.003

Lambton Facility 2022 Annual Landfill Report Biomonitoring Program

2021 Field Year



Analyte	Site	Matrix	Regression Start Year	Number of Samples (n)	R^2	Slope	Intercept	p-value	Direction of Significant Trend
Zirconium	N5	SS	1991	20	0.421	-0.029	59.225	0.002	Decreasing

Appendix G APPROVED CHANGES TO THE BIOMONITORING PROGRAM

Ministry of the Environment and Climate Change

733 Exeter Road
London ON N6E 1L3
Tel': 519 873-5000
Fax: 519 873-5020

Ministère de l'Environnement et de l'Action en matière de changement climatique

733, rue Exeter
London ON N6E 1L3
Tél.: 519 873-5000
Fax: 519 873-5020

Ontario

February 12, 2018

Mr. Michael E. Parker
Vice President, Canadian Environmental Compliance
Clean Harbors Canada, Inc.
4090 Telfer Road, R.R. No. 1
Corunna ON N0N 1G0

Re: Clean Harbors Hazardous Waste Landfill
Approval of the Bio-Monitoring Plan
Environmental Compliance Approval No. A031806

This letter is being provided pursuant to Condition 9 (a) (i) of Notice No. 9 of Environmental Compliance Approval No. A031806, issued to Clean Harbors Canada Inc. (the "Company") for the hazardous waste landfill.

This is to confirm that the ministry has completed its review of the Company's bio-monitoring plan, and the Company has satisfactorily addressed the ministry's review comments. Therefore, I approve the final Bio-Monitoring Plan outlined in the report titled "Bio-Monitoring Program Lambton Facility, Corunna, Ontario", prepared by Stantec Consulting Limited dated November 26, 2015, and amendments dated September 6, 2016, and April 20, 2017.

The Company shall not make changes to the Bio-Monitoring Program unless such changes have been authorized by or requested by the Regional Director, in writing.

Sincerely,

Angela McGonigal
Director (A)
Southwest Region

c. Mike Moroney, MOECC Sarnia District Office
Sean Morrison, MOECC Sarnia District Office
Don Hayes, MOECC Sarnia District Office
Andrew McDonough, MOECC Environmental Sciences and Standards Division

Clean Harbors Canada, Inc.
4090 Telfer Road, R.R. #1
Corunna, ON N0N 1G0

Tel: 519.864.1021
Fax: 519.864.1437
www.cleanharbors.com

April 20, 2017

Mr. Aaron Todd
Supervisor
Terrestrial Assessment and Field Services Unit
Ministry of the Environment and Climate Change
Environmental Monitoring and Reporting Branch
125 Resources Road
Etobicoke ON M9P 3V6

Re: Memorandum – Review of Summary of Proposed Changes to Clean Harbors Biomonitoring Program

Dear Mr. Todd,

This letter is in response to the memorandum titled "Review of Summary of Proposed Changes to Clean Harbors Biomonitoring Program", issued by the Ministry of Environment and Climate Change (MOECC) to Clean Harbors on March 29, 2017.

Environmental Media (Maple Leaves) and *Addition of Fluoride as a Chemical Analyte*

In September 2002, the MOECC provided the preliminary report titled Phytotoxicology 1999, 2000, and 2001 Investigations: Safety-Kleen Limited – Moore Township (Gizyn, 2002). In response to a request from MOECC, Clean Harbors Canada Inc. (formerly Safety-Kleen Limited) volunteered and initiated its own maple leaf sampling program. As such, the maple leaf sampling program is not part of the core mandatory Clean Harbors biomonitoring program as outlined in the ECA no. A031806, and instead is a voluntary program that Clean Harbors is engaged in.

Fluoride testing in the Clean Harbors maple leaf sampling program has not been conducted, and as such Clean Harbors cannot comment on the fluoride concentration differences between the control site and the rest of the onsite locations tested. On the other hand, the MOECC sampling program did include fluoride testing and it is on the basis of the MOECC's fluoride

results in maple leaves that Stantec Consulting Ltd. recommended adding fluoride as an analyte to the biomonitoring program.

As required in Condition no. 9 (a) (i) of ECA no. A031806, and in response to concerns from the District office, an updated biomonitoring program was submitted to MOECC which proposed adding fluoride testing to the core program. At the same time it is the company's opinion that the maple leaf program provides no benefit to the core program. Thus, the company is withdrawing its support from the maple leaf program. The addition of the fluoride testing within the biomonitoring program would fulfill the purpose to determine if fluoride is higher closer to the facility.

Clean Harbors feels that this approach would accomplish the study of fluoride on and off the facility. The maple leaf study results obtained by the company thus far have shown no significant difference between the control sites and the rest of the locations, and as such the company would require suitable justification from the District to continue with this study.

Change in Test Sites Surrounding the Lambton Facility

We appreciate the MOECC support for the rationale establishing a new test site to the northeast of the Facility, and removing Site S5 to the south. We are also in agreement that the data should inform decisions regarding the discontinuation of a site, and that quantitative evidence of the similarities between Sites S2 and S5 would provide additional support. In order to support the removal of Site S5 from the Biomonitoring Program, an evaluation of all data collected was conducted in all media (soil, natural grasses and agricultural crops) and all chemical of concern, CoC.

Specifically in the case of the inorganic contaminants, statistical comparison was conducted between the inorganic upper and lower limits (UL15 and LL15) at Sites S2 and S5 from all available media to determine if the means of the limits were equal for the two sites. Two analysis of variances (ANOVA) were conducted to determine if there were significant differences in the means of the upper and lower limits. The results of the ANOVA support the hypothesis that there are no statistically significant differences between the two sites for both the upper and lower limits ($p>0.05$).

Given that the upper and lower limits can be used to define the "normal" or "expected" variability of the annual mean concentrations of the analytes in a sampling media, and represent the typical ranges of concentrations expected at a specific site, the finding of the ANOVA comparison of the mean upper and lower limits indicates a similarity in inorganic parameters between S2 and S5.

Upper limits are not available for organic parameters due to the large number of non-detect (ND) concentrations. Therefore, for organic parameters, two lines of evidence were reviewed: 1) a comparison to available standards and 2) the number of detected concentrations measured at each site. The results of each review are below:

1) Since the inception of the program (1991) most of the data shows ND. From the detected data none of it was identified at concentrations which exceeded applicable criteria (where available, such as the Ontario Typical Range (MOECC, 2011), the Upper Limit of Normal (MOECC, 1989), or the Soil, Ground Water and Sediment Standards for Use under Part XV.I of the Environmental Protection Act (MOECC, 2011).
2) The number of detected concentrations is provided in the enclosed tables. Fewer detected concentrations were measured at Site S5 compared to Sites S2, suggesting that the organic concentrations at Site S5 are generally lower than at Site S2.

Therefore, based on the review of both the inorganic and organic data at Sites S2 and S5, it is recommended that Site S5 be removed from the Biomonitoring Program.

Clean Harbors proposes a meeting between the company, the company's consulting firm (Stantec Consulting Ltd.), the District and yourself. During this meeting the parties involved can discuss the elements of the core biomonitoring program, and thus work towards the final acceptance of a new program, and how acceptance of this program will be communicated to the company. We are available at any time for this meeting.

Please feel free to reach out to the undersigned should you require any further information, and to discuss the prospect of a meeting.

Sincerely,

Erica Carabott
Senior Compliance Manager
Clean Harbors Canada, Inc.

519-864-3890
carabott.erica@cleanharbors.com

Parameters	Number of Detected Concentrations (1991-2015)	
	S2	S5
Dioxins/Furans		
C14-Tetrachlorodibenzofuran, 2,3,7,8-	6	9
C14-Tetrachlorodibenzo-p-Dioxin, 2,3,7,8-	5	4
C15-Pentachlorodibenzofuran, 1,2,3,7,8-	5	7
C15-Pentachlorodibenzofuran, 2,3,4,7,8-	5	9
C15-Pentachlorodibenzo-p-Dioxin, 1,2,3,7,8-	4	4
C16-Hexachlorodibenzofuran, 1,2,3,4,7,8-	10	9
C16-Hexachlorodibenzofuran, 1,2,3,6,7,8-	10	9
C16-Hexachlorodibenzofuran, 1,2,3,7,8,9-	3	3
C16-Hexachlorodibenzofuran, 2,3,4,6,7,8-	5	7
C16-Hexachlorodibenzo-p-Dioxin, 1,2,3,4,7,8-	4	4
C16-Hexachlorodibenzo-p-Dioxin, 1,2,3,6,7,8-	6	6
C16-Hexachlorodibenzo-p-Dioxin, 1,2,3,7,8,9-	9	8
C17-Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	9	7
C17-Heptachlorodibenzofuran, 1,2,3,4,7,8,9-	6	5
C17-Heptachlorodibenzo-p-Dioxin, 1,2,3,4,6,7,8-	20	17
C18-Octachlorodibenzofuran	14	13
C18-Octachlorodibenzo-p-dioxin	24	20
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	23	25
Heptachlorodibenzofuran, 1,2,3,4,7,8,9-	7	7
Heptachlorodibenzo-p-Dioxin, 1,2,3,4,6,7,8-	32	31
Hexachlorodibenzofuran, 1,2,3,4,7,8-	18	17
Hexachlorodibenzofuran, 1,2,3,6,7,8-	15	13
Hexachlorodibenzofuran, 1,2,3,7,8,9-	11	9
Hexachlorodibenzofuran, 2,3,4,6,7,8-	16	15
Hexachlorodibenzo-p-Dioxin, 1,2,3,4,7,8-	9	6
Hexachlorodibenzo-p-Dioxin, 1,2,3,6,7,8-	13	12
Hexachlorodibenzo-p-Dioxin, 1,2,3,7,8,9-	10	13
Octachlorodibenzofuran	34	35
Octachlorodibenzo-p-dioxin	60	55
Pentachlorodibenzofuran, 1,2,3,7,8-	11	11
Pentachlorodibenzofuran, 2,3,4,7,8-	13	10
Pentachlorodibenzo-p-Dioxin, 1,2,3,7,8-	7	7
Tetrachlorodibenzofuran, 2,3,7,8-	6	5
Tetrachlorodibenzo-p-Dioxin, 2,3,7,8-	7	6
Total Heptachlorodibenzofuran	18	17
Total Heptachlorodibenzo-p-dioxin	30	28
Total Hexachlorodibenzofuran	18	22
Total Hexachlorodibenzo-p-dioxin	24	29
Total Pentachlorodibenzofuran	14	13
Total Pentachlorodibenzo-p-dioxin	13	13
Total polychlorinated dibenzofurans (PCDFs)	23	22
Total polychlorinated dibenzo-p-dioxins (PCDDs)	28	27
Total TEQ (ND=0) (WHO Calc)	47	42
Total TEQ (ND=0_5DL) (WHO Calc)	33	33
Total TEQ (ND=DL) (WHO Calc)	33	33
Total Tetrachlorodibenzofuran	12	9
Total Tetrachlorodibenzo-p-dioxin	18	16
OCPs		
Aldrin	1	0
BHC, alpha-	5	3
Chlordane, alpha-	7	2
Chlordane, trans- (gamma-Chlordane)	4	3
DDD (p,p'-DDD)	1	1
DDE (p,p'-DDE)	14	10
DDT (p,p'-DDT)	5	6
Dieldrin	11	10
Endosulfan I	7	4
Endosulfan II	1	3
Endosulfan Sulfate	6	7
Endrin	1	4
Endrin Aldehyde	5	3
Heptachlor	3	3
Heptachlor Epoxide	7	8
Lindane (Hexachlorocyclohexane, gamma)	1	0
Methoxychlor (4,4'-Methoxychlor)	2	1
Mirex	8	7
PARLAR 50	0	1
PCBs		
Polychlorinated Biphenyls (PCBs)	0	0
PCPs		

The Mixed Procedure

Model Information	
Data Set	WORK.S2S5
Dependent Variable	UL15_log_normal
Covariance Structure	Diagonal
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Residual

Class Level Information		
Class	**Levels**	**Values**
Site	2	S2 S5
Analyte	31	Aluminum Arsenic Barium Beryllium Boron Cadmium Calcium Chloride Chromium (Total Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Phosphorus Potassium Silico. Silicon Silver Sodium Strontium Sulfur Thallium Titanium Va.dium Zi. Zirconium

Dimensions	
Covariance Parameters	1
Columns in X	3
Columns in Z	0
Subjects	1
Max Obs per Subject	256

Number of Observations	
Number of Observations Read	258
Number of Observations Used	256
Number of Observations Not Used	2

Covariance Parameter Estimates	
Cov Parm	**Estimate**
Residual	3.7326E9

Fit Statistics	
-2 Res Log Likelihood	6328.8
AIC (Smaller is Better)	6330.8
AICC (Smaller is Better)	6330.8
BIC (Smaller is Better)	6334.3

The Mixed Procedure

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
Site	1	254	0.31	0.5756

Least Squares Means						
Effect	Site	Estimate	Standard Error	DF	t Value	Pr > |t|
Site	S2	7045.98	5400.05	254	1.30	0.1931
Site	S5	11327	5400.05	254	2.10	0.0369

Differences of Least Squares Means							
Effect	Site	_Site	Estimate	Standard Error	DF	t Value	Pr > |t|
Site	S2	S5	-4280.79	7636.83	254	-0.56	0.5756

The Mixed Procedure

Model Information	
Data Set	WORK.S2S5
Dependent Variable	LL15_log_normal
Covariance Structure	Diagonal
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Residual

Class Level Information		
Class	Levels	Values
Site	2	S2 S5
Analyte	31	Aluminum Arsenic Barium Beryllium Boron Cadmium Calcium Chloride Chromium (Total Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Phosphorus Potassium Silico. Silicon Silver Sodium Strontium Sulfur Thallium Titanium Va.dium Zi. Zirconium

Dimensions	
Covariance Parameters	1
Columns in X	3
Columns in Z	0
Subjects	1
Max Obs per Subject	256

Number of Observations	
Number of Observations Read	258
Number of Observations Used	256
Number of Observations Not Used	2

Covariance Parameter Estimates	
Cov Parm	Estimate
Residual	5253740

Fit Statistics	
-2 Res Log Likelihood	4661.0
AIC (Smaller is Better)	4663.0
AICC (Smaller is Better)	4663.1
BIC (Smaller is Better)	4666.6

The Mixed Procedure

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
Site	1	254	0.02	0.9007

Least Squares Means						
Effect	Site	Estimate	Standard Error	DF	t Value	Pr > |t|
Site	S2	659.88	202.60	254	3.26	0.0013
Site	S5	695.68	202.60	254	3.43	0.0007

Differences of Least Squares Means							
Effect	Site	_Site	Estimate	Standard Error	DF	t Value	Pr > |t|
Site	S2	S5	-35.8036	286.51	254	-0.12	0.9007

Stantec Consulting Ltd.
100-300 Hagey Boulevard, Waterloo ON N2L 0A4

September 6, 2016
File: 122160003

Attention: Erica Carabott
Facility Compliance Manager
Clean Harbors
4090 Telfer Road, R.R. #1
Corruna, ON N0N 1G0

Dear Ms. Carabott,

Reference: Summary of Proposed Changes to Clean Harbors Biomonitoring Program

Stantec Consulting Ltd. (Stantec) is proposing a number of modifications to the Clean Harbors Biomonitoring Program to streamline the program and accommodate the Landfill Expansion currently underway. The Biomonitoring Program is required under condition 9 of the Lambton Facility's Environmental Compliance Approval (ECA No. A031806).

The proposed changes were presented in a letter prepared by Stantec (July 3, 2015). Comments were received from the Ontario Ministry of the Environment and Climate Change (MOECC) (September 17, 2015), and Neegan Burnside on behalf of First Nations (August 28, 2015). Taking these comments into consideration a Revised Biomonitoring Sampling Program was prepared (Stantec, December 15, 2015) and provided to the MOECC. Since that time, conditions at the Lambton Facility have changed, resulting in additional proposed changes to the Biomonitoring Program.

The purpose of this letter is to summarize the current proposed changes to the Biomonitoring Program. Each change is discussed in detail in the following sections.

Table 1 – Summary of Proposed Changes to the Biomonitoring Program

Type of Change	Proposed Changes
Test Sites	**Sites within Lambton Facility affected by Landfill Expansion** • Site E6 – No change at this time. • Site S3 – Remove from Biomonitoring Program. Site has been replaced by an access road. • New Site S7 – Proposed new site to replace Site S3. **Sites in Surrounding Area of Lambton Facility** • New Site E7 - Proposed new site to increase coverage to northeast of Facility based on predominant wind direction. • Site S5 – Remove from Biomonitoring Program. Sufficient coverage to the south of Facility is provided by remaining sites.
Environmental Media	Discontinue maple leaf sampling
Chemical Analytes	Add fluoride as an analyte to all environmental media sampled in the Biomonitoring Program
Sampling Frequency	Change sediment fertility and characterization sampling to every three years.
Analytical Frequency	Polychlorinated biphenyls, pentachlorophenol and organochlorinated pesticides (PCB, PCP and OCP): Analysis will change to a three-year cycle. Year 1, all samples will be submitted for analysis. Years 2 and 3, two samples per environmental media will be submitted for analytical testing: the site with highest historical concentration and the control. Should concentrations of PCB, PCP or OCP be detected at concentrations greater than 50% of the applicable guidelines, the remaining samples will be submitted for analysis.
Data Analysis	Create isopleth maps only when investigating recurring exceedances (more than three years consecutively) for Group 2 Chemicals.

CHANGE IN TEST SITES ON THE LAMBTON FACILITY

The Clean Harbors Lambton Facility existing landfill occupies 56 hectares of the Clean Harbors licensed property. In order to keep managing hazardous waste over a 25 year period, Clean Harbors has identified the need to expand the landfill capacity. As a result, an environmental assessment was initiated in March 2011 to identify the environment potentially impacted by the expansion (Clean Harbors, 2014a).

Reference: Summary of Proposed Changes to Clean Harbors Biomonitoring Program

The environmental assessment describes two proposed expansion alternatives to increase the landfill capacity. The first alternative involves a vertical expansion of the existing on-site landfill up to a grade of 9 m above the ground surface, with the exception of the northwest corner. Areas that have not been landfilled in the southeast corner will be excavated and filled (Clean Harbors, 2014a). With this alternative, biomonitoring sites on the facility may be impacted by the expansion. Biomonitoring test site locations are provided on Figures 1 and 2.

Site E6

At this time, Site E6 remains intact, although a new temporary access road has been constructed immediately to the west of the test site. Monitoring at Site E6 will continue and results from samples collected at Site E6 will be closely monitored to determine if traffic from the access road is influencing analyte concentrations.

Site S3 replaced by a New Site S7

Site S3 has been removed and the area replaced by an access road to support construction activities for the landfill expansion. To replace Site S3, it is recommended that a new site (Site S7) be installed at the proposed location directly east of Site S3 (Figure 2). The proposed location will align in a southern direction with the previous location for Site S3 and will allow for the collection of sediment samples from the adjacent drainage ditch which extends from the southwest pond. This will facilitate the continuation of sediment concentration records established at Site S3. Based on the estimated construction schedule, landfilling activities will proceed in a gradual manner and the proposed location for Site S7 will remain viable for up to ten years after being established.

CHANGE IN TEST SITES SURROUNDING THE LAMBTON FACILITY

The locations of test sites surrounding the facility were evaluated based on the current scientific literature and the predominant wind direction. The establishment of a new test site to the northeast of the Facility, and the removal of Site S5 to the south are proposed.

Stantec has generated a wind rose using meteorological data collected from the Lambton Facility from July 2014 to June 2015 (Figure 3). The wind rose indicated that the dominant wind direction came from the south and southwest, and blew to a lesser degree from the north and west. The current program has two sites that are in the maximum deposition area to the north of the incinerator (N2 and N4), and three sites east of the facility (E1, E2 and E5). Sites S1, S2, S4 and S5 are situated to the south of the facility. Sites W2 and W4 are situated in locations opposite from the predominant wind directions.

Site E7 – New Site

The dominant wind direction is toward the northeast from the Facility. The current sites are located to the north and east of the Facility. A new site (Site E7) has been recommended to be added to the northeast of the incinerator approximately 1 km away to provide coverage for areas located downwind from the facility. A map showing the proposed location of the new site has been included as Figure 1. The permanent location of Site E7 will be finalized following consultation with Clean Harbors and associated property owner regarding access to the site.

Site S5 to be Removed

Due to the abundant number of sites located to the south of the facility, and the fact that concentrations reported in samples collected from S5 are similar to or less than concentrations reported at Site S2, Site S5 will be removed from the Biomonitoring Program, as the remaining sites (S1, S2 and S4) will provide sufficient coverage.

ENVIRONMENTAL MEDIA (MAPLE LEAVES)

In an effort to streamline the Biomonitoring Program, a review of the analyzed environmental media has been conducted to determine if any should be added or removed from the program. Based on the past findings of the Maple Leaf Sampling Program, results have shown no significant difference between concentrations measured in maple leaves adjacent to the facility in comparison with the control site. As the maple leaf program does not offer additional meaningful information to supplement the Biomonitoring Program, sampling of maple leaves is proposed to be discontinued.

ADDITION OF FLUORIDE AS A CHEMICAL ANALYTE

A review of the 2014 Landfill Report (Clean Harbors, 2014b) was conducted to determine if the groundwater, surface water, or air quality environmental monitoring programs identified exceedances of analytes that could be added to the current Biomonitoring Program. Potential environmental concerns are limited to those identified in the groundwater. Fluoride was detected at concentrations above the Ontario Drinking Water Standards (ODWS) in the shallow and deep monitoring wells that have been installed on the facility property and off-property. The MOECC has observed that fluoride concentrations within silver maple foliage samples collected in close proximity to the Clean Harbors facility are higher in comparison to samples collected further away (DeBrou, 2010). Due to these high fluoride concentrations in silver maple foliage, and the high fluoride concentrations identified in the groundwater, it is recommended that fluoride be added as an analyte to all environmental media sampled in the Biomonitoring Program.

Reference: Summary of Proposed Changes to Clean Harbors Biomonitoring Program

SEDIMENT FERTILITY AND CHARACTERIZATION SAMPLING FREQUENCY

Based on a review of historical data, sediment particle size distribution (texture) has shown little variation annually. The majority of the sites in the Biomonitoring Program are described as having silt clay, clay, or clay loam texture and a low organic matter content. Although concentrations of inorganic chemicals have been identified in sediment, the clay soil texture in the vicinity of the Lambton Facility means that inorganic chemicals are often sorbed to the abundant clay particles and are less likely to leach into the groundwater or be transported by surface water runoff. Although the majority of the sites are shown to have low organic matter content, the number of detected concentrations for organic chemicals reported in samples collected from these sites is low, and monitoring of the sorption of these parameters to the organic matter in the sediment is not as essential. As a result, the frequency of sediment fertility and characterization sampling will be changed to every three years.

PCB, PCP, AND OCP ANALYTICAL FREQUENCY

Concentrations of select organic analytes (PCBs, PCPs and OCPs) have been relatively consistent for over twenty years and there have been few concentrations measured above the reportable detection limit since 1991. Samples will continue to be collected from all sites on an annual basis, but analytical frequency will change to a three year cycle. In Year 1 all samples will be submitted for analysis. In Years 2 and 3 only one sample from the site that historically has the highest concentrations and one sample from the control site will be submitted for analysis. If PCB, PCP or OCP are detected at concentrations which exceed 50% of the applicable guidelines in the sample from the site that historically has the highest concentrations, the samples from the other sites can be submitted for analysis. However, if these analytes are not detected in the site that historically has the highest concentrations, it is assumed that the other sites will not have detected concentrations greater than applicable guidelines.

ADDITION OF ISOPLETH MAPS FOR DATA ANALYSIS

Isopleth maps will only be generated and used for visual analysis when an analyte/matrix combination for Group 2 chemicals has been identified as repeatedly exceeding a site-specific or site-wide upper limit (UL) in three consecutive years and additional investigation is warranted. Isopleths illustrating the distribution of UL15 values will be used when investigating analytes that have exceeded site-wide concentrations, while isopleths illustrating year-specific concentrations can be used when investigating exceedances of site-specific concentrations.

CLOSURE

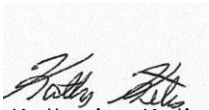
This letter outlined a number of recommendations that can be implemented to streamline the Biomonitoring Program and accommodate the Landfill Expansion at the Lambton Facility. Upon approval by the MOECC, they could be implemented during the next cycle of the Biomonitoring Program beginning in the 2017 Field Year.

Reference: Summary of Proposed Changes to Clean Harbors Biomonitoring Program

Should you have any questions, please don't hesitate to contact the undersigned.

Regards,

STANTEC CONSULTING LTD.



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Attachment: Figure 1 – Existing and Proposed Sampling Locations (overview)
Figure 2 – Existing and Proposed Sampling Locations (within and adjacent to Facility)
Figure 3 – Wind Speed Direction (blowing from)

c. Mike Parker, Clean Harbors Canada

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ATTACHMENT
FIGURES

\\cd1220-f02\Work_group\01221\active\122160003\drawing\MXD\2016_Q3_SamplingStations\122160003_2016_Q3_Fig01_Existing_ProposedSampling_zoomed_20160826.mxd
Revised: 2016-09-05 By: svandamme

N

PLANK ROAD

N2

N4

E7

PETROLIA LINE

W4

N5

E2

E1

E6

W2

WAUBUNO ROAD

TELFER ROAD

S3

S7

E5

BRIGDEN ROAD

S1

S2

S5

ROKEBY LINE

S4

0 440 880 m

1:20,000

September 2016
122160003

Stantec

Legend

- Existing Sampling Locations (Approximate)
- Proposed Sampling Location (Approximate)
- Existing Sampling Station to be Removed (Approximate)
- Watercourse
- Building
- Lambton Facility
- Waterbody
- Wooded Area

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

Client/Project

Clean Harbors Canada Inc.
Lambton Landfill Expansion

Figure No.

1

Title

Existing and Proposed Sampling Locations

\\cd1220-f02\Work_group\01221\active\122160003\drawing\MXD\2016_Q3_SamplingStations\122160003_2016_Q3_Fig02_ExistingProposedSamplingLocations_20160501.mxd
Revised: 2016-09-05 By: svandamme

September 2016
122160003

Stantec

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

Legend

- Existing Sampling Locations (Approximate)
- Proposed Sampling Location (Approximate)
- Existing Sampling Station to be Removed (Approximate)
- Watercourse
- Building
- Lambton Facility
- Waterbody
- Wooded Area

Client/Project

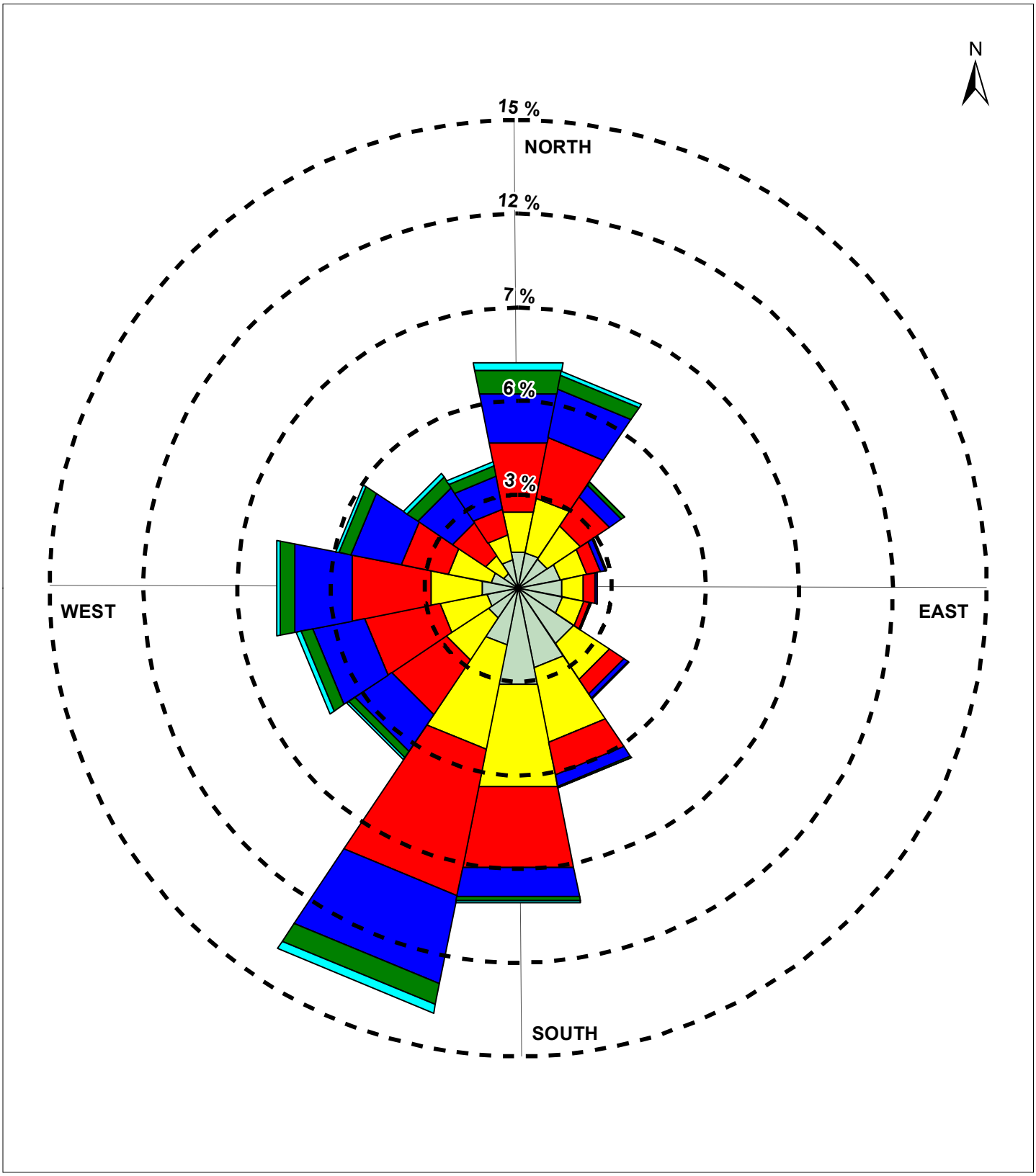
Clean Harbors Canada Inc.
Lambton Landfill Expansion

Figure No.

2

Title

Existing and Proposed Sampling Locations



\\ca1220-f02\Work_group\01221\active\122160003\drawing\MXD\2016_Q3_SamplingStations\122160003_2016_Q3_Fig03_WindRose.mxd
Revised: 2016-09-05 By: svandamme

September 2016
122160003

Stantec

Notes
1. Not to scale.

Legend

Wind Speed (Knots)

- >= 22
- 17 - 21
- 11 - 17
- 7 - 11
- 4 -7
- 1 - 4

Calms: 3.06%

Client/Project

Clean Harbors Canada Inc.
Lambton Landfill Expansion

Figure No.

3

Title

Wind Speed Direction (blowing from)

4.0 FOLLOW-UP OF RECOMMENDATIONS FROM PREVIOUS BIOMONITORING REPORTS

Table 4-1 presents the status of conclusions and recommendations presented previously in the 2013 and 2014 Biomonitoring Program reports which are to be addressed in 2015.

Discussion of recommended changes to the Biomonitoring Program is also provided.

Table 4-1: Status of Historical Conclusions and Recommendations

Item No.	Report	Conclusions and Recommendations Requiring Follow-up	Discussion	Status
1.	2014 Annual Landfill Report, 2013 Field Year	Molybdenum investigation	Molybdenum in Soil (Discussed in Section 3.2.6.1) A literature review based on the phytotoxicity of molybdenum in soil was completed due to the high soil concentrations observed at Site S3. Plant tissue concentrations from the 2013 and 2014 Field Year were below the phytotoxic limit of 100 mg/kg, suggesting that current concentrations of molybdenum in soil are not resulting in phytotoxic concentrations in plants.	Based on results of the literature review, no further investigation is required; however, monitoring will continue.
2.	Clean Harbors Biomonitoring Program – Recommended Changes Letter (July, 2015)	It is recommended that PCB analysis continue on a 3-year from an annual sample collection schedule in all media.	PCBs have rarely been detected at concentrations above the reporting limit. Where no observations of PCBs have occurred in the last fourteen years of the program. Decreasing the frequency of analysis will help streamline the program.	A letter summarizing recommended changes to the Biomonitoring Program was submitted to Clean Harbors Environmental Services in July 2015. Comments on the recommended changes were received from Neegan Burnside and the MOECC in September 2015. Neegan Burnside proposed a PCB sample collection schedule of 2 years. The MOECC proposed an annual collection cycle, with only samples from the site with highest historical PCB concentrations and also the control site being submitted for analysis. In the event that PCB/PCP/OCP concentrations are detected above the RDL, the remaining samples can be sent in for analysis. It was also proposed by the MOECC that, on a three year schedule, all samples collected from all

Table 4-1: Status of Historical Conclusions and Recommendations

Item No.	Report	Conclusions and Recommendations Requiring Follow-up	Discussion	Status
				sites should be analyzed. Stantec is currently in the process of investigating these options and responding to stakeholder comments.
3.	Clean Harbors Biomonitoring Program – Recommended Changes Letter (July, 2015)	It is recommended that PCP analysis continue on a 3-year from an annual sample collection schedule in all media.	PCP has been detected above the reporting limits in only 4/24 years of the Biomonitoring Program (1998, 1999, 2002 and 2009). Decreasing the frequency of analysis will help streamline the program.	A letter summarizing recommended changes to the Biomonitoring Program was submitted to Clean Harbors Environmental Services in July 2015. Comments on the recommended changes were received from Neegan Burnside and the MOECC in September 2015. Neegan Burnside proposed a PCB sample collection schedule of 2 years. The MOECC proposed an annual collection cycle, with only samples from the site with highest historical PCB concentrations and also the control site being submitted for analysis. In the event that PCB/PCP/OCP concentrations are detected above the RDL, the remaining samples can be sent in for analysis. It was also proposed by the MOECC that, on a three year schedule, all samples collected from all sites should be analyzed. Stantec is currently in the process of investigating these options and responding to stakeholder comments.

Table 4-1: Status of Historical Conclusions and Recommendations

Item No.	Report	Conclusions and Recommendations Requiring Follow-up	Discussion	Status
4.	Clean Harbors Biomonitoring Program – Recommended Changes Letter (July, 2015)	It is recommended that OCP analysis continue on a 3-year from an annual sample collection schedule in all media.	As indicated in **Table C-2f**, OCP are rarely detected at concentrations above the reporting limit. Dieldrin, endosulfan, sulphate, p,p'-DDE, and p,p'-DDT, are the few chemicals which have been reported at detected concentrations in at least 10% of samples. However, there have been no detected concentrations of OCPs which have exceeded the applicable guidelines for these chemicals. Decreasing the frequency of analysis will help streamline the program.	A letter summarizing recommended changes to the Biomonitoring Program was submitted to Clean Harbors Environmental Services in July 2015. Comments on the recommended changes were received from Neegan Burnside and the MOECC in September 2015. Neegan Burnside proposed a PCB sample collection schedule of 2 years. The MOECC proposed an annual collection cycle, with only samples from the site with highest historical PCB concentrations and also the control site being submitted for analysis. In the event that PCB/PCP/OCP concentrations are detected above the RDL, the remaining samples can be sent in for analysis. It was also proposed by the MOECC that, on a three year schedule, all samples collected from all sites should be analyzed. Stantec is currently in the process of investigating these options and responding to stakeholder comments.

Table 4-1: Status of Historical Conclusions and Recommendations

Item No.	Report	Conclusions and Recommendations Requiring Follow-up	Discussion	Status
5.	Clean Harbors Biomonitoring Program – Recommended Changes Letter (July, 2015)	It is recommended that sites be added to, or removed from, the Biomonitoring program.	Based on a review of scientific literature, it is recommended that a new site be added to the northeast of the incinerator 2-2.5 km away within the maximum deposition area. Additionally, a control site may be added to monitor regional background concentrations unaffected by facility operations. Due to the sufficient coverage offered by currently established sites south of the facility, it is recommended that Site S5 can be removed to streamline the Biomonitoring Program.	A letter summarizing recommended changes to the Biomonitoring Program was submitted to Clean Harbors Environmental Services in July 2015. Comments on the recommended changes were received from Neegan Burnside and the MOECC in September 2015. Neegan Burnside indicated that they concur with the addition of new sites, and are comfortable with the removal of one test site. The MOECC suggested a revision of the proposed locations of the new sites, but agree with the proposed removal of Site S5 on the condition that a data comparison between S2 and S5 is completed to demonstrate that the two sites are similar. Stantec is currently in the process of reviewing the comments and responding to stakeholders.
6.	Clean Harbors Biomonitoring Program – Recommended Changes Letter (July, 2015)	It is recommended that sediment particle size distribution (texture) analysis continue on a 3-year schedule.	Sediment particle size distribution (texture) has shown little variation annually so the frequency of analysis for sediment fertility and characterization is recommended to be changed to every three years.	A letter summarizing recommended changes to the Biomonitoring Program was submitted to Clean Harbors Environmental Services in July 2015. Comments on the recommended changes were received from Neegan Burnside and the MOECC in September 2015. Neegan Burnside did not comment on the proposed revision of the sediment characterization/fertility

Table 4-1: Status of Historical Conclusions and Recommendations

Item No.	Report	Conclusions and Recommendations Requiring Follow-up	Discussion	Status
				analysis schedule, while the MOECC is in agreement. Following acceptance of these proposed changes by Clean Harbors, sediment fertility and characterization (texture) analysis will continue on a 3-year sample collection schedule.
7.	Clean Harbors Biomonitoring Program – Recommended Changes Letter (July, 2015)	It is recommended that fluoride be added as an analyte sampled in the Biomonitoring Program.	Based on a review of the two most recent Clean Harbors Maple Leaf Monitoring reports and the Annual Landfill Report, high fluoride concentrations have been identified in silver maple foliage and groundwater.	A letter summarizing recommended changes to the Biomonitoring Program was submitted to Clean Harbors Environmental Services in July 2015. Comments on the recommended changes were received from Neegan Burnside and the MOECC in September 2015. Both stakeholders are in agreement that fluoride should be added as an analyte to the Biomonitoring Program. Following acceptance of these proposed changes by Clean Harbors, fluoride will be added as an analyte sampled in the Biomonitoring Program.
8.	2014 Annual Landfill Report, 2013 Field Year	Entering the remaining analytes into a database	Two sets of parameters (PCDD and PCDF) were entered into the EQuIS database this year to improve data management efficiency. The remaining parameters should be entered into the EQuIS database.	Historic PCP and PCB data should be imported into the EQuIS database next year.

Appendix H LABORATORY CERTIFICATES

1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	Stantec Consulting Ltd.
ALS Project ID:	14789	**Client Address:**	70 Southgate Dr, Suite 01
ALS WO#:	L2657806		Guelph, ON N1G 4P5
Date of Report	27-Apr-22		Canada
Date of Sample Receipt	20-Oct-21	**Client Contact:**	Katherine Ketis
		Client Project ID:	122160252
		Project Description:	Clean Harbors

COMMENTS: **Pentachlorophenol by modifed EPA 8270E SIM Isotope Dilution Option**

All results have been reported on a dry weight basis.

For some of the samples and lab QC, the pentachlorophenol value has been quantified using the peaks representing the underivatized phenol, where this was more abundant and/or free from interference in the final extract.

For the post-run continuing calibration verification (CCV), the recovery of 13C6-Pentachlorophenol was below the method control limit.
As a result, the reported recoveries of this standard are likely biased low. The target analyte result is not biased. Pentachlorophenol has not been detected in any of the samples and the laboratory control sample recoveries are within limits.

Certified by:

Steve Kennedy
Technical Supervisor

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Method Blank	21-W2-SB-CH-005	21-W4-WW-CH-011	21-N4-SB-CH-027	21-E1-FC-CH-041	21-E2-SU-CH-051
ALS Sample ID	WG3676523-1	L2657806-2	L2657806-5	L2657806-12	L2657806-19	L2657806-23
Sample Size	15.00	17.90	15.34	15.78	16.25	4.34
Sample units	g	g	g	g	g	g
Moisture Content	n/a	11.3%	24.0%	21.9%	19.2%	78.6%
Matrix	QC	Plant Tissue	Plant Tissue	Plant Tissue	Plant Tissue	Plant Tissue
Sampling Date	n/a	20-Sep-21	9-Jul-21	21-Sep-21	6-Oct-21	21-Sep-21
Extraction Date	7-Feb-22	7-Feb-22	7-Feb-22	7-Feb-22	7-Feb-22	7-Feb-22
Target Analytes	**ng/g**	**ng/g**	**ng/g**	**ng/g**	**ng/g**	**ng/g**
Pentachlorophenol	<0.7 U	<0.6 U	<0.7 U	<0.6 U	<0.6 U	<2.3 U
Extraction Standards	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
13C6-Pentachlorophenol (ES)	41.9	28.1	107.9	109.7	101	30.7

U Indicates that this compound was not detected above the LOD.

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Duplicate	21-E7-FC-CH-300	21-S4-WW-CH-095	21-D5-SB-CH-205	21-D8-SU-CH-210	Laboratory Control Sample
ALS Sample ID	WG3676523-5	L2657806-29	L2657806-36	L2657806-45	L2657806-47	WG3676523-2
Sample Size	4.31	16.46	7.85	17.89	4.48	1
Sample units	g	g	g	g	g	n/a
Moisture Content	78.6%	18.9%	21.9%	11.6%	77.8%	n/a
Matrix	QC	Plant Tissue	Plant Tissue	Plant Tissue	Plant Tissue	QC
Sampling Date	n/a	4-Oct-21	9-Jul-21	20-Sep-21	21-Sep-21	n/a
Extraction Date	7-Feb-22	7-Feb-22	7-Feb-22	7-Feb-22	7-Feb-22	7-Feb-22
Target Analytes	**ng/g**	**ng/g**	**ng/g**	**ng/g**	**ng/g**	**% Recovery**
Pentachlorophenol	<2.3 U	<0.6 U	<1.3 U	<0.6 U	<2.2 U	90
Extraction Standards	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
13C6-Pentachlorophenol (ES)	43.2	117.4	97.4	19.2	26	57.7

U Indicates that this compound was not detected above the LOD.

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Laboratory Control Sample	CVS	CCV	CCV
ALS Sample ID	WG3676523-6	CP-RS#1	CP-CS#4	CP-CS#4
Sample Size	1	1	1	1
Sample units	n/a	n/a	n/a	n/a
Moisture Content	n/a	n/a	n/a	n/a
Matrix	QC			
Sampling Date	n/a	n/a	n/a	n/a
Extraction Date	7-Feb-22	n/a	n/a	n/a
Target Analytes	**% Recovery**	**% Recovery**	**% Recovery**	**% Recovery**
Pentachlorophenol	72	105	93	85
Extraction Standards	**% Rec**	**% Rec**	**% Rec**	**% Rec**
13C6-Pentachlorophenol (ES)	40.5	120.9	43.4	12.5

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a
ALS Sample ID	WG3676523-1	Extraction Date	7-Feb-22
Analysis Method	PCP by 8270E		
Analysis Type	Blank		
Sample Matrix	QC		
Sample Size	15.00 g		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3676523

Approved:
Andrew Reid
--e-signature--
29-Mar-2018

Run Information	**Run 1**
Filename	22032119.D
Run Date	3/21/2022 20:22
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes		**Ret. Time**	**Concentration ng/g**	**Flags**	
Pentachlorophenol		13.64	<0.7	U	
Extraction Standards			**% Rec**		**Limits**
13C6-Pentachlorophenol (ES)	200	13.64	41.9		50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-W2-SB-CH-005**	Sampling Date	20-Sep-21	
ALS Sample ID	L2657806-2	Extraction Date	7-Feb-22	
Analysis Method	PCP by 8270E			
Analysis Type	sample			
Sample Matrix	Plant Tissue			Approved:
Sample Size	17.90 g			*Andrew Reid*
Percent Moisture	11.3%			--e-signature--
Split Ratio	1	Workgroup	WG3676523	29-Mar-2018

Run Information	**Run 1**
Filename	22032120.D
Run Date	3/21/2022 20:50
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes	**Ret. Time**	**Concentration ng/g**	**Flags**
Pentachlorophenol	13.72	<0.6	U

Extraction Standards		**% Rec**	**Limits**
13C6-Pentachlorophenol (ES)	14.08	28.1	50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-W4-WW-CH-011**	Sampling Date	9-Jul-21
ALS Sample ID	L2657806-5	Extraction Date	7-Feb-22
Analysis Method	PCP by 8270E		
Analysis Type	sample		
Sample Matrix	Plant Tissue		
Sample Size	15.34 g		
Percent Moisture	24.0%		
Split Ratio	1	Workgroup	WG3676523

Approved:
Andrew Reid
--e-signature--
29-Mar-2018

Run Information	**Run 1**
Filename	22032121.D
Run Date	3/21/2022 21:19
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes	**Ret. Time**	**Concentration ng/g**	**Flags**
Pentachlorophenol	13.52	<0.7	U

Extraction Standards		**% Rec**	**Limits**
13C6-Pentachlorophenol (ES)	200 14.09	107.9	50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-N4-SB-CH-027**	Sampling Date	21-Sep-21	
ALS Sample ID	L2657806-12	Extraction Date	7-Feb-22	
Analysis Method	PCP by 8270E			
Analysis Type	sample			
Sample Matrix	Plant Tissue			Approved:
Sample Size	15.78 g			*Andrew Reid*
Percent Moisture	21.9%			--e-signature--
Split Ratio	1	Workgroup	WG3676523	29-Mar-2018

Run Information	**Run 1**
Filename	22032122.D
Run Date	3/21/2022 21:48
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes		**Ret. Time**	**Concentration ng/g**	**Flags**
Pentachlorophenol		13.37	<0.6	U
Extraction Standards			**% Rec**	**Limits**
13C6-Pentachlorophenol (ES)	200	14.10	109.7	50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-E1-FC-CH-041**	Sampling Date	6-Oct-21	
ALS Sample ID	L2657806-19	Extraction Date	7-Feb-22	
Analysis Method	PCP by 8270E			
Analysis Type	sample			
Sample Matrix	Plant Tissue			Approved:
Sample Size	16.25 g			*Andrew Reid*
Percent Moisture	19.2%			--e-signature--
Split Ratio	1	Workgroup	WG3676523	29-Mar-2018

Run Information	**Run 1**
Filename	22032123.D
Run Date	3/21/2022 22:17
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes		**Ret. Time**	**Concentration ng/g**	**Flags**
Pentachlorophenol		13.73	<0.6	U
Extraction Standards			**% Rec**	**Limits**
13C6-Pentachlorophenol (ES)	200	14.09	101	50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-E2-SU-CH-051**	Sampling Date	21-Sep-21	
ALS Sample ID	L2657806-23	Extraction Date	7-Feb-22	
Analysis Method	PCP by 8270E			
Analysis Type	sample			
Sample Matrix	Plant Tissue			Approved:
Sample Size	4.34 g			*Andrew Reid*
Percent Moisture	78.6%			--e-signature--
Split Ratio	1	Workgroup	WG3676523	29-Mar-2018

Run Information	**Run 1**
Filename	22032124.D
Run Date	3/21/2022 22:45
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes	**Ret. Time**	**Concentration ng/g**	**Flags**
Pentachlorophenol	13.73	<2.3	U

Extraction Standards		**% Rec**	**Limits**
13C6-Pentachlorophenol (ES)	200	30.7	50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**Duplicate**	Sampling Date	n/a
ALS Sample ID	WG3676523-5	Extraction Date	7-Feb-22
Analysis Method	PCP by 8270E		
Analysis Type	sample		
Sample Matrix	QC		Approved:
Sample Size	4.31 g		*Andrew Reid*
Percent Moisture	78.6%		--e-signature--
Split Ratio	1	Workgroup	WG3676523 29-Mar-2018

Run Information	**Run 1**
Filename	22032125.D
Run Date	3/21/2022 23:14
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes		**Ret. Time**	**Concentration ng/g**	**Flags**	
Pentachlorophenol		13.73	<2.3	U	
Extraction Standards			**% Rec**		**Limits**
13C6-Pentachlorophenol (ES)	200	13.66	43.2		50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-E7-FC-CH-300**	Sampling Date	4-Oct-21	
ALS Sample ID	L2657806-29	Extraction Date	7-Feb-22	
Analysis Method	PCP by 8270E			
Analysis Type	sample			
Sample Matrix	Plant Tissue			Approved:
Sample Size	16.46 g			*Andrew Reid*
Percent Moisture	18.9%			--e-signature--
Split Ratio	1	Workgroup	WG3676523	29-Mar-2018

Run Information	**Run 1**
Filename	22032126.D
Run Date	3/21/2022 23:43
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes	**Ret. Time**	**Concentration ng/g**	**Flags**
Pentachlorophenol	13.72	<0.6	U

Extraction Standards		**% Rec**	**Limits**
13C6-Pentachlorophenol (ES)	200 14.08	117.4	50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-S4-WW-CH-095**	Sampling Date	9-Jul-21	
ALS Sample ID	L2657806-36	Extraction Date	7-Feb-22	
Analysis Method	PCP by 8270E			
Analysis Type	sample			
Sample Matrix	Plant Tissue			Approved:
Sample Size	7.85 g			*Andrew Reid*
Percent Moisture	21.9%			--e-signature--
Split Ratio	1	Workgroup	WG3676523	29-Mar-2018

Run Information	**Run 1**
Filename	22032127.D
Run Date	3/22/2022 0:11
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes	**Ret. Time**	**Concentration ng/g**	**Flags**
Pentachlorophenol	13.68	<1.3	U

Extraction Standards		**% Rec**	**Limits**
13C6-Pentachlorophenol (ES)	14.09	97.4	50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-D5-SB-CH-205**	Sampling Date	20-Sep-21	
ALS Sample ID	L2657806-45	Extraction Date	7-Feb-22	
Analysis Method	PCP by 8270E			
Analysis Type	sample			
Sample Matrix	Plant Tissue			Approved:
Sample Size	17.89 g			*Andrew Reid*
Percent Moisture	11.6%			--e-signature--
Split Ratio	1	Workgroup	WG3676523	29-Mar-2018

Run Information	**Run 1**
Filename	22032128.D
Run Date	3/22/2022 0:40
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes		**Ret. Time**	**Concentration ng/g**	**Flags**	
Pentachlorophenol		13.73	<0.6	U	
Extraction Standards			**% Rec**		**Limits**
13C6-Pentachlorophenol (ES)	200	14.09	19.2		50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-D8-SU-CH-210**	Sampling Date	21-Sep-21	
ALS Sample ID	L2657806-47	Extraction Date	7-Feb-22	
Analysis Method	PCP by 8270E			
Analysis Type	sample			
Sample Matrix	Plant Tissue			Approved:
Sample Size	4.48 g			*Andrew Reid*
Percent Moisture	77.8%			--e-signature--
Split Ratio	1	Workgroup	WG3676523	29-Mar-2018

Run Information	**Run 1**
Filename	22032129.D
Run Date	3/22/2022 1:09
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes	**Ret. Time**	**Concentration ng/g**	**Flags**
Pentachlorophenol	13.73	<2.2	U

Extraction Standards		**% Rec**	**Limits**
13C6-Pentachlorophenol (ES)	13.68	26	50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3676523-2	Extraction Date	7-Feb-22
Analysis Method	PCP by 8270E		
Analysis Type	LCS		
Sample Matrix	QC		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3676523

Approved:
Andrew Reid
--e-signature--
29-Mar-2018

Run Information	**Run 1**
Filename	22032117.D
Run Date	3/21/2022 19:24
Final Volume	1 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-1
Column	HP-5MS USC160412H

Target Analytes	**ug spiked**	**Ret. Time**	**% Recovery**	**Flags**	**Limits**
Pentachlorophenol	200	14.08	90		50-150
Extraction Standards			**% Rec**		**Limits**
13C6-Pentachlorophenol (ES)	200	13.64	57.7		30-150

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3676523-6	Extraction Date	7-Feb-22
Analysis Method	PCP by 8270E		
Analysis Type	LCS		
Sample Matrix	QC		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3676523

Approved:
Andrew Reid
--e-signature--
29-Mar-2018

Run Information	**Run 1**
Filename	22032116.D
Run Date	3/21/2022 18:55
Final Volume	1 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-1
Column	HP-5MS USC160412H

Target Analytes	**ug spiked**	**Ret. Time**	**% Recovery**	**Flags**	**Limits**
Pentachlorophenol	10	13.64	72		50-150
Extraction Standards			**% Rec**		**Limits**
13C6-Pentachlorophenol (ES)	200	13.64	40.5		30-150

1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	Stantec Consulting Ltd.
ALS Project ID:	14789	**Client Address:**	70 Southgate Dr, Suite 01
ALS WO#:	L2657806		Guelph, ON N1G 4P5
Date of Report	28-Apr-22		Canada
Date of Sample Receipt	20-Oct-21	**Client Contact:**	Katherine Ketis
		Client Project ID:	122160252
		Project Description:	Clean Harbors

COMMENTS: **Pentachlorophenol by modifed EPA 8270E SIM Isotope Dilution Option**

Certified by:

Steve Kennedy
Technical Supervisor

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Method Blank		21-D6-FC-CH-207		21-D7-WW-CH-209		Laboratory Control Sample	Low Level Laboratory Control Sample	CVS
ALS Sample ID	WG3701037-1		L2657806-48		L2657806-50		WG3701037-2	WG3701037-4	CP-RS#1
Sample Size	7.00		8.04		5.54		1	1	1
Sample units	g		g		g		n/a	n/a	n/a
Moisture Content	n/a		20.2%		21.4%		n/a	n/a	n/a
Matrix	QC		Plant Tissue		Plant Tissue		QC	QC	
Sampling Date	n/a		4-Oct-21		9-Jul-21		n/a	n/a	n/a
Extraction Date	7-Feb-22		7-Feb-22		7-Feb-22		7-Feb-22	7-Feb-22	7-Feb-22
Target Analytes	**ng/g**		**ng/g**		**ng/g**		**% Recovery**	**% Recovery**	**% Recovery**
Pentachlorophenol	<1.4	U	<1.2	U	<1.8	U	112	68	105
Extraction Standards	**% Rec**		**% Rec**		**% Rec**		**% Rec**	**% Rec**	**% Rec**
13C6-Pentachlorophenol (ES)	47.4		105		43.6		36.3	44.7	120.9

U Indicates that this compound was not detected above the LOD.

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a
ALS Sample ID	WG3701037-1	Extraction Date	2-Mar-22
Analysis Method	PCP by 8270E		
Analysis Type	Blank		
Sample Matrix	QC		
Sample Size	7.00 g		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3701037

Approved:
Andrew Reid
--e-signature--
29-Mar-2018

Run Information	**Run 1**
Filename	22032135.D
Run Date	3/22/2022 4:01
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes		**Ret. Time**	**Concentration ng/g**	**Flags**	
Pentachlorophenol		13.67	<1.4	U	
Extraction Standards			**% Rec**		**Limits**
13C6-Pentachlorophenol (ES)	200	13.66	47.4		50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-D6-FC-CH-207**	Sampling Date	04-Oct-21	
ALS Sample ID	L2657806-48	Extraction Date	2-Mar-22	
Analysis Method	PCP by 8270E			
Analysis Type	sample			
Sample Matrix	Plant Tissue			Approved:
Sample Size	8.04 g			*Andrew Reid*
Percent Moisture	20.2%			--e-signature--
Split Ratio	1	Workgroup	WG3701037	29-Mar-2018

Run Information	**Run 1**
Filename	22032136.D
Run Date	3/22/2022 4:30
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes		**Ret. Time**	**Concentration ng/g**	**Flags**
Pentachlorophenol		13.72	<1.2	U
Extraction Standards			**% Rec**	**Limits**
13C6-Pentachlorophenol (ES)	200	14.09	105	50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**21-D7-WW-CH-209**	Sampling Date	09-Jul-21	
ALS Sample ID	L2657806-50	Extraction Date	2-Mar-22	
Analysis Method	PCP by 8270E			
Analysis Type	sample			
Sample Matrix	Plant Tissue			Approved:
Sample Size	5.54 g			*Andrew Reid*
Percent Moisture	21.4%			--e-signature--
Split Ratio	1	Workgroup	WG3701037	29-Mar-2018

Run Information	**Run 1**
Filename	22032137.D
Run Date	3/22/2022 4:59
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes		**Ret. Time**	**Concentration ng/g**	**Flags**	
Pentachlorophenol		13.28	<1.8	U	
Extraction Standards			**% Rec**		**Limits**
13C6-Pentachlorophenol (ES)	200	13.67	43.6		50-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a	
ALS Sample ID	WG3701037-2	Extraction Date	2-Mar-22	
Analysis Method	PCP by 8270E			
Analysis Type	LCS			
Sample Matrix	QC			Approved:
Sample Size	1 n/a			*Andrew Reid*
Percent Moisture	n/a			--e-signature--
Split Ratio	1	Workgroup	WG3701037	29-Mar-2018

Run Information	**Run 1**
Filename	22032134.D
Run Date	3/22/2022 3:33
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes	**ug spiked**	**Ret. Time**	**% Recovery**	**Flags**	**Limits**
Pentachlorophenol	200	14.08	112		50-150
Extraction Standards			**% Rec**		**Limits**
13C6-Pentachlorophenol (ES)	200	13.66	36.3		30-150

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**		Sampling Date	n/a
ALS Sample ID	WG3701037-4		Extraction Date	2-Mar-22
Analysis Method	PCP by 8270E			
Analysis Type	LCS			
Sample Matrix	QC			
Sample Size	1	n/a		
Percent Moisture	n/a			
Split Ratio	1		Workgroup	WG3701037

Approved:
Andrew Reid
--e-signature--
29-Mar-2018

Run Information	**Run 1**
Filename	22032133.D
Run Date	3/22/2022 3:04
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/g
Instrument	MSD-1
Column	HP-5MS USR123112H

Target Analytes	**ug spiked**	**Ret. Time**	**% Recovery**	**Flags**	**Limits**
Pentachlorophenol	10	13.67	68		50-150
Extraction Standards			**% Rec**		**Limits**
13C6-Pentachlorophenol (ES)	200	13.66	44.7		30-150

1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	Stantec Consulting Ltd.
ALS Project ID:	14789	**Client Address:**	70 Southgate Dr. Suite 01
ALS WO#:	L2657806		Guelph, ON N1G 4P5
Date of Report	9-Mar-22		Canada
Date of Sample Receipt	20-Oct-22	**Client Contact:**	Katherine Ketis
		Client Project ID:	122160252

COMMENTS:

Sample preparation using Mod. Method E3053 (GN 10-Feb-2022)
Sample analysis using Mod. Method E3053 fluoride Ion Selective Electrode (GRB 3-Mar-2022)

ANALYST COMMENTS:

Samples were extracted using a modification of Method E3053. To 0.5g sub-samples was added 0.1N H2SO4 and the resulting solution heated on a hotblock overnight. Two rounds of sonication, separated by an H2SO4 addition, were followed by addition of a KOH buffer to generate the final sample. This solution was analyzed first by IC, which showed significant interferences on the target analyte. Final results were generated using a fluoride ion-selective electrode. All data has been moisture corrected to yield the requested units.
Matrix spike recoveries on L2657806-16 could not be quantified, as the samples were compromised during shipping for confirmation by ISE.

PE 9-Mar-22

LOR = Limit of Reporting
MB = Laboratory Control Blank (limits: <LOR)
LCS = Laboratory Control Sample (limits: 90-110%)
MS = Matrix Spike Sample (limits: 90-110%, NH_3: 85-115%)
RPD = Relative Percent Difference (limits: <20% for sample duplicate, <10% for duplicate injection)
nq = Indicates that this value was not quantifiable.

Certified by: L. Wrona

Lynne Wrona
Project Manager

ALS Environmental

Sample Analysis Summary Report

Sample Name		21-W2-SB-CH-005	21-W2-NG-CH-003	21-W4-WW-CH-011	21-W4-NG-CH-009	21-N2-NG-CH-019
ALS Sample ID		L2657806-2	L2657806-3	L2657806-5	L2657806-6	L2657806-9
Matrix		Plant tissue	Plant tissue	Plant tissue	Plant tissue	Plant tissue
Analysis type		Sample	Sample	Sample	Sample	Sample
Sampling Date/Time		20-Sep-21	20-Sep-21	9-Jul-21	20-Sep-21	5-Oct-21
Date of Receipt		20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21
Ion Chromatography Analysis						
Mod. Method E3053	**LOR**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**
Fluoride	8.0	<8.0	13.0	<8.0	9.6	<8.0

ALS Environmental

Sample Analysis Summary Report

Sample Name		21-N2-FC-CH-021	21-N4-SB-CH-027	21-N4-NG-CH-025	21-N5-NG-CH-035	21-E1-NG-CH-039
ALS Sample ID		L2657806-10	L2657806-12	L2657806-13	L2657806-16	L2657806-18
Matrix		Plant tissue	Plant tissue	Plant tissue	Plant tissue	Plant tissue
Analysis type		Sample	Sample	Sample	Sample	Sample
Sampling Date/Time		5-Oct-21	21-Sep-21	21-Sep-21	22-Sep-21	6-Oct-21
Date of Receipt		20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21
Ion Chromatography Analysis						
Mod. Method E3053	**LOR**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**
Fluoride	8.0	<8.0	<8.0	<8.0	9.7	<8.0

ALS Environmental

Sample Analysis Summary Report

Sample Name		21-E1-FC-CH-041	21-E2-NG-CH-049	21-E2-SU-CH-051	21-E5-NG-CH-055	21-E5-FC-CH-057
ALS Sample ID		L2657806-19	L2657806-22	L2657806-23	L2657806-25	L2657806-26
Matrix		Plant tissue	Plant tissue	Plant tissue	Plant tissue	Plant tissue
Analysis type		Sample	Sample	Sample	Sample	Sample
Sampling Date/Time		6-Oct-21	21-Sep-21	21-Sep-21	5-Oct-21	5-Oct-21
Date of Receipt		20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21
Ion Chromatography Analysis						
Mod. Method E3053	**LOR**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**
Fluoride	8.0	<8.0	<8.0	<8.0	<8.0	<8.0

ALS Environmental

Sample Analysis Summary Report

Sample Name		21-E7-NG-CH-305	21-E7-FC-CH-300	21-S2-NG-CH-075	21-S2-FC-CH-077	21-S4-NG-CH-093
ALS Sample ID		L2657806-28	L2657806-29	L2657806-31	L2657806-32	L2657806-35
Matrix		Plant tissue	Plant tissue	Plant tissue	Plant tissue	Plant tissue
Analysis type		Sample	Sample	Sample	Sample	Sample
Sampling Date/Time		4-Oct-21	4-Oct-21	4-Oct-21	4-Oct-21	21-Sep-21
Date of Receipt		20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21
Ion Chromatography Analysis						
Mod. Method E3053	**LOR**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**
Fluoride	8.0	<8.0	<8.0	<8.0	<8.0	<8.0

ALS Environmental

Sample Analysis Summary Report

Sample Name		21-S4-WW-CH-095	21-S8-NG-CH-085	21-D5-SB-CH-205	21-D3-NG-CH-203	21-D8-SU-CH-210
ALS Sample ID		L2657806-36	L2657806-39	L2657806-45	L2657806-46	L2657806-47
Matrix		Plant tissue	Plant tissue	Plant tissue	Plant tissue	Plant tissue
Analysis type		Sample	Sample	Sample	Sample	Sample
Sampling Date/Time		9-Jul-21	22-Sep-21	20-Sep-21	20-Sep-21	21-Sep-21
Date of Receipt		20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21
Ion Chromatography Analysis						
Mod. Method E3053	**LOR**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**
Fluoride	8.0	<8.0	<8.0	<8.0	13.0	<8.0

ALS Environmental

Sample Analysis Summary Report

Sample Name		**21-D6-FC-CH-207**	**21-D7-WW-CH-209**
ALS Sample ID		L2657806-48	L2657806-50
Matrix		Plant tissue	Plant tissue
Analysis type		Sample	Sample
Sampling Date/Time		4-Oct-21	9-Jul-21
Date of Receipt		20-Oct-21	20-Oct-21
Ion Chromatography Analysis			
Mod. Method E3053	**LOR**	**mg/kg dry wt.**	**mg/kg dry wt.**
Fluoride	8.0	<8.0	<8.0

ALS Environmental

Sample QC Summary Report

Sample Name		MB	LCS	LCS	LCSD	LCSD
ALS Sample ID		MB	LCS	LCS	LCSD	LCSD
Analysis type		Method Blank	Blank Spike	Blank Spike	Blank Spike	Blank Spike
Sampling Date/Time		n/a	n/a	n/a	n/a	n/a
Date of Receipt		n/a	n/a	n/a	n/a	n/a
Ion Chromatography Analysis						
Mod. Method E3053	**LOR**	**mg/kg dry wt.**	**mg/kg dry wt.**	**% Rec**	**mg/kg dry wt.**	**% Rec**
Fluoride	8.000	<8.0	51.6	103%	48.2	96%

ALS Environmental

Sample QC Summary Report

Sample Name		MB	LCS	LCS	LCSD	LCSD
ALS Sample ID		MB	LCS	LCS	LCSD	LCSD
Analysis type		Method Blank	Blank Spike	Blank Spike	Blank Spike	Blank Spike
Sampling Date/Time		n/a	n/a	n/a	n/a	n/a
Date of Receipt		n/a	n/a	n/a	n/a	n/a
Ion Chromatography Analysis						
Mod. Method E3053	**LOR**	**mg/kg dry wt.**	**mg/kg dry wt.**	**% Rec**	**mg/kg dry wt.**	**% Rec**
Fluoride	8.0	<8.0	48.2	96%	47.2	94%

ALS Environmental

Sample QC Summary Report

Sample Name		21-W2-SB-CH-005	21-W2-SB-CH-005	21-W2-SB-CH-005	21-W2-SB-CH-005	21-W2-SB-CH-005	21-W2-SB-CH-005
ALS Sample ID		L2657806-2	L2657806-2DUP	L2657806-2MS	L2657806-2MS	L2657806-2MSD	L2657806-2MSD
Matrix		Plant tissue	Plant tissue	Plant tissue	Plant tissue	Plant tissue	Plant tissue
Analysis type		Sample	Duplicate	Matrix Spike	Matrix Spike	Matrix Spike	Matrix Spike
Sampling Date/Time		20-Sep-21	20-Sep-21	20-Sep-21	20-Sep-21	20-Sep-21	20-Sep-21
Date of Receipt		20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21
Ion Chromatography Analysis							
Mod. Method E3053	**LOR**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**% Rec**	**mg/kg dry wt.**	**% Rec**
Fluoride	8.0	<8.0	<8.0	61.7	112%	59.0	107%

ALS Environmental

Sample QC Summary Report

Sample Name		**21-N5-NG-CH-035**	**21-N5-NG-CH-035**	**21-N5-NG-CH-035**	**21-N5-NG-CH-035**	**21-N5-NG-CH-035**	**21-N5-NG-CH-035**
ALS Sample ID		L2657806-16	L2657806-16DUP	L2657806-16MS	L2657806-16MS	L2657806-16MS	L2657806-16MS
Matrix		Plant tissue	Plant tissue	Plant tissue	Plant tissue	Plant tissue	Plant tissue
Analysis type		Sample	Duplicate	Matrix Spike	Matrix Spike	Matrix Spike	Matrix Spike
Sampling Date/Time		22-Sep-21	22-Sep-21	22-Sep-21	22-Sep-21	22-Sep-21	22-Sep-21
Date of Receipt		20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21	20-Oct-21
Ion Chromatography Analysis							
Mod. Method E3053	**LOR**	**mg/kg dry wt.**	**mg/kg dry wt.**	**mg/kg dry wt.**	**% Rec**	**mg/kg dry wt.**	**% Rec**
Fluoride	8.0	9.7	8.5	nq	nq	nq	nq

STANTEC CONSULTING LTD.
ATTN: Katherine Ketis
70 Southgate Dr, Suite 01
Guelph ON N1G 4P5

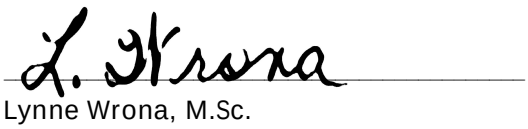
Date Received: 20-OCT-21
Report Date: 02-MAY-22 15:01 (MT)
Version: FINAL REV. 2

Client Phone: 519-836-6050

Certificate of Analysis

Lab Work Order #: L2657806

Project P.O. #: NOT SUBMITTED
Job Reference: 122160252 CLEAN HARBORS
C of C Numbers:
Legal Site Desc:



Lynne Wrona, M.Sc.
Project Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-1 21-W2-SS-CH-001							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 12:30							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	<5.0		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	4.33		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0492		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	14.4		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	16200		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Antimony (Sb)	0.29		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Arsenic (As)	6.77		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Barium (Ba)	62.6		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Beryllium (Be)	0.66		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Boron (B)	9.6		5.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cadmium (Cd)	0.460		0.020	mg/kg	10-JAN-22	25-JAN-22	R5709149
Calcium (Ca)	4670		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Chromium (Cr)	22.6		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cobalt (Co)	7.37		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Copper (Cu)	12.8		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Iron (Fe)	18000		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Lead (Pb)	15.4		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Magnesium (Mg)	4030		20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Manganese (Mn)	356		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Molybdenum (Mo)	1.97		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Nickel (Ni)	17.9		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Phosphorus (P)	552		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Potassium (K)	1860		100	mg/kg	10-JAN-22	25-JAN-22	R5709149
Silver (Ag)	<0.10		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sodium (Na)	82		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Strontium (Sr)	14.9		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sulfur (S)	<1000		1000	mg/kg	10-JAN-22	25-JAN-22	R5709149
Thallium (Tl)	0.238		0.050	mg/kg	10-JAN-22	25-JAN-22	R5709149
Titanium (Ti)	157		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Vanadium (V)	39.4		0.20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zinc (Zn)	53.5		2.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zirconium (Zr)	1.4		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
CARB428 PCB TOTALS							
Total PCB	1.62		0.0060	ng/g	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 1	46.7		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 3	50.4		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 4	56.4		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 15	56.2		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 19	51.3		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 37	72.1		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 54	56.6		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 81	73.3		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 104	61.9		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 123	83.9		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 118	66.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 114	74.9		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 105	76.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 126	59.9	M	10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 155	64.4		10-145	%	02-FEB-22	24-FEB-22	R5755385

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-1 21-W2-SS-CH-001							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 12:30							
Matrix: Soil							
CARB428 PCB TOTALS							
Surrogate: 13C12 PCB 167	80.2		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 156	80.9	M	10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 157	79.7		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 169	82.2		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 188	70.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 202	76.9		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 205	75.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 208	53.4		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 206	84.2		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 209	67.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
OC Pesticides by Method 1699							
alpha-BHC	<0.0095	[U]	0.0095	ng/g	02-FEB-22	07-APR-22	R5769474
beta-BHC	<0.014	[U]	0.014	ng/g	02-FEB-22	07-APR-22	R5769474
delta-BHC	<0.012	[U]	0.012	ng/g	02-FEB-22	07-APR-22	R5769474
gamma-BHC	<0.013	[U]	0.013	ng/g	02-FEB-22	07-APR-22	R5769474
Heptachlor	<0.0011	M,U	0.0011	ng/g	02-FEB-22	07-APR-22	R5769474
Aldrin	<0.0016	[U]	0.0016	ng/g	02-FEB-22	07-APR-22	R5769474
Heptachlor Epoxide	0.0101	M,J	0.00097	ng/g	02-FEB-22	07-APR-22	R5769474
trans-Chlordane	0.0130	M,J,R	0.0080	ng/g	02-FEB-22	07-APR-22	R5769474
cis-Chlordane	<0.0071	[U]	0.0071	ng/g	02-FEB-22	07-APR-22	R5769474
Dieldrin	0.0211	M,J	0.0053	ng/g	02-FEB-22	07-APR-22	R5769474
Endrin	<0.0067	[U]	0.0067	ng/g	02-FEB-22	07-APR-22	R5769474
Endrin Aldehyde	<0.0066	M,U	0.0066	ng/g	02-FEB-22	07-APR-22	R5769474
Endosulfan I	<0.0058	[U]	0.0058	ng/g	02-FEB-22	07-APR-22	R5769474
Endosulfan II	<0.019	[U]	0.019	ng/g	02-FEB-22	07-APR-22	R5769474
Endosulfan Sulfate	<0.0031	[U]	0.0031	ng/g	02-FEB-22	07-APR-22	R5769474
4,4-DDE	0.206		0.0049	ng/g	02-FEB-22	07-APR-22	R5769474
4,4-DDD	0.0064	M,J	0.0038	ng/g	02-FEB-22	07-APR-22	R5769474
4,4-DDT	0.181		0.0047	ng/g	02-FEB-22	07-APR-22	R5769474
Methoxychlor	<0.0053	[U]	0.0053	ng/g	02-FEB-22	07-APR-22	R5769474
Mirex	0.00690	J,R	0.00045	ng/g	02-FEB-22	07-APR-22	R5769474
Surrogate: alpha-BHC, 13C6-	73.0		16-129	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Heptachlor, 13C10-	75.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Oxychlordane, 13C10-	71.0		23-135	%	02-FEB-22	07-APR-22	R5769474
Surrogate: trans-Nonachlor, 13C10-	63.0		14-136	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Dieldrin, 13C12-	66.0		40-151	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Endrin, 13C12-	68.0		35-155	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Endosulfan II, 13C9-	71.0		5-122	%	02-FEB-22	07-APR-22	R5769474
Surrogate: 4,4'-DDE, 13C12-	69.0		21-125	%	02-FEB-22	07-APR-22	R5769474
Surrogate: 4,4'-DDT, 13C12-	77.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Mirex, 13C10-	63.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Heptachlor Epoxide A	<0.0059	[U]	0.0059	ng/g	02-FEB-22	07-APR-22	R5769474
Surrogate: 4,4'-DDD, 13C12-	72.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: gamma-BHC, 13C6-	69.0		11-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Methoxychlor, 13C12-	55.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: beta-BHC, 13C6-	66.0		11-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: delta-BHC, 13C6-	72.0		11-120	%	02-FEB-22	07-APR-22	R5769474
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.164	M,J	0.036	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.150	J,R	0.031	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.191	[J]	0.051	pg/g	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-1 21-W2-SS-CH-001							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 12:30							
Matrix: Soil							
Dioxins and Furans HR 1613B							
1,2,3,6,7,8-HxCDD	0.395	[J]	0.049	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.360	M,J,R	0.047	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	5.72		0.12	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	31.5		0.27	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.170	J,R	0.092	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.173	[J]	0.071	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.598	[J]	0.058	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.335	[J]	0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.400	J,R	0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.460	J,R	0.052	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	<0.077	[U]	0.077	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	1.77	[J]	0.049	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.120	J,R	0.074	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	1.89	[J]	0.053	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	0.659		0.036	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	1.82		0.031	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	5.38		0.051	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	10.9		0.12	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	5.26		0.092	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	13				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	8.32		0.071	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	9				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	4.20		0.077	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	6				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	2.78		0.074	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	82.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	87.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	87.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	87.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	79.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	61.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	75.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	82.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	79.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	80.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	76.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	80.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	80.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	74.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	71.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	77.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	0.526			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	0.820			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	0.824			pg/g	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-2 21-W2-SB-CH-005							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 12:55							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	11.3		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	48		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	3220		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	1.37		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	27.7		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	0.0197		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	3340		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	0.108		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	13.0		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	71.4		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	2760		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	26.5		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	11.4		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	1.00		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	7140		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	21000		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	2.95		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	33.4		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	<0.0060		0.0060	ng/g	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 1	19.5		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 3	33.4		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 4	18.5		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 15	43.8		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 19	15.6		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 37	52.5		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 54	16.5		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 81	47.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 104	23.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 123	53.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 118	40.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 114	34.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 105	38.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 126	34.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 155	47.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 167	47.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 156	41.6	M	10-145	%	03-FEB-22	24-FEB-22	R5755457

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-2 21-W2-SB-CH-005							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 12:55							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Surrogate: 13C12 PCB 157	44.3		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 169	49.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 188	48.3		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 202	46.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 205	45.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 208	41.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 206	49.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 209	45.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
OC Pesticides by Method 1699							
alpha-BHC	<0.097	[U]	0.097	ng/g	04-FEB-22	18-APR-22	R5767500
beta-BHC	<0.71	[U]	0.71	ng/g	04-FEB-22	18-APR-22	R5767500
delta-BHC	<0.42	[U]	0.42	ng/g	04-FEB-22	18-APR-22	R5767500
gamma-BHC	<0.19	[U]	0.19	ng/g	04-FEB-22	18-APR-22	R5767500
Heptachlor	<0.015	[U]	0.015	ng/g	04-FEB-22	13-APR-22	R5767500
Aldrin	<0.071	[U]	0.071	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide	<0.11	M,U	0.11	ng/g	04-FEB-22	13-APR-22	R5767500
trans-Chlordane	<0.46	[U]	0.46	ng/g	04-FEB-22	13-APR-22	R5767500
cis-Chlordane	<0.42	[U]	0.42	ng/g	04-FEB-22	13-APR-22	R5767500
Dieldrin	<0.30	[U]	0.30	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin	<0.42	[U]	0.42	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin Aldehyde	<0.64	[U]	0.64	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan I	<0.45	[U]	0.45	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan II	<0.55	[U]	0.55	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan Sulfate	<0.14	[U]	0.14	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDE	<0.37	[U]	0.37	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDD	<0.77	[U]	0.77	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDT	<0.91	[U]	0.91	ng/g	04-FEB-22	13-APR-22	R5767500
Methoxychlor	<0.26	[U]	0.26	ng/g	04-FEB-22	18-APR-22	R5767500
Mirex	<0.057	[U]	0.057	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	29.0		16-129	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	52.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	34.0		23-135	%	04-FEB-22	13-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	50.0		14-136	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	40.0	M,R	40-151	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endrin, 13C12-	36.0	M	35-155	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	41.0	M	5-122	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	38.0		21-125	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	19.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Mirex, 13C10-	20.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	22.0	M	5-150	%	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide A	<0.70	[U]	0.70	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	17.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	7.0	R	5-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	5.0	G	11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	8.0	G	11-120	%	04-FEB-22	18-APR-22	R5767500
Note: ES % recovery below the method limit, isotope dilution calculation for native target is recovery corrected , impact to data quality is minimal							
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.065	[U]	0.065	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.058	[U]	0.058	pg/g	31-JAN-22	11-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-2 21-W2-SB-CH-005							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 12:55							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,4,7,8-HxCDD	<0.036	[U]	0.036	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.036	[U]	0.036	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.034	[U]	0.034	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	<0.059	[U]	0.059	pg/g	31-JAN-22	11-MAR-22	R5743237
OCDD	0.940	J,R	0.046	pg/g	31-JAN-22	11-MAR-22	R5743237
2,3,7,8-TCDF	<0.043	[U]	0.043	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.026	[U]	0.026	pg/g	31-JAN-22	11-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.024	M,U	0.024	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.020	[U]	0.020	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.019	[U]	0.019	pg/g	31-JAN-22	11-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.022	[U]	0.022	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.028	[U]	0.028	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.038	M,J,R	0.024	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	0.035	M,J,R	0.032	pg/g	31-JAN-22	11-MAR-22	R5743237
OCDF	0.31	M,J,R	0.10	pg/g	31-JAN-22	11-MAR-22	R5743237
Total-TCDD	<0.065	[U]	0.065	pg/g	31-JAN-22	11-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-PeCDD	<0.058	[U]	0.058	pg/g	31-JAN-22	11-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-HxCDD	<0.036	[U]	0.036	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HxCDD # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-HpCDD	<0.059	[U]	0.059	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HpCDD # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-TCDF	<0.043	[U]	0.043	pg/g	31-JAN-22	11-MAR-22	R5743237
Total TCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-PeCDF	<0.026	[U]	0.026	pg/g	31-JAN-22	11-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-HxCDF	<0.028	[U]	0.028	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HxCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-HpCDF	<0.032	[U]	0.032	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	36.0		25-164	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	34.0		25-181	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	44.0		32-141	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	35.0		28-130	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	46.0		23-140	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-OCDD	40.0		17-157	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	36.0		24-169	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	35.0		21-192	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	32.0		21-178	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	44.0		26-152	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	40.0		26-123	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	38.0		29-147	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	41.0		28-136	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	47.0		28-143	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	46.0		26-138	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	35.0		31-197	%	31-JAN-22	11-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.00			pg/g	31-JAN-22	11-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.0788			pg/g	31-JAN-22	11-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.156			pg/g	31-JAN-22	11-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-3 21-W2-NG-CH-003							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 12:45							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	70.5		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	6210		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0153		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	3060		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	0.79		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	33.6		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	0.027		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727624
Arsenic (As)-Total	0.026		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	4.04		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	9.2		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.0241		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	7900		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	0.332		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.026		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	9.78		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	90.5		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	0.151		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	2400		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	46.8		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	7.17		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	0.28		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	3660		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	24200		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	22		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	10.6		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727624
Vanadium (V)-Total	<0.10		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	25.4		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
PCB congeners by SIM GC/LRMS							
Total PCB	<0.097		0.097	ng/g	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 1	43.1		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 3	43.9		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 4	50.8		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 15	45.7		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 19	44.7		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 37	56.2		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 54	49.1		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 81	65.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 104	53.5		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 123	68.5		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 118	57.2		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 114	54.5		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 105	59.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 126	55.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 155	51.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 167	64.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 156	65.7	M	10-145	%	09-FEB-22	24-FEB-22	R5755637

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-3 21-W2-NG-CH-003							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 12:45							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Surrogate: 13C12 PCB 157	66.5		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 169	65.5		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 188	55.8		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 202	61.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 205	64.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 208	42.3		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 206	70.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 209	53.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
OC Pesticides by Method 1699							
alpha-BHC	<0.82	[U]	0.82	ng/g	04-FEB-22	18-APR-22	R5767500
beta-BHC	<4.9	[U]	4.9	ng/g	04-FEB-22	18-APR-22	R5767500
delta-BHC	<2.9	[U]	2.9	ng/g	04-FEB-22	18-APR-22	R5767500
gamma-BHC	<1.4	[U]	1.4	ng/g	04-FEB-22	18-APR-22	R5767500
Heptachlor	<0.27	[U]	0.27	ng/g	04-FEB-22	14-APR-22	R5767500
Aldrin	<1.3	[U]	1.3	ng/g	04-FEB-22	14-APR-22	R5767500
Heptachlor Epoxide	<1.6	[U]	1.6	ng/g	04-FEB-22	14-APR-22	R5767500
trans-Chlordane	<2.6	[U]	2.6	ng/g	04-FEB-22	14-APR-22	R5767500
cis-Chlordane	<2.4	[U]	2.4	ng/g	04-FEB-22	14-APR-22	R5767500
Dieldrin	<7.1	[U]	7.1	ng/g	04-FEB-22	14-APR-22	R5767500
Endrin	<9.4	[U]	9.4	ng/g	04-FEB-22	14-APR-22	R5767500
Endrin Aldehyde	<9.7	[U]	9.7	ng/g	04-FEB-22	14-APR-22	R5767500
Endosulfan I	<2.2	[U]	2.2	ng/g	04-FEB-22	18-APR-22	R5767500
Endosulfan II	<3.8	[U]	3.8	ng/g	04-FEB-22	18-APR-22	R5767500
Endosulfan Sulfate	<0.96	[U]	0.96	ng/g	04-FEB-22	18-APR-22	R5767500
4,4-DDE	<4.8	[U]	4.8	ng/g	04-FEB-22	14-APR-22	R5767500
4,4-DDD	<11	[U]	11	ng/g	04-FEB-22	14-APR-22	R5767500
4,4-DDT	<9.7	[U]	9.7	ng/g	04-FEB-22	14-APR-22	R5767500
Methoxychlor	<7.2	[U]	7.2	ng/g	04-FEB-22	18-APR-22	R5767500
Mirex	<0.69	[U]	0.69	ng/g	04-FEB-22	14-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	26.0		16-129	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	55.0	M	5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	28.0		23-135	%	04-FEB-22	14-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	43.0	M	14-136	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	41.0	M,R	40-151	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Endrin, 13C12-	29.0	M	35-155	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	32.0		5-122	%	04-FEB-22	18-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	41.0		21-125	%	04-FEB-22	14-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	27.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Mirex, 13C10-	35.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	25.0	M	5-150	%	04-FEB-22	14-APR-22	R5767500
Heptachlor Epoxide A	<10	[U]	10	ng/g	04-FEB-22	14-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	20.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	11.0	R	5-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	7.0	G	11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	9.0	G	11-120	%	04-FEB-22	18-APR-22	R5767500
Note: ES % recovery slightly below the method limit, isotope dilution calculation for native target is recovery corrected , impact to data quality is minimal							
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.13	[U]	0.13	pg/g	31-JAN-22	11-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-3 21-W2-NG-CH-003							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 12:45							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,7,8-PeCDD	<0.087	[U]	0.087	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	0.098	M,J,R	0.073	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	0.100	M,J,R	0.074	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	0.140	M,J,R	0.069	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	1.41	[J]	0.072	pg/g	31-JAN-22	11-MAR-22	R5743237
OCDD	6.52	[J]	0.26	pg/g	31-JAN-22	11-MAR-22	R5743237
2,3,7,8-TCDF	<0.095	M,U	0.095	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8-PeCDF	0.063	J,R	0.061	pg/g	31-JAN-22	11-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.054	[U]	0.054	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.068	M,U	0.068	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.065	[U]	0.065	pg/g	31-JAN-22	11-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.082	M,U	0.082	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.092	[U]	0.092	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.270	M,J,R	0.075	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.081	[U]	0.081	pg/g	31-JAN-22	11-MAR-22	R5743237
OCDF	0.90	M,J,R	0.11	pg/g	31-JAN-22	11-MAR-22	R5743237
Total-TCDD	<0.13	[U]	0.13	pg/g	31-JAN-22	11-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-PeCDD	<0.087	[U]	0.087	pg/g	31-JAN-22	11-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-HxCDD	2.75		0.074	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HxCDD # Homologues	2				31-JAN-22	11-MAR-22	R5743237
Total-HpCDD	4.37		0.072	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HpCDD # Homologues	2				31-JAN-22	11-MAR-22	R5743237
Total-TCDF	<0.095	[U]	0.095	pg/g	31-JAN-22	11-MAR-22	R5743237
Total TCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-PeCDF	<0.061	[U]	0.061	pg/g	31-JAN-22	11-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-HxCDF	0.102		0.092	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HxCDF # Homologues	1				31-JAN-22	11-MAR-22	R5743237
Total-HpCDF	<0.081	[U]	0.081	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	55.0		25-164	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	56.0		25-181	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	68.0		32-141	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	54.0		28-130	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	54.0		23-140	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-OCDD	36.0		17-157	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	56.0		24-169	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	57.0		21-192	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	53.0		21-178	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	64.0		26-152	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	56.0		26-123	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	50.0		29-147	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	59.0		28-136	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	44.0		28-143	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	52.0		26-138	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	55.0		31-197	%	31-JAN-22	11-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.0161			pg/g	31-JAN-22	11-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.192			pg/g	31-JAN-22	11-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.329			pg/g	31-JAN-22	11-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-4 21-W4-SS-CH-007							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 14:35							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	10.7		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	0.109		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	2.19		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0479		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	22.2		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	23800		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Antimony (Sb)	0.32		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Arsenic (As)	6.41		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Barium (Ba)	107		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Beryllium (Be)	1.09		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Boron (B)	22.3		5.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cadmium (Cd)	0.446		0.020	mg/kg	10-JAN-22	25-JAN-22	R5709149
Calcium (Ca)	5180		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Chromium (Cr)	34.9		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cobalt (Co)	8.73		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Copper (Cu)	24.8		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Iron (Fe)	24000		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Lead (Pb)	17.5		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Magnesium (Mg)	6380		20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Manganese (Mn)	228		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Molybdenum (Mo)	2.05		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Nickel (Ni)	29.6		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Phosphorus (P)	1100		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Potassium (K)	4740		100	mg/kg	10-JAN-22	25-JAN-22	R5709149
Silver (Ag)	<0.10		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sodium (Na)	87		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Strontium (Sr)	21.6		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sulfur (S)	<1000		1000	mg/kg	10-JAN-22	25-JAN-22	R5709149
Thallium (Tl)	0.347		0.050	mg/kg	10-JAN-22	25-JAN-22	R5709149
Titanium (Ti)	145		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Vanadium (V)	48.2		0.20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zinc (Zn)	91.6		2.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zirconium (Zr)	3.2		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.456	M,J	0.059	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.303	[J]	0.061	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.300	M,J,R	0.056	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	1.07	M,J	0.052	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.867	M,J	0.051	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	18.8		0.14	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	102		0.19	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.560	J,R	0.091	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.354	[J]	0.073	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.701	[J]	0.058	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.723	[J]	0.045	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.570	J,R	0.044	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.715	[J]	0.042	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.129	[J]	0.061	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	7.85		0.075	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.40	[J]	0.10	pg/g	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-4 21-W4-SS-CH-007							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 14:35							
Matrix: Soil							
Dioxins and Furans HR 1613B							
OCDF	10.8		0.060	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	2.22		0.059	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	2.97		0.061	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	9.41		0.056	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	31.8		0.14	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	5.56		0.091	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	7				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	9.81		0.073	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	11				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	9.34		0.061	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	9				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	16.5		0.10	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	76.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	86.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	82.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	79.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	94.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	111.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	68.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	77.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	78.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	72.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	67.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	73.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	76.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	78.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	83.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	76.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	1.63			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	1.78			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	1.78			pg/g	01-FEB-22	10-MAR-22	R5740125
L2657806-5 21-W4-WW-CH-011							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 14:35							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	24.0		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	393		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	1310		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	6.4		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-5 21-W4-WW-CH-011							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 14:35							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Barium (Ba)-Total	5.18		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	1.7		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	0.178		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	869		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	3.61		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	45.3		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	0.034		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	1070		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	28.6		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	0.847		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	0.30		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	2820		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	3220		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	1.85		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	22.5		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	<0.012		0.012	ng/g	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 1	24.0		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 3	27.8		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 4	25.2		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 15	31.1		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 19	19.5		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 37	34.2		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 54	21.5		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 81	36.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 104	32.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 123	36.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 118	37.2		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 114	35.0		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 105	37.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 126	33.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 155	37.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 167	44.0		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 156	40.8	M	10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 157	38.8		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 169	40.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 188	39.0		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 202	42.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 205	42.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 208	26.5		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 206	46.3		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 209	22.8		10-145	%	09-FEB-22	24-FEB-22	R5755637
OC Pesticides by Method 1699							
alpha-BHC	<0.18	[U]	0.18	ng/g	04-FEB-22	08-APR-22	R5767500

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-5 21-W4-WW-CH-011							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 14:35							
Matrix: Plant tissue							
OC Pesticides by Method 1699							
beta-BHC	<0.72	[U]	0.72	ng/g	04-FEB-22	08-APR-22	R5767500
delta-BHC	<0.47	[U]	0.47	ng/g	04-FEB-22	08-APR-22	R5767500
gamma-BHC	<0.27	[U]	0.27	ng/g	04-FEB-22	08-APR-22	R5767500
Heptachlor	<0.012	[U]	0.012	ng/g	04-FEB-22	08-APR-22	R5767500
Aldrin	<0.025	[U]	0.025	ng/g	04-FEB-22	08-APR-22	R5767500
Heptachlor Epoxide	<0.066	[U]	0.066	ng/g	04-FEB-22	08-APR-22	R5767500
trans-Chlordane	<0.42	[U]	0.42	ng/g	04-FEB-22	08-APR-22	R5767500
cis-Chlordane	<0.39	[U]	0.39	ng/g	04-FEB-22	08-APR-22	R5767500
Dieldrin	<0.15	[U]	0.15	ng/g	04-FEB-22	08-APR-22	R5767500
Endrin	<0.17	[U]	0.17	ng/g	04-FEB-22	08-APR-22	R5767500
Endrin Aldehyde	<0.17	[U]	0.17	ng/g	04-FEB-22	08-APR-22	R5767500
Endosulfan I	<0.18	[U]	0.18	ng/g	04-FEB-22	08-APR-22	R5767500
Endosulfan II	<0.33	[U]	0.33	ng/g	04-FEB-22	08-APR-22	R5767500
Endosulfan Sulfate	<0.042	[U]	0.042	ng/g	04-FEB-22	08-APR-22	R5767500
4,4-DDE	<0.088	[U]	0.088	ng/g	04-FEB-22	08-APR-22	R5767500
4,4-DDD	<0.089	[U]	0.089	ng/g	04-FEB-22	08-APR-22	R5767500
4,4-DDT	<0.060	[U]	0.060	ng/g	04-FEB-22	08-APR-22	R5767500
Methoxychlor	<0.058	[U]	0.058	ng/g	04-FEB-22	08-APR-22	R5767500
Mirex	<0.0078	[U]	0.0078	ng/g	04-FEB-22	08-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	35.0		16-129	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	62.0		5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	66.0		23-135	%	04-FEB-22	08-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	68.0		14-136	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	75.0	M	40-151	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Endrin, 13C12-	72.0	M,R	35-155	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	71.0	M	5-122	%	04-FEB-22	08-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	73.0		21-125	%	04-FEB-22	08-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	74.0		5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Mirex, 13C10-	81.0		5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	75.0		5-150	%	04-FEB-22	08-APR-22	R5767500
Heptachlor Epoxide A	<0.42	[U]	0.42	ng/g	04-FEB-22	08-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	29.0		11-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	68.0		5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	12.0		11-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	21.0		11-120	%	04-FEB-22	08-APR-22	R5767500
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.034	[U]	0.034	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.032	[U]	0.032	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.021	[U]	0.021	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.020	[U]	0.020	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.019	[U]	0.019	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	0.049	J,R	0.015	pg/g	31-JAN-22	11-MAR-22	R5743237
OCDD	0.420	J,R	0.024	pg/g	31-JAN-22	11-MAR-22	R5743237
2,3,7,8-TCDF	<0.026	[U]	0.026	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.013	[U]	0.013	pg/g	31-JAN-22	11-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.012	[U]	0.012	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.011	[U]	0.011	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.012	[U]	0.012	pg/g	31-JAN-22	11-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.011	[U]	0.011	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.014	[U]	0.014	pg/g	31-JAN-22	11-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	<0.018	[U]	0.018	pg/g	31-JAN-22	11-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-5 21-W4-WW-CH-011							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 14:35							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,4,7,8,9-HpCDF	<0.028	[U]	0.028	pg/g	31-JAN-22	11-MAR-22	R5743237
OCDF	0.063	M,J,R	0.027	pg/g	31-JAN-22	11-MAR-22	R5743237
Total-TCDD	<0.034	[U]	0.034	pg/g	31-JAN-22	11-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-PeCDD	0.048		0.032	pg/g	31-JAN-22	11-MAR-22	R5743237
Total PeCDD # Homologues	1				31-JAN-22	11-MAR-22	R5743237
Total-HxCDD	<0.021	[U]	0.021	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HxCDD # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-HpCDD	<0.015	[U]	0.015	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HpCDD # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-TCDF	<0.026	[U]	0.026	pg/g	31-JAN-22	11-MAR-22	R5743237
Total TCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-PeCDF	<0.013	[U]	0.013	pg/g	31-JAN-22	11-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-HxCDF	<0.014	[U]	0.014	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HxCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Total-HpCDF	<0.028	[U]	0.028	pg/g	31-JAN-22	11-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	56.0		25-164	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	59.0		25-181	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	69.0		32-141	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	64.0		28-130	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	66.0		23-140	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-OCDD	54.0		17-157	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	58.0		24-169	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	63.0		21-192	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	58.0		21-178	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	76.0		26-152	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	63.0		26-123	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	68.0		29-147	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	71.0		28-136	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	65.0		28-143	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	62.0		26-138	%	31-JAN-22	11-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	56.0		31-197	%	31-JAN-22	11-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.00			pg/g	31-JAN-22	11-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.0426			pg/g	31-JAN-22	11-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.0845			pg/g	31-JAN-22	11-MAR-22	R5743237
L2657806-6 21-W4-NG-CH-009							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 15:30							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	83.5		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	12700		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	4200		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	1.29		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	50.1		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727624

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-6 21-W4-NG-CH-009							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 15:30							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Arsenic (As)-Total	0.101		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	10.6		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	6.0		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.245		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	4230		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	0.442		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.027		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	9.68		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	130		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	0.066		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	2140		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	28.1		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	6.94		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	0.47		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	5950		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	45600		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	82		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	6.44		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727624
Vanadium (V)-Total	0.12		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	21.2		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	0.21		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.23	[U]	0.23	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.093	[U]	0.093	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.17	[U]	0.17	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.17	[U]	0.17	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.16	[U]	0.16	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	0.88	[J]	0.18	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	3.99	[J]	0.32	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.17	M,U	0.17	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.11	[U]	0.11	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.099	[U]	0.099	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.072	[U]	0.072	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.074	[U]	0.074	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.082	[U]	0.082	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.092	[U]	0.092	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.370	M,J,R	0.096	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.14	[U]	0.14	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	1.47	M,J	0.23	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.23	[U]	0.23	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	<0.093	[U]	0.093	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	1.08		0.17	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	0.88		0.18	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-TCDF	<0.17	[U]	0.17	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-6 21-W4-NG-CH-009							
Sampled By: M. Bilal Siddiqui on 20-SEP-21 @ 15:30							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Total-PeCDF	<0.11	[U]	0.11	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	0.217		0.092	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDF # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-HpCDF	<0.14	[U]	0.14	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	53.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	51.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	67.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	59.0		28-130	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	56.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	38.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	55.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	55.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	52.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	73.0		26-152	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	62.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	61.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	68.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	57.0		28-143	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	56.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	56.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.0104			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.242			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.470			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-7 21-N2-SS-CH-103							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 10:00							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	<5.0		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	0.125		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	2.30		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0573		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	24.0		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	28400		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Antimony (Sb)	0.34		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Arsenic (As)	5.72		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Barium (Ba)	118		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Beryllium (Be)	1.14		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Boron (B)	22.3		5.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cadmium (Cd)	0.521		0.020	mg/kg	10-JAN-22	25-JAN-22	R5709149
Calcium (Ca)	5330		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Chromium (Cr)	39.8		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cobalt (Co)	11.1		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Copper (Cu)	31.3		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Iron (Fe)	25000		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Lead (Pb)	16.2		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Magnesium (Mg)	7280		20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Manganese (Mn)	337		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Molybdenum (Mo)	1.30		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-7 21-N2-SS-CH-103							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 10:00							
Matrix: Soil							
Metals in Soil by CRC ICPMS							
Nickel (Ni)	34.7		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Phosphorus (P)	910		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Potassium (K)	4790		100	mg/kg	10-JAN-22	25-JAN-22	R5709149
Silver (Ag)	<0.10		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sodium (Na)	80		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Strontium (Sr)	24.4		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sulfur (S)	<1000		1000	mg/kg	10-JAN-22	25-JAN-22	R5709149
Thallium (Tl)	0.286		0.050	mg/kg	10-JAN-22	25-JAN-22	R5709149
Titanium (Ti)	185		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Vanadium (V)	48.7		0.20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zinc (Zn)	80.9		2.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zirconium (Zr)	5.6		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.356	[J]	0.067	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.230	J,R	0.077	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.220	J,R	0.059	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	0.417	[J]	0.056	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.350	J,R	0.054	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	4.96		0.072	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	26.3		0.15	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.40	[J]	0.12	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.25	[J]	0.13	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.45	[J]	0.11	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.420	J,R	0.039	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.379	[J]	0.042	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.361	[J]	0.038	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.086	[J]	0.056	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	1.84	[J]	0.036	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.120	J,R	0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	1.87	[J]	0.031	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	1.69		0.067	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	1.04		0.077	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	5.26		0.059	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	4				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	9.82		0.072	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	3.06		0.12	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	7				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	2.91		0.13	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	7				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	3.08		0.056	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	6				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	2.74		0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	69.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	79.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	67.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	75.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	79.0		23-140	%	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-7 21-N2-SS-CH-103							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 10:00							
Matrix: Soil							
Dioxins and Furans HR 1613B							
Surrogate: 13C12-OCDD	78.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	64.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	73.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	72.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	62.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	62.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	66.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	65.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	66.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	68.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	65.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	0.739			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	1.07			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	1.07			pg/g	01-FEB-22	10-MAR-22	R5740125
L2657806-8 21-N2-SD-CH-015							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 10:00							
Matrix: Sediment							
Miscellaneous Parameters							
Chloride (Cl)	19.2		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	6.78		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0202		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	19.8		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	13600		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Antimony (Sb)	0.36		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Arsenic (As)	7.15		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Barium (Ba)	73.8		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Beryllium (Be)	0.62		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Boron (B)	20.8		5.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cadmium (Cd)	0.184		0.020	mg/kg	10-JAN-22	25-JAN-22	R5709149
Calcium (Ca)	97600		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Chromium (Cr)	23.5		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cobalt (Co)	8.80		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Copper (Cu)	16.6		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Iron (Fe)	19100		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Lead (Pb)	8.06		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Magnesium (Mg)	32800		20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Manganese (Mn)	351		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Molybdenum (Mo)	4.19		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Nickel (Ni)	25.7		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Phosphorus (P)	397		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Potassium (K)	3110		100	mg/kg	10-JAN-22	25-JAN-22	R5709149
Silver (Ag)	<0.10		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sodium (Na)	191		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Strontium (Sr)	90.4		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sulfur (S)	<1000		1000	mg/kg	10-JAN-22	25-JAN-22	R5709149
Thallium (Tl)	0.309		0.050	mg/kg	10-JAN-22	25-JAN-22	R5709149
Titanium (Ti)	241		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Vanadium (V)	31.7		0.20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zinc (Zn)	44.7		2.0	mg/kg	10-JAN-22	25-JAN-22	R5709149

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-8 21-N2-SD-CH-015							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 10:00							
Matrix: Sediment							
Metals in Soil by CRC ICPMS							
Zirconium (Zr)	9.7		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
L2657806-9 21-N2-NG-CH-019							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 10:00							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	75.5		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	6540		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0115		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	2480		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	2.04		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	115		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	0.012		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727624
Arsenic (As)-Total	0.046		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	11.1		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	4.1		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.0436		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	5250		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	0.454		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.061		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	5.97		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	158		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	0.183		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	1970		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	36.5		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	8.51		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	0.71		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	2480		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	18800		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	20		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	7.96		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	0.0026		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727624
Vanadium (V)-Total	0.25		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	17.1		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.18	[U]	0.18	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.13	[U]	0.13	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.15	[U]	0.15	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.16	M,U	0.16	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.15	[U]	0.15	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	0.89	M,J,R	0.50	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	5.40	J,R	0.14	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.13	[U]	0.13	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.10	[U]	0.10	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.078	[U]	0.078	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.080	[U]	0.080	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.082	[U]	0.082	pg/g	31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-9 21-N2-NG-CH-019							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 10:00							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,7,8,9-HxCDF	<0.10	[U]	0.10	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.310	M,J,R	0.096	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	1.40	[J]	0.078	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.18	[U]	0.18	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	<0.13	[U]	0.13	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	1.51		0.16	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	2				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	<0.50	[U]	0.50	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-TCDF	0.16		0.13	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-PeCDF	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	0.31		0.10	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDF # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-HpCDF	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	64.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	67.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	77.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	68.0		28-130	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	84.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	71.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	66.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	64.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	65.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	86.0		26-152	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	71.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	76.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	78.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	78.0		28-143	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	82.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	63.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.000420			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.233			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.452			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-10 21-N2-FC-CH-021							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 10:00							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	20.1		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	351		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	1040		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-10 21-N2-FC-CH-021							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 10:00							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	2.5		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	0.0054		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	39		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	1.56		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	14.6		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	853		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	3.37		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	0.533		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	2430		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	3180		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	14.1		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.034	[U]	0.034	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.020	[U]	0.020	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.013	[U]	0.013	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	0.024	M,J,R	0.015	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	0.280	J,R	0.040	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.022	[U]	0.022	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.023	[U]	0.023	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.017	[U]	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.0089	[U]	0.0089	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.0086	[U]	0.0086	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.0094	[U]	0.0094	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	<0.014	[U]	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.020	[U]	0.020	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	0.180	J,R	0.028	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.034	[U]	0.034	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	<0.020	[U]	0.020	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	<0.013	[U]	0.013	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	<0.015	[U]	0.015	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-10 21-N2-FC-CH-021							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 10:00							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Total-TCDF	<0.022	[U]	0.022	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDF	<0.023	[U]	0.023	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDF	<0.020	[U]	0.020	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	62.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	64.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	74.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	68.0		28-130	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	77.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	64.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	64.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	62.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	63.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	83.0		26-152	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	73.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	71.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	72.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	77.0		28-143	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	75.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	63.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.00			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.0353			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.0703			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-11 21-N4-SS-CH-023							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 14:00							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	<5.0		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	0.057		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	3.71		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0500		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	16.6		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	20900		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Antimony (Sb)	0.28		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Arsenic (As)	7.08		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Barium (Ba)	104		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Beryllium (Be)	0.92		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Boron (B)	14.0		5.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cadmium (Cd)	0.541		0.020	mg/kg	10-JAN-22	25-JAN-22	R5709149
Calcium (Ca)	4480		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Chromium (Cr)	30.0		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cobalt (Co)	10.8		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Copper (Cu)	19.2		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Iron (Fe)	22300		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Lead (Pb)	17.1		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Magnesium (Mg)	5210		20	mg/kg	10-JAN-22	25-JAN-22	R5709149

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-11 21-N4-SS-CH-023							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 14:00							
Matrix: Soil							
Metals in Soil by CRC ICPMS							
Manganese (Mn)	427		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Molybdenum (Mo)	2.03		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Nickel (Ni)	23.6		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Phosphorus (P)	912		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Potassium (K)	2980		100	mg/kg	10-JAN-22	25-JAN-22	R5709149
Silver (Ag)	<0.10		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sodium (Na)	64		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Strontium (Sr)	19.5		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sulfur (S)	<1000		1000	mg/kg	10-JAN-22	25-JAN-22	R5709149
Thallium (Tl)	0.267		0.050	mg/kg	10-JAN-22	25-JAN-22	R5709149
Titanium (Ti)	124		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Vanadium (V)	43.6		0.20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zinc (Zn)	75.3		2.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zirconium (Zr)	4.2		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.246	[J]	0.038	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.215	[J]	0.060	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.190	M,J,R	0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	0.436	M,J	0.049	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.390	M,J,R	0.047	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	6.39		0.087	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	33.2		0.11	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.527	[J]	0.074	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.31	[J]	0.10	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.676	[J]	0.083	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.466	[J]	0.020	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.360	J,R	0.020	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.457	[J]	0.019	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.098	[J]	0.028	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	2.14	[J]	0.032	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.088	J,R	0.047	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	2.34	[J]	0.033	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	0.332		0.038	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	1.56		0.060	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	5.07		0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	12.7		0.087	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	7.61		0.074	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	14				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	6.71		0.10	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	8				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	3.69		0.028	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	6				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	3.20		0.047	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	80.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	91.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	84.0		32-141	%	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-11 21-N4-SS-CH-023							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 14:00							
Matrix: Soil							
Dioxins and Furans HR 1613B							
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	89.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	90.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	82.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	72.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	85.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	83.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	77.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	75.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	81.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	80.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	79.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	78.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	75.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	0.968			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	1.06			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	1.06			pg/g	01-FEB-22	10-MAR-22	R5740125
L2657806-12 21-N4-SB-CH-027							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 14:30							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	21.9		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	36		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	4380		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	0.814		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	40.3		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	0.0595		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	1860		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	0.071		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	14.9		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	76.6		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	2480		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	24.2		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	7.96		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	2.79		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	7220		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	20900		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	1.52		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-12 21-N4-SB-CH-027							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 14:30							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Zinc (Zn)-Total	41.4		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	<0.0060		0.0060	ng/g	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 1	22.7		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 3	43.4		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 4	18.3		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 15	48.7		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 19	13.9		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 37	59.9		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 54	14.6		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 81	47.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 104	25.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 123	58.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 118	42.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 114	36.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 105	40.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 126	39.2	M	10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 155	54.3		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 167	53.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 156	52.8	M	10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 157	43.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 169	56.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 188	57.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 202	58.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 205	50.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 208	51.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 206	58.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 209	55.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
OC Pesticides by Method 1699							
alpha-BHC	<0.20	[U]	0.20	ng/g	04-FEB-22	08-APR-22	R5767500
beta-BHC	<0.96	[U]	0.96	ng/g	04-FEB-22	08-APR-22	R5767500
delta-BHC	<0.66	[U]	0.66	ng/g	04-FEB-22	08-APR-22	R5767500
gamma-BHC	<0.33	[U]	0.33	ng/g	04-FEB-22	08-APR-22	R5767500
Heptachlor	<0.017	[U]	0.017	ng/g	04-FEB-22	08-APR-22	R5767500
Aldrin	<0.042	[U]	0.042	ng/g	04-FEB-22	08-APR-22	R5767500
Heptachlor Epoxide	<0.061	[U]	0.061	ng/g	04-FEB-22	08-APR-22	R5767500
trans-Chlordane	<0.33	[U]	0.33	ng/g	04-FEB-22	08-APR-22	R5767500
cis-Chlordane	<0.31	[U]	0.31	ng/g	04-FEB-22	08-APR-22	R5767500
Dieldrin	<0.14	[U]	0.14	ng/g	04-FEB-22	08-APR-22	R5767500
Endrin	<0.17	[U]	0.17	ng/g	04-FEB-22	08-APR-22	R5767500
Endrin Aldehyde	<0.12	[U]	0.12	ng/g	04-FEB-22	08-APR-22	R5767500
Endosulfan I	<0.40	[U]	0.40	ng/g	04-FEB-22	08-APR-22	R5767500
Endosulfan II	<0.62	[U]	0.62	ng/g	04-FEB-22	08-APR-22	R5767500
Endosulfan Sulfate	<0.11	[U]	0.11	ng/g	04-FEB-22	08-APR-22	R5767500
4,4-DDE	<0.17	[U]	0.17	ng/g	04-FEB-22	08-APR-22	R5767500
4,4-DDD	<0.12	[U]	0.12	ng/g	04-FEB-22	08-APR-22	R5767500
4,4-DDT	<0.19	[U]	0.19	ng/g	04-FEB-22	08-APR-22	R5767500
Methoxychlor	<0.10	[U]	0.10	ng/g	04-FEB-22	08-APR-22	R5767500
Mirex	<0.011	[U]	0.011	ng/g	04-FEB-22	08-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	30.0		16-129	%	04-FEB-22	08-APR-22	R5767500

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-12 21-N4-SB-CH-027							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 14:30							
Matrix: Plant tissue							
OC Pesticides by Method 1699							
Surrogate: Heptachlor, 13C10-	46.0		5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	40.0		23-135	%	04-FEB-22	08-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	47.0		14-136	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	42.0	M	40-151	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Endrin, 13C12-	48.0	M	35-155	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	45	M,R	5-122	%	04-FEB-22	08-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	43.0		21-125	%	04-FEB-22	08-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	45.0		5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Mirex, 13C10-	49.0		5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	49.0		5-150	%	04-FEB-22	08-APR-22	R5767500
Heptachlor Epoxide A	<0.39	[U]	0.39	ng/g	04-FEB-22	08-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	24.0		11-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	42	R	5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	10.0	G	11-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	15.0		11-120	%	04-FEB-22	08-APR-22	R5767500
Note: beta-BHC,13C6 ES % recovery slightly below the method limit, isotope dilution calculation for native target is recovery corrected , impact to data quality is minimal							
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.041	[U]	0.041	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.017	[U]	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.023	[U]	0.023	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.025	[U]	0.025	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.023	[U]	0.023	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	0.025	M,J,R	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	0.170	M,J,R	0.028	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.024	[U]	0.024	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.017	[U]	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.015	[U]	0.015	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.013	[U]	0.013	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.014	[U]	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.017	[U]	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.029	M,J,R	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.023	[U]	0.023	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	0.320	[J]	0.023	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.041	[U]	0.041	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	<0.017	[U]	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	<0.025	[U]	0.025	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	<0.017	[U]	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-TCDF	<0.024	[U]	0.024	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDF	<0.017	[U]	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	<0.017	[U]	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-12 21-N4-SB-CH-027							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 14:30							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Total-HpCDF	<0.023	[U]	0.023	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	48.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	46.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	59.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	53.0		28-130	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	57.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	49.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	48.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	47.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	43.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	62.0		26-152	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	52.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	51.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	53.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	60.0		28-143	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	57.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	46.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.0000960			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.0399			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.0790			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-13 21-N4-NG-CH-025							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 14:10							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	75.1		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	10300		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0070		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	3060		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	2.20		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	176		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	0.011		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Arsenic (As)-Total	0.083		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	10.6		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	6.0		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.0204		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	5130		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	0.419		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.081		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	5.18		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	201		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	0.175		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	2370		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	61.1		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	1.74		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	0.67		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	1380		10	mg/kg	14-FEB-22	17-FEB-22	R5727266

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-13 21-N4-NG-CH-025							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 14:10							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Potassium (K)-Total	17500		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	35		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	13.8		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	0.0064		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Vanadium (V)-Total	0.35		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	31.5		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.15	[U]	0.15	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.12	M,U	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.11	[U]	0.11	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	0.40	M,J,R	0.18	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	2.92	[J]	0.15	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.086	[U]	0.086	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.070	M,U	0.070	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.064	M,U	0.064	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.091	[U]	0.091	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.092	[U]	0.092	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.082	[U]	0.082	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.097	[U]	0.097	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.23	[U]	0.23	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	0.730	J,R	0.096	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.15	[U]	0.15	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	1.78		0.18	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-TCDF	0.237		0.086	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	2				31-JAN-22	12-MAR-22	R5743237
Total-PeCDF	<0.070	[U]	0.070	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	0.114		0.097	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDF # Homologues	2				31-JAN-22	12-MAR-22	R5743237
Total-HpCDF	<0.23	[U]	0.23	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	50.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	41.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	41.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	37.0		28-130	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	35.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	30.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	53.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	46.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	42.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	42.0		26-152	%	31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-13 21-N4-NG-CH-025							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 14:10							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	38.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	45.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	50.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	36.0		28-143	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	26.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	53.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.000876			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.192			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.380			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-14 21-N5-SS-CH-029							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:30							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	7.7		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	4.54		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0903		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	25.7		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	14100		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Antimony (Sb)	0.36		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Arsenic (As)	5.53		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Barium (Ba)	66.6		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Beryllium (Be)	0.59		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Boron (B)	12.4		5.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cadmium (Cd)	0.558		0.020	mg/kg	10-JAN-22	25-JAN-22	R5709149
Calcium (Ca)	12400		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Chromium (Cr)	21.2		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Cobalt (Co)	7.83		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Copper (Cu)	15.6		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Iron (Fe)	16000		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Lead (Pb)	29.1		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Magnesium (Mg)	6090		20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Manganese (Mn)	341		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Molybdenum (Mo)	1.95		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Nickel (Ni)	17.8		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Phosphorus (P)	454		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Potassium (K)	1800		100	mg/kg	10-JAN-22	25-JAN-22	R5709149
Silver (Ag)	<0.10		0.10	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sodium (Na)	83		50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Strontium (Sr)	58.9		0.50	mg/kg	10-JAN-22	25-JAN-22	R5709149
Sulfur (S)	<1000		1000	mg/kg	10-JAN-22	25-JAN-22	R5709149
Thallium (Tl)	0.248		0.050	mg/kg	10-JAN-22	25-JAN-22	R5709149
Titanium (Ti)	103		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Vanadium (V)	29.8		0.20	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zinc (Zn)	71.0		2.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
Zirconium (Zr)	2.1		1.0	mg/kg	10-JAN-22	25-JAN-22	R5709149
CARB428 PCB TOTALS							
Total PCB	3.35		0.0070	ng/g	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 1	48.3		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 3	53.4		5-145	%	02-FEB-22	24-FEB-22	R5755385

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-14 21-N5-SS-CH-029							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:30							
Matrix: Soil							
CARB428 PCB TOTALS							
Surrogate: 13C12 PCB 4	57.1		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 15	55.7		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 19	49.7		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 37	71.9		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 54	54.5		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 81	64.5		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 104	61.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 123	83.5		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 118	65.6		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 114	72.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 105	73.6		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 126	67.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 155	61.6		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 167	78.4		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 156	79.4	M	10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 157	77.7		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 169	81.4		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 188	68.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 202	74.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 205	72.9		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 208	61.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 206	81.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 209	59.2		10-145	%	02-FEB-22	24-FEB-22	R5755385
OC Pesticides by Method 1699							
alpha-BHC	<0.0097	[U]	0.0097	ng/g	02-FEB-22	07-APR-22	R5769474
beta-BHC	<0.014	[U]	0.014	ng/g	02-FEB-22	07-APR-22	R5769474
delta-BHC	<0.013	[U]	0.013	ng/g	02-FEB-22	07-APR-22	R5769474
gamma-BHC	0.060	[J]	0.012	ng/g	02-FEB-22	07-APR-22	R5769474
Heptachlor	0.00300	M,J,R	0.00072	ng/g	02-FEB-22	07-APR-22	R5769474
Aldrin	0.0039	M,J,R	0.0030	ng/g	02-FEB-22	07-APR-22	R5769474
Heptachlor Epoxide	0.0074	M,J,R	0.0031	ng/g	02-FEB-22	07-APR-22	R5769474
trans-Chlordane	<0.016	[U]	0.016	ng/g	02-FEB-22	07-APR-22	R5769474
cis-Chlordane	<0.014	M,U	0.014	ng/g	02-FEB-22	07-APR-22	R5769474
Dieldrin	0.039	J,R	0.014	ng/g	02-FEB-22	07-APR-22	R5769474
Endrin	<0.019	[U]	0.019	ng/g	02-FEB-22	07-APR-22	R5769474
Endrin Aldehyde	<0.0081	M,U	0.0081	ng/g	02-FEB-22	07-APR-22	R5769474
Endosulfan I	<0.021	[U]	0.021	ng/g	02-FEB-22	07-APR-22	R5769474
Endosulfan II	<0.031	[U]	0.031	ng/g	02-FEB-22	07-APR-22	R5769474
Endosulfan Sulfate	<0.0069	[U]	0.0069	ng/g	02-FEB-22	07-APR-22	R5769474
4,4-DDE	0.333		0.0056	ng/g	02-FEB-22	07-APR-22	R5769474
4,4-DDD	0.0315	[J]	0.0038	ng/g	02-FEB-22	07-APR-22	R5769474
4,4-DDT	0.216		0.0078	ng/g	02-FEB-22	07-APR-22	R5769474
Methoxychlor	0.0180	M,J,R	0.0048	ng/g	02-FEB-22	07-APR-22	R5769474
Mirex	0.0137	[J]	0.00073	ng/g	02-FEB-22	07-APR-22	R5769474
Surrogate: alpha-BHC, 13C6-	69.0		16-129	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Heptachlor, 13C10-	67.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Oxychlordane, 13C10-	63.0		23-135	%	02-FEB-22	07-APR-22	R5769474
Surrogate: trans-Nonachlor, 13C10-	58.0		14-136	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Dieldrin, 13C12-	60.0		40-151	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Endrin, 13C12-	59.0		35-155	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Endosulfan II, 13C9-	60.0		5-122	%	02-FEB-22	07-APR-22	R5769474

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-14 21-N5-SS-CH-029							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:30							
Matrix: Soil							
OC Pesticides by Method 1699							
Surrogate: 4,4'-DDE, 13C12-	64.0		21-125	%	02-FEB-22	07-APR-22	R5769474
Surrogate: 4,4'-DDT, 13C12-	74.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Mirex, 13C10-	71.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Heptachlor Epoxide A	<0.019	[U]	0.019	ng/g	02-FEB-22	07-APR-22	R5769474
Surrogate: 4,4'-DDD, 13C12-	66.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: gamma-BHC, 13C6-	66.0		11-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Methoxychlor, 13C12-	57.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: beta-BHC, 13C6-	64.0		11-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: delta-BHC, 13C6-	69.0		11-120	%	02-FEB-22	07-APR-22	R5769474
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.110	M,J,R	0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.360	M,J	0.031	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.653	[J]	0.057	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	1.62	[J]	0.056	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	1.62	M,J	0.053	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	47.1		0.22	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	347		0.36	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.45	M,J	0.12	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.358	[J]	0.049	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.623	[J]	0.040	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.978	[J]	0.034	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	1.03	[J]	0.034	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	1.10	[J]	0.031	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.180	M,J,R	0.049	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	19.8		0.17	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	1.15	[J]	0.25	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	39.9		0.091	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	1.75		0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	3.95		0.031	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	8				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	13.2		0.057	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	6				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	81.3		0.22	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	3.37		0.12	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	6				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	7.01		0.049	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	9				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	15.1		0.049	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	7				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	41.2		0.25	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	74.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	85.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	81.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	81.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	84.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	72.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	67.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	79.0		24-185	%	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-14 21-N5-SS-CH-029							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:30							
Matrix: Soil							
Dioxins and Furans HR 1613B							
Surrogate: 13C12-2,3,4,7,8-PeCDF	77.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	74.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	71.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	78.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	76.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	74.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	72.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	69.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	2.10			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	2.23			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	2.23			pg/g	01-FEB-22	10-MAR-22	R5740125
L2657806-15 21-N5-SD-CH-031							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:30							
Matrix: Sediment							
Miscellaneous Parameters							
Chloride (Cl)	24.5		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	4.52		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0781		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	38.8		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	19000		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.44		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	6.92		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	89.1		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	0.84		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	21.8		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.511		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	53000		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	31.1		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	9.14		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	24.7		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	22900		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	20.4		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	20200		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	364		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	2.35		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	28.9		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	577		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	3170		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	177		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	66.7		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.312		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	144		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	41.7		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	97.8		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	1.6		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
CARB428 PCB TOTALS							
Total PCB	26.7		0.0080	ng/g	02-FEB-22	24-FEB-22	R5755385

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-15 21-N5-SD-CH-031							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:30							
Matrix: Sediment							
CARB428 PCB TOTALS							
Surrogate: 13C12 PCB 1	36.4		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 3	45.3		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 4	48.3		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 15	54.8		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 19	44.9		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 37	73.0		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 54	50.0		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 81	68.5		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 104	59.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 123	82.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 118	70.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 114	64.5		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 105	71.9		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 126	58.9	M	10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 155	59.4		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 167	75.6		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 156	80.0	M	10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 157	67.6		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 169	82.4		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 188	65.6		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 202	70.3		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 205	72.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 208	48.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 206	79.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 209	63.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
OC Pesticides by Method 1699							
alpha-BHC	<0.016	[U]	0.016	ng/g	02-FEB-22	07-APR-22	R5769474
beta-BHC	<0.022	[U]	0.022	ng/g	02-FEB-22	07-APR-22	R5769474
delta-BHC	<0.019	[U]	0.019	ng/g	02-FEB-22	07-APR-22	R5769474
gamma-BHC	0.098	M,J	0.020	ng/g	02-FEB-22	07-APR-22	R5769474
Heptachlor	<0.0018	M,J,R	0.0018	ng/g	02-FEB-22	07-APR-22	R5769474
Aldrin	0.0056	M,J	0.0038	ng/g	02-FEB-22	07-APR-22	R5769474
Heptachlor Epoxide	0.0093	M,J,R	0.0065	ng/g	02-FEB-22	07-APR-22	R5769474
trans-Chlordane	0.059	M,J,R	0.037	ng/g	02-FEB-22	07-APR-22	R5769474
cis-Chlordane	<0.033	[U]	0.033	ng/g	02-FEB-22	07-APR-22	R5769474
Dieldrin	0.0694	M,J	0.0088	ng/g	02-FEB-22	07-APR-22	R5769474
Endrin	0.016	M,J,R	0.012	ng/g	02-FEB-22	07-APR-22	R5769474
Endrin Aldehyde	<0.012	[U]	0.012	ng/g	02-FEB-22	07-APR-22	R5769474
Endosulfan I	<0.021	[U]	0.021	ng/g	02-FEB-22	07-APR-22	R5769474
Endosulfan II	<0.029	[U]	0.029	ng/g	02-FEB-22	07-APR-22	R5769474
Endosulfan Sulfate	<0.0084	[U]	0.0084	ng/g	02-FEB-22	07-APR-22	R5769474
4,4-DDE	0.562		0.0084	ng/g	02-FEB-22	07-APR-22	R5769474
4,4-DDD	0.122	[J]	0.0062	ng/g	02-FEB-22	07-APR-22	R5769474
4,4-DDT	0.371		0.010	ng/g	02-FEB-22	07-APR-22	R5769474
Methoxychlor	0.0510	M,J,R	0.0097	ng/g	02-FEB-22	07-APR-22	R5769474
Mirex	0.0300	J,R	0.0011	ng/g	02-FEB-22	07-APR-22	R5769474
Surrogate: alpha-BHC, 13C6-	37.0		16-129	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Heptachlor, 13C10-	34.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Oxychlordane, 13C10-	29.0		23-135	%	02-FEB-22	07-APR-22	R5769474
Surrogate: trans-Nonachlor, 13C10-	26.0		14-136	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Dieldrin, 13C12-	27.0	G	40-151	%	02-FEB-22	07-APR-22	R5769474

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-15 21-N5-SD-CH-031							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:30							
Matrix: Sediment							
OC Pesticides by Method 1699							
Surrogate: Endrin, 13C12-	27.0	G	35-155	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Endosulfan II, 13C9-	29.0		5-122	%	02-FEB-22	07-APR-22	R5769474
Surrogate: 4,4'-DDE, 13C12-	29.0		21-125	%	02-FEB-22	07-APR-22	R5769474
Surrogate: 4,4'-DDT, 13C12-	31.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Mirex, 13C10-	34.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Heptachlor Epoxide A	<0.040	[U]	0.040	ng/g	02-FEB-22	07-APR-22	R5769474
Surrogate: 4,4'-DDD, 13C12-	31.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: gamma-BHC, 13C6-	37.0		11-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: Methoxychlor, 13C12-	28.0		5-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: beta-BHC, 13C6-	37.0		11-120	%	02-FEB-22	07-APR-22	R5769474
Surrogate: delta-BHC, 13C6-	41.0		11-120	%	02-FEB-22	07-APR-22	R5769474
Note: Surrogate recoveries are below method criteria. Data is calculated by isotope dilution. No impact to data quality.							
L2657806-16 21-N5-NG-CH-035							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:40							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	83.4		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	3030		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0382		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	0.0059		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	3070		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	3.22		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	132		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	0.043		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Arsenic (As)-Total	0.102		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	11.8		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	6.6		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.113		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	4380		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	0.490		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.122		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	3.40		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	197		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	1.04		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	1480		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	14.7		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	2.58		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	0.51		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	1130		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	7790		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	<20		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	49.6		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	0.0045		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Vanadium (V)-Total	0.33		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	20.0		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
PCB congeners by SIM GC/LRMS							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-16 21-N5-NG-CH-035							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:40							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Total PCB	0.069		0.030	ng/g	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 1	25.9		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 3	28.2		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 4	33.5		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 15	36.1		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 19	33.3		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 37	47.7		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 54	39.7		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 81	57.0		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 104	43.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 123	59.5		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 118	50.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 114	50.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 105	53.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 126	47.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 155	45.8		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 167	56.5		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 156	58.7	M	10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 157	53.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 169	53.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 188	50.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 202	54.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 205	55.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 208	47.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 206	61.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 209	48.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
OC Pesticides by Method 1699							
alpha-BHC	N.R	[U]	0	ng/g	04-FEB-22	14-APR-22	R5767500
beta-BHC	<7.2	[U]	7.2	ng/g	04-FEB-22	18-APR-22	R5767500
delta-BHC	<3.3	[U]	3.3	ng/g	04-FEB-22	18-APR-22	R5767500
gamma-BHC	<1.8	[U]	1.8	ng/g	04-FEB-22	18-APR-22	R5767500
Heptachlor	<0.13	[U]	0.13	ng/g	04-FEB-22	14-APR-22	R5767500
Aldrin	<0.37	[U]	0.37	ng/g	04-FEB-22	14-APR-22	R5767500
Heptachlor Epoxide	<0.73	[U]	0.73	ng/g	04-FEB-22	14-APR-22	R5767500
trans-Chlordane	<8.9	[U]	8.9	ng/g	04-FEB-22	14-APR-22	R5767500
cis-Chlordane	<8.2	[U]	8.2	ng/g	04-FEB-22	14-APR-22	R5767500
Dieldrin	<1.9	[U]	1.9	ng/g	04-FEB-22	14-APR-22	R5767500
Endrin	<3.3	[U]	3.3	ng/g	04-FEB-22	14-APR-22	R5767500
Endrin Aldehyde	<2.4	[U]	2.4	ng/g	04-FEB-22	14-APR-22	R5767500
Endosulfan I	<0.88	[U]	0.88	ng/g	04-FEB-22	18-APR-22	R5767500
Endosulfan II	<1.8	[U]	1.8	ng/g	04-FEB-22	18-APR-22	R5767500
Endosulfan Sulfate	<0.69	[U]	0.69	ng/g	04-FEB-22	18-APR-22	R5767500
4,4-DDE	<3.3	[U]	3.3	ng/g	04-FEB-22	14-APR-22	R5767500
4,4-DDD	<4.2	[U]	4.2	ng/g	04-FEB-22	14-APR-22	R5767500
4,4-DDT	<7.2	[U]	7.2	ng/g	04-FEB-22	14-APR-22	R5767500
Methoxychlor	<3.9	[U]	3.9	ng/g	04-FEB-22	18-APR-22	R5767500
Mirex	<0.31	[U]	0.31	ng/g	04-FEB-22	14-APR-22	R5767500
Pentachloronitrobenzene	<1.6	[U]	1.6	ng/g	04-FEB-22	18-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	34.0		16-129	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	72.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	38.0	M	23-135	%	04-FEB-22	14-APR-22	R5767500

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-16 21-N5-NG-CH-035							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:40							
Matrix: Plant tissue							
OC Pesticides by Method 1699							
Surrogate: trans-Nonachlor, 13C10-	63.0	M	14-136	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	62.0	M	40-151	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Endrin, 13C12-	56.0	M	35-155	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	60.0		5-122	%	04-FEB-22	18-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	59.0	M,R	21-125	%	04-FEB-22	14-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	39.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Mirex, 13C10-	50.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	49.0		5-150	%	04-FEB-22	14-APR-22	R5767500
Heptachlor Epoxide A	<4.7	[U]	4.7	ng/g	04-FEB-22	14-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	28.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	21.0	R	5-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	9.0	R	11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	19.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.19	[U]	0.19	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.16	[U]	0.16	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.21	[U]	0.21	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.21	[U]	0.21	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.20	[U]	0.20	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	1.70	J,R	0.11	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	13.1	[J]	0.11	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.14	[U]	0.14	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.069	[U]	0.069	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.060	[U]	0.060	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.089	[U]	0.089	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.096	[U]	0.096	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.096	[U]	0.096	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.63	M,J,R	0.23	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.38	[U]	0.38	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	2.48	M,J	0.17	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.19	[U]	0.19	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	0.39		0.16	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	0.44		0.21	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	4.17		0.11	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-TCDF	0.65		0.14	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	2				31-JAN-22	12-MAR-22	R5743237
Total-PeCDF	<0.069	[U]	0.069	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	<0.12	[U]	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDF	<0.38	[U]	0.38	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	65.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	62.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	77.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	70.0		28-130	%	31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-16 21-N5-NG-CH-035							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 14:40							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	65.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	51.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	68.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	64.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	62.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	89.0		26-152	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	74.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	78.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	77.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	70.0		28-143	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	62.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	61.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.00467			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.273			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.518			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-17 21-E1-SS-CH-037							
Sampled By: M. Bilal Siddiqui on 06-OCT-21 @ 10:30							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	<5.0		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	0.142		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	1.64		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0453		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	19.3		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	13000		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.22		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	5.16		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	58.1		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	0.57		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	10.4		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.386		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	3190		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	20.3		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	5.90		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	13.6		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	15100		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	13.0		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	3490		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	318		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	1.25		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	16.4		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	625		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	1950		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	52		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	12.7		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.187		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	108		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	31.5		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-17 21-E1-SS-CH-037							
Sampled By: M. Bilal Siddiqui on 06-OCT-21 @ 10:30							
Matrix: Soil							
Metals in Soil by CRC ICPMS							
Zinc (Zn)	55.2		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	1.5		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.160	J,R	0.067	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.187	[J]	0.026	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.150	J,R	0.038	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	0.380	[J]	0.038	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.350	M,J,R	0.036	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	5.77		0.062	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	45.9		0.15	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.310	J,R	0.068	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.160	J,R	0.051	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.358	[J]	0.042	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.614	[J]	0.027	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.436	[J]	0.026	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.366	[J]	0.026	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.110	[J]	0.035	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	4.00	M,1.	0.036	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.190	J,R	0.052	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	5.63	[J]	0.054	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	0.926		0.067	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	4				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	1.65		0.026	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	4				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	4.62		0.038	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	12.1		0.062	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	2.93		0.068	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	10				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	3.85		0.051	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	7				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	3.83		0.035	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	8				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	5.66		0.052	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	80.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	90.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	90.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	85.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	100.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	111.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	72.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	84.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	82.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	79.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	74.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	80.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	84.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	85.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	88.0		26-138	%	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-17 21-E1-SS-CH-037							
Sampled By: M. Bilal Siddiqui on 06-OCT-21 @ 10:30							
Matrix: Soil							
Dioxins and Furans HR 1613B							
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	77.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	0.558			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	0.846			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	0.846			pg/g	01-FEB-22	10-MAR-22	R5740125
L2657806-18 21-E1-NG-CH-039							
Sampled By: M. Bilal Siddiqui on 06-OCT-21 @ 10:30							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	71.8		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	7620		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0074		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	2960		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	0.29		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	26.2		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Arsenic (As)-Total	0.030		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	18.4		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	4.5		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.0297		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	4700		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	0.181		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.025		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	4.60		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	65.8		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	0.175		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	1540		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	12.3		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	2.39		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	0.29		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	3440		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	20000		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	<20		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	16.8		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Vanadium (V)-Total	<0.10		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	27.6		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.087	[U]	0.087	pg/g	31-JAN-22	13-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.081	[U]	0.081	pg/g	31-JAN-22	13-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.077	[U]	0.077	pg/g	31-JAN-22	13-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	0.094	M,J,R	0.078	pg/g	31-JAN-22	13-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	0.110	M,J,R	0.073	pg/g	31-JAN-22	13-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	1.22	[J]	0.091	pg/g	31-JAN-22	13-MAR-22	R5743237
OCDD	5.69	[J]	0.11	pg/g	31-JAN-22	13-MAR-22	R5743237
2,3,7,8-TCDF	<0.078	[U]	0.078	pg/g	31-JAN-22	13-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.087	M,U	0.087	pg/g	31-JAN-22	13-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.072	[U]	0.072	pg/g	31-JAN-22	13-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-18 21-E1-NG-CH-039							
Sampled By: M. Bilal Siddiqui on 06-OCT-21 @ 10:30							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,4,7,8-HxCDF	<0.050	[U]	0.050	pg/g	31-JAN-22	13-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	0.066	M,J	0.050	pg/g	31-JAN-22	13-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	0.071	M,J	0.051	pg/g	31-JAN-22	13-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.069	[U]	0.069	pg/g	31-JAN-22	13-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.200	J,R	0.046	pg/g	31-JAN-22	13-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	0.093	M,J,R	0.070	pg/g	31-JAN-22	13-MAR-22	R5743237
OCDF	1.46	M,J	0.26	pg/g	31-JAN-22	13-MAR-22	R5743237
Total-TCDD	<0.087	[U]	0.087	pg/g	31-JAN-22	13-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	13-MAR-22	R5743237
Total-PeCDD	0.572		0.081	pg/g	31-JAN-22	13-MAR-22	R5743237
Total PeCDD # Homologues	2				31-JAN-22	13-MAR-22	R5743237
Total-HxCDD	1.29		0.078	pg/g	31-JAN-22	13-MAR-22	R5743237
Total HxCDD # Homologues	2				31-JAN-22	13-MAR-22	R5743237
Total-HpCDD	3.05		0.091	pg/g	31-JAN-22	13-MAR-22	R5743237
Total HpCDD # Homologues	2				31-JAN-22	13-MAR-22	R5743237
Total-TCDF	<0.078	[U]	0.078	pg/g	31-JAN-22	13-MAR-22	R5743237
Total TCDF # Homologues	0				31-JAN-22	13-MAR-22	R5743237
Total-PeCDF	0.230		0.087	pg/g	31-JAN-22	13-MAR-22	R5743237
Total PeCDF # Homologues	2				31-JAN-22	13-MAR-22	R5743237
Total-HxCDF	0.321		0.069	pg/g	31-JAN-22	13-MAR-22	R5743237
Total HxCDF # Homologues	3				31-JAN-22	13-MAR-22	R5743237
Total-HpCDF	<0.070	[U]	0.070	pg/g	31-JAN-22	13-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	63.0		25-164	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	58.0		25-181	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	72.0		32-141	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	66.0		28-130	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	55.0		23-140	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-OCDD	35.0		17-157	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	65.0		24-169	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	60.0		21-192	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	59.0		21-178	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	75.0		26-152	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	67.0		26-123	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	70.0		29-147	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	67.0		28-136	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	59.0		28-143	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	53.0		26-138	%	31-JAN-22	13-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	69.0		31-197	%	31-JAN-22	13-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.0280			pg/g	31-JAN-22	13-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.161			pg/g	31-JAN-22	13-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.271			pg/g	31-JAN-22	13-MAR-22	R5743237
L2657806-19 21-E1-FC-CH-041							
Sampled By: M. Bilal Siddiqui on 06-OCT-21 @ 10:30							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	19.2		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	396		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	1000		100	mg/kg	11-FEB-22	14-FEB-22	R5724000

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-19 21-E1-FC-CH-041							
Sampled By: M. Bilal Siddiqui on 06-OCT-21 @ 10:30							
Matrix: Plant tissue							
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	2.7		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	0.0077		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	31		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	1.74		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	22.0		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	1040		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	4.23		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	0.487		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	0.26		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	2830		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	3600		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	17.9		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	<0.0060		0.0060	ng/g	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 1	26.0		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 3	35.9		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 4	40.1		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 15	46.9		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 19	41.6		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 37	61.3		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 54	47.9		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 81	72.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 104	56.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 123	73.3		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 118	59.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 114	68.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 105	68.0		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 126	47.7	M	10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 155	60.0		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 167	72.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 156	72.9	M	10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 157	67.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 169	69.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 188	64.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 202	69.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 205	67.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 208	18.4		10-145	%	09-FEB-22	24-FEB-22	R5755637

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-19 21-E1-FC-CH-041							
Sampled By: M. Bilal Siddiqui on 06-OCT-21 @ 10:30							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Surrogate: 13C12 PCB 206	76.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 209	60.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
OC Pesticides by Method 1699							
alpha-BHC	<0.24	[U]	0.24	ng/g	04-FEB-22	08-APR-22	R5767500
beta-BHC	<1.2	[U]	1.2	ng/g	04-FEB-22	08-APR-22	R5767500
delta-BHC	<0.64	[U]	0.64	ng/g	04-FEB-22	08-APR-22	R5767500
gamma-BHC	<0.33	[U]	0.33	ng/g	04-FEB-22	08-APR-22	R5767500
Heptachlor	<0.020	[U]	0.020	ng/g	04-FEB-22	08-APR-22	R5767500
Aldrin	<0.034	[U]	0.034	ng/g	04-FEB-22	08-APR-22	R5767500
Heptachlor Epoxide	<0.040	[U]	0.040	ng/g	04-FEB-22	08-APR-22	R5767500
trans-Chlordane	<0.25	[U]	0.25	ng/g	04-FEB-22	08-APR-22	R5767500
cis-Chlordane	<0.24	[U]	0.24	ng/g	04-FEB-22	08-APR-22	R5767500
Dieldrin	<0.15	[U]	0.15	ng/g	04-FEB-22	08-APR-22	R5767500
Endrin	<0.15	[U]	0.15	ng/g	04-FEB-22	08-APR-22	R5767500
Endrin Aldehyde	<0.090	[U]	0.090	ng/g	04-FEB-22	08-APR-22	R5767500
Endosulfan I	<0.18	[U]	0.18	ng/g	04-FEB-22	08-APR-22	R5767500
Endosulfan II	<0.31	[U]	0.31	ng/g	04-FEB-22	08-APR-22	R5767500
Endosulfan Sulfate	<0.080	[U]	0.080	ng/g	04-FEB-22	08-APR-22	R5767500
4,4-DDE	<0.16	[U]	0.16	ng/g	04-FEB-22	08-APR-22	R5767500
4,4-DDD	<0.095	[U]	0.095	ng/g	04-FEB-22	08-APR-22	R5767500
4,4-DDT	<0.16	[U]	0.16	ng/g	04-FEB-22	08-APR-22	R5767500
Methoxychlor	<0.15	[U]	0.15	ng/g	04-FEB-22	08-APR-22	R5767500
Mirex	<0.010	[U]	0.010	ng/g	04-FEB-22	08-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	46.0		16-129	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	50.0		5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	57.0		23-135	%	04-FEB-22	08-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	50.0	M	14-136	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	50.0	M	40-151	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Endrin, 13C12-	57.0	M	35-155	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	56.0	R	5-122	%	04-FEB-22	08-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	54.0		21-125	%	04-FEB-22	08-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	57.0		5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Mirex, 13C10-	67.0		5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	62.0		5-150	%	04-FEB-22	08-APR-22	R5767500
Heptachlor Epoxide A	<0.25	[U]	0.25	ng/g	04-FEB-22	08-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	49.0		11-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	56.0	R	5-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	13.0	M	11-120	%	04-FEB-22	08-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	30.0		11-120	%	04-FEB-22	08-APR-22	R5767500
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.027	[U]	0.027	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.015	[U]	0.015	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.011	[U]	0.011	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	<0.033	M,U	0.033	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	0.240	M,J,R	0.026	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.017	[U]	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.014	[U]	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.011	[U]	0.011	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.011	[U]	0.011	pg/g	31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-19 21-E1-FC-CH-041							
Sampled By: M. Bilal Siddiqui on 06-OCT-21 @ 10:30							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,6,7,8-HxCDF	<0.011	M,U	0.011	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.015	[U]	0.015	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.0470	M,J,R	0.0083	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	0.190	J,R	0.020	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.027	[U]	0.027	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	<0.015	[U]	0.015	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	<0.033	[U]	0.033	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-TCDF	<0.017	[U]	0.017	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDF	<0.014	[U]	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	<0.015	[U]	0.015	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDF	<0.012	[U]	0.012	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	64.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	64.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	81.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	66.0		28-130	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	79.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	66.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	66.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	62.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	65.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	80.0		26-152	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	69.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	75.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	76.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	83.0		28-143	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	77.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	65.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.00			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.0287			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.0569			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-20 21-E2-SS-CH-043							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:00							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	<5.0		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	0.056		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	3.16		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0587		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	16.8		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-20 21-E2-SS-CH-043							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:00							
Matrix: Soil							
Metals in Soil by CRC ICPMS							
Aluminum (Al)	14900		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.31		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	5.62		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	79.6		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	0.64		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	9.7		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.413		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	5700		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	23.6		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	8.86		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	17.1		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	19000		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	23.5		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	4340		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	442		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	1.76		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	19.6		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	869		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	2720		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	70		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	22.2		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.214		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	91.2		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	31.9		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	69.8		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	2.0		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.170	M,J,R	0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.185	[J]	0.034	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.220	J,R	0.045	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	0.431	[J]	0.046	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.585	[J]	0.043	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	7.02		0.073	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	41.6		0.11	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.250	M,J,R	0.097	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.188	[J]	0.075	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.340	J,R	0.059	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.250	J,R	0.045	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.340	J,R	0.044	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.357	[J]	0.043	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.080	J,R	0.060	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	1.80	M,J,1.	0.043	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.150	J,R	0.061	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	1.96	[J]	0.038	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	0.766		0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	2.44		0.034	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	5.57		0.046	pg/g	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-20 21-E2-SS-CH-043							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:00							
Matrix: Soil							
Dioxins and Furans HR 1613B							
Total HxCDD # Homologues	6				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	13.7		0.073	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	2.24		0.097	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	2.74		0.075	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	7				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	2.80		0.060	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	2.63		0.061	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	76.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	90.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	83.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	81.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	98.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	109.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	71.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	83.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	82.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	73.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	68.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	75.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	78.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	83.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	86.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	77.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	0.411			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	0.817			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	0.817			pg/g	01-FEB-22	10-MAR-22	R5740125
L2657806-21 21-E2-SD-CH-045							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:10							
Matrix: Sediment							
Miscellaneous Parameters							
Chloride (Cl)	40.8		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	5.40		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0259		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	25.2		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	14700		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.28		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	5.86		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	69.6		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	0.66		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	17.3		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.217		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	81800		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	25.1		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	8.97		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	17.8		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-21 21-E2-SD-CH-045							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:10							
Matrix: Sediment							
Metals in Soil by CRC ICPMS							
Iron (Fe)	19300		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	8.95		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	27000		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	352		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	2.52		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	26.3		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	456		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	2790		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	224		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	93.6		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.230		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	162		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	30.4		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	59.8		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	4.2		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
L2657806-22 21-E2-NG-CH-049							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:20							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	75.7		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	2560		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0081		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	4510		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	0.69		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	119		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Arsenic (As)-Total	0.072		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	19.8		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	6.4		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.0408		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	6330		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	1.14		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.054		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	8.37		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	163		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	0.159		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	2660		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	27.6		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	5.58		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	0.44		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	4980		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	30900		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	80		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	17.4		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	0.0025		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727266

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-22 21-E2-NG-CH-049							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:20							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Vanadium (V)-Total	0.25		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	24.5		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.096	[U]	0.096	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.083	[U]	0.083	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.077	[U]	0.077	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.080	[U]	0.080	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.074	[U]	0.074	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	0.39	J,R	0.15	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	2.02	M,J	0.10	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.091	[U]	0.091	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.062	[U]	0.062	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.050	[U]	0.050	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.053	[U]	0.053	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.055	[U]	0.055	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.058	[U]	0.058	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.073	[U]	0.073	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.190	J,R	0.076	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.094	[U]	0.094	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	1.53	[J]	0.11	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.096	[U]	0.096	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	<0.083	[U]	0.083	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	<0.080	[U]	0.080	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	<0.15	[U]	0.15	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-TCDF	<0.091	[U]	0.091	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDF	<0.062	[U]	0.062	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	<0.073	[U]	0.073	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDF	<0.094	[U]	0.094	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	64.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	60.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	79.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	66.0		28-130	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	71.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	56.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	66.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	62.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	60.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	84.0		26-152	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	70.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	72.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	76.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	72.0		28-143	%	31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-22 21-E2-NG-CH-049							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:20							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	75.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	64.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.00107			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.133			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.260			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-23 21-E2-SU-CH-051							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:30							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	78.6		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	134		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	0.0054		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	490		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	9.19		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	389		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	0.011		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	0.134		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	5.70		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	0.017		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	12.1		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	0.121		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	1420		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	0.711		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	0.224		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	5.12		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	469		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	0.539		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	2340		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	21.7		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	0.064		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	0.60		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	2500		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	7940		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	196		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	8.25		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	0.0125		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	0.87		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	14.6		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	0.51		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	<0.023		0.023	ng/g	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 1	23.7		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 3	33.5		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 4	38.3		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 15	47.2		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 19	43.0		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 37	61.1		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 54	50.2		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 81	73.6		10-145	%	09-FEB-22	24-FEB-22	R5755637

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-23 21-E2-SU-CH-051							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:30							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Surrogate: 13C12 PCB 104	57.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 123	75.0		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 118	64.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 114	63.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 105	67.5		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 126	52.1	M	10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 155	59.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 167	72.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 156	73.7	M	10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 157	70.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 169	72.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 188	63.8		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 202	70.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 205	70.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 208	49.9		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 206	79.0		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 209	62.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
OC Pesticides by Method 1699							
alpha-BHC	<0.92	[U]	0.92	ng/g	04-FEB-22	13-APR-22	R5767500
beta-BHC	<1.3	[U]	1.3	ng/g	04-FEB-22	13-APR-22	R5767500
delta-BHC	<1.2	[U]	1.2	ng/g	04-FEB-22	13-APR-22	R5767500
gamma-BHC	<0.98	[U]	0.98	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor	<0.052	[U]	0.052	ng/g	04-FEB-22	13-APR-22	R5767500
Aldrin	<0.11	[U]	0.11	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide	<0.069	[U]	0.069	ng/g	04-FEB-22	13-APR-22	R5767500
trans-Chlordane	<0.43	[U]	0.43	ng/g	04-FEB-22	13-APR-22	R5767500
cis-Chlordane	<0.38	[U]	0.38	ng/g	04-FEB-22	13-APR-22	R5767500
Dieldrin	<0.30	[U]	0.30	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin	<0.66	[U]	0.66	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin Aldehyde	<0.51	[U]	0.51	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan I	<0.39	[U]	0.39	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan II	<1.2	[U]	1.2	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan Sulfate	<0.16	[U]	0.16	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDE	<0.32	[U]	0.32	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDD	<0.35	[U]	0.35	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDT	<0.43	[U]	0.43	ng/g	04-FEB-22	13-APR-22	R5767500
Methoxychlor	<0.23	[U]	0.23	ng/g	04-FEB-22	13-APR-22	R5767500
Mirex	<0.015	[U]	0.015	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	31.0		16-129	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	23.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	32.0		23-135	%	04-FEB-22	13-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	41.0		14-136	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	38.0	G	40-151	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endrin, 13C12-	18.0	G	35-155	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	39.0	M,R	5-122	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	40.0		21-125	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	26.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Mirex, 13C10-	38.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	32.0		5-150	%	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide A	<0.48	[U]	0.48	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	34.0		11-120	%	04-FEB-22	13-APR-22	R5767500

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-23 21-E2-SU-CH-051							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:30							
Matrix: Plant tissue							
OC Pesticides by Method 1699							
Surrogate: Methoxychlor, 13C12-	21.0	R	5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	32.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	37.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Note: some ES % recovery slightly below the method limit, isotope dilution calculation for native target is recovery corrected , impact to data quality is minimal							
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.064	[U]	0.064	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.047	[U]	0.047	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.056	[U]	0.056	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	0.069	M,J	0.056	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.053	[U]	0.053	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	0.410	J,R	0.071	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	2.38	[J]	0.031	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.065	[U]	0.065	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.064	[U]	0.064	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.052	[U]	0.052	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	0.039	M,J	0.028	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.027	M,U	0.027	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	0.038	M,J,R	0.027	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.035	M,U	0.035	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.170	J,R	0.044	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.059	[U]	0.059	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	0.80	J,R	0.12	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.064	[U]	0.064	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	<0.047	[U]	0.047	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	0.069		0.056	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	0.534		0.071	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-TCDF	0.176		0.065	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-PeCDF	<0.064	[U]	0.064	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	0.121		0.035	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDF # Homologues	2				31-JAN-22	12-MAR-22	R5743237
Total-HpCDF	<0.059	[U]	0.059	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	42.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	46.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	59.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	45.0		28-130	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	55.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	45.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	44.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	47.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	47.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	59.0		26-152	%	31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-23 21-E2-SU-CH-051							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 11:30							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	49.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	54.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	55.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	56.0		28-143	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	54.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	53.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.0115			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.0977			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.174			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-24 21-E5-SS-CH-053							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 14:00							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	<5.0		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	4.02		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0281		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	20.1		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	11900		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.19		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	4.89		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	55.0		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	0.53		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	7.0		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.307		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	4280		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	18.8		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	5.82		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	9.54		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	15600		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	13.3		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	3880		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	232		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	1.41		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	15.0		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	409		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	1430		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	<50		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	13.5		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.166		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	94.9		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	30.0		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	51.3		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	1.1		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.140	J,R	0.054	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.150	J,R	0.030	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.130	J,R	0.066	pg/g	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-24 21-E5-SS-CH-053							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 14:00							
Matrix: Soil							
Dioxins and Furans HR 1613B							
1,2,3,6,7,8-HxCDD	0.270	J,R	0.064	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.342	[J]	0.061	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	4.81		0.040	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	28.4		0.13	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.170	M,J,R	0.063	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.130	J,R	0.046	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.310	[J]	0.037	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.260	J,R	0.036	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.230	[J]	0.035	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.274	[J]	0.035	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.060	J,R	0.049	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	1.65	[J]	0.031	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.105	[J]	0.044	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	1.85	[J]	0.045	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	0.459		0.054	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	1				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	0.638		0.030	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	1				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	3.23		0.066	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	10.0		0.040	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	1.48		0.063	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	8				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	2.26		0.046	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	7				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	1.93		0.049	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	6				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	2.63		0.044	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	4				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	74.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	86.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	86.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	81.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	86.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	76.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	67.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	79.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	77.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	77.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	72.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	76.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	78.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	75.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	73.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	68.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	0.252			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	0.635			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	0.635			pg/g	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-25 21-E5-NG-CH-055							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 14:00							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	72.1		0.50	%		10-FEB-22	R5721118
Chloride (Cl)	7460		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0121		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	0.0100		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	15600		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	14.3		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	1100		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Arsenic (As)-Total	0.414		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	18.0		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	0.047		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	26.1		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.0658		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	34400		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	2.35		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.668		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	6.19		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	1200		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	1.07		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	5180		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	57.5		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	11.7		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	1.88		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	1670		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	19300		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	43		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	46.1		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	0.0190		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Vanadium (V)-Total	2.47		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	33.2		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	0.63		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.079	[U]	0.079	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.078	M,U	0.078	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.063	[U]	0.063	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.062	[U]	0.062	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.059	[U]	0.059	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	1.51	[J]	0.056	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	6.63	[J]	0.095	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.076	[U]	0.076	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.070	[U]	0.070	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.062	M,U	0.062	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	0.053	[J]	0.034	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.037	[U]	0.037	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.037	[U]	0.037	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.046	[U]	0.046	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.313	[J]	0.024	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.037	[U]	0.037	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	0.380	J,R	0.080	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.079	[U]	0.079	pg/g	31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-25 21-E5-NG-CH-055							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 14:00							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	0.446		0.078	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	2				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	1.54		0.063	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	1.51		0.056	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Total-TCDF	0.195		0.076	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	2				31-JAN-22	12-MAR-22	R5743237
Total-PeCDF	<0.070	[U]	0.070	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	0.331		0.046	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDF # Homologues	2				31-JAN-22	12-MAR-22	R5743237
Total-HpCDF	0.433		0.037	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	2				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	51.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	48.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	61.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	54.0		28-130	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	55.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	44.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	53.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	49.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	48.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	68.0		26-152	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	59.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	60.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	61.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	59.0		28-143	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	55.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	52.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.0255			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.134			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.242			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-26 21-E5-FC-CH-057							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 14:00							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	26.0		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	377		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	1080		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-26 21-E5-FC-CH-057							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 14:00							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Boron (B)-Total	2.5		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	41		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	1.86		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	21.9		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	1410		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	4.79		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	0.852		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	3710		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	4270		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	22.9		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.023	[U]	0.023	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDD	<0.0094	[U]	0.0094	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDD	<0.014	[U]	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDD	<0.014	[U]	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDD	<0.013	[U]	0.013	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDD	<0.020	[U]	0.020	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDD	0.510	M,J,R	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,7,8-TCDF	<0.014	[U]	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8-PeCDF	<0.0093	[U]	0.0093	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,7,8-PeCDF	<0.0072	[U]	0.0072	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8-HxCDF	<0.0061	[U]	0.0061	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,6,7,8-HxCDF	<0.0062	M,U	0.0062	pg/g	31-JAN-22	12-MAR-22	R5743237
2,3,4,6,7,8-HxCDF	<0.0061	M,U	0.0061	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,7,8,9-HxCDF	<0.0077	[U]	0.0077	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,6,7,8-HpCDF	0.0558	[J]	0.0078	pg/g	31-JAN-22	12-MAR-22	R5743237
1,2,3,4,7,8,9-HpCDF	<0.011	[U]	0.011	pg/g	31-JAN-22	12-MAR-22	R5743237
OCDF	0.370	J,R	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
Total-TCDD	<0.023	[U]	0.023	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDD	<0.0094	[U]	0.0094	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDD	<0.014	[U]	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HxCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDD	<0.020	[U]	0.020	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDD # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-TCDF	<0.014	[U]	0.014	pg/g	31-JAN-22	12-MAR-22	R5743237
Total TCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-PeCDF	<0.0093	[U]	0.0093	pg/g	31-JAN-22	12-MAR-22	R5743237
Total PeCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HxCDF	<0.0077	[U]	0.0077	pg/g	31-JAN-22	12-MAR-22	R5743237

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-26 21-E5-FC-CH-057							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 14:00							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Total HxCDF # Homologues	0				31-JAN-22	12-MAR-22	R5743237
Total-HpCDF	0.056		0.011	pg/g	31-JAN-22	12-MAR-22	R5743237
Total HpCDF # Homologues	1				31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDD	59.0		25-164	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDD	66.0		25-181	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	73.0		32-141	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	67.0		28-130	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	60.0		23-140	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-OCDD	70.0		17-157	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,7,8-TCDF	63.0		24-169	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8-PeCDF	63.0		21-192	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,7,8-PeCDF	64.0		21-178	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	75.0		26-152	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	65.0		26-123	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	71.0		29-147	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	71.0		28-136	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	69.0		28-143	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	63.0		26-138	%	31-JAN-22	12-MAR-22	R5743237
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	58.0		31-197	%	31-JAN-22	12-MAR-22	R5743237
Lower Bound PCDD/F TEQ (WHO 2005)	0.000558			pg/g	31-JAN-22	12-MAR-22	R5743237
Mid Point PCDD/F TEQ (WHO 2005)	0.0225			pg/g	31-JAN-22	12-MAR-22	R5743237
Upper Bound PCDD/F TEQ (WHO 2005)	0.0441			pg/g	31-JAN-22	12-MAR-22	R5743237
L2657806-27 21-E7-SS-CH-303							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 13:00							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	<5.0		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	4.60		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0316		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	22.5		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	17700		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.24		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	6.13		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	78.5		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	0.75		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	9.2		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.328		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	5730		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	24.9		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	9.43		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	13.3		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	20400		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	14.3		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	5660		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	336		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	1.71		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	22.2		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	602		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	2180		100	mg/kg	09-JAN-22	13-JAN-22	R5694779

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-27 21-E7-SS-CH-303							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 13:00							
Matrix: Soil							
Metals in Soil by CRC ICPMS							
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	56		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	18.3		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.226		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	83.3		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	36.0		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	51.5		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	1.9		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.198	[J]	0.047	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.180	J,R	0.046	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.233	[J]	0.041	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	0.494	[J]	0.042	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.480	M,J	0.039	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	9.70		0.092	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	65.5		0.10	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.350	M,J	0.059	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.255	[J]	0.030	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.492	[J]	0.027	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.518	[J]	0.039	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.325	[J]	0.040	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.520	M,J,1.	0.040	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.107	[J]	0.047	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	2.89	[J]	0.037	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.200	J,R	0.052	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	4.63	[J]	0.030	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	0.873		0.047	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	0.906		0.046	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	6.43		0.042	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	6				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	18.8		0.092	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	1.62		0.059	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	7.18		0.030	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	11				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	5.28		0.047	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	8				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	5.51		0.052	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	74.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	83.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	81.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	79.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	96.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	107.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	64.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	79.0		24-185	%	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-27 21-E7-SS-CH-303							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 13:00							
Matrix: Soil							
Dioxins and Furans HR 1613B							
Surrogate: 13C12-2,3,4,7,8-PeCDF	70.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	79.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	75.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	74.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	83.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	85.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	89.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	76.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	0.751			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	0.985			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	0.985			pg/g	01-FEB-22	10-MAR-22	R5740125
L2657806-28 21-E7-NG-CH-305							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 13:00							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	57.0		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	6700		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0122		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	1890		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	<0.25		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	41.0		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	0.018		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Arsenic (As)-Total	0.071		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	6.49		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	8.3		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.0488		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	10300		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	0.324		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.045		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	3.48		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	70.9		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	0.266		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	2410		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	90.7		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	5.20		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	0.31		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	1430		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	10900		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	238		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	55.1		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	0.0045		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Vanadium (V)-Total	0.12		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	20.1		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.043	[U]	0.043	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	0.068	M,J,B	0.026	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	0.063	M,J	0.020	pg/g	01-FEB-22	12-MAR-22	R5746458

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-28 21-E7-NG-CH-305							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 13:00							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,6,7,8-HxCDD	0.121	M,J	0.020	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	0.100	M,J,R	0.019	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDD	1.19	M,J	0.072	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	5.98	[J]	0.080	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,7,8-TCDF	0.061	M,J	0.041	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	<0.019	[U]	0.019	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	<0.015	[U]	0.015	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.057	M,J,R	0.017	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	0.055	M,J,B	0.017	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	0.100	M,J,B	0.017	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	0.048	M,J,R	0.024	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.322	M,J,B	0.022	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	<0.032	M,U	0.032	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.569	M,J	0.042	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	<0.043	[U]	0.043	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	1.18		0.026	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	6				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	1.28		0.020	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	3				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	1.19		0.072	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	0.485		0.041	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	6				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	0.465		0.019	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	6				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.483		0.024	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDF # Homologues	5				01-FEB-22	12-MAR-22	R5746458
Total-HpCDF	0.322		0.032	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	59.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	58.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	73.0		32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	68.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	62.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	46.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	59.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	53.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	56.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	62.0		26-152	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	61.0		26-123	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	64.0		29-147	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	66.0		28-136	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	57.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	58.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	63.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.125			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.170			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.194			pg/g	01-FEB-22	12-MAR-22	R5746458

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-29 21-E7-FC-CH-300							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 13:00							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	18.9		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	425		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	820		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	2.3		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	61		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	2.19		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	21.9		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	1340		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	4.40		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	2.65		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	3920		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	4230		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	0.104		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	18.4		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	<0.0060		0.0060	ng/g	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 1	8.4		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 3	12.9		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 4	11.5		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 15	18.9		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 19	10.9		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 37	24.4		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 54	13.2		5-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 81	28.3		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 104	20.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 123	27.8		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 118	26.3		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 114	24.8		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 105	26.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 126	17.9	M	10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 155	22.0		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 167	29.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 156	29.7	M	10-145	%	09-FEB-22	24-FEB-22	R5755637

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-29 21-E7-FC-CH-300							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 13:00							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Surrogate: 13C12 PCB 157	28.2		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 169	29.5		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 188	25.2		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 202	29.1		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 205	28.8		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 208	24.6		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 206	32.7		10-145	%	09-FEB-22	24-FEB-22	R5755637
Surrogate: 13C12 PCB 209	26.4		10-145	%	09-FEB-22	24-FEB-22	R5755637
OC Pesticides by Method 1699							
alpha-BHC	<0.096	[U]	0.096	ng/g	04-FEB-22	13-APR-22	R5767500
beta-BHC	<0.20	[U]	0.20	ng/g	04-FEB-22	13-APR-22	R5767500
delta-BHC	<0.20	[U]	0.20	ng/g	04-FEB-22	13-APR-22	R5767500
gamma-BHC	<0.14	[U]	0.14	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor	<0.0072	[U]	0.0072	ng/g	04-FEB-22	13-APR-22	R5767500
Aldrin	<0.011	[U]	0.011	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide	<0.012	[U]	0.012	ng/g	04-FEB-22	13-APR-22	R5767500
trans-Chlordane	<0.032	[U]	0.032	ng/g	04-FEB-22	13-APR-22	R5767500
cis-Chlordane	<0.029	[U]	0.029	ng/g	04-FEB-22	13-APR-22	R5767500
Dieldrin	<0.022	[U]	0.022	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin	<0.044	[U]	0.044	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin Aldehyde	<0.032	[U]	0.032	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan I	<0.099	[U]	0.099	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan II	<0.15	[U]	0.15	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan Sulfate	<0.026	[U]	0.026	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDE	<0.043	[U]	0.043	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDD	<0.056	[U]	0.056	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDT	<0.088	[U]	0.088	ng/g	04-FEB-22	13-APR-22	R5767500
Methoxychlor	<0.042	[U]	0.042	ng/g	04-FEB-22	13-APR-22	R5767500
Mirex	<0.0033	[U]	0.0033	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	77.0		16-129	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	50.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	67.0		23-135	%	04-FEB-22	13-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	81.0		14-136	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	84.0		40-151	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endrin, 13C12-	49.0		35-155	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	70.0		5-122	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	80.0		21-125	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	44.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Mirex, 13C10-	66.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	58.0		5-150	%	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide A	<0.083	[U]	0.083	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	74.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	33.0	R	5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	53.0	M	11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	61.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.0080	[U]	0.0080	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	<0.0066	[U]	0.0066	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	0.0106	M,J	0.0062	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	0.0065	M,J	0.0064	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	0.0074	M,J,B	0.0059	pg/g	01-FEB-22	12-MAR-22	R5746458

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-29 21-E7-FC-CH-300							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 13:00							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,4,6,7,8-HpCDD	0.027	M,J,B	0.013	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	0.140	M,J,B	0.015	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,7,8-TCDF	<0.0047	[U]	0.0047	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	<0.0036	[U]	0.0036	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	<0.0031	[U]	0.0031	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.0075	M,J,R	0.0039	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	0.0072	M,J,R	0.0039	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	0.0100	M,J,B	0.0040	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	<0.0059	[U]	0.0059	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.0134	M,J,B	0.0041	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	<0.0061	[U]	0.0061	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.0214	M,J	0.0082	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	<0.0080	[U]	0.0080	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	<0.0066	[U]	0.0066	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	0.0244		0.0064	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	3				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	0.027		0.013	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	<0.0047	[U]	0.0047	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	<0.0036	[U]	0.0036	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.0100		0.0059	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDF # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-HpCDF	0.0134		0.0061	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	61.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	57.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	77.0		32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	71.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	53.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	59.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	60.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	55.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	52.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	70.0		26-152	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	68.0		26-123	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	68.0		29-147	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	68.0		28-136	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	55.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	56.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	66.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.00389			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.0137			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.0221			pg/g	01-FEB-22	12-MAR-22	R5746458
L2657806-30 21-S2-SS-CH-073							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 14:00							
Matrix: Soil							
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-30 21-S2-SS-CH-073							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 14:00							
Matrix: Soil							
Chloride (Cl)	<5.0		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	4.97		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0305		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	20.0		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	20100		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.28		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	6.55		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	89.0		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	0.87		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	16.3		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.297		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	9260		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	29.3		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	9.83		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	14.4		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	22300		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	15.3		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	7790		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	319		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	1.51		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	25.8		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	743		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	3210		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	70		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	24.5		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.251		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	169		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	41.4		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	57.3		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	1.8		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.150	M,J,R	0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.190	J,R	0.033	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.150	M,J,R	0.052	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	0.340	M,J,R	0.044	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.280	M,J,R	0.045	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	4.45		0.077	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	23.1	[B]	0.15	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.237	M,J	0.095	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.180	M,J	0.060	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.350	J,R	0.047	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.332	M,J	0.077	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.260	M,J,R	0.080	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.252	[J]	0.073	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	<0.11	[U]	0.11	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	1.53	[J]	0.038	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.067	J,R	0.053	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	1.33	[J]	0.050	pg/g	01-FEB-22	10-MAR-22	R5740125

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-30 21-S2-SS-CH-073							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 14:00							
Matrix: Soil							
Dioxins and Furans HR 1613B							
Total-TCDD	0.845		0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	4				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	0.234		0.033	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	1				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	1.75		0.052	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	1				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	8.75		0.077	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	3.01		0.095	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	8				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	4.17		0.060	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	10				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	2.55		0.11	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	6				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	2.37		0.053	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	75.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	86.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	88.0	R	32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	82.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	93.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	86.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	72.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	80.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	78.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	75.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	74.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	80.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	79.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	78.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	80.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	75.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	0.155			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	0.709			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	0.714			pg/g	01-FEB-22	10-MAR-22	R5740125
L2657806-31 21-S2-NG-CH-075							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 14:00							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	69.9		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	4650		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0072		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	2140		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	7.29		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	646		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Arsenic (As)-Total	0.213		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	47.6		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-31 21-S2-NG-CH-075							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 14:00							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Beryllium (Be)-Total	0.028		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	3.3		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.341		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	5150		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	1.02		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.363		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	5.21		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	691		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	0.584		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	5780		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	27.5		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	3.40		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	1.18		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	1960		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	19100		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	49		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	27.5		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	0.0112		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Vanadium (V)-Total	1.33		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	13.2		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.026	[U]	0.026	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	0.084	M,J,B	0.024	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	0.054	[J]	0.032	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	0.095	[J]	0.029	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	0.064	J,B	0.028	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDD	0.846	M,J	0.021	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	3.36	M,J	0.055	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,7,8-TCDF	<0.031	M,U	0.031	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	<0.015	[U]	0.015	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	<0.012	[U]	0.012	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.030	J,R	0.017	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	0.045	J,B	0.016	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	0.045	M,J,B	0.016	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	0.034	M,J,B	0.026	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.214	M,J,B	0.029	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	<0.050	M,U	0.050	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.285	M,J	0.026	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	0.215		0.026	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	3				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	1.14		0.024	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	5				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	2.02		0.032	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	5				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	0.846		0.021	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	0.564		0.031	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	4				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	0.111		0.015	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	2				01-FEB-22	12-MAR-22	R5746458

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-31 21-S2-NG-CH-075							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 14:00							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Total-HxCDF	0.152		0.026	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDF # Homologues	4				01-FEB-22	12-MAR-22	R5746458
Total-HpCDF	0.243		0.050	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	2				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	64.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	56.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	78.0	R	32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	73.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	62.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	47.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	63.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	55.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	53.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	73.0		26-152	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	69.0		26-123	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	73.0		29-147	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	70.0		28-136	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	61.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	56.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	71.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.129			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.149			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.166			pg/g	01-FEB-22	12-MAR-22	R5746458
L2657806-32 21-S2-FC-CH-077							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 14:00							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	27.5		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	481		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	1010		100	mg/kg	11-FEB-22	14-FEB-22	R5736198
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	1.7		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	62		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	1.87		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	28.0		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	1270		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	3.75		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	0.827		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-32 21-S2-FC-CH-077							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 14:00							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Nickel (Ni)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	3260		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	4000		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	0.112		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	12.9		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.0083	[U]	0.0083	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	<0.0066	[U]	0.0066	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	<0.010	[U]	0.010	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	<0.011	[U]	0.011	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	<0.0097	[U]	0.0097	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDD	0.047	M,J,B	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	0.396	M,J,B	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,7,8-TCDF	<0.0050	[U]	0.0050	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	<0.0035	[U]	0.0035	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	<0.0030	[U]	0.0030	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	<0.0055	[U]	0.0055	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	<0.0056	[U]	0.0056	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	<0.0057	[U]	0.0057	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	0.0130	M,J,B	0.0082	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.0203	M,J,B	0.0074	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	<0.011	M,U	0.011	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.070	M,J	0.011	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	<0.0083	[U]	0.0083	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	<0.0066	[U]	0.0066	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	<0.011	[U]	0.011	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	0.047		0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	<0.0050	[U]	0.0050	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	<0.0035	[U]	0.0035	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.0130		0.0082	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDF # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-HpCDF	0.029		0.011	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	2				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	59.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	55.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	71.0		32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	66.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	55.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	52.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	58.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	53.0		21-192	%	01-FEB-22	12-MAR-22	R5746458

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-32 21-S2-FC-CH-077							
Sampled By: M. Bilal Siddiqui on 04-OCT-21 @ 14:00							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Surrogate: 13C12-2,3,4,7,8-PeCDF	51.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	65.0		26-152	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	63.0		26-123	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	63.0		29-147	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	64.0		28-136	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	53.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	54.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	67.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.00212			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.0127			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.0234			pg/g	01-FEB-22	12-MAR-22	R5746458
L2657806-33 21-S4-SS-CH-087							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 12:15							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	20.3		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	4.85		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0441		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	24.2		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	29900		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.23		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	5.97		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	150		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	1.32		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	19.9		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.291		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	12600		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	43.2		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	14.9		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	19.7		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	29400		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	17.7		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	11300		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	409		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	0.90		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	35.6		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	753		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	4370		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	113		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	38.0		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.262		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	114		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	52.4		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	76.8		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	4.1		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.315	[J]	0.035	pg/g	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-33 21-S4-SS-CH-087							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 12:15							
Matrix: Soil							
Dioxins and Furans HR 1613B							
1,2,3,7,8-PeCDD	0.180	J,R	0.029	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.184	[J]	0.056	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	0.450	J,R	0.058	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.480	J,R	0.054	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	8.79		0.063	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	58.8		0.14	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.350	M,J,R	0.077	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.210	[J]	0.040	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.410	[J]	0.036	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.366	[J]	0.013	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.273	[J]	0.013	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.390	M,J,R,1.	0.014	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.089	J,R	0.016	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	2.59	[J]	0.033	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.173	[J]	0.046	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	3.40	[J]	0.028	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	1.71		0.035	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	8				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	2.29		0.029	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	4				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	4.52		0.058	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	15.8		0.063	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	2.46		0.077	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	4.92		0.040	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	7				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	3.18		0.016	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	6				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	4.88		0.046	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	75.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	85.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	81.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	77.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	88.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	86.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	66.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	79.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	73.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	75.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	69.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	70.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	77.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	76.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	77.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	76.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	0.661			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	1.02			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	1.02			pg/g	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-34 21-S4-SD-CH-089							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 10:00							
Matrix: Sediment							
Miscellaneous Parameters							
Chloride (Cl)	46.9		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	0.068		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	5.40		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0371		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	45.5		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	20600		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.22		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	5.15		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	100		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	0.90		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	20.9		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.277		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	47400		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	32.5		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	10.7		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	19.6		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	24100		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	12.2		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	16900		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	480		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	1.18		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	29.8		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	789		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	3810		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	176		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	78.4		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.226		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	140		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	39.4		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	63.2		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	2.0		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
CARB428 PCB TOTALS							
Total PCB	<0.0090		0.0090	ng/g	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 1	13.4		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 3	30.4		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 4	11.9		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 15	32.2		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 19	9.5		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 37	43.4		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 54	11.9		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 81	30.8		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 104	20.6		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 123	48.9		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 118	31.4		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 114	27.9		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 105	29.2		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 126	38.2		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 155	47.4		10-145	%	02-FEB-22	12-MAR-22	R5755385

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-34 21-S4-SD-CH-089							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 10:00							
Matrix: Sediment							
CARB428 PCB TOTALS							
Surrogate: 13C12 PCB 167	42.9		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 156	31.4	M	10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 157	35.6		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 169	42.3		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 188	50.4		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 202	49.6		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 205	44.1		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 208	43.4		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 206	49.3		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 209	46.5		10-145	%	02-FEB-22	12-MAR-22	R5755385
OC Pesticides by Method 1699							
alpha-BHC	<0.031	[U]	0.031	ng/g	02-FEB-22	08-APR-22	R5769474
beta-BHC	<0.044	[U]	0.044	ng/g	02-FEB-22	08-APR-22	R5769474
delta-BHC	<0.036	[U]	0.036	ng/g	02-FEB-22	08-APR-22	R5769474
gamma-BHC	<0.040	[U]	0.040	ng/g	02-FEB-22	08-APR-22	R5769474
Heptachlor	<0.0026	M,U	0.0026	ng/g	02-FEB-22	08-APR-22	R5769474
Aldrin	<0.0062	[U]	0.0062	ng/g	02-FEB-22	08-APR-22	R5769474
Heptachlor Epoxide	0.013	M,J	0.010	ng/g	02-FEB-22	08-APR-22	R5769474
trans-Chlordane	<0.036	[U]	0.036	ng/g	02-FEB-22	08-APR-22	R5769474
cis-Chlordane	<0.032	[U]	0.032	ng/g	02-FEB-22	08-APR-22	R5769474
Dieldrin	<0.030	M,U	0.030	ng/g	02-FEB-22	08-APR-22	R5769474
Endrin	<0.040	[U]	0.040	ng/g	02-FEB-22	08-APR-22	R5769474
Endrin Aldehyde	<0.019	[U]	0.019	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan I	<0.045	[U]	0.045	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan II	<0.067	[U]	0.067	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan Sulfate	<0.012	[U]	0.012	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDE	0.158	[J]	0.021	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDD	0.029	M,J	0.016	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDT	0.056	J,R	0.017	ng/g	02-FEB-22	08-APR-22	R5769474
Methoxychlor	<0.019	[U]	0.019	ng/g	02-FEB-22	08-APR-22	R5769474
Mirex	0.0039	M,J,R	0.0024	ng/g	02-FEB-22	08-APR-22	R5769474
Surrogate: alpha-BHC, 13C6-	34.0		16-129	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Heptachlor, 13C10-	26.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Oxychlordane, 13C10-	27.0		23-135	%	02-FEB-22	08-APR-22	R5769474
Surrogate: trans-Nonachlor, 13C10-	24.0		14-136	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Dieldrin, 13C12-	23.0	G	40-151	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Endrin, 13C12-	22.0	G	35-155	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Endosulfan II, 13C9-	25.0		5-122	%	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDE, 13C12-	26.0		21-125	%	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDT, 13C12-	24.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Mirex, 13C10-	27.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Heptachlor Epoxide A	<0.062	[U]	0.062	ng/g	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDD, 13C12-	24.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: gamma-BHC, 13C6-	32.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Methoxychlor, 13C12-	21.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: beta-BHC, 13C6-	33.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: delta-BHC, 13C6-	37.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Note: Surrogate recoveries are below method criteria. Data is calculated by isotope dilution. No impact to data quality							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-35 21-S4-NG-CH-093							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 10:15							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	70.6		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	7030		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0120		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	3330		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	14.5		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	1170		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Arsenic (As)-Total	0.316		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	11.3		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	0.051		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	7.9		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.0447		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	10800		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	1.95		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.611		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	7.43		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	1310		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	0.731		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	4230		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	60.5		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	4.42		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	2.40		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	3260		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	24700		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	31		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	17.9		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	0.0124		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Vanadium (V)-Total	2.40		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	15.9		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	0.46		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.044	M,U	0.044	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	0.120	M,J,B	0.023	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	0.079	M,J	0.020	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	0.108	M,J	0.021	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	0.092	M,J,R	0.019	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDD	1.38	[J]	0.024	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	5.30	M,J	0.088	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,7,8-TCDF	0.055	M,J	0.032	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	<0.011	[U]	0.011	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	<0.0090	[U]	0.0090	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.050	M,J,R	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	0.062	M,J,R	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	0.056	M,J,B	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	<0.020	[U]	0.020	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.247	M,J,B	0.018	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	<0.026	M,U	0.026	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.405	M,J	0.030	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	0.199		0.044	pg/g	01-FEB-22	12-MAR-22	R5746458

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-35 21-S4-NG-CH-093							
Sampled By: M. Bilal Siddiqui on 21-SEP-21 @ 10:15							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Total TCDD # Homologues	4				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	0.928		0.023	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	4				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	1.20		0.021	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	3				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	1.38		0.024	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	0.429		0.032	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	7				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	0.392		0.011	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	3				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.519		0.020	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDF # Homologues	4				01-FEB-22	12-MAR-22	R5746458
Total-HpCDF	0.247		0.026	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	65.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	64.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	76.0		32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	70.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	60.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	43.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	64.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	60.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	59.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	68.0		26-152	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	67.0		26-123	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	65.0		29-147	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	68.0		28-136	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	57.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	57.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	72.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.168			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.213			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.237			pg/g	01-FEB-22	12-MAR-22	R5746458
L2657806-36 21-S4-WW-CH-095							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 12:15							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	21.9		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	362		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	1260		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	2.6		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	2.28		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-36 21-S4-WW-CH-095							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 12:15							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Boron (B)-Total	<1.0		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	0.0771		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	565		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	4.59		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	29.8		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	1230		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	13.2		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	0.988		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	3250		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	3400		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	1.76		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	17.7		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	0.06		0.0060	ng/g	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 1	23.5		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 3	49.0		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 4	21.6		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 15	51.8		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 19	17.8		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 37	65.8		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 54	20.3		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 81	49.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 104	25.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 123	63.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 118	45.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 114	38.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 105	42.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 126	51.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 155	55.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 167	55.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 156	47.4	M	10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 157	48.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 169	58.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 188	57.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 202	56.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 205	54.3		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 208	38.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 206	57.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 209	10.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
OC Pesticides by Method 1699							
alpha-BHC	<0.26	[U]	0.26	ng/g	04-FEB-22	13-APR-22	R5767500
beta-BHC	<0.51	[U]	0.51	ng/g	04-FEB-22	13-APR-22	R5767500
delta-BHC	<0.49	[U]	0.49	ng/g	04-FEB-22	13-APR-22	R5767500

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-36 21-S4-WW-CH-095							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 12:15							
Matrix: Plant tissue							
OC Pesticides by Method 1699							
gamma-BHC	<0.32	[U]	0.32	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor	<0.0094	[U]	0.0094	ng/g	04-FEB-22	13-APR-22	R5767500
Aldrin	<0.021	[U]	0.021	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide	<0.017	[U]	0.017	ng/g	04-FEB-22	13-APR-22	R5767500
trans-Chlordane	<0.072	[U]	0.072	ng/g	04-FEB-22	13-APR-22	R5767500
cis-Chlordane	<0.064	[U]	0.064	ng/g	04-FEB-22	13-APR-22	R5767500
Dieldrin	<0.13	[U]	0.13	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin	<0.23	[U]	0.23	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin Aldehyde	<0.13	[U]	0.13	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan I	<0.20	[U]	0.20	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan II	<0.24	[U]	0.24	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan Sulfate	<0.12	[U]	0.12	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDE	<0.099	[U]	0.099	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDD	<0.13	[U]	0.13	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDT	<0.13	[U]	0.13	ng/g	04-FEB-22	13-APR-22	R5767500
Methoxychlor	<0.12	[U]	0.12	ng/g	04-FEB-22	13-APR-22	R5767500
Mirex	<0.0076	[U]	0.0076	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	60.0		16-129	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	42.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	59.0		23-135	%	04-FEB-22	13-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	71.0		14-136	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	65.0		40-151	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endrin, 13C12-	41.0		35-155	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	58.0		5-122	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	69.0		21-125	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	41.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Mirex, 13C10-	63.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	50.0		5-150	%	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide A	<0.11	[U]	0.11	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	65.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	32.0	M	5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	47.0	M	11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	56.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.010	[U]	0.010	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	<0.012	M,U	0.012	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	0.0164	M,J	0.0056	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	0.0160	M,J,R	0.0059	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	0.0179	M,J,B	0.0054	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDD	0.072	J,B	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	0.471	M,J,B	0.010	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,7,8-TCDF	<0.010	[U]	0.010	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	0.0179	M,J	0.0046	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	0.0124	[J]	0.0036	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.0151	M,J,B	0.0023	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	0.0125	M,J,B	0.0023	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	0.0141	M,J,B	0.0024	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	0.0218	M,J,B	0.0034	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.0307	M,J,B	0.0058	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	0.0305	M,J,B	0.0091	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.092	M,J	0.016	pg/g	01-FEB-22	12-MAR-22	R5746458

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-36 21-S4-WW-CH-095							
Sampled By: M. Bilal Siddiqui on 09-JUL-21 @ 12:15							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
Total-TCDD	<0.010	[U]	0.010	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	0.029		0.012	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	2				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	0.119		0.0059	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	3				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	0.072		0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	<0.010	[U]	0.010	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	0.0523		0.0046	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	5				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.0910		0.0034	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDF # Homologues	6				01-FEB-22	12-MAR-22	R5746458
Total-HpCDF	0.0611		0.0091	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	2				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	62.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	59.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	73.0		32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	69.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	62.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	53.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	62.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	54.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	56.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	63.0		26-152	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	61.0		26-123	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	60.0		29-147	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	64.0		28-136	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	60.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	58.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	59.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.0155			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.0286			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.0401			pg/g	01-FEB-22	12-MAR-22	R5746458
L2657806-37 21-S8-SS-CH-079							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 16:00							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	<5.0		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	5.36		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.111		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	23.2		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	16000		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.41		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	5.93		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	78.5		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	0.74		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	15.3		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-37 21-S8-SS-CH-079							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 16:00							
Matrix: Soil							
Metals in Soil by CRC ICPMS							
Cadmium (Cd)	0.621		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	33900		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	29.1		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	8.39		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	19.6		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	18500		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	19.0		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	12600		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	313		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	2.42		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	26.5		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	410		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	2390		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	101		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	41.8		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.329		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	137		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	35.3		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	79.0		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	2.2		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
CARB428 PCB TOTALS							
Total PCB	3.16		0.0060	ng/g	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 1	36.9		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 3	49.3		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 4	43.9		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 15	47.3		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 19	37.8		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 37	62.8		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 54	43.2		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 81	62.5		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 104	57.6		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 123	80.7		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 118	69.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 114	66.5		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 105	72.5		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 126	57.9	M	10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 155	58.7		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 167	75.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 156	84.5	M	10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 157	71.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 169	81.5		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 188	63.4		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 202	69.2		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 205	72.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 208	52.2		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 206	79.9		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 209	64.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
OC Pesticides by Method 1699							
alpha-BHC	0.072	[J]	0.011	ng/g	02-FEB-22	08-APR-22	R5769474

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-37 21-S8-SS-CH-079							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 16:00							
Matrix: Soil							
OC Pesticides by Method 1699							
beta-BHC	0.299		0.015	ng/g	02-FEB-22	08-APR-22	R5769474
delta-BHC	<0.013	[U]	0.013	ng/g	02-FEB-22	08-APR-22	R5769474
gamma-BHC	1.89		0.013	ng/g	02-FEB-22	08-APR-22	R5769474
Heptachlor	0.0041	M,J,R	0.0011	ng/g	02-FEB-22	08-APR-22	R5769474
Aldrin	0.0107	M,J	0.0021	ng/g	02-FEB-22	08-APR-22	R5769474
Heptachlor Epoxide	0.0135	M,J	0.0029	ng/g	02-FEB-22	08-APR-22	R5769474
trans-Chlordane	0.278		0.037	ng/g	02-FEB-22	08-APR-22	R5769474
cis-Chlordane	0.167	M	0.033	ng/g	02-FEB-22	08-APR-22	R5769474
Dieldrin	0.389		0.011	ng/g	02-FEB-22	08-APR-22	R5769474
Endrin	0.118	[J]	0.014	ng/g	02-FEB-22	08-APR-22	R5769474
Endrin Aldehyde	<0.010	M,U	0.010	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan I	0.069	M,J	0.024	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan II	<0.044	[U]	0.044	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan Sulfate	0.018	M,J,R	0.013	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDE	1.54		0.011	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDD	2.88		0.0053	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDT	3.63		0.010	ng/g	02-FEB-22	08-APR-22	R5769474
Methoxychlor	0.0399	[J]	0.0094	ng/g	02-FEB-22	08-APR-22	R5769474
Mirex	0.0200	M,J,R	0.0013	ng/g	02-FEB-22	08-APR-22	R5769474
Surrogate: alpha-BHC, 13C6-	57.0		16-129	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Heptachlor, 13C10-	55.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Oxychlordane, 13C10-	50.0		23-135	%	02-FEB-22	08-APR-22	R5769474
Surrogate: trans-Nonachlor, 13C10-	43.0		14-136	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Dieldrin, 13C12-	44.0		40-151	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Endrin, 13C12-	47.0		35-155	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Endosulfan II, 13C9-	46.0		5-122	%	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDE, 13C12-	48.0		21-125	%	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDT, 13C12-	46.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Mirex, 13C10-	41.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Heptachlor Epoxide A	<0.017	[U]	0.017	ng/g	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDD, 13C12-	50.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: gamma-BHC, 13C6-	55.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Methoxychlor, 13C12-	48.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: beta-BHC, 13C6-	54.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: delta-BHC, 13C6-	59.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.404	[J]	0.038	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.245	[J]	0.027	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.200	J,R	0.048	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	0.610	J,R	0.048	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.488	[J]	0.045	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	15.1		0.12	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDD	156		0.34	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.25	M,J,R	0.10	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.180	J,R	0.055	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.356	[J]	0.045	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.497	[J]	0.032	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.350	J,R	0.033	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.350	J,R	0.031	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.092	M,J,R	0.043	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	3.73		0.063	pg/g	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-37 21-S8-SS-CH-079							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 16:00							
Matrix: Soil							
Dioxins and Furans HR 1613B							
1,2,3,4,7,8,9-HpCDF	0.28	J,R	0.10	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	9.17		0.055	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	1.93		0.038	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	7				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	3.57		0.027	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	7.47		0.048	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	31.6		0.12	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	1.97		0.10	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	7				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	2.32		0.055	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	3.64		0.043	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	7.68		0.10	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	77.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	87.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	86.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	85.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	79.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	64.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	73.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	81.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	79.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	81.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	74.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	79.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	80.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	72.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	67.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	76.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	1.09			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	1.29			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	1.29			pg/g	01-FEB-22	10-MAR-22	R5740125
L2657806-38 21-S8-SD-CH-001							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 16:00							
Matrix: Sediment							
Miscellaneous Parameters							
Chloride (Cl)	61.7		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	6.85		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0500		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	23.5		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	12700		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.53		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	6.12		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	70.2		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-38 21-S8-SD-CH-001							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 16:00							
Matrix: Sediment							
Metals in Soil by CRC ICPMS							
Beryllium (Be)	0.62		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	18.2		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.306		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	88100		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	25.5		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	9.42		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	19.6		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	18600		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	12.9		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	26700		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	413		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	4.32		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	26.9		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	392		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	2640		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	249		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	88.3		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.252		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	205		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	31.2		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	50.6		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	5.4		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
CARB428 PCB TOTALS							
Total PCB	25.2		0.0060	ng/g	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 1	20.5	M	5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 3	58.8		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 4	30.4		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 15	50.1		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 19	36.6		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 37	73.3		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 54	42.5		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 81	48.3		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 104	46.7		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 123	89.3		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 118	53.7		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 114	51.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 105	58.7		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 126	48.3	M	10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 155	41.5		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 167	60.9		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 156	55.7	M	10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 157	54.5		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 169	58.3		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 188	48.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 202	53.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 205	65.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 208	46.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 206	72.2		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 209	56.0		10-145	%	02-FEB-22	24-FEB-22	R5755385

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-38 21-S8-SD-CH-001							
Sampled By: M. Bilal Siddiqui on 05-OCT-21 @ 16:00							
Matrix: Sediment							
OC Pesticides by Method 1699							
alpha-BHC	<0.0084	[U]	0.0084	ng/g	02-FEB-22	08-APR-22	R5769474
beta-BHC	0.029	M,J,R	0.014	ng/g	02-FEB-22	08-APR-22	R5769474
delta-BHC	<0.012	[U]	0.012	ng/g	02-FEB-22	08-APR-22	R5769474
gamma-BHC	0.886		0.011	ng/g	02-FEB-22	08-APR-22	R5769474
Heptachlor	0.0027	M,J,R	0.0016	ng/g	02-FEB-22	08-APR-22	R5769474
Aldrin	0.0044	M,J,R	0.0036	ng/g	02-FEB-22	08-APR-22	R5769474
Heptachlor Epoxide	0.0039	M,J,R	0.0015	ng/g	02-FEB-22	08-APR-22	R5769474
trans-Chlordane	0.045	M,J	0.023	ng/g	02-FEB-22	08-APR-22	R5769474
cis-Chlordane	0.058	M,J	0.020	ng/g	02-FEB-22	08-APR-22	R5769474
Dieldrin	0.045	M,J,R	0.013	ng/g	02-FEB-22	08-APR-22	R5769474
Endrin	0.037	M,J,R	0.015	ng/g	02-FEB-22	08-APR-22	R5769474
Endrin Aldehyde	<0.013	[U]	0.013	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan I	0.024	M,J	0.024	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan II	<0.041	[U]	0.041	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan Sulfate	<0.0074	[U]	0.0074	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDE	0.0781	[J]	0.0036	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDD	0.113	[J]	0.0033	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDT	0.0692	[J]	0.0042	ng/g	02-FEB-22	08-APR-22	R5769474
Methoxychlor	<0.012	[U]	0.012	ng/g	02-FEB-22	08-APR-22	R5769474
Mirex	0.0240	J,R	0.0015	ng/g	02-FEB-22	08-APR-22	R5769474
Surrogate: alpha-BHC, 13C6-	67.0		16-129	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Heptachlor, 13C10-	75.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Oxychlordane, 13C10-	69.0		23-135	%	02-FEB-22	08-APR-22	R5769474
Surrogate: trans-Nonachlor, 13C10-	57.0		14-136	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Dieldrin, 13C12-	59.0		40-151	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Endrin, 13C12-	64.0		35-155	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Endosulfan II, 13C9-	59.0		5-122	%	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDE, 13C12-	65.0		21-125	%	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDT, 13C12-	62.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Mirex, 13C10-	50.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Heptachlor Epoxide A	<0.0092	[U]	0.0092	ng/g	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDD, 13C12-	66.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: gamma-BHC, 13C6-	62.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Methoxychlor, 13C12-	60.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: beta-BHC, 13C6-	60.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: delta-BHC, 13C6-	65.0		11-120	%	02-FEB-22	08-APR-22	R5769474
L2657806-39 21-S8-NG-CH-085							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 16:00							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	81.3		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	4370		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	0.0235		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	0.0111		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	2670		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	13.1		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	1450		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	0.032		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Arsenic (As)-Total	0.515		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-39 21-S8-NG-CH-085							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 16:00							
Matrix: Plant tissue							
Metals in Tissue by CRC ICPMS (DRY)							
Barium (Ba)-Total	26.9		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	0.069		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	10.8		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.281		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	9550		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	2.87		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.736		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	6.66		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	1670		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	1.99		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	3370		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	72.1		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	9.03		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	3.54		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	1630		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	17800		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	69		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	21.9		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	0.0341		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Vanadium (V)-Total	3.17		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	39.5		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	1.40		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
PCB congeners by SIM GC/LRMS							
Total PCB	0.17		0.026	ng/g	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 1	13.3		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 3	31.7		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 4	12.0		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 15	36.3		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 19	10.1		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 37	48.8		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 54	11.7		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 81	36.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 104	20.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 123	51.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 118	33.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 114	29.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 105	31.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 126	41.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 155	44.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 167	44.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 156	37.2	M	10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 157	37.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 169	45.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 188	48.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 202	49.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 205	44.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 208	37.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 206	51.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 209	46.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
OC Pesticides by Method 1699							
alpha-BHC	<3.3	[U]	3.3	ng/g	04-FEB-22	18-APR-22	R5767500

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-39 21-S8-NG-CH-085							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 16:00							
Matrix: Plant tissue							
OC Pesticides by Method 1699							
beta-BHC	<5.1	[U]	5.1	ng/g	04-FEB-22	18-APR-22	R5767500
delta-BHC	<4.2	[U]	4.2	ng/g	04-FEB-22	18-APR-22	R5767500
gamma-BHC	<4.0	[U]	4.0	ng/g	04-FEB-22	18-APR-22	R5767500
Heptachlor	<0.25	[U]	0.25	ng/g	04-FEB-22	14-APR-22	R5767500
Aldrin	<1.5	[U]	1.5	ng/g	04-FEB-22	14-APR-22	R5767500
Heptachlor Epoxide	<2.1	[U]	2.1	ng/g	04-FEB-22	14-APR-22	R5767500
trans-Chlordane	<13	[U]	13	ng/g	04-FEB-22	14-APR-22	R5767500
cis-Chlordane	<12	[U]	12	ng/g	04-FEB-22	14-APR-22	R5767500
Dieldrin	<1.9	[U]	1.9	ng/g	04-FEB-22	14-APR-22	R5767500
Endrin	<3.5	[U]	3.5	ng/g	04-FEB-22	14-APR-22	R5767500
Endrin Aldehyde	<4.8	[U]	4.8	ng/g	04-FEB-22	14-APR-22	R5767500
Endosulfan I	<3.7	[U]	3.7	ng/g	04-FEB-22	18-APR-22	R5767500
Endosulfan II	<5.2	[U]	5.2	ng/g	04-FEB-22	18-APR-22	R5767500
Endosulfan Sulfate	<0.50	[U]	0.50	ng/g	04-FEB-22	18-APR-22	R5767500
4,4-DDE	<3.8	[U]	3.8	ng/g	04-FEB-22	14-APR-22	R5767500
4,4-DDD	<7.6	[U]	7.6	ng/g	04-FEB-22	14-APR-22	R5767500
4,4-DDT	<10	[U]	10	ng/g	04-FEB-22	14-APR-22	R5767500
Methoxychlor	<3.6	[U]	3.6	ng/g	04-FEB-22	18-APR-22	R5767500
Mirex	<0.33	[U]	0.33	ng/g	04-FEB-22	14-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	41.0		16-129	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	83.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	47.0	M,R	23-135	%	04-FEB-22	14-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	60.0	M,R	14-136	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	47.0	M	40-151	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Endrin, 13C12-	46.0	M	35-155	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	48.0		5-122	%	04-FEB-22	18-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	65.0	M	21-125	%	04-FEB-22	14-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	48.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Mirex, 13C10-	61.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	55.0	R	5-150	%	04-FEB-22	14-APR-22	R5767500
Heptachlor Epoxide A	<13	[U]	13	ng/g	04-FEB-22	14-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	37.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	32.0	R	5-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	36.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	42.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.060	M,U	0.060	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	0.136	M,J,B	0.033	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	0.100	M,J,R	0.055	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	0.160	M,J,R	0.046	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	0.130	M,J,R	0.047	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDD	1.75	[J]	0.058	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	8.15	M,J	0.11	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,7,8-TCDF	<0.070	[U]	0.070	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	0.079	M,J	0.025	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	0.072	M,J	0.022	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.52	M,J	0.16	pg/g	01-FEB-22	14-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	0.36	M,J,R	0.14	pg/g	01-FEB-22	14-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	0.44	M,J,R	0.16	pg/g	01-FEB-22	14-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	<0.30	M,U	0.30	pg/g	01-FEB-22	14-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.649	M,J	0.037	pg/g	01-FEB-22	12-MAR-22	R5746458

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-39 21-S8-NG-CH-085							
Sampled By: M. Bilal Siddiqui on 22-SEP-21 @ 16:00							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,4,7,8,9-HpCDF	0.110	M,J,R	0.064	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.851	M,J	0.069	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	0.674		0.060	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	2				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	0.832		0.033	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	3				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	2.38		0.055	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	1.75		0.058	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	0.691		0.070	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	6				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	0.667		0.025	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	5				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.52		0.30	pg/g	01-FEB-22	14-MAR-22	R5746458
Total HxCDF # Homologues	1				01-FEB-22	14-MAR-22	R5746458
Total-HpCDF	0.649		0.064	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	60.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	56.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	69.0	R	32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	69.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	56.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	45.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	60.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	52.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	53.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	49.0		26-152	%	01-FEB-22	14-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	64.0		26-123	%	01-FEB-22	14-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	60.0		29-147	%	01-FEB-22	14-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	54.0		28-136	%	01-FEB-22	14-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	55.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	54.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	63.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.239			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.407			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.456			pg/g	01-FEB-22	12-MAR-22	R5746458
L2657806-40 21-N4-RB-CH-215							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Water							
Total Metals in Water + Hg (CCME/BCWQG)							
Hardness							
Hardness (as CaCO3)	0.94	HTC	0.50	mg/L		17-DEC-21	
Total Mercury in Water by CVAAS or CVAFS							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		04-FEB-22	R5713353
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0250		0.0050	mg/L		17-DEC-21	R5680396
Antimony (Sb)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Arsenic (As)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Barium (Ba)-Total	<0.020		0.020	mg/L		17-DEC-21	R5680396
Beryllium (Be)-Total	<0.00010		0.00010	mg/L		17-DEC-21	R5680396

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-40 21-N4-RB-CH-215							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Water							
Total Metals in Water by CRC ICPMS							
Boron (B)-Total	<0.10		0.10	mg/L		17-DEC-21	R5680396
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		17-DEC-21	R5680396
Calcium (Ca)-Total	0.37		0.10	mg/L		17-DEC-21	R5680396
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Cobalt (Co)-Total	<0.00030		0.00030	mg/L		17-DEC-21	R5680396
Copper (Cu)-Total	0.0048		0.0010	mg/L		17-DEC-21	R5680396
Iron (Fe)-Total	<0.030		0.030	mg/L		17-DEC-21	R5680396
Lead (Pb)-Total	0.00058		0.00050	mg/L		17-DEC-21	R5680396
Lithium (Li)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Magnesium (Mg)-Total	<0.10		0.10	mg/L		17-DEC-21	R5680396
Manganese (Mn)-Total	<0.00030		0.00030	mg/L		17-DEC-21	R5680396
Molybdenum (Mo)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Nickel (Ni)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Potassium (K)-Total	<2.0		2.0	mg/L		17-DEC-21	R5680396
Selenium (Se)-Total	<0.000050		0.000050	mg/L		17-DEC-21	R5680396
Silver (Ag)-Total	<0.000020		0.000020	mg/L		17-DEC-21	R5680396
Sodium (Na)-Total	<2.0		2.0	mg/L		17-DEC-21	R5680396
Sulfur (S)-Total	<0.50		0.50	mg/L		17-DEC-21	R5680396
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		17-DEC-21	R5680396
Tin (Sn)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Titanium (Ti)-Total	<0.010		0.010	mg/L		17-DEC-21	R5680396
Uranium (U)-Total	<0.00020		0.00020	mg/L		17-DEC-21	R5680396
Vanadium (V)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Zinc (Zn)-Total	<0.0050		0.0050	mg/L		17-DEC-21	R5680396
Miscellaneous Parameters							
Silicon (as SiO2)-Total	0.29		0.21	mg/L		17-DEC-21	
L2657806-41 21-N4-FB-CH-213							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Water							
Total Metals in Water + Hg (CCME/BCWQG)							
Hardness							
Hardness (as CaCO3)	<0.50	HTC	0.50	mg/L		08-JAN-22	
Total Mercury in Water by CVAAS or CVAFS							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		04-FEB-22	R5713353
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L		17-DEC-21	R5680396
Antimony (Sb)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Arsenic (As)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Barium (Ba)-Total	<0.020		0.020	mg/L		17-DEC-21	R5680396
Beryllium (Be)-Total	<0.00010		0.00010	mg/L		17-DEC-21	R5680396
Boron (B)-Total	<0.10		0.10	mg/L		17-DEC-21	R5680396
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		17-DEC-21	R5680396
Calcium (Ca)-Total	<0.10		0.10	mg/L		17-DEC-21	R5680396
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Cobalt (Co)-Total	<0.00030		0.00030	mg/L		17-DEC-21	R5680396
Copper (Cu)-Total	0.0013	RRV	0.0010	mg/L		08-JAN-22	R5689162
Iron (Fe)-Total	<0.030		0.030	mg/L		17-DEC-21	R5680396
Lead (Pb)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Lithium (Li)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Magnesium (Mg)-Total	<0.10		0.10	mg/L		17-DEC-21	R5680396
Manganese (Mn)-Total	<0.00030		0.00030	mg/L		17-DEC-21	R5680396

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-41 21-N4-FB-CH-213							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Water							
Total Metals in Water by CRC ICPMS							
Molybdenum (Mo)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Nickel (Ni)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Potassium (K)-Total	<2.0		2.0	mg/L		17-DEC-21	R5680396
Selenium (Se)-Total	<0.000050		0.000050	mg/L		17-DEC-21	R5680396
Silver (Ag)-Total	<0.000020		0.000020	mg/L		17-DEC-21	R5680396
Sodium (Na)-Total	<2.0		2.0	mg/L		17-DEC-21	R5680396
Sulfur (S)-Total	<0.50		0.50	mg/L		17-DEC-21	R5680396
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		17-DEC-21	R5680396
Tin (Sn)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Titanium (Ti)-Total	<0.010		0.010	mg/L		17-DEC-21	R5680396
Uranium (U)-Total	<0.00020		0.00020	mg/L		17-DEC-21	R5680396
Vanadium (V)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Zinc (Zn)-Total	<0.0050		0.0050	mg/L		17-DEC-21	R5680396
Miscellaneous Parameters							
Silicon (as SiO2)-Total	<0.21		0.21	mg/L		08-JAN-22	
L2657806-42 21-E1-RB-CH-217							
Sampled By: M. Bilal Siddiqui on 07-OCT-21							
Matrix: Water							
Total Metals in Water + Hg (CCME/BCWQG)							
Hardness							
Hardness (as CaCO3)	1.69	HTC	0.50	mg/L		17-DEC-21	
Total Mercury in Water by CVAAS or CVAFS							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		04-FEB-22	R5713353
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0318		0.0050	mg/L		17-DEC-21	R5680396
Antimony (Sb)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Arsenic (As)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Barium (Ba)-Total	<0.020		0.020	mg/L		17-DEC-21	R5680396
Beryllium (Be)-Total	<0.00010		0.00010	mg/L		17-DEC-21	R5680396
Boron (B)-Total	<0.10		0.10	mg/L		17-DEC-21	R5680396
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		17-DEC-21	R5680396
Calcium (Ca)-Total	0.51		0.10	mg/L		17-DEC-21	R5680396
Chromium (Cr)-Total	0.0012		0.0010	mg/L		17-DEC-21	R5680396
Cobalt (Co)-Total	<0.00030		0.00030	mg/L		17-DEC-21	R5680396
Copper (Cu)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Iron (Fe)-Total	<0.030		0.030	mg/L		17-DEC-21	R5680396
Lead (Pb)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Lithium (Li)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Magnesium (Mg)-Total	0.10		0.10	mg/L		17-DEC-21	R5680396
Manganese (Mn)-Total	<0.00030		0.00030	mg/L		17-DEC-21	R5680396
Molybdenum (Mo)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Nickel (Ni)-Total	0.0176		0.0010	mg/L		17-DEC-21	R5680396
Potassium (K)-Total	<2.0		2.0	mg/L		17-DEC-21	R5680396
Selenium (Se)-Total	<0.000050		0.000050	mg/L		17-DEC-21	R5680396
Silver (Ag)-Total	<0.000020		0.000020	mg/L		17-DEC-21	R5680396
Sodium (Na)-Total	<2.0		2.0	mg/L		17-DEC-21	R5680396
Sulfur (S)-Total	<0.50		0.50	mg/L		17-DEC-21	R5680396
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		17-DEC-21	R5680396
Tin (Sn)-Total	0.568		0.00050	mg/L		17-DEC-21	R5680396
Titanium (Ti)-Total	<0.010		0.010	mg/L		17-DEC-21	R5680396
Uranium (U)-Total	<0.00020		0.00020	mg/L		17-DEC-21	R5680396

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-42 21-E1-RB-CH-217							
Sampled By: M. Bilal Siddiqui on 07-OCT-21							
Matrix: Water							
Total Metals in Water by CRC ICPMS							
Vanadium (V)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Zinc (Zn)-Total	<0.0050		0.0050	mg/L		17-DEC-21	R5680396
Miscellaneous Parameters							
Silicon (as SiO2)-Total	0.70		0.21	mg/L		17-DEC-21	
L2657806-43 21-E1-FB-CH-218							
Sampled By: M. Bilal Siddiqui on 07-OCT-21							
Matrix: Water							
Total Metals in Water + Hg (CCME/BCWQG)							
Hardness							
Hardness (as CaCO3)	0.75	HTC	0.50	mg/L		17-DEC-21	
Total Mercury in Water by CVAAS or CVAFS							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		04-FEB-22	R5713353
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0164		0.0050	mg/L		17-DEC-21	R5680396
Antimony (Sb)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Arsenic (As)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Barium (Ba)-Total	<0.020		0.020	mg/L		17-DEC-21	R5680396
Beryllium (Be)-Total	<0.00010		0.00010	mg/L		17-DEC-21	R5680396
Boron (B)-Total	<0.10		0.10	mg/L		17-DEC-21	R5680396
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		17-DEC-21	R5680396
Calcium (Ca)-Total	0.30		0.10	mg/L		17-DEC-21	R5680396
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Cobalt (Co)-Total	<0.00030		0.00030	mg/L		17-DEC-21	R5680396
Copper (Cu)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Iron (Fe)-Total	<0.030		0.030	mg/L		17-DEC-21	R5680396
Lead (Pb)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Lithium (Li)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Magnesium (Mg)-Total	<0.10		0.10	mg/L		17-DEC-21	R5680396
Manganese (Mn)-Total	<0.00030		0.00030	mg/L		17-DEC-21	R5680396
Molybdenum (Mo)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Nickel (Ni)-Total	<0.0010		0.0010	mg/L		17-DEC-21	R5680396
Potassium (K)-Total	<2.0		2.0	mg/L		17-DEC-21	R5680396
Selenium (Se)-Total	<0.000050		0.000050	mg/L		17-DEC-21	R5680396
Silver (Ag)-Total	<0.000020		0.000020	mg/L		17-DEC-21	R5680396
Sodium (Na)-Total	<2.0		2.0	mg/L		17-DEC-21	R5680396
Sulfur (S)-Total	<0.50		0.50	mg/L		17-DEC-21	R5680396
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		17-DEC-21	R5680396
Tin (Sn)-Total	0.00256		0.00050	mg/L		17-DEC-21	R5680396
Titanium (Ti)-Total	<0.010		0.010	mg/L		17-DEC-21	R5680396
Uranium (U)-Total	<0.00020		0.00020	mg/L		17-DEC-21	R5680396
Vanadium (V)-Total	<0.00050		0.00050	mg/L		17-DEC-21	R5680396
Zinc (Zn)-Total	<0.0050		0.0050	mg/L		17-DEC-21	R5680396
Miscellaneous Parameters							
Silicon (as SiO2)-Total	2.66		0.21	mg/L		17-DEC-21	
L2657806-44 21-D1-SS-CH-200							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Soil							
Miscellaneous Parameters							
Chloride (Cl)	<5.0		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-44 21-D1-SS-CH-200							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Soil							
Fluoride (F)	4.55		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0472		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	13.8		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	13100		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.28		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	6.34		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	59.4		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	0.60		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	7.1		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.403		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	6430		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	19.4		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	7.05		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	11.5		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	16700		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	16.2		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	3620		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	376		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	2.25		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	16.4		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	527		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	1390		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	<50		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	13.3		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.196		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	95.0		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	33.2		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	49.9		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	1.7		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
CARB428 PCB TOTALS							
Total PCB	1.65		0.0060	ng/g	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 1	45.2		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 3	48.9		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 4	54.1		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 15	53.3		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 19	49.1		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 37	68.1		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 54	54.4		5-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 81	66.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 104	58.2		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 123	77.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 118	67.6		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 114	67.3		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 105	71.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 126	63.6		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 155	60.7		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 167	76.2		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 156	79.2	M	10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 157	73.0		10-145	%	02-FEB-22	24-FEB-22	R5755385

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-44 21-D1-SS-CH-200							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Soil							
CARB428 PCB TOTALS							
Surrogate: 13C12 PCB 169	75.3		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 188	67.0		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 202	72.3		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 205	68.7		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 208	58.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 206	77.8		10-145	%	02-FEB-22	24-FEB-22	R5755385
Surrogate: 13C12 PCB 209	63.1		10-145	%	02-FEB-22	24-FEB-22	R5755385
OC Pesticides by Method 1699							
alpha-BHC	<0.0069	[U]	0.0069	ng/g	02-FEB-22	08-APR-22	R5769474
beta-BHC	<0.010	[U]	0.010	ng/g	02-FEB-22	08-APR-22	R5769474
delta-BHC	<0.0093	[U]	0.0093	ng/g	02-FEB-22	08-APR-22	R5769474
gamma-BHC	0.0144	M,J	0.0087	ng/g	02-FEB-22	08-APR-22	R5769474
Heptachlor	0.00150	M,J,R	0.00071	ng/g	02-FEB-22	08-APR-22	R5769474
Aldrin	<0.0011	[U]	0.0011	ng/g	02-FEB-22	08-APR-22	R5769474
Heptachlor Epoxide	0.0097	M,J,R	0.0011	ng/g	02-FEB-22	08-APR-22	R5769474
trans-Chlordane	<0.025	[U]	0.025	ng/g	02-FEB-22	08-APR-22	R5769474
cis-Chlordane	<0.022	[U]	0.022	ng/g	02-FEB-22	08-APR-22	R5769474
Dieldrin	0.0220	M,J,R	0.0049	ng/g	02-FEB-22	08-APR-22	R5769474
Endrin	0.0123	M,J	0.0061	ng/g	02-FEB-22	08-APR-22	R5769474
Endrin Aldehyde	<0.0054	[U]	0.0054	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan I	<0.0078	[U]	0.0078	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan II	<0.021	[U]	0.021	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan Sulfate	<0.0030	[U]	0.0030	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDE	0.220		0.0044	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDD	0.0065	M,J	0.0047	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDT	0.182		0.0034	ng/g	02-FEB-22	08-APR-22	R5769474
Methoxychlor	<0.0039	[U]	0.0039	ng/g	02-FEB-22	08-APR-22	R5769474
Mirex	0.00890	J,R	0.00049	ng/g	02-FEB-22	08-APR-22	R5769474
Surrogate: alpha-BHC, 13C6-	78.0		16-129	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Heptachlor, 13C10-	86.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Oxychlordane, 13C10-	78.0		23-135	%	02-FEB-22	08-APR-22	R5769474
Surrogate: trans-Nonachlor, 13C10-	68.0		14-136	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Dieldrin, 13C12-	69.0		40-151	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Endrin, 13C12-	74.0		35-155	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Endosulfan II, 13C9-	70.0		5-122	%	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDE, 13C12-	71.0		21-125	%	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDT, 13C12-	73.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Mirex, 13C10-	67.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Heptachlor Epoxide A	<0.0066	[U]	0.0066	ng/g	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDD, 13C12-	73.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: gamma-BHC, 13C6-	76.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Methoxychlor, 13C12-	71.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: beta-BHC, 13C6-	69.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: delta-BHC, 13C6-	76.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	0.091	J,R	0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDD	0.211	[J]	0.044	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDD	0.194	[J]	0.035	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDD	0.434	[J]	0.032	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDD	0.497	M,J	0.032	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDD	6.41		0.087	pg/g	01-FEB-22	10-MAR-22	R5740125

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-44 21-D1-SS-CH-200							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Soil							
Dioxins and Furans HR 1613B							
OCDD	37.2		0.11	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,7,8-TCDF	0.180	J,R	0.092	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8-PeCDF	0.180	J,R	0.059	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,7,8-PeCDF	0.717	[J]	0.048	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8-HxCDF	0.411	[J]	0.026	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,6,7,8-HxCDF	0.500	[J]	0.026	pg/g	01-FEB-22	10-MAR-22	R5740125
2,3,4,6,7,8-HxCDF	0.504	[J]	0.024	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,7,8,9-HxCDF	0.137	[J]	0.036	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,6,7,8-HpCDF	1.98	[J]	0.030	pg/g	01-FEB-22	10-MAR-22	R5740125
1,2,3,4,7,8,9-HpCDF	0.120	J,R	0.041	pg/g	01-FEB-22	10-MAR-22	R5740125
OCDF	2.08	[J]	0.027	pg/g	01-FEB-22	10-MAR-22	R5740125
Total-TCDD	0.451		0.050	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDD # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Total-PeCDD	0.919		0.044	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDD # Homologues	4				01-FEB-22	10-MAR-22	R5740125
Total-HxCDD	5.10		0.035	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDD # Homologues	5				01-FEB-22	10-MAR-22	R5740125
Total-HpCDD	12.3		0.087	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDD # Homologues	2				01-FEB-22	10-MAR-22	R5740125
Total-TCDF	2.80		0.092	pg/g	01-FEB-22	10-MAR-22	R5740125
Total TCDF # Homologues	9				01-FEB-22	10-MAR-22	R5740125
Total-PeCDF	8.89		0.059	pg/g	01-FEB-22	10-MAR-22	R5740125
Total PeCDF # Homologues	8				01-FEB-22	10-MAR-22	R5740125
Total-HxCDF	5.40		0.036	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HxCDF # Homologues	10				01-FEB-22	10-MAR-22	R5740125
Total-HpCDF	3.21		0.041	pg/g	01-FEB-22	10-MAR-22	R5740125
Total HpCDF # Homologues	3				01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDD	78.0		25-164	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDD	93.0		25-181	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	89.0		32-141	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	81.0		28-130	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	100.0		23-140	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-OCDD	114.0		17-157	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,7,8-TCDF	70.0		24-169	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8-PeCDF	83.0		24-185	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,7,8-PeCDF	82.0		21-178	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	78.0		26-152	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	70.0		26-123	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	78.0		29-147	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	80.0		28-136	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	85.0		28-143	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	88.0		26-138	%	01-FEB-22	10-MAR-22	R5740125
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	71.0		35-197	%	01-FEB-22	10-MAR-22	R5740125
Lower Bound PCDD/F TEQ (WHO 2005)	0.789			pg/g	01-FEB-22	10-MAR-22	R5740125
Mid Point PCDD/F TEQ (WHO 2005)	0.905			pg/g	01-FEB-22	10-MAR-22	R5740125
Upper Bound PCDD/F TEQ (WHO 2005)	0.905			pg/g	01-FEB-22	10-MAR-22	R5740125
L2657806-45 21-D5-SB-CH-205							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	11.6		0.50	%		10-FEB-22	R5721122

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-45 21-D5-SB-CH-205							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Plant tissue							
Chloride (Cl)	49		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	3340		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	1.34		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	28.7		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	0.0209		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	3120		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	0.093		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	11.8		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	68.3		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	2510		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	26.3		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	11.1		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	1.07		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	6700		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	19300		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	3.00		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	30.3		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	0.04		0.0060	ng/g	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 1	16.3		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 3	36.6		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 4	16.8		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 15	43.9		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 19	14.3		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 37	56.1		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 54	15.3		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 81	48.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 104	23.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 123	57.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 118	41.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 114	36.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 105	40.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 126	39.5	M	10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 155	49.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 167	50.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 156	46.5	M	10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 157	47.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 169	51.3		10-145	%	03-FEB-22	24-FEB-22	R5755457

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-45 21-D5-SB-CH-205							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Surrogate: 13C12 PCB 188	50.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 202	49.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 205	47.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 208	43.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 206	52.3		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 209	48.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
OC Pesticides by Method 1699							
alpha-BHC	<0.53	[U]	0.53	ng/g	04-FEB-22	18-APR-22	R5767500
beta-BHC	<1.6	[U]	1.6	ng/g	04-FEB-22	18-APR-22	R5767500
delta-BHC	<1.1	[U]	1.1	ng/g	04-FEB-22	18-APR-22	R5767500
gamma-BHC	<0.72	[U]	0.72	ng/g	04-FEB-22	18-APR-22	R5767500
Heptachlor	<0.14	[U]	0.14	ng/g	04-FEB-22	14-APR-22	R5767500
Aldrin	<0.48	[U]	0.48	ng/g	04-FEB-22	14-APR-22	R5767500
Heptachlor Epoxide	<0.71	[U]	0.71	ng/g	04-FEB-22	14-APR-22	R5767500
trans-Chlordane	<1.1	[U]	1.1	ng/g	04-FEB-22	14-APR-22	R5767500
cis-Chlordane	<1.0	[U]	1.0	ng/g	04-FEB-22	14-APR-22	R5767500
Dieldrin	<0.61	[U]	0.61	ng/g	04-FEB-22	14-APR-22	R5767500
Endrin	<1.2	[U]	1.2	ng/g	04-FEB-22	14-APR-22	R5767500
Endrin Aldehyde	<1.3	[U]	1.3	ng/g	04-FEB-22	14-APR-22	R5767500
Endosulfan I	<0.68	[U]	0.68	ng/g	04-FEB-22	18-APR-22	R5767500
Endosulfan II	<1.4	[U]	1.4	ng/g	04-FEB-22	18-APR-22	R5767500
Endosulfan Sulfate	<0.23	[U]	0.23	ng/g	04-FEB-22	18-APR-22	R5767500
4,4-DDE	<1.7	[U]	1.7	ng/g	04-FEB-22	14-APR-22	R5767500
4,4-DDD	<2.3	[U]	2.3	ng/g	04-FEB-22	14-APR-22	R5767500
4,4-DDT	<2.8	[U]	2.8	ng/g	04-FEB-22	14-APR-22	R5767500
Methoxychlor	<1.0	[U]	1.0	ng/g	04-FEB-22	18-APR-22	R5767500
Mirex	<0.092	[U]	0.092	ng/g	04-FEB-22	14-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	27.0		16-129	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	34.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	34.0	M	23-135	%	04-FEB-22	14-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	31.0	M	14-136	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	54.0	M	40-151	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Endrin, 13C12-	44.0	M,R	35-155	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	34.0		5-122	%	04-FEB-22	18-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	38.0	M	21-125	%	04-FEB-22	14-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	33.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Mirex, 13C10-	37.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	32.0	M	5-150	%	04-FEB-22	14-APR-22	R5767500
Heptachlor Epoxide A	<4.6	[U]	4.6	ng/g	04-FEB-22	14-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	24.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	15.0	R	5-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	12.0	R	11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	15.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.011	[U]	0.011	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	0.0146	M,J,B	0.0063	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	0.0095	M,J,R	0.0064	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	0.0100	M,J,R	0.0065	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	0.0091	M,J,R	0.0061	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDD	0.0335	M,J,B	0.0093	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	0.150	M,J,B	0.013	pg/g	01-FEB-22	12-MAR-22	R5746458

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-45 21-D5-SB-CH-205							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
2,3,7,8-TCDF	<0.0044	M,U	0.0044	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	0.0140	M,J,R	0.0036	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	0.0104	M,J	0.0029	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.0111	M,J,B	0.0049	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	0.0134	M,J,B	0.0051	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	0.0126	M,J,B	0.0052	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	0.0092	M,J,B	0.0075	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	<0.0085	[U]	0.0085	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	0.013	M,J,R	0.012	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.060	M,J	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	<0.011	[U]	0.011	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	0.0146		0.0063	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	<0.0065	[U]	0.0065	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	0.0335		0.0093	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	<0.0044	[U]	0.0044	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	0.0104		0.0036	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.0463		0.0075	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDF # Homologues	4				01-FEB-22	12-MAR-22	R5746458
Total-HpCDF	<0.012	[U]	0.012	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	59.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	53.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	75.0		32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	70.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	61.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	57.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	58.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	51.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	50.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	67.0		26-152	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	71.0		26-123	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	64.0		29-147	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	67.0		28-136	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	56.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	59.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	68.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.0227			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.0319			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.0377			pg/g	01-FEB-22	12-MAR-22	R5746458
L2657806-46 21-D3-NG-CH-203							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	72.0		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	6920		10	mg/kg	10-FEB-22	10-FEB-22	R5720461

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-46 21-D3-NG-CH-203							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Plant tissue							
Mercury (Hg)-Total	0.0144		0.0050	mg/kg	14-FEB-22	01-MAR-22	R5730642
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sulfur (S)-Total	2810		100	mg/kg	14-FEB-22	17-FEB-22	R5727266
Titanium (Ti)-Total	0.29		0.25	mg/kg	14-FEB-22	17-FEB-22	R5727266
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	33.4		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Antimony (Sb)-Total	0.011		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Arsenic (As)-Total	0.026		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Barium (Ba)-Total	8.23		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Beryllium (Be)-Total	<0.010		0.010	mg/kg	14-FEB-22	17-FEB-22	R5727266
Boron (B)-Total	8.0		1.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cadmium (Cd)-Total	0.0161		0.0050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Calcium (Ca)-Total	8940		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Chromium (Cr)-Total	0.175		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Cobalt (Co)-Total	0.024		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Copper (Cu)-Total	9.11		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Iron (Fe)-Total	83.8		3.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Lead (Pb)-Total	0.254		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Magnesium (Mg)-Total	2230		2.0	mg/kg	14-FEB-22	17-FEB-22	R5727266
Manganese (Mn)-Total	42.8		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Molybdenum (Mo)-Total	12.1		0.020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Nickel (Ni)-Total	0.34		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Phosphorus (P)-Total	3330		10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Potassium (K)-Total	27700		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Sodium (Na)-Total	23		20	mg/kg	14-FEB-22	17-FEB-22	R5727266
Strontium (Sr)-Total	13.2		0.050	mg/kg	14-FEB-22	17-FEB-22	R5727266
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	14-FEB-22	17-FEB-22	R5727266
Vanadium (V)-Total	<0.10		0.10	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zinc (Zn)-Total	30.6		0.50	mg/kg	14-FEB-22	17-FEB-22	R5727266
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	14-FEB-22	17-FEB-22	R5727266
PCB congeners by SIM GC/LRMS							
Total PCB	0.75		0.018	ng/g	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 1	19.1		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 3	35.3		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 4	16.0		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 15	34.4		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 19	12.3		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 37	42.0		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 54	12.7		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 81	34.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 104	19.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 123	43.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 118	27.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 114	24.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 105	26.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 126	31.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 155	32.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 167	32.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 156	30.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 157	30.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 169	38.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 188	34.0		10-145	%	03-FEB-22	24-FEB-22	R5755457

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-46 21-D3-NG-CH-203							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Surrogate: 13C12 PCB 202	34.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 205	36.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 208	28.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 206	40.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 209	36.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
OC Pesticides by Method 1699							
alpha-BHC	<3.0	[U]	3.0	ng/g	04-FEB-22	18-APR-22	R5767500
beta-BHC	<4.3	[U]	4.3	ng/g	04-FEB-22	18-APR-22	R5767500
delta-BHC	<3.9	[U]	3.9	ng/g	04-FEB-22	18-APR-22	R5767500
gamma-BHC	<3.5	[U]	3.5	ng/g	04-FEB-22	18-APR-22	R5767500
Heptachlor	<0.88	[U]	0.88	ng/g	04-FEB-22	14-APR-22	R5767500
Aldrin	<3.0	[U]	3.0	ng/g	04-FEB-22	14-APR-22	R5767500
Heptachlor Epoxide	<4.3	[U]	4.3	ng/g	04-FEB-22	14-APR-22	R5767500
trans-Chlordane	<6.8	[U]	6.8	ng/g	04-FEB-22	14-APR-22	R5767500
cis-Chlordane	<6.3	[U]	6.3	ng/g	04-FEB-22	14-APR-22	R5767500
Dieldrin	<3.2	[U]	3.2	ng/g	04-FEB-22	14-APR-22	R5767500
Endrin	<7.6	[U]	7.6	ng/g	04-FEB-22	14-APR-22	R5767500
Endrin Aldehyde	<7.2	[U]	7.2	ng/g	04-FEB-22	14-APR-22	R5767500
Endosulfan I	<2.9	[U]	2.9	ng/g	04-FEB-22	18-APR-22	R5767500
Endosulfan II	<4.8	[U]	4.8	ng/g	04-FEB-22	18-APR-22	R5767500
Endosulfan Sulfate	<0.93	[U]	0.93	ng/g	04-FEB-22	18-APR-22	R5767500
4,4-DDE	<9.2	[U]	9.2	ng/g	04-FEB-22	14-APR-22	R5767500
4,4-DDD	<7.3	[U]	7.3	ng/g	04-FEB-22	14-APR-22	R5767500
4,4-DDT	<13	[U]	13	ng/g	04-FEB-22	14-APR-22	R5767500
Methoxychlor	<4.3	[U]	4.3	ng/g	04-FEB-22	18-APR-22	R5767500
Mirex	<0.49	[U]	0.49	ng/g	04-FEB-22	14-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	52.0		16-129	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	51.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	43.0	M	23-135	%	04-FEB-22	14-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	67.0	M	14-136	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	56.0	M	40-151	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Endrin, 13C12-	41.0	M,R	35-155	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	48.0		5-122	%	04-FEB-22	18-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	58.0	M,R	21-125	%	04-FEB-22	14-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	40.0	M	5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: Mirex, 13C10-	49.0		5-120	%	04-FEB-22	14-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	53.0		5-150	%	04-FEB-22	14-APR-22	R5767500
Heptachlor Epoxide A	<27	[U]	27	ng/g	04-FEB-22	14-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	54.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	27.0	R	5-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	50.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	52.0		11-120	%	04-FEB-22	18-APR-22	R5767500
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.024	[U]	0.024	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	0.054	M,J,B	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	0.071	M,J,R	0.022	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	0.120	M,J,R	0.023	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	0.120	J,R	0.021	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDD	1.62	[J]	0.037	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	4.91	[J]	0.10	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,7,8-TCDF	0.058	M,J,R	0.029	pg/g	01-FEB-22	12-MAR-22	R5746458

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-46 21-D3-NG-CH-203							
Sampled By: M. Bilal Siddiqui on 20-SEP-21							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,7,8-PeCDF	0.052	M,J	0.015	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	0.041	M,J	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.075	J,B	0.026	pg/g	01-FEB-22	16-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	0.072	J,B	0.028	pg/g	01-FEB-22	16-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	0.094	M,J,B	0.032	pg/g	01-FEB-22	16-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	<0.038	[U]	0.038	pg/g	01-FEB-22	16-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.313	M,J,B	0.026	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	<0.037	[U]	0.037	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.542	M,J	0.067	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	0.222		0.024	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	2				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	1.73		0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	5				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	1.89		0.023	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	2				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	1.62		0.037	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	0.599		0.029	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	6				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	0.454		0.015	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	5				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.865		0.038	pg/g	01-FEB-22	16-MAR-22	R5746458
Total HxCDF # Homologues	6				01-FEB-22	16-MAR-22	R5746458
Total-HpCDF	0.313		0.037	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	61.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	52.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	63.0		32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	61.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	43.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	33.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	59.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	49.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	45.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	67.0		26-152	%	01-FEB-22	16-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	61.0		26-123	%	01-FEB-22	16-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	58.0		29-147	%	01-FEB-22	16-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	59.0		28-136	%	01-FEB-22	16-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	41.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	43.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	62.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.113			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.164			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.178			pg/g	01-FEB-22	12-MAR-22	R5746458
L2657806-47 21-D8-SU-CH-210							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	77.8		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	374		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-47 21-D8-SU-CH-210							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Plant tissue							
Silver (Ag)-Total	0.0057		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	440		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	9.74		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	436		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	0.011		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	0.160		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	7.70		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	0.019		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	12.6		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	0.0851		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	1500		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	0.824		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	0.269		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	5.74		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	532		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	0.596		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	2110		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	27.2		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	0.139		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	0.62		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	1980		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	9350		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	227		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	7.88		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	0.0094		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	0.97		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	12.1		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	0.50		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	<0.022		0.022	ng/g	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 1	10.9		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 3	28.7		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 4	11.4		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 15	34.9		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 19	10.2		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 37	45.5		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 54	11.1		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 81	35.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 104	18.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 123	46.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 118	32.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 114	29.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 105	30.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 126	30.4	M	10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 155	41.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 167	42.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 156	37.2	M	10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 157	37.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 169	44.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 188	44.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 202	44.8		10-145	%	03-FEB-22	24-FEB-22	R5755457

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-47 21-D8-SU-CH-210							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Surrogate: 13C12 PCB 205	41.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 208	40.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 206	47.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 209	44.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
OC Pesticides by Method 1699							
alpha-BHC	<0.84	[U]	0.84	ng/g	04-FEB-22	13-APR-22	R5767500
beta-BHC	<1.5	[U]	1.5	ng/g	04-FEB-22	13-APR-22	R5767500
delta-BHC	<1.2	[U]	1.2	ng/g	04-FEB-22	13-APR-22	R5767500
gamma-BHC	<0.95	[U]	0.95	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor	<0.028	[U]	0.028	ng/g	04-FEB-22	13-APR-22	R5767500
Aldrin	<0.082	[U]	0.082	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide	<0.066	[U]	0.066	ng/g	04-FEB-22	13-APR-22	R5767500
trans-Chlordane	<0.40	[U]	0.40	ng/g	04-FEB-22	13-APR-22	R5767500
cis-Chlordane	<0.36	[U]	0.36	ng/g	04-FEB-22	13-APR-22	R5767500
Dieldrin	<0.19	[U]	0.19	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin	<0.49	[U]	0.49	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin Aldehyde	<0.29	[U]	0.29	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan I	<0.54	[U]	0.54	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan II	<0.70	[U]	0.70	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan Sulfate	<0.11	[U]	0.11	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDE	<0.33	[U]	0.33	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDD	<0.31	[U]	0.31	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDT	<0.52	[U]	0.52	ng/g	04-FEB-22	13-APR-22	R5767500
Methoxychlor	<0.21	[U]	0.21	ng/g	04-FEB-22	13-APR-22	R5767500
Mirex	<0.017	[U]	0.017	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	34.0		16-129	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	25.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	37.0		23-135	%	04-FEB-22	13-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	45.0		14-136	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	49.0		40-151	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endrin, 13C12-	23.0	G	35-155	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	41.0		5-122	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	46.0		21-125	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	27.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Mirex, 13C10-	43.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	36.0		5-150	%	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide A	<0.45	[U]	0.45	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	37.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	24.0	M	5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	25.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	36.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Note: 13C12-Endrin ES % recovery slightly below the method limit, isotope dilution calculation for native target is recovery corrected , impact to data quality is minimal							
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.12	[U]	0.12	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	<0.037	M,U	0.037	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	0.064	M,J	0.048	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	<0.049	M,U	0.049	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	<0.046	M,U	0.046	pg/g	01-FEB-22	12-MAR-22	R5746458

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-47 21-D8-SU-CH-210							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,4,6,7,8-HpCDD	0.263	M,J,B	0.062	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	1.37	J,B	0.068	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,7,8-TCDF	<0.060	[U]	0.060	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	0.066	M,J	0.029	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	0.027	M,J,R	0.023	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.056	M,J,B	0.025	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	<0.024	[U]	0.024	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	0.039	M,J,B	0.024	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	0.047	J,B	0.038	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.125	M,J,B	0.033	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	<0.049	[U]	0.049	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.221	M,J	0.041	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	<0.12	[U]	0.12	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	<0.037	[U]	0.037	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	0.064		0.049	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	0.263		0.062	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	<0.060	[U]	0.060	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	0.066		0.029	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.142		0.038	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDF # Homologues	3				01-FEB-22	12-MAR-22	R5746458
Total-HpCDF	0.125		0.049	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	24.0	G	25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	27.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	38.0	M	32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	30.0	M	28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	33.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	29.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	24.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	24.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	25.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	33.0		26-152	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	32.0		26-123	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	34.0		29-147	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	33.0		28-136	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	28.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	31.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	31.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.0269			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.123			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.210			pg/g	01-FEB-22	12-MAR-22	R5746458
Note: Sample is outside method recovery criteria for select labelled targets. Natives are quantified using isotope dilution and are inherently recovery corrected.							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-48 21-D6-FC-CH-207							
Sampled By: M. Bilal Siddiqui on 04-OCT-21							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	20.2		0.50	%		10-FEB-22	R5721122
Chloride (Cl)	425		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	790		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	2.3		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	55		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	1.98		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	18.9		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	1080		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	3.26		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	2.59		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	3120		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	3700		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	0.081		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	14.3		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	<0.0060		0.0060	ng/g	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 1	11.2		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 3	38.8		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 4	12.9		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 15	49.9		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 19	12.2		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 37	63.0		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 54	14.1		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 81	44.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 104	21.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 123	56.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 118	38.3		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 114	32.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 105	35.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 126	37.1	M	10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 155	57.8		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 167	51.0		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 156	38.0	M	10-145	%	03-FEB-22	24-FEB-22	R5755457

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-48 21-D6-FC-CH-207							
Sampled By: M. Bilal Siddiqui on 04-OCT-21							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Surrogate: 13C12 PCB 157	41.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 169	55.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 188	59.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 202	60.3		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 205	50.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 208	43.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 206	57.2		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 209	55.9		10-145	%	03-FEB-22	24-FEB-22	R5755457
OC Pesticides by Method 1699							
alpha-BHC	<0.096	[U]	0.096	ng/g	04-FEB-22	13-APR-22	R5767500
beta-BHC	<0.24	[U]	0.24	ng/g	04-FEB-22	13-APR-22	R5767500
delta-BHC	<0.20	[U]	0.20	ng/g	04-FEB-22	13-APR-22	R5767500
gamma-BHC	<0.12	[U]	0.12	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor	<0.0082	[U]	0.0082	ng/g	04-FEB-22	13-APR-22	R5767500
Aldrin	<0.013	[U]	0.013	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide	<0.016	[U]	0.016	ng/g	04-FEB-22	13-APR-22	R5767500
trans-Chlordane	<0.070	[U]	0.070	ng/g	04-FEB-22	13-APR-22	R5767500
cis-Chlordane	<0.063	[U]	0.063	ng/g	04-FEB-22	13-APR-22	R5767500
Dieldrin	<0.031	[U]	0.031	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin	<0.055	[U]	0.055	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin Aldehyde	<0.024	[U]	0.024	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan I	<0.072	[U]	0.072	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan II	<0.090	[U]	0.090	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan Sulfate	<0.019	[U]	0.019	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDE	<0.036	[U]	0.036	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDD	<0.053	[U]	0.053	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDT	<0.057	[U]	0.057	ng/g	04-FEB-22	13-APR-22	R5767500
Methoxychlor	<0.047	[U]	0.047	ng/g	04-FEB-22	13-APR-22	R5767500
Mirex	<0.0023	[U]	0.0023	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	69.0		16-129	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	44.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	61.0		23-135	%	04-FEB-22	13-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	70.0		14-136	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	76.0		40-151	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endrin, 13C12-	47.0		35-155	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	70.0		5-122	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	76.0		21-125	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	40.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Mirex, 13C10-	62.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	54.0		5-150	%	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide A	<0.11	[U]	0.11	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	67.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	28.0	M,R	5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	41.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	54.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.0083	[U]	0.0083	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	<0.0065	M,U	0.0065	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	0.0096	M,J,R	0.0074	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	0.0120	M,J,R	0.0077	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	<0.0070	[U]	0.0070	pg/g	01-FEB-22	12-MAR-22	R5746458

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-48 21-D6-FC-CH-207							
Sampled By: M. Bilal Siddiqui on 04-OCT-21							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
1,2,3,4,6,7,8-HpCDD	0.029	M,J,B	0.013	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	0.141	M,J,B	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,7,8-TCDF	<0.0040	[U]	0.0040	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	0.0140	M,J,R	0.0031	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	0.0067	J,R	0.0026	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.0091	M,J,B	0.0045	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	0.0087	M,J,B	0.0045	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	0.0106	M,J,B	0.0045	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	0.0139	M,J,B	0.0068	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.0100	M,J,R	0.0039	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	0.0080	M,J,R	0.0058	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.0400	M,J,R	0.0085	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	<0.0083	[U]	0.0083	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	<0.0065	[U]	0.0065	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	<0.0077	[U]	0.0077	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	0.029		0.013	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	<0.0040	[U]	0.0040	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	<0.0031	[U]	0.0031	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.0423		0.0068	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDF # Homologues	4				01-FEB-22	12-MAR-22	R5746458
Total-HpCDF	<0.0058	[U]	0.0058	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	65.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	59.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	77.0		32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	71.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	60.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	55.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	63.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	56.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	56.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	70.0		26-152	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	67.0		26-123	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	70.0		29-147	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	67.0		28-136	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	57.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	57.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	69.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.00456			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.0173			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.0252			pg/g	01-FEB-22	12-MAR-22	R5746458
L2657806-49 21-D4-SD-CH-204							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Sediment							
Miscellaneous Parameters							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-49 21-D4-SD-CH-204							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Sediment							
Chloride (Cl)	31.9		5.0	mg/kg	14-FEB-22	27-FEB-22	R5730750
Cyanide, Total	<0.050		0.050	mg/kg	10-MAR-22	10-MAR-22	R5740062
Fluoride (F)	5.68		0.20	mg/kg	09-JAN-22	13-JAN-22	R5697072
Mercury (Hg)	0.0355		0.0050	mg/kg	09-JAN-22	13-JAN-22	R5694861
Moisture	46.1		0.25	%		09-JAN-22	R5691798
Metals in Soil by CRC ICPMS							
Aluminum (Al)	22500		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Antimony (Sb)	0.25		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Arsenic (As)	5.94		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Barium (Ba)	120		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Beryllium (Be)	1.03		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Boron (B)	19.7		5.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cadmium (Cd)	0.317		0.020	mg/kg	09-JAN-22	13-JAN-22	R5694779
Calcium (Ca)	62900		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Chromium (Cr)	36.1		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Cobalt (Co)	12.4		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Copper (Cu)	22.8		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Iron (Fe)	27700		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Lead (Pb)	13.7		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Magnesium (Mg)	20800		20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Manganese (Mn)	556		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Molybdenum (Mo)	1.46		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Nickel (Ni)	34.1		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Phosphorus (P)	922		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Potassium (K)	3770		100	mg/kg	09-JAN-22	13-JAN-22	R5694779
Silver (Ag)	<0.10		0.10	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sodium (Na)	218		50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Strontium (Sr)	98.1		0.50	mg/kg	09-JAN-22	13-JAN-22	R5694779
Sulfur (S)	<1000		1000	mg/kg	09-JAN-22	13-JAN-22	R5694779
Thallium (Tl)	0.243		0.050	mg/kg	09-JAN-22	13-JAN-22	R5694779
Titanium (Ti)	123		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Vanadium (V)	42.7		0.20	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zinc (Zn)	71.9		2.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
Zirconium (Zr)	3.5		1.0	mg/kg	09-JAN-22	13-JAN-22	R5694779
CARB428 PCB TOTALS							
Total PCB	3.11		0.0090	ng/g	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 1	16.1		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 3	17.7		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 4	18.3		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 15	16.5		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 19	15.1		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 37	21.2		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 54	18.2		5-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 81	20.5		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 104	21.2		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 123	26.5		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 118	22.1		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 114	21.9		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 105	23.5		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 126	19.6		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 155	22.5		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 167	25.1		10-145	%	02-FEB-22	12-MAR-22	R5755385

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-49 21-D4-SD-CH-204							
Sampled By: M. Bilal Siddiqui on 21-SEP-21							
Matrix: Sediment							
CARB428 PCB TOTALS							
Surrogate: 13C12 PCB 156	25.0	M	10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 157	24.2		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 169	24.1		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 188	24.0		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 202	24.4		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 205	24.2		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 208	22.0		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 206	26.5		10-145	%	02-FEB-22	12-MAR-22	R5755385
Surrogate: 13C12 PCB 209	21.2		10-145	%	02-FEB-22	12-MAR-22	R5755385
OC Pesticides by Method 1699							
alpha-BHC	<0.011	[U]	0.011	ng/g	02-FEB-22	08-APR-22	R5769474
beta-BHC	<0.018	[U]	0.018	ng/g	02-FEB-22	08-APR-22	R5769474
delta-BHC	<0.016	[U]	0.016	ng/g	02-FEB-22	08-APR-22	R5769474
gamma-BHC	<0.014	[U]	0.014	ng/g	02-FEB-22	08-APR-22	R5769474
Heptachlor	0.0053	M,J,R	0.0013	ng/g	02-FEB-22	08-APR-22	R5769474
Aldrin	<0.0026	[U]	0.0026	ng/g	02-FEB-22	08-APR-22	R5769474
Heptachlor Epoxide	0.0169	M,J	0.0017	ng/g	02-FEB-22	08-APR-22	R5769474
trans-Chlordane	<0.030	M,U	0.030	ng/g	02-FEB-22	08-APR-22	R5769474
cis-Chlordane	0.035	M,J,R	0.027	ng/g	02-FEB-22	08-APR-22	R5769474
Dieldrin	0.071	M,J	0.013	ng/g	02-FEB-22	08-APR-22	R5769474
Endrin	<0.017	[U]	0.017	ng/g	02-FEB-22	08-APR-22	R5769474
Endrin Aldehyde	<0.0097	[U]	0.0097	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan I	0.090	M,J	0.041	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan II	<0.068	[U]	0.068	ng/g	02-FEB-22	08-APR-22	R5769474
Endosulfan Sulfate	0.0160	M,J,R	0.0087	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDE	0.205		0.0067	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDD	0.0210	M,J,R	0.0088	ng/g	02-FEB-22	08-APR-22	R5769474
4,4-DDT	0.138	[J]	0.023	ng/g	02-FEB-22	08-APR-22	R5769474
Methoxychlor	<0.031	[U]	0.031	ng/g	02-FEB-22	08-APR-22	R5769474
Mirex	0.0077	M,J,R	0.0048	ng/g	02-FEB-22	08-APR-22	R5769474
Surrogate: alpha-BHC, 13C6-	62.0		16-129	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Heptachlor, 13C10-	68.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Oxychlordane, 13C10-	59.0		23-135	%	02-FEB-22	08-APR-22	R5769474
Surrogate: trans-Nonachlor, 13C10-	50.0		14-136	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Dieldrin, 13C12-	52.0		40-151	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Endrin, 13C12-	52.0		35-155	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Endosulfan II, 13C9-	37.0		5-122	%	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDE, 13C12-	50.0		21-125	%	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDT, 13C12-	25.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Mirex, 13C10-	17.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Heptachlor Epoxide A	<0.010	[U]	0.010	ng/g	02-FEB-22	08-APR-22	R5769474
Surrogate: 4,4'-DDD, 13C12-	33.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: gamma-BHC, 13C6-	60.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: Methoxychlor, 13C12-	17.0		5-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: beta-BHC, 13C6-	52.0		11-120	%	02-FEB-22	08-APR-22	R5769474
Surrogate: delta-BHC, 13C6-	57.0		11-120	%	02-FEB-22	08-APR-22	R5769474
L2657806-50 21-D7-WW-CH-209							
Sampled By: M. Bilal Siddiqui on 09-JUL-21							
Matrix: Plant tissue							
Miscellaneous Parameters							
% Moisture	21.4		0.50	%		10-FEB-22	R5721122

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-50 21-D7-WW-CH-209							
Sampled By: M. Bilal Siddiqui on 09-JUL-21							
Matrix: Plant tissue							
Chloride (Cl)	271		10	mg/kg	10-FEB-22	10-FEB-22	R5720461
Mercury (Hg)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	02-MAR-22	R5731028
Silver (Ag)-Total	<0.0050		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sulfur (S)-Total	1390		100	mg/kg	11-FEB-22	14-FEB-22	R5724000
Titanium (Ti)-Total	<0.25		0.25	mg/kg	11-FEB-22	14-FEB-22	R5724000
Metals in Tissue by CRC ICPMS (DRY)							
Aluminum (Al)-Total	2.7		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Antimony (Sb)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Arsenic (As)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Barium (Ba)-Total	1.97		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Beryllium (Be)-Total	<0.010		0.010	mg/kg	11-FEB-22	14-FEB-22	R5724000
Boron (B)-Total	<1.0		1.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cadmium (Cd)-Total	0.0862		0.0050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Calcium (Ca)-Total	570		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Chromium (Cr)-Total	<0.050		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Cobalt (Co)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Copper (Cu)-Total	5.29		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Iron (Fe)-Total	48.6		3.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Lead (Pb)-Total	<0.020		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Magnesium (Mg)-Total	1390		2.0	mg/kg	11-FEB-22	14-FEB-22	R5724000
Manganese (Mn)-Total	15.0		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Molybdenum (Mo)-Total	1.18		0.020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Nickel (Ni)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Phosphorus (P)-Total	3660		10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Potassium (K)-Total	3550		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Sodium (Na)-Total	<20		20	mg/kg	11-FEB-22	14-FEB-22	R5724000
Strontium (Sr)-Total	1.72		0.050	mg/kg	11-FEB-22	14-FEB-22	R5724000
Thallium (Tl)-Total	<0.0020		0.0020	mg/kg	11-FEB-22	14-FEB-22	R5724000
Vanadium (V)-Total	<0.10		0.10	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zinc (Zn)-Total	20.9		0.50	mg/kg	11-FEB-22	14-FEB-22	R5724000
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	11-FEB-22	14-FEB-22	R5724000
PCB congeners by SIM GC/LRMS							
Total PCB	0.027		0.0060	ng/g	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 1	14.4		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 3	41.3		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 4	13.7		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 15	41.9		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 19	12.5		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 37	50.5		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 54	14.7		5-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 81	35.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 104	16.3		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 123	48.3		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 118	29.5		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 114	25.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 105	27.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 126	34.1		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 155	41.3		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 167	38.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 156	32.4	M	10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 157	35.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 169	44.5		10-145	%	03-FEB-22	24-FEB-22	R5755457

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-50 21-D7-WW-CH-209							
Sampled By: M. Bilal Siddiqui on 09-JUL-21							
Matrix: Plant tissue							
PCB congeners by SIM GC/LRMS							
Surrogate: 13C12 PCB 188	42.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 202	41.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 205	37.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 208	36.6		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 206	42.4		10-145	%	03-FEB-22	24-FEB-22	R5755457
Surrogate: 13C12 PCB 209	41.7		10-145	%	03-FEB-22	24-FEB-22	R5755457
OC Pesticides by Method 1699							
alpha-BHC	<0.030	[U]	0.030	ng/g	04-FEB-22	13-APR-22	R5767500
beta-BHC	<0.070	[U]	0.070	ng/g	04-FEB-22	13-APR-22	R5767500
delta-BHC	<0.052	[U]	0.052	ng/g	04-FEB-22	13-APR-22	R5767500
gamma-BHC	<0.042	[U]	0.042	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor	<0.0033	[U]	0.0033	ng/g	04-FEB-22	13-APR-22	R5767500
Aldrin	<0.0040	[U]	0.0040	ng/g	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide	<0.0032	[U]	0.0032	ng/g	04-FEB-22	13-APR-22	R5767500
trans-Chlordane	<0.031	[U]	0.031	ng/g	04-FEB-22	13-APR-22	R5767500
cis-Chlordane	<0.028	[U]	0.028	ng/g	04-FEB-22	13-APR-22	R5767500
Dieldrin	0.010	[U]	0.010	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin	<0.016	[U]	0.016	ng/g	04-FEB-22	13-APR-22	R5767500
Endrin Aldehyde	<0.010	[U]	0.010	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan I	<0.020	[U]	0.020	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan II	<0.038	[U]	0.038	ng/g	04-FEB-22	13-APR-22	R5767500
Endosulfan Sulfate	<0.0081	[U]	0.0081	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDE	<0.011	M,J,R	0.011	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDD	<0.017	[U]	0.017	ng/g	04-FEB-22	13-APR-22	R5767500
4,4-DDT	<0.023	[U]	0.023	ng/g	04-FEB-22	13-APR-22	R5767500
Methoxychlor	<0.023	[U]	0.023	ng/g	04-FEB-22	13-APR-22	R5767500
Mirex	<0.00092	[U]	0.00092	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: alpha-BHC, 13C6-	62.0		16-129	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Heptachlor, 13C10-	44.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Oxychlordane, 13C10-	61.0		23-135	%	04-FEB-22	13-APR-22	R5767500
Surrogate: trans-Nonachlor, 13C10-	68.0		14-136	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Dieldrin, 13C12-	70.0		40-151	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endrin, 13C12-	56.0		35-155	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Endosulfan II, 13C9-	62.0		5-122	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDE, 13C12-	70.0		21-125	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDT, 13C12-	42.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Mirex, 13C10-	47.0		5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: 4,4'-DDD, 13C12-	54.0		5-150	%	04-FEB-22	13-APR-22	R5767500
Heptachlor Epoxide A	<0.022	[U]	0.022	ng/g	04-FEB-22	13-APR-22	R5767500
Surrogate: gamma-BHC, 13C6-	57.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: Methoxychlor, 13C12-	26.0	M,R	5-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: beta-BHC, 13C6-	41.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Surrogate: delta-BHC, 13C6-	55.0		11-120	%	04-FEB-22	13-APR-22	R5767500
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.0096	[U]	0.0096	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDD	<0.0089	[U]	0.0089	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDD	<0.010	[U]	0.010	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,6,7,8-HxCDD	<0.010	[U]	0.010	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8,9-HxCDD	<0.0094	[U]	0.0094	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDD	0.0812	M,J,B	0.0078	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDD	0.334	M,J,B	0.014	pg/g	01-FEB-22	12-MAR-22	R5746458

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657806-50 21-D7-WW-CH-209							
Sampled By: M. Bilal Siddiqui on 09-JUL-21							
Matrix: Plant tissue							
Dioxins and Furans HR 1613B							
2,3,7,8-TCDF	0.0124	M,J	0.0093	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,7,8-PeCDF	0.0107	[J]	0.0057	pg/g	01-FEB-22	12-MAR-22	R5746458
2,3,4,7,8-PeCDF	0.0045	M,J	0.0045	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8-HxCDF	0.050	M,J,B	0.042	pg/g	01-FEB-22	14-MAR-22	R5746458
1,2,3,6,7,8-HxCDF	<0.039	M,U	0.039	pg/g	01-FEB-22	14-MAR-22	R5746458
2,3,4,6,7,8-HxCDF	<0.043	M,U	0.043	pg/g	01-FEB-22	14-MAR-22	R5746458
1,2,3,7,8,9-HxCDF	<0.084	M,U	0.084	pg/g	01-FEB-22	14-MAR-22	R5746458
1,2,3,4,6,7,8-HpCDF	0.0150	M,J,R	0.0046	pg/g	01-FEB-22	12-MAR-22	R5746458
1,2,3,4,7,8,9-HpCDF	<0.0074	M,U	0.0074	pg/g	01-FEB-22	12-MAR-22	R5746458
OCDF	0.0410	J,R	0.0091	pg/g	01-FEB-22	12-MAR-22	R5746458
Total-TCDD	<0.0096	[U]	0.0096	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-PeCDD	<0.0089	[U]	0.0089	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDD # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Total-HxCDD	0.077		0.010	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HxCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-HpCDD	0.0812		0.0078	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDD # Homologues	1				01-FEB-22	12-MAR-22	R5746458
Total-TCDF	0.0246		0.0093	pg/g	01-FEB-22	12-MAR-22	R5746458
Total TCDF # Homologues	2				01-FEB-22	12-MAR-22	R5746458
Total-PeCDF	0.0341		0.0057	pg/g	01-FEB-22	12-MAR-22	R5746458
Total PeCDF # Homologues	3				01-FEB-22	12-MAR-22	R5746458
Total-HxCDF	0.179		0.084	pg/g	01-FEB-22	14-MAR-22	R5746458
Total HxCDF # Homologues	4				01-FEB-22	14-MAR-22	R5746458
Total-HpCDF	<0.0074	[U]	0.0074	pg/g	01-FEB-22	12-MAR-22	R5746458
Total HpCDF # Homologues	0				01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDD	70.0		25-164	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDD	66.0		25-181	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	84.0		32-141	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	77.0		28-130	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	64.0		23-140	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-OCDD	57.0		17-157	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,7,8-TCDF	68.0		24-169	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8-PeCDF	61.0		21-192	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-2,3,4,7,8-PeCDF	62.0		21-178	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	63.0		26-152	%	01-FEB-22	14-MAR-22	R5746458
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	78.0		26-123	%	01-FEB-22	14-MAR-22	R5746458
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	76.0		29-147	%	01-FEB-22	14-MAR-22	R5746458
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	66.0		28-136	%	01-FEB-22	14-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	67.0		28-143	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	64.0		26-138	%	01-FEB-22	12-MAR-22	R5746458
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	62.0		31-197	%	01-FEB-22	12-MAR-22	R5746458
Lower Bound PCDD/F TEQ (WHO 2005)	0.00882			pg/g	01-FEB-22	12-MAR-22	R5746458
Mid Point PCDD/F TEQ (WHO 2005)	0.0280			pg/g	01-FEB-22	12-MAR-22	R5746458
Upper Bound PCDD/F TEQ (WHO 2005)	0.0471			pg/g	01-FEB-22	12-MAR-22	R5746458

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Individual Samples Listed:

Lab Sample ID	Client Sample ID	Qualifier	Description
L2657806-40	21-N4-RB-CH-215	WSMT	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
L2657806-42	21-E1-RB-CH-217	WSMT	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

Sample Parameter Qualifier Key:

Qualifier	Description
A	Method Blank exceeds ALS DQO. Refer to narrative comments for further information.
G	QC result did not meet ALS DQO. Refer to narrative comments for further information.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
J,B	The analyte was detected below the calibrated range but above the EDL, and was detected in the Method Blank at >10% of the sample concentration.
J,R	The analyte was detected below the calibrated range but above the EDL, and the ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
M	A peak has been manually integrated.
M,J	A peak has been manually integrated, and the analyte was detected below the calibrated range but above the EDL.
M,J,B	A peak has been manually integrated. Target analyte was detected below the calibrated range but above the EDL. Compound was detected in the method blank at >10% of the sample concentration.
M,J,R	A peak has been manually integrated, the analyte was detected below the calibrated range but above the EDL, and the ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
M,R	A peak has been manually integrated, and the ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
M,U	A peak has been manually integrated, and the analyte was not detected above the EDL.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
RRV	Reported Result Verified By Repeat Analysis
[B]	The analyte was detected in the Method Blank at >10% of the sample concentration.
[J]	The analyte was detected below the calibrated range but above the EDL.
[U]	The analyte was not detected above the EDL.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
AG-DRY-CCMS-N-VA	Tissue	Silver in Tissue by CRC ICPMS (DRY)	EPA 200.3/6020A

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

CL-DRY-SOL-L-IC-ED	Tissue	Chloride (Cl) - Soluble dry weight	Comm Soil Sci 16:7/APHA 4110B

Leachable Anions in vegetation analysis is carried out using a leaching procedure which involves the gentle tumbling of the sample in a specified leaching solution (typically deionized water) for a specific length of time. The resulting extract is then analyzed for chloride by ion chromatography with conductivity or UV detection.

CL-LEACH-IC-VA	Soil	Chloride leach (1:10) by IC	APHA 4110 IC

Leachable Anions in Sediment/Soil Method analysis is carried out using a leaching procedure which involves the gentle tumbling of the sample in a specified leaching solution (typically deionized water) for a specific length of time. The resulting extract is then analysed anions by ion chromatography with conductivity or UV detection. The method is applicable to the following anions: fluoride, chloride, phosphate, bromide, nitrate, sulphate.

CN-TOT-WT	Soil	Cyanide, Total	APHA 4500CN C E-Strong acid Dist Colorim

The sample is extracted with a strong base for 6 hours, and then filtered. The filtrate is then analyzed for total cyanide by using the combination of UV digestion and distillation. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

When using this method, high levels of thiocyanate in samples can cause false positives at ~1-2% of the thiocyanate concentration. For samples with detectable cyanide analyzed by this method, ALS recommends analysis for thiocyanate to check for this potential interference

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
DX-1613B-HRMS-BU	Biota	Dioxins and Furans HR 1613B	USEPA 1613B
DX-1613B-HRMS-BU	Soil	Dioxins and Furans HR 1613B	USEPA 1613B

Samples are extracted by Soxhlet. The extracts are prepared using column chromatography, reduced in volume and analyzed by isotope-dilution GC/HRMS

EC-SCREEN-VA	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

F-1:5-DI-SIE-VA	Soil	Fluoride leach (1:5) by SIE	BCMOE/EPA 300.1 (mod)

This analysis is carried out using procedures from the Method: "Fluoride in Soils by 5:1 Aqueous Extraction", BC Ministry of Environment, 22 January 2008, and procedures adapted from APHA Method 4500-F "Fluoride". The procedure involves mixing the dried (at <60°C) and sieved (2mm) sample with deionized/distilled water at a 1:5 ratio of soil to water. Fluoride is determined using ion chromatography.

HARDNESS-CALC-VA	Water	Hardness	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-200.2-CVAF-VA	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with hot nitric and hydrochloric acids, followed by CVAAS analysis. This method is fully compliant with the BC SALM strong acid leachable metals digestion method.

HG-DRY-CVAFS-N-VA	Tissue	Mercury in Tissue by CVAAS (DRY)	EPA 200.3, EPA 245.7

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Analysis is by atomic fluorescence spectrophotometry or atomic absorption spectrophotometry, adapted from US EPA Method 245.7.

HG-T-CVAA-VA	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

MET-200.2-CCMS-VA	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

MET-DRY-CCMS-N-VA	Tissue	Metals in Tissue by CRC ICPMS (DRY)	EPA 200.3/6020A

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MOISTURE-INT-SVOC-BU	Solid	% Moisture - Internal Use	ASTM METHOD D2974-00
MOISTURE-TISS-VA	Tissue	% Moisture in Tissues	Puget Sound WQ Authority, Apr 1997

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MOISTURE-VA	Soil	Moisture content	CCME PHC in Soil - Tier 1 (mod)

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of two hours.

OCPEST-1699-HRMS-BU	Solid	OC Pesticides by Method 1699	OC PESTICIDES 1699

Samples are extracted by Soxhlet, prepared by column chromatography, and analyzed by GC-HRMS.

OCPEST-1699-HRMS-BU	Tissue	OC Pesticides by Method 1699	EPA 1699

Samples are extracted by Soxhlet, prepared by gel-permeation chromatography followed by column chromatography, and analyzed by GC-HRMS.

PCB-C428-LRMS-BU	Solid	CARB428 PCB TOTALS	C428 LRMS
PCB-C428-LRMS-BU	Tissue	PCB congeners by SIM GC/LRMS	SIM GC/LRMS

Samples are Soxhlet extracted with dichloromethane. Extracts are passed through GPC for lipid removal and cleaned by column chromatograpahy. Extracts are analyzed via SIM GC/LRMS.

S-DRY-CCMS-N-VA	Tissue	Sulfur in Tissue by CRC ICPMS (DRY)	EPA 200.3/6020A

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

SIO2-T-CALC-VA	Water	Total Silicon (reported as Silica)	CALCULATION

Total Silicon (as SiO2) is a calculated parameter. Total Silicon (as SiO2 mg/L) = 2.139 x Total Silicon (mg/L).

TI-DRY-CCMS-N-VA	Tissue	Ti in Tissue by CRC ICPMS (DRY)	EPA 200.3/6020A

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
BU	ALS ENVIRONMENTAL - BURLINGTON, ONTARIO, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Client: STANTEC CONSULTING LTD.
70 Southgate Dr, Suite 01
Guelph ON N1G 4P5
Contact: Katherine Ketis

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-VA	**Water**							
Batch R5713353								
WG3692428-3 DUP		**L2657806-43**						
Mercury (Hg)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	04-FEB-22
WG3692428-2 LCS								
Mercury (Hg)-Total			101.4		%		80-120	04-FEB-22
WG3692428-1 MB								
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	04-FEB-22
MET-T-CCMS-VA	**Water**							
Batch R5680396								
WG3674712-3 DUP		**L2657806-40**						
Aluminum (Al)-Total		0.0250	0.0172	J	mg/L	0.0078	0.01	17-DEC-21
Antimony (Sb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	17-DEC-21
Arsenic (As)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	17-DEC-21
Barium (Ba)-Total		<0.020	<0.020	RPD-NA	mg/L	N/A	20	17-DEC-21
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-DEC-21
Boron (B)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	17-DEC-21
Cadmium (Cd)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	17-DEC-21
Calcium (Ca)-Total		0.37	0.32		mg/L	17	20	17-DEC-21
Chromium (Cr)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	17-DEC-21
Cobalt (Co)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	17-DEC-21
Copper (Cu)-Total		0.0048	0.0046		mg/L	4.3	20	17-DEC-21
Iron (Fe)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	17-DEC-21
Lead (Pb)-Total		0.00058	0.00055		mg/L	5.2	20	17-DEC-21
Lithium (Li)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	17-DEC-21
Magnesium (Mg)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	17-DEC-21
Manganese (Mn)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	17-DEC-21
Molybdenum (Mo)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	17-DEC-21
Nickel (Ni)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	17-DEC-21
Potassium (K)-Total		<2.0	<2.0	RPD-NA	mg/L	N/A	20	17-DEC-21
Selenium (Se)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	17-DEC-21
Silver (Ag)-Total		<0.000020	0.000028	RPD-NA	mg/L	N/A	20	17-DEC-21
Sodium (Na)-Total		<2.0	<2.0	RPD-NA	mg/L	N/A	20	17-DEC-21
Sulfur (S)-Total		<0.50	<0.50	RPD-NA	mg/L	N/A	20	17-DEC-21
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	17-DEC-21
Tin (Sn)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	17-DEC-21
Titanium (Ti)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	17-DEC-21
Uranium (U)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	17-DEC-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA	**Water**							
Batch R5680396								
WG3674712-3 DUP		**L2657806-40**						
Vanadium (V)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	17-DEC-21
Zinc (Zn)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	17-DEC-21
WG3674712-2 LCS								
Aluminum (Al)-Total			99.6		%		80-120	17-DEC-21
Antimony (Sb)-Total			98.6		%		80-120	17-DEC-21
Arsenic (As)-Total			101.3		%		80-120	17-DEC-21
Barium (Ba)-Total			102.0		%		80-120	17-DEC-21
Beryllium (Be)-Total			98.0		%		80-120	17-DEC-21
Boron (B)-Total			97.2		%		80-120	17-DEC-21
Cadmium (Cd)-Total			100.6		%		80-120	17-DEC-21
Calcium (Ca)-Total			97.1		%		80-120	17-DEC-21
Chromium (Cr)-Total			100.2		%		80-120	17-DEC-21
Cobalt (Co)-Total			97.9		%		80-120	17-DEC-21
Copper (Cu)-Total			97.0		%		80-120	17-DEC-21
Iron (Fe)-Total			94.0		%		80-120	17-DEC-21
Lead (Pb)-Total			95.6		%		80-120	17-DEC-21
Lithium (Li)-Total			97.9		%		80-120	17-DEC-21
Magnesium (Mg)-Total			105.0		%		80-120	17-DEC-21
Manganese (Mn)-Total			97.6		%		80-120	17-DEC-21
Molybdenum (Mo)-Total			103.4		%		80-120	17-DEC-21
Nickel (Ni)-Total			98.8		%		80-120	17-DEC-21
Potassium (K)-Total			99.5		%		80-120	17-DEC-21
Selenium (Se)-Total			100.6		%		80-120	17-DEC-21
Silver (Ag)-Total			95.7		%		80-120	17-DEC-21
Sodium (Na)-Total			93.8		%		80-120	17-DEC-21
Sulfur (S)-Total			104.2		%		80-120	17-DEC-21
Thallium (Tl)-Total			104.4		%		80-120	17-DEC-21
Tin (Sn)-Total			99.7		%		80-120	17-DEC-21
Titanium (Ti)-Total			93.0		%		80-120	17-DEC-21
Uranium (U)-Total			96.2		%		80-120	17-DEC-21
Vanadium (V)-Total			99.0		%		80-120	17-DEC-21
Zinc (Zn)-Total			96.6		%		80-120	17-DEC-21
WG3674712-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	17-DEC-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	17-DEC-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA	**Water**							
Batch R5680396								
WG3674712-1 MB								
Arsenic (As)-Total			<0.00010		mg/L		0.0001	17-DEC-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	17-DEC-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	17-DEC-21
Boron (B)-Total			<0.010		mg/L		0.01	17-DEC-21
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	17-DEC-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	17-DEC-21
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	17-DEC-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	17-DEC-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	17-DEC-21
Iron (Fe)-Total			<0.010		mg/L		0.01	17-DEC-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	17-DEC-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	17-DEC-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	17-DEC-21
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	17-DEC-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	17-DEC-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	17-DEC-21
Potassium (K)-Total			<0.050		mg/L		0.05	17-DEC-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	17-DEC-21
Silver (Ag)-Total			<0.000010		mg/L		0.00001	17-DEC-21
Sodium (Na)-Total			<0.050		mg/L		0.05	17-DEC-21
Sulfur (S)-Total			<0.50		mg/L		0.5	17-DEC-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	17-DEC-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	17-DEC-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	17-DEC-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	17-DEC-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	17-DEC-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	17-DEC-21
WG3674712-4 MS		**L2657806-41**						
Aluminum (Al)-Total			94.3		%		70-130	17-DEC-21
Antimony (Sb)-Total			93.3		%		70-130	17-DEC-21
Arsenic (As)-Total			98.4		%		70-130	17-DEC-21
Barium (Ba)-Total			98.0		%		70-130	17-DEC-21
Beryllium (Be)-Total			95.7		%		70-130	17-DEC-21
Boron (B)-Total			99.4		%		70-130	17-DEC-21

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA	**Water**							
Batch R5680396								
WG3674712-4 MS		**L2657806-41**						
Cadmium (Cd)-Total			101.7		%		70-130	17-DEC-21
Calcium (Ca)-Total			95.1		%		70-130	17-DEC-21
Chromium (Cr)-Total			97.0		%		70-130	17-DEC-21
Cobalt (Co)-Total			98.1		%		70-130	17-DEC-21
Iron (Fe)-Total			97.3		%		70-130	17-DEC-21
Lead (Pb)-Total			94.5		%		70-130	17-DEC-21
Lithium (Li)-Total			100.3		%		70-130	17-DEC-21
Magnesium (Mg)-Total			100.2		%		70-130	17-DEC-21
Manganese (Mn)-Total			98.5		%		70-130	17-DEC-21
Molybdenum (Mo)-Total			96.9		%		70-130	17-DEC-21
Nickel (Ni)-Total			99.6		%		70-130	17-DEC-21
Potassium (K)-Total			95.1		%		70-130	17-DEC-21
Selenium (Se)-Total			100.8		%		70-130	17-DEC-21
Silver (Ag)-Total			99.7		%		70-130	17-DEC-21
Sodium (Na)-Total			90.2		%		70-130	17-DEC-21
Sulfur (S)-Total			94.6		%		70-130	17-DEC-21
Thallium (Tl)-Total			93.6		%		70-130	17-DEC-21
Tin (Sn)-Total			96.9		%		70-130	17-DEC-21
Titanium (Ti)-Total			91.9		%		70-130	17-DEC-21
Uranium (U)-Total			94.6		%		70-130	17-DEC-21
Vanadium (V)-Total			95.4		%		70-130	17-DEC-21
Zinc (Zn)-Total			95.9		%		70-130	17-DEC-21
Batch R5689162								
WG3681979-3 DUP		**L2657806-41**						
Aluminum (Al)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	08-JAN-22
Antimony (Sb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	08-JAN-22
Arsenic (As)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	08-JAN-22
Barium (Ba)-Total		<0.020	<0.020	RPD-NA	mg/L	N/A	20	08-JAN-22
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	08-JAN-22
Boron (B)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	08-JAN-22
Cadmium (Cd)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	08-JAN-22
Calcium (Ca)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	08-JAN-22
Chromium (Cr)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	08-JAN-22
Cobalt (Co)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	08-JAN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA	**Water**							
Batch R5689162								
WG3681979-3 DUP		**L2657806-41**						
Copper (Cu)-Total		0.0013	0.0012		mg/L	5.0	20	08-JAN-22
Iron (Fe)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	08-JAN-22
Lead (Pb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	08-JAN-22
Lithium (Li)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	08-JAN-22
Magnesium (Mg)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	08-JAN-22
Manganese (Mn)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	08-JAN-22
Molybdenum (Mo)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	08-JAN-22
Nickel (Ni)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	08-JAN-22
Potassium (K)-Total		<2.0	<2.0	RPD-NA	mg/L	N/A	20	08-JAN-22
Selenium (Se)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	08-JAN-22
Silver (Ag)-Total		<0.000020	<0.000020	RPD-NA	mg/L	N/A	20	08-JAN-22
Sodium (Na)-Total		<2.0	<2.0	RPD-NA	mg/L	N/A	20	08-JAN-22
Sulfur (S)-Total		<0.50	<0.50	RPD-NA	mg/L	N/A	20	08-JAN-22
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	08-JAN-22
Tin (Sn)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	08-JAN-22
Titanium (Ti)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	08-JAN-22
Uranium (U)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	08-JAN-22
Vanadium (V)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	08-JAN-22
Zinc (Zn)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	08-JAN-22
WG3681979-2 LCS								
Aluminum (Al)-Total			102.6		%		80-120	08-JAN-22
Antimony (Sb)-Total			103.8		%		80-120	08-JAN-22
Arsenic (As)-Total			101.9		%		80-120	08-JAN-22
Barium (Ba)-Total			98.7		%		80-120	08-JAN-22
Beryllium (Be)-Total			98.3		%		80-120	08-JAN-22
Boron (B)-Total			94.2		%		80-120	08-JAN-22
Cadmium (Cd)-Total			94.8		%		80-120	08-JAN-22
Calcium (Ca)-Total			98.8		%		80-120	08-JAN-22
Chromium (Cr)-Total			96.4		%		80-120	08-JAN-22
Cobalt (Co)-Total			96.0		%		80-120	08-JAN-22
Copper (Cu)-Total			96.9		%		80-120	08-JAN-22
Iron (Fe)-Total			96.8		%		80-120	08-JAN-22
Lead (Pb)-Total			97.0		%		80-120	08-JAN-22
Lithium (Li)-Total			97.6		%		80-120	08-JAN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA	**Water**							
Batch R5689162								
WG3681979-2 LCS								
Magnesium (Mg)-Total			104.9		%		80-120	08-JAN-22
Manganese (Mn)-Total			97.5		%		80-120	08-JAN-22
Molybdenum (Mo)-Total			101.9		%		80-120	08-JAN-22
Nickel (Ni)-Total			97.7		%		80-120	08-JAN-22
Potassium (K)-Total			102.9		%		80-120	08-JAN-22
Selenium (Se)-Total			100.9		%		80-120	08-JAN-22
Silver (Ag)-Total			88.3		%		80-120	08-JAN-22
Sodium (Na)-Total			104.8		%		80-120	08-JAN-22
Sulfur (S)-Total			91.0		%		80-120	08-JAN-22
Thallium (Tl)-Total			100.6		%		80-120	08-JAN-22
Tin (Sn)-Total			97.9		%		80-120	08-JAN-22
Titanium (Ti)-Total			97.7		%		80-120	08-JAN-22
Uranium (U)-Total			97.4		%		80-120	08-JAN-22
Vanadium (V)-Total			99.8		%		80-120	08-JAN-22
Zinc (Zn)-Total			96.9		%		80-120	08-JAN-22
WG3681979-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	08-JAN-22
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	08-JAN-22
Arsenic (As)-Total			<0.00010		mg/L		0.0001	08-JAN-22
Barium (Ba)-Total			<0.00010		mg/L		0.0001	08-JAN-22
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	08-JAN-22
Boron (B)-Total			<0.010		mg/L		0.01	08-JAN-22
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	08-JAN-22
Calcium (Ca)-Total			<0.050		mg/L		0.05	08-JAN-22
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	08-JAN-22
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	08-JAN-22
Copper (Cu)-Total			<0.00050		mg/L		0.0005	08-JAN-22
Iron (Fe)-Total			<0.010		mg/L		0.01	08-JAN-22
Lead (Pb)-Total			<0.000050		mg/L		0.00005	08-JAN-22
Lithium (Li)-Total			<0.0010		mg/L		0.001	08-JAN-22
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	08-JAN-22
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	08-JAN-22
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	08-JAN-22
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	08-JAN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA	**Water**							
Batch R5689162								
WG3681979-1 MB								
Potassium (K)-Total			<0.050		mg/L		0.05	08-JAN-22
Selenium (Se)-Total			<0.000050		mg/L		0.00005	08-JAN-22
Silver (Ag)-Total			<0.000010		mg/L		0.00001	08-JAN-22
Sodium (Na)-Total			<0.050		mg/L		0.05	08-JAN-22
Sulfur (S)-Total			<0.50		mg/L		0.5	08-JAN-22
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	08-JAN-22
Tin (Sn)-Total			<0.00010		mg/L		0.0001	08-JAN-22
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	08-JAN-22
Uranium (U)-Total			<0.000010		mg/L		0.00001	08-JAN-22
Vanadium (V)-Total			<0.00050		mg/L		0.0005	08-JAN-22
Zinc (Zn)-Total			<0.0030		mg/L		0.003	08-JAN-22
WG3681979-4 MS		**L2657806-41**						
Aluminum (Al)-Total			98.5		%		70-130	08-JAN-22
Antimony (Sb)-Total			103.1		%		70-130	08-JAN-22
Arsenic (As)-Total			99.1		%		70-130	08-JAN-22
Barium (Ba)-Total			96.5		%		70-130	08-JAN-22
Beryllium (Be)-Total			100.0		%		70-130	08-JAN-22
Boron (B)-Total			95.4		%		70-130	08-JAN-22
Cadmium (Cd)-Total			96.2		%		70-130	08-JAN-22
Calcium (Ca)-Total			97.5		%		70-130	08-JAN-22
Chromium (Cr)-Total			96.8		%		70-130	08-JAN-22
Cobalt (Co)-Total			95.7		%		70-130	08-JAN-22
Copper (Cu)-Total			96.6		%		70-130	08-JAN-22
Iron (Fe)-Total			97.1		%		70-130	08-JAN-22
Lead (Pb)-Total			95.7		%		70-130	08-JAN-22
Lithium (Li)-Total			98.6		%		70-130	08-JAN-22
Magnesium (Mg)-Total			96.8		%		70-130	08-JAN-22
Manganese (Mn)-Total			97.2		%		70-130	08-JAN-22
Molybdenum (Mo)-Total			102.5		%		70-130	08-JAN-22
Nickel (Ni)-Total			97.6		%		70-130	08-JAN-22
Potassium (K)-Total			98.1		%		70-130	08-JAN-22
Selenium (Se)-Total			99.5		%		70-130	08-JAN-22
Silver (Ag)-Total			95.1		%		70-130	08-JAN-22
Sodium (Na)-Total			102.4		%		70-130	08-JAN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA	**Water**							
Batch R5689162								
WG3681979-4 MS		**L2657806-41**						
Sulfur (S)-Total			99.9		%		70-130	08-JAN-22
Thallium (Tl)-Total			94.5		%		70-130	08-JAN-22
Tin (Sn)-Total			96.6		%		70-130	08-JAN-22
Titanium (Ti)-Total			94.7		%		70-130	08-JAN-22
Uranium (U)-Total			97.2		%		70-130	08-JAN-22
Vanadium (V)-Total			97.5		%		70-130	08-JAN-22
Zinc (Zn)-Total			96.3		%		70-130	08-JAN-22
CL-LEACH-IC-VA	**Soil**							
Batch R5730750								
WG3695441-2 DUP		**L2657806-1**						
Chloride (Cl)		<5.0	<5.0	RPD-NA	mg/kg	N/A	30	27-FEB-22
WG3695441-3 LCS								
Chloride (Cl)			101.7		%		70-130	27-FEB-22
WG3695441-1 MB								
Chloride (Cl)			<5.0		mg/kg		5	27-FEB-22
CN-TOT-WT	**Soil**							
Batch R5740062								
WG3704330-3 DUP		**L2657806-15**						
Cyanide, Total		<0.050	<0.050	RPD-NA	mg/kg	N/A	20	10-MAR-22
WG3704330-2 LCS								
Cyanide, Total			92.0		%		80-120	10-MAR-22
WG3704330-1 MB								
Cyanide, Total			<0.050		mg/kg		0.05	10-MAR-22
WG3704330-4 MS		**L2657806-15**						
Cyanide, Total			97.3		%		70-130	10-MAR-22
DX-1613B-HRMS-BU	**Soil**							
Batch R5740125								
WG3676489-4 DUP		**L2657806-1**						
2,3,7,8-TCDD		0.164	0.160		pg/g	2.5	50	10-MAR-22
1,2,3,7,8-PeCDD		0.150	0.208		pg/g	32	50	10-MAR-22
1,2,3,4,7,8-HxCDD		0.191	0.190		pg/g	0.5	50	10-MAR-22
1,2,3,6,7,8-HxCDD		0.395	0.380		pg/g	3.9	50	10-MAR-22
1,2,3,7,8,9-HxCDD		0.360	0.390		pg/g	8.0	50	10-MAR-22
1,2,3,4,6,7,8-HpCDD		5.72	6.69		pg/g	16	50	10-MAR-22
OCDD		31.5	36.4		pg/g	14	50	10-MAR-22

COMMENTS: Sample and Duplicate do not meet replication criteria for all targets

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-1613B-HRMS-BU	**Soil**							
Batch R5740125								
WG3676489-4 DUP		**L2657806-1**						
2,3,7,8-TCDF		0.170	<0.10	RPD-NA	pg/g	N/A	50	10-MAR-22
1,2,3,7,8-PeCDF		0.173	0.220		pg/g	24	50	10-MAR-22
2,3,4,7,8-PeCDF		0.598	0.652		pg/g	8.6	50	10-MAR-22
1,2,3,4,7,8-HxCDF		0.335	0.435		pg/g	26	50	10-MAR-22
1,2,3,6,7,8-HxCDF		0.400	0.336		pg/g	17	50	10-MAR-22
2,3,4,6,7,8-HxCDF		0.460	0.810	G	pg/g	55	50	10-MAR-22
1,2,3,7,8,9-HxCDF		<0.077	0.067	G	pg/g	N/A	50	10-MAR-22
1,2,3,4,6,7,8-HpCDF		1.77	2.03		pg/g	14	50	10-MAR-22
1,2,3,4,7,8,9-HpCDF		0.120	0.100		pg/g	18	50	10-MAR-22
OCDF		1.89	2.46		pg/g	26	50	10-MAR-22
Total-TCDD		0.659	0.803		pg/g	20	50	10-MAR-22
Total-PeCDD		1.82	1.46		pg/g	22	50	10-MAR-22
Total-HxCDD		5.38	5.16		pg/g	4.2	50	10-MAR-22
Total-HpCDD		10.9	12.7		pg/g	15	50	10-MAR-22
Total-TCDF		5.26	0.83	G	pg/g	146	50	10-MAR-22
Total-PeCDF		8.32	9.81		pg/g	16	50	10-MAR-22
Total-HxCDF		4.20	4.93		pg/g	16	50	10-MAR-22
Total-HpCDF		2.78	3.18		pg/g	13	50	10-MAR-22
COMMENTS: Sample and Duplicate do not meet replication criteria for all targets								
WG3676489-2 LCS								
2,3,7,8-TCDD			83.0		%		67-158	09-MAR-22
1,2,3,7,8-PeCDD			100.0		%		70-142	09-MAR-22
1,2,3,4,7,8-HxCDD			98.0		%		70-164	09-MAR-22
1,2,3,6,7,8-HxCDD			93.0		%		76-134	09-MAR-22
1,2,3,7,8,9-HxCDD			103.0		%		64-162	09-MAR-22
1,2,3,4,6,7,8-HpCDD			93.0		%		70-140	09-MAR-22
OCDD			91.0		%		78-144	09-MAR-22
2,3,7,8-TCDF			85.0		%		75-158	09-MAR-22
1,2,3,7,8-PeCDF			96.0		%		80-134	09-MAR-22
2,3,4,7,8-PeCDF			88.0		%		68-160	09-MAR-22
1,2,3,4,7,8-HxCDF			93.0		%		72-134	09-MAR-22
1,2,3,6,7,8-HxCDF			92.0		%		84-130	09-MAR-22
2,3,4,6,7,8-HxCDF			88.0		%		70-156	09-MAR-22
1,2,3,7,8,9-HxCDF			95.0		%		78-130	09-MAR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-1613B-HRMS-BU	**Soil**							
Batch R5740125								
WG3676489-2 LCS								
1,2,3,4,6,7,8-HpCDF			98.0		%		82-122	09-MAR-22
1,2,3,4,7,8,9-HpCDF			95.0		%		78-138	09-MAR-22
OCDF			80.0		%		63-170	09-MAR-22
WG3676489-1 MB								
2,3,7,8-TCDD			<0.023	[U]	pg/g		0.023	09-MAR-22
1,2,3,7,8-PeCDD			<0.016	[U]	pg/g		0.016	09-MAR-22
1,2,3,4,7,8-HxCDD			<0.0091	[U]	pg/g		0.0091	09-MAR-22
1,2,3,6,7,8-HxCDD			<0.0085	[U]	pg/g		0.0085	09-MAR-22
1,2,3,7,8,9-HxCDD			<0.0083	[U]	pg/g		0.0083	09-MAR-22
1,2,3,4,6,7,8-HpCDD			<0.070	[U]	pg/g		0.07	09-MAR-22
OCDD			2.59	[J]	pg/g		0.11	09-MAR-22
2,3,7,8-TCDF			<0.013	[U]	pg/g		0.013	09-MAR-22
1,2,3,7,8-PeCDF			<0.011	[U]	pg/g		0.011	09-MAR-22
2,3,4,7,8-PeCDF			<0.0089	[U]	pg/g		0.0089	09-MAR-22
1,2,3,4,7,8-HxCDF			<0.0087	[U]	pg/g		0.0087	09-MAR-22
1,2,3,6,7,8-HxCDF			<0.0082	[U]	pg/g		0.0082	09-MAR-22
2,3,4,6,7,8-HxCDF			<0.0081	[U]	pg/g		0.0081	09-MAR-22
1,2,3,7,8,9-HxCDF			<0.012	[U]	pg/g		0.012	09-MAR-22
1,2,3,4,6,7,8-HpCDF			<0.030	M,U	pg/g		0.03	09-MAR-22
1,2,3,4,7,8,9-HpCDF			<0.040	[U]	pg/g		0.04	09-MAR-22
OCDF			0.097	M,J,R	pg/g		0.038	09-MAR-22
Total-TCDD			<0.023	[U]	pg/g		0.023	09-MAR-22
Total-PeCDD			<0.016	[U]	pg/g		0.016	09-MAR-22
Total-HxCDD			<0.0091	[U]	pg/g		0.0091	09-MAR-22
Total-HpCDD			<0.070	[U]	pg/g		0.07	09-MAR-22
Total-TCDF			<0.013	[U]	pg/g		0.013	09-MAR-22
Total-PeCDF			<0.011	[U]	pg/g		0.011	09-MAR-22
Total-HxCDF			<0.012	[U]	pg/g		0.012	09-MAR-22
Total-HpCDF			<0.040	[U]	pg/g		0.04	09-MAR-22
Surrogate: 13C12-2,3,7,8-TCDD			73.0		%		25-164	09-MAR-22
Surrogate: 13C12-1,2,3,7,8-PeCDD			80.0		%		25-181	09-MAR-22
Surrogate: 13C12-1,2,3,4,7,8-HxCDD			81.0		%		32-141	09-MAR-22
Surrogate: 13C12-1,2,3,6,7,8-HxCDD			75.0		%		28-130	09-MAR-22
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD			79.0		%		23-140	09-MAR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-1613B-HRMS-BU	**Soil**							
Batch R5740125								
WG3676489-1 MB								
Surrogate: 13C12-OCDD			62.0		%		17-157	09-MAR-22
Surrogate: 13C12-2,3,7,8-TCDF			65.0		%		24-169	09-MAR-22
Surrogate: 13C12-1,2,3,7,8-PeCDF			74.0		%		24-185	09-MAR-22
Surrogate: 13C12-2,3,4,7,8-PeCDF			73.0		%		21-178	09-MAR-22
Surrogate: 13C12-1,2,3,4,7,8-HxCDF			71.0		%		26-152	09-MAR-22
Surrogate: 13C12-1,2,3,6,7,8-HxCDF			66.0		%		26-123	09-MAR-22
Surrogate: 13C12-2,3,4,6,7,8-HxCDF			72.0		%		29-147	09-MAR-22
Surrogate: 13C12-1,2,3,7,8,9-HxCDF			72.0		%		28-136	09-MAR-22
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF			69.0		%		28-143	09-MAR-22
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF			74.0		%		26-138	09-MAR-22
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)			74.0		%		35-197	09-MAR-22
F-1:5-DI-SIE-VA	**Soil**							
Batch R5697072								
WG3683177-3 DUP		**L2657806-14**						
Fluoride (F)		4.54	4.57		mg/kg	0.6	30	13-JAN-22
WG3683177-2 LCS								
Fluoride (F)			103.4		%		70-130	13-JAN-22
WG3683177-1 MB								
Fluoride (F)			<0.20		mg/kg		0.2	13-JAN-22
HG-200.2-CVAF-VA	**Soil**							
Batch R5694861								
WG3683179-4 CRM		**SCP SS-2**						
Mercury (Hg)			104.0		%		70-130	13-JAN-22
WG3683179-2 DUP		**L2657806-14**						
Mercury (Hg)		0.0903	0.0995		mg/kg	9.8	40	13-JAN-22
WG3683179-3 LCS								
Mercury (Hg)			113.7		%		80-120	13-JAN-22
WG3683179-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	13-JAN-22
MET-200.2-CCMS-VA	**Soil**							
Batch R5694779								
WG3683179-4 CRM		**SCP SS-2**						
Aluminum (Al)			118.3		%		70-130	13-JAN-22
Antimony (Sb)			118.7		%		70-130	13-JAN-22
Arsenic (As)			120.1		%		70-130	13-JAN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-VA	**Soil**							
Batch R5694779								
WG3683179-4 CRM		**SCP SS-2**						
Barium (Ba)			113.2		%		70-130	13-JAN-22
Beryllium (Be)			117.4		%		70-130	13-JAN-22
Boron (B)			11.5		mg/kg		3.5-13.5	13-JAN-22
Cadmium (Cd)			109.0		%		70-130	13-JAN-22
Calcium (Ca)			111.9		%		70-130	13-JAN-22
Chromium (Cr)			117.8		%		70-130	13-JAN-22
Cobalt (Co)			110.8		%		70-130	13-JAN-22
Copper (Cu)			113.0		%		70-130	13-JAN-22
Iron (Fe)			115.8		%		70-130	13-JAN-22
Lead (Pb)			112.8		%		70-130	13-JAN-22
Magnesium (Mg)			116.8		%		70-130	13-JAN-22
Manganese (Mn)			118.1		%		70-130	13-JAN-22
Molybdenum (Mo)			113.8		%		70-130	13-JAN-22
Nickel (Ni)			112.6		%		70-130	13-JAN-22
Phosphorus (P)			102.9		%		70-130	13-JAN-22
Potassium (K)			119.6		%		70-130	13-JAN-22
Sodium (Na)			112.3		%		70-130	13-JAN-22
Strontium (Sr)			117.4		%		70-130	13-JAN-22
Thallium (Tl)			0.085		mg/kg		0.029-0.129	13-JAN-22
Titanium (Ti)			121.9		%		70-130	13-JAN-22
Vanadium (V)			115.5		%		70-130	13-JAN-22
Zinc (Zn)			116.4		%		70-130	13-JAN-22
Zirconium (Zr)			112.1		%		70-130	13-JAN-22
WG3683179-1 MB								
Aluminum (Al)			<50		mg/kg		50	13-JAN-22
Antimony (Sb)			<0.10		mg/kg		0.1	13-JAN-22
Arsenic (As)			<0.10		mg/kg		0.1	13-JAN-22
Barium (Ba)			<0.50		mg/kg		0.5	13-JAN-22
Beryllium (Be)			<0.10		mg/kg		0.1	13-JAN-22
Boron (B)			<5.0		mg/kg		5	13-JAN-22
Cadmium (Cd)			<0.020		mg/kg		0.02	13-JAN-22
Calcium (Ca)			<50		mg/kg		50	13-JAN-22
Chromium (Cr)			<0.50		mg/kg		0.5	13-JAN-22
Cobalt (Co)			<0.10		mg/kg		0.1	13-JAN-22

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-VA	**Soil**							
Batch R5694779								
WG3683179-1 MB								
Copper (Cu)			<0.50		mg/kg		0.5	13-JAN-22
Iron (Fe)			<50		mg/kg		50	13-JAN-22
Lead (Pb)			<0.50		mg/kg		0.5	13-JAN-22
Magnesium (Mg)			<20		mg/kg		20	13-JAN-22
Manganese (Mn)			<1.0		mg/kg		1	13-JAN-22
Molybdenum (Mo)			<0.10		mg/kg		0.1	13-JAN-22
Nickel (Ni)			<0.50		mg/kg		0.5	13-JAN-22
Phosphorus (P)			<50		mg/kg		50	13-JAN-22
Potassium (K)			<100		mg/kg		100	13-JAN-22
Silver (Ag)			<0.10		mg/kg		0.1	13-JAN-22
Sodium (Na)			<50		mg/kg		50	13-JAN-22
Strontium (Sr)			<0.50		mg/kg		0.5	13-JAN-22
Sulfur (S)			<1000		mg/kg		1000	13-JAN-22
Thallium (Tl)			<0.050		mg/kg		0.05	13-JAN-22
Titanium (Ti)			<1.0		mg/kg		1	13-JAN-22
Vanadium (V)			<0.20		mg/kg		0.2	13-JAN-22
Zinc (Zn)			<2.0		mg/kg		2	13-JAN-22
Zirconium (Zr)			<1.0		mg/kg		1	13-JAN-22
Batch R5709149								
WG3683179-2 DUP		**L2657806-14**						
Aluminum (Al)		14100	15900		mg/kg	12	40	25-JAN-22
Antimony (Sb)		0.36	0.39		mg/kg	8.4	30	25-JAN-22
Arsenic (As)		5.53	6.20		mg/kg	11	30	25-JAN-22
Barium (Ba)		66.6	70.8		mg/kg	6.1	40	25-JAN-22
Beryllium (Be)		0.59	0.63		mg/kg	6.3	30	25-JAN-22
Boron (B)		12.4	14.3		mg/kg	15	30	25-JAN-22
Cadmium (Cd)		0.558	0.563		mg/kg	1.0	30	25-JAN-22
Calcium (Ca)		12400	11600		mg/kg	6.7	30	25-JAN-22
Chromium (Cr)		21.2	23.7		mg/kg	11	30	25-JAN-22
Cobalt (Co)		7.83	7.51		mg/kg	4.1	30	25-JAN-22
Copper (Cu)		15.6	16.4		mg/kg	4.9	30	25-JAN-22
Iron (Fe)		16000	17600		mg/kg	9.3	30	25-JAN-22
Lead (Pb)		29.1	30.4		mg/kg	4.4	40	25-JAN-22
Magnesium (Mg)		6090	6570		mg/kg	7.6	30	25-JAN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-VA	**Soil**							
Batch R5709149								
WG3683179-2 DUP		**L2657806-14**						
Manganese (Mn)		341	341		mg/kg	0.2	30	25-JAN-22
Molybdenum (Mo)		1.95	2.19		mg/kg	12	40	25-JAN-22
Nickel (Ni)		17.8	18.8		mg/kg	5.2	30	25-JAN-22
Phosphorus (P)		454	483		mg/kg	6.2	30	25-JAN-22
Potassium (K)		1800	2120		mg/kg	16	40	25-JAN-22
Silver (Ag)		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	25-JAN-22
Sodium (Na)		83	85		mg/kg	2.3	40	25-JAN-22
Strontium (Sr)		58.9	59.9		mg/kg	1.7	40	25-JAN-22
Sulfur (S)		<1000	<1000	RPD-NA	mg/kg	N/A	30	25-JAN-22
Thallium (Tl)		0.248	0.278		mg/kg	11	30	25-JAN-22
Titanium (Ti)		103	117		mg/kg	13	40	25-JAN-22
Vanadium (V)		29.8	34.0		mg/kg	13	30	25-JAN-22
Zinc (Zn)		71.0	76.5		mg/kg	7.5	30	25-JAN-22
Zirconium (Zr)		2.1	1.8		mg/kg	14	30	25-JAN-22
MOISTURE-VA	**Soil**							
Batch R5691798								
WG3683176-3 DUP		**L2657806-14**						
Moisture		25.7	26.4		%	2.6	20	09-JAN-22
WG3683176-2 LCS								
Moisture			99.1		%		90-110	09-JAN-22
WG3683176-1 MB								
Moisture			<0.25		%		0.25	09-JAN-22
AG-DRY-CCMS-N-VA	**Tissue**							
Batch R5724000								
WG3695370-3 CRM		**VA-NRC-DOLT5**						
Silver (Ag)-Total			92.9		%		70-130	14-FEB-22
WG3695370-2 DUP		**L2657806-29**						
Silver (Ag)-Total		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	40	14-FEB-22
WG3695370-4 LCS								
Silver (Ag)-Total			93.7		%		80-120	14-FEB-22
WG3695370-1 MB								
Silver (Ag)-Total			<0.0050		mg/kg		0.005	14-FEB-22
Batch R5727266								
WG3695941-3 CRM		**VA-NRC-DOLT5**						
Silver (Ag)-Total			66.9	MES	%		70-130	17-FEB-22
WG3695941-2 DUP		**L2657806-6**						

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
AG-DRY-CCMS-N-VA	**Tissue**							
Batch R5727266								
WG3695941-2 DUP		**L2657806-6**						
Silver (Ag)-Total		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	40	17-FEB-22
WG3695941-4 LCS								
Silver (Ag)-Total			80.8		%		80-120	17-FEB-22
WG3695941-1 MB								
Silver (Ag)-Total			<0.0050		mg/kg		0.005	17-FEB-22
CL-DRY-SOL-L-IC-ED	**Tissue**							
Batch R5720461								
WG3694352-10 DUP		**L2657806-2**						
Chloride (Cl)		48	52		mg/kg	7.5	35	10-FEB-22
WG3694352-12 DUP		**L2657806-45**						
Chloride (Cl)		49	54		mg/kg	9.3	35	10-FEB-22
WG3694352-11 MB								
Chloride (Cl)			<10		mg/kg		10	10-FEB-22
WG3694352-9 MB								
Chloride (Cl)			<10		mg/kg		10	10-FEB-22
HG-DRY-CVAFS-N-VA	**Tissue**							
Batch R5730642								
WG3695941-3 CRM		**VA-NRC-DOLT5**						
Mercury (Hg)-Total			102.3		%		70-130	01-MAR-22
WG3695941-2 DUP		**L2657806-6**						
Mercury (Hg)-Total		<0.0050	0.0051	RPD-NA	mg/kg	N/A	40	01-MAR-22
WG3695941-4 LCS								
Mercury (Hg)-Total			90.5		%		80-120	01-MAR-22
WG3695941-1 MB								
Mercury (Hg)-Total			<0.0050		mg/kg		0.005	01-MAR-22
Batch R5731028								
WG3695370-3 CRM		**VA-NRC-DOLT5**						
Mercury (Hg)-Total			109.2		%		70-130	02-MAR-22
WG3695370-2 DUP		**L2657806-29**						
Mercury (Hg)-Total		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	40	02-MAR-22
WG3695370-4 LCS								
Mercury (Hg)-Total			97.6		%		80-120	02-MAR-22
WG3695370-1 MB								
Mercury (Hg)-Total			<0.0050		mg/kg		0.005	02-MAR-22
MET-DRY-CCMS-N-VA	**Tissue**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R5724000								
WG3695370-3 CRM		**VA-NRC-DOLT5**						
Aluminum (Al)-Total			83.9		%		70-130	14-FEB-22
Antimony (Sb)-Total			0.016		mg/kg		0.001-0.023	14-FEB-22
Arsenic (As)-Total			99.1		%		70-130	14-FEB-22
Barium (Ba)-Total			0.077		mg/kg		0.04-0.14	14-FEB-22
Boron (B)-Total			1.1		mg/kg		0.1-2.1	14-FEB-22
Cadmium (Cd)-Total			94.5		%		70-130	14-FEB-22
Calcium (Ca)-Total			97.5		%		70-130	14-FEB-22
Chromium (Cr)-Total			92.4		%		70-130	14-FEB-22
Cobalt (Co)-Total			97.0		%		70-130	14-FEB-22
Copper (Cu)-Total			100.3		%		70-130	14-FEB-22
Iron (Fe)-Total			100.9		%		70-130	14-FEB-22
Lead (Pb)-Total			102.3		%		70-130	14-FEB-22
Magnesium (Mg)-Total			98.5		%		70-130	14-FEB-22
Manganese (Mn)-Total			98.6		%		70-130	14-FEB-22
Molybdenum (Mo)-Total			96.4		%		70-130	14-FEB-22
Nickel (Ni)-Total			108.4		%		70-130	14-FEB-22
Phosphorus (P)-Total			101.2		%		70-130	14-FEB-22
Potassium (K)-Total			99.2		%		70-130	14-FEB-22
Sodium (Na)-Total			99.1		%		70-130	14-FEB-22
Strontium (Sr)-Total			97.9		%		70-130	14-FEB-22
Thallium (Tl)-Total			88.8		%		70-130	14-FEB-22
Vanadium (V)-Total			96.3		%		70-130	14-FEB-22
Zinc (Zn)-Total			96.7		%		70-130	14-FEB-22
WG3695370-2 DUP		**L2657806-29**						
Aluminum (Al)-Total		<2.0	<2.0	RPD-NA	mg/kg	N/A	40	14-FEB-22
Antimony (Sb)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-FEB-22
Arsenic (As)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-FEB-22
Barium (Ba)-Total		<0.050	<0.050	RPD-NA	mg/kg	N/A	40	14-FEB-22
Beryllium (Be)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-FEB-22
Boron (B)-Total		2.3	2.3		mg/kg	0.1	40	14-FEB-22
Cadmium (Cd)-Total		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	40	14-FEB-22
Calcium (Ca)-Total		61	54		mg/kg	12	60	14-FEB-22
Chromium (Cr)-Total		<0.050	<0.050	RPD-NA	mg/kg	N/A	40	14-FEB-22
Cobalt (Co)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-FEB-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R5724000								
WG3695370-2 DUP		**L2657806-29**						
Copper (Cu)-Total		2.19	2.04		mg/kg	7.5	40	14-FEB-22
Iron (Fe)-Total		21.9	20.1		mg/kg	8.5	40	14-FEB-22
Lead (Pb)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-FEB-22
Magnesium (Mg)-Total		1340	1260		mg/kg	5.8	40	14-FEB-22
Manganese (Mn)-Total		4.40	3.95		mg/kg	11	40	14-FEB-22
Molybdenum (Mo)-Total		2.65	2.59		mg/kg	2.3	40	14-FEB-22
Nickel (Ni)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	14-FEB-22
Phosphorus (P)-Total		3920	3790		mg/kg	3.2	40	14-FEB-22
Potassium (K)-Total		4230	4320		mg/kg	2.1	40	14-FEB-22
Sodium (Na)-Total		<20	<20	RPD-NA	mg/kg	N/A	40	14-FEB-22
Strontium (Sr)-Total		0.104	0.088		mg/kg	17	60	14-FEB-22
Thallium (Tl)-Total		<0.0020	<0.0020	RPD-NA	mg/kg	N/A	40	14-FEB-22
Vanadium (V)-Total		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	14-FEB-22
Zinc (Zn)-Total		18.4	16.8		mg/kg	9.4	40	14-FEB-22
Zirconium (Zr)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	14-FEB-22
WG3695370-4 LCS								
Aluminum (Al)-Total			99.7		%		80-120	14-FEB-22
Antimony (Sb)-Total			105.0		%		80-120	14-FEB-22
Arsenic (As)-Total			103.6		%		80-120	14-FEB-22
Barium (Ba)-Total			104.4		%		80-120	14-FEB-22
Beryllium (Be)-Total			99.9		%		80-120	14-FEB-22
Boron (B)-Total			96.6		%		80-120	14-FEB-22
Cadmium (Cd)-Total			99.2		%		80-120	14-FEB-22
Calcium (Ca)-Total			99.1		%		80-120	14-FEB-22
Chromium (Cr)-Total			101.5		%		80-120	14-FEB-22
Cobalt (Co)-Total			103.4		%		80-120	14-FEB-22
Copper (Cu)-Total			100.9		%		80-120	14-FEB-22
Iron (Fe)-Total			106.1		%		80-120	14-FEB-22
Lead (Pb)-Total			102.5		%		80-120	14-FEB-22
Magnesium (Mg)-Total			102.9		%		80-120	14-FEB-22
Manganese (Mn)-Total			102.4		%		80-120	14-FEB-22
Molybdenum (Mo)-Total			102.5		%		80-120	14-FEB-22
Nickel (Ni)-Total			98.7		%		80-120	14-FEB-22
Phosphorus (P)-Total			108.3		%		80-120	14-FEB-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R5724000								
WG3695370-4 LCS								
Potassium (K)-Total			102.2		%		80-120	14-FEB-22
Sodium (Na)-Total			102.2		%		80-120	14-FEB-22
Strontium (Sr)-Total			100.6		%		80-120	14-FEB-22
Thallium (Tl)-Total			101.7		%		80-120	14-FEB-22
Vanadium (V)-Total			103.9		%		80-120	14-FEB-22
Zinc (Zn)-Total			96.8		%		80-120	14-FEB-22
Zirconium (Zr)-Total			100.7		%		80-120	14-FEB-22
WG3695370-1 MB								
Aluminum (Al)-Total			<2.0		mg/kg		2	14-FEB-22
Antimony (Sb)-Total			<0.010		mg/kg		0.01	14-FEB-22
Arsenic (As)-Total			<0.020		mg/kg		0.02	14-FEB-22
Barium (Ba)-Total			<0.050		mg/kg		0.05	14-FEB-22
Beryllium (Be)-Total			<0.010		mg/kg		0.01	14-FEB-22
Boron (B)-Total			<1.0		mg/kg		1	14-FEB-22
Cadmium (Cd)-Total			<0.0050		mg/kg		0.005	14-FEB-22
Calcium (Ca)-Total			<20		mg/kg		20	14-FEB-22
Chromium (Cr)-Total			<0.050		mg/kg		0.05	14-FEB-22
Cobalt (Co)-Total			<0.020		mg/kg		0.02	14-FEB-22
Copper (Cu)-Total			<0.10		mg/kg		0.1	14-FEB-22
Iron (Fe)-Total			<3.0		mg/kg		3	14-FEB-22
Lead (Pb)-Total			<0.020		mg/kg		0.02	14-FEB-22
Magnesium (Mg)-Total			<2.0		mg/kg		2	14-FEB-22
Manganese (Mn)-Total			<0.050		mg/kg		0.05	14-FEB-22
Molybdenum (Mo)-Total			<0.020		mg/kg		0.02	14-FEB-22
Nickel (Ni)-Total			<0.20		mg/kg		0.2	14-FEB-22
Phosphorus (P)-Total			<10		mg/kg		10	14-FEB-22
Potassium (K)-Total			<20		mg/kg		20	14-FEB-22
Sodium (Na)-Total			<20		mg/kg		20	14-FEB-22
Strontium (Sr)-Total			<0.050		mg/kg		0.05	14-FEB-22
Thallium (Tl)-Total			<0.0020		mg/kg		0.002	14-FEB-22
Vanadium (V)-Total			<0.10		mg/kg		0.1	14-FEB-22
Zinc (Zn)-Total			<0.50		mg/kg		0.5	14-FEB-22
Zirconium (Zr)-Total			<0.20		mg/kg		0.2	14-FEB-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R5727266								
WG3695941-3 CRM		**VA-NRC-DOLT5**						
Aluminum (Al)-Total			77.3		%		70-130	17-FEB-22
Antimony (Sb)-Total			0.012		mg/kg		0.001-0.023	17-FEB-22
Arsenic (As)-Total			94.4		%		70-130	17-FEB-22
Barium (Ba)-Total			0.074		mg/kg		0.04-0.14	17-FEB-22
Boron (B)-Total			1.1		mg/kg		0.1-2.1	17-FEB-22
Cadmium (Cd)-Total			90.4		%		70-130	17-FEB-22
Calcium (Ca)-Total			99.6		%		70-130	17-FEB-22
Chromium (Cr)-Total			102.4		%		70-130	17-FEB-22
Cobalt (Co)-Total			85.8		%		70-130	17-FEB-22
Copper (Cu)-Total			92.9		%		70-130	17-FEB-22
Iron (Fe)-Total			94.4		%		70-130	17-FEB-22
Lead (Pb)-Total			99.2		%		70-130	17-FEB-22
Magnesium (Mg)-Total			95.1		%		70-130	17-FEB-22
Manganese (Mn)-Total			93.5		%		70-130	17-FEB-22
Molybdenum (Mo)-Total			95.1		%		70-130	17-FEB-22
Nickel (Ni)-Total			97.2		%		70-130	17-FEB-22
Phosphorus (P)-Total			95.3		%		70-130	17-FEB-22
Potassium (K)-Total			98.7		%		70-130	17-FEB-22
Sodium (Na)-Total			95.7		%		70-130	17-FEB-22
Strontium (Sr)-Total			91.1		%		70-130	17-FEB-22
Thallium (Tl)-Total			86.5		%		70-130	17-FEB-22
Vanadium (V)-Total			91.3		%		70-130	17-FEB-22
Zinc (Zn)-Total			93.0		%		70-130	17-FEB-22
WG3695941-2 DUP		**L2657806-6**						
Aluminum (Al)-Total		50.1	51.1		mg/kg	2.1	40	17-FEB-22
Antimony (Sb)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	17-FEB-22
Arsenic (As)-Total		0.101	0.098		mg/kg	2.6	40	17-FEB-22
Barium (Ba)-Total		10.6	10.4		mg/kg	2.0	40	17-FEB-22
Beryllium (Be)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	17-FEB-22
Boron (B)-Total		6.0	5.8		mg/kg	3.4	40	17-FEB-22
Cadmium (Cd)-Total		0.245	0.240		mg/kg	2.0	40	17-FEB-22
Calcium (Ca)-Total		4230	4180		mg/kg	1.2	60	17-FEB-22
Chromium (Cr)-Total		0.442	0.407		mg/kg	8.1	40	17-FEB-22
Cobalt (Co)-Total		0.027	0.024		mg/kg	12	40	17-FEB-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R5727266								
WG3695941-2 DUP		**L2657806-6**						
Copper (Cu)-Total		9.68	9.64		mg/kg	0.3	40	17-FEB-22
Iron (Fe)-Total		130	125		mg/kg	3.5	40	17-FEB-22
Lead (Pb)-Total		0.066	0.075		mg/kg	12	40	17-FEB-22
Magnesium (Mg)-Total		2140	2060		mg/kg	3.7	40	17-FEB-22
Manganese (Mn)-Total		28.1	27.7		mg/kg	1.6	40	17-FEB-22
Molybdenum (Mo)-Total		6.94	6.73		mg/kg	3.1	40	17-FEB-22
Nickel (Ni)-Total		0.47	0.45		mg/kg	4.6	40	17-FEB-22
Phosphorus (P)-Total		5950	5790		mg/kg	2.8	40	17-FEB-22
Potassium (K)-Total		45600	45200		mg/kg	0.9	40	17-FEB-22
Sodium (Na)-Total		82	80		mg/kg	2.7	40	17-FEB-22
Strontium (Sr)-Total		6.44	6.20		mg/kg	3.7	60	17-FEB-22
Vanadium (V)-Total		0.12	0.11		mg/kg	7.8	40	17-FEB-22
Zinc (Zn)-Total		21.2	20.8		mg/kg	1.7	40	17-FEB-22
Zirconium (Zr)-Total		0.21	<0.20	RPD-NA	mg/kg	N/A	40	17-FEB-22
WG3695941-4 LCS								
Aluminum (Al)-Total			101.0		%		80-120	17-FEB-22
Antimony (Sb)-Total			102.2		%		80-120	17-FEB-22
Arsenic (As)-Total			101.0		%		80-120	17-FEB-22
Barium (Ba)-Total			100.5		%		80-120	17-FEB-22
Beryllium (Be)-Total			103.9		%		80-120	17-FEB-22
Boron (B)-Total			101.0		%		80-120	17-FEB-22
Cadmium (Cd)-Total			97.4		%		80-120	17-FEB-22
Calcium (Ca)-Total			101.7		%		80-120	17-FEB-22
Chromium (Cr)-Total			98.8		%		80-120	17-FEB-22
Cobalt (Co)-Total			98.0		%		80-120	17-FEB-22
Copper (Cu)-Total			96.3		%		80-120	17-FEB-22
Iron (Fe)-Total			103.6		%		80-120	17-FEB-22
Lead (Pb)-Total			99.8		%		80-120	17-FEB-22
Magnesium (Mg)-Total			101.2		%		80-120	17-FEB-22
Manganese (Mn)-Total			98.6		%		80-120	17-FEB-22
Molybdenum (Mo)-Total			101.4		%		80-120	17-FEB-22
Nickel (Ni)-Total			98.1		%		80-120	17-FEB-22
Phosphorus (P)-Total			105.1		%		80-120	17-FEB-22
Potassium (K)-Total			105.9		%		80-120	17-FEB-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R5727266								
WG3695941-4 LCS								
Sodium (Na)-Total			104.1		%		80-120	17-FEB-22
Strontium (Sr)-Total			102.5		%		80-120	17-FEB-22
Thallium (Tl)-Total			103.7		%		80-120	17-FEB-22
Vanadium (V)-Total			100.6		%		80-120	17-FEB-22
Zinc (Zn)-Total			95.1		%		80-120	17-FEB-22
Zirconium (Zr)-Total			96.2		%		80-120	17-FEB-22
WG3695941-1 MB								
Aluminum (Al)-Total			<2.0		mg/kg		2	17-FEB-22
Antimony (Sb)-Total			<0.010		mg/kg		0.01	17-FEB-22
Arsenic (As)-Total			<0.020		mg/kg		0.02	17-FEB-22
Barium (Ba)-Total			<0.050		mg/kg		0.05	17-FEB-22
Beryllium (Be)-Total			<0.010		mg/kg		0.01	17-FEB-22
Boron (B)-Total			<1.0		mg/kg		1	17-FEB-22
Cadmium (Cd)-Total			<0.0050		mg/kg		0.005	17-FEB-22
Calcium (Ca)-Total			<20		mg/kg		20	17-FEB-22
Chromium (Cr)-Total			<0.050		mg/kg		0.05	17-FEB-22
Cobalt (Co)-Total			<0.020		mg/kg		0.02	17-FEB-22
Copper (Cu)-Total			<0.10		mg/kg		0.1	17-FEB-22
Iron (Fe)-Total			<3.0		mg/kg		3	17-FEB-22
Lead (Pb)-Total			<0.020		mg/kg		0.02	17-FEB-22
Magnesium (Mg)-Total			<2.0		mg/kg		2	17-FEB-22
Manganese (Mn)-Total			<0.050		mg/kg		0.05	17-FEB-22
Molybdenum (Mo)-Total			<0.020		mg/kg		0.02	17-FEB-22
Nickel (Ni)-Total			<0.20		mg/kg		0.2	17-FEB-22
Phosphorus (P)-Total			<10		mg/kg		10	17-FEB-22
Potassium (K)-Total			<20		mg/kg		20	17-FEB-22
Sodium (Na)-Total			<20		mg/kg		20	17-FEB-22
Strontium (Sr)-Total			<0.050		mg/kg		0.05	17-FEB-22
Thallium (Tl)-Total			<0.0020		mg/kg		0.002	17-FEB-22
Vanadium (V)-Total			<0.10		mg/kg		0.1	17-FEB-22
Zinc (Zn)-Total			<0.50		mg/kg		0.5	17-FEB-22
Zirconium (Zr)-Total			<0.20		mg/kg		0.2	17-FEB-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R5727624								
WG3695941-2 DUP		**L2657806-6**						
Thallium (Tl)-Total		<0.0020	<0.0020	RPD-NA	mg/kg	N/A	40	17-FEB-22
MOISTURE-TISS-VA	**Tissue**							
Batch R5721118								
WG3694827-3 DUP		**L2657806-3**						
% Moisture		70.5	71.0		%	0.6	20	10-FEB-22
WG3694827-2 LCS								
% Moisture			100.2		%		90-110	10-FEB-22
WG3694827-1 MB								
% Moisture			<0.50		%		0.5	10-FEB-22
Batch R5721122								
WG3694839-3 DUP		**L2657806-29**						
% Moisture		18.9	18.4		%	2.7	20	10-FEB-22
WG3694839-2 LCS								
% Moisture			100.2		%		90-110	10-FEB-22
WG3694839-1 MB								
% Moisture			0.50		%		0.5	10-FEB-22
OCPEST-1699-HRMS-BU	**Tissue**							
Batch R5767500								
WG3676513-5 DUP		**L2657806-2**						
Heptachlor		<0.015	<0.042	RPD-NA	ng/g	N/A	50	14-APR-22
Aldrin		<0.071	<0.14	RPD-NA	ng/g	N/A	50	14-APR-22
Heptachlor Epoxide		<0.11	<0.25	RPD-NA	ng/g	N/A	50	14-APR-22
trans-Chlordane		<0.46	<0.96	RPD-NA	ng/g	N/A	50	14-APR-22
cis-Chlordane		<0.42	<0.88	RPD-NA	ng/g	N/A	50	14-APR-22
Dieldrin		<0.30	<0.45	RPD-NA	ng/g	N/A	50	14-APR-22
Endrin		<0.42	<0.43	RPD-NA	ng/g	N/A	50	14-APR-22
Endrin Aldehyde		<0.64	<0.86	RPD-NA	ng/g	N/A	50	14-APR-22
4,4-DDE		<0.37	<0.88	RPD-NA	ng/g	N/A	50	14-APR-22
4,4-DDD		<0.77	<1.3	RPD-NA	ng/g	N/A	50	14-APR-22
4,4-DDT		<0.91	<2.1	RPD-NA	ng/g	N/A	50	14-APR-22
Mirex		<0.057	<0.097	RPD-NA	ng/g	N/A	50	14-APR-22
Heptachlor Epoxide A		<0.70	<1.6	RPD-NA	ng/g	N/A	50	14-APR-22
WG3676513-1 MB								
alpha-BHC			<0.048	[U]	ng/g		0.1	08-APR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OCPEST-1699-HRMS-BU	**Tissue**							
Batch	**R5767500**							
WG3676513-1	**MB**							
beta-BHC			<0.31	[U]	ng/g		0.39	08-APR-22
delta-BHC			<0.22	[U]	ng/g		0.39	08-APR-22
gamma-BHC			<0.096	[U]	ng/g		0.1	08-APR-22
Heptachlor			<0.0083	[U]	ng/g		0.1	08-APR-22
Aldrin			<0.013	[U]	ng/g		0.1	08-APR-22
Heptachlor Epoxide			<0.010	[U]	ng/g		0.1	08-APR-22
trans-Chlordane			<0.17	[U]	ng/g		0.1	08-APR-22
cis-Chlordane			<0.16	[U]	ng/g		0.1	08-APR-22
Dieldrin			<0.077	[U]	ng/g		0.1	08-APR-22
Endrin			<0.10	[U]	ng/g		0.1	08-APR-22
Endrin Aldehyde			<0.11	[U]	ng/g		0.1	08-APR-22
Endosulfan I			<0.15	[U]	ng/g		0.1	08-APR-22
Endosulfan II			<0.49	[U]	ng/g		0.1	08-APR-22
Endosulfan Sulfate			<0.056	[U]	ng/g		0.1	08-APR-22
4,4-DDE			<0.11	[U]	ng/g		0.1	08-APR-22
4,4-DDD			<0.12	[U]	ng/g		0.1	08-APR-22
4,4-DDT			<0.14	[U]	ng/g		0.1	08-APR-22
Methoxychlor			<0.049	[U]	ng/g		0.1	08-APR-22
Mirex			<0.012	[U]	ng/g		0.1	08-APR-22
Surrogate: alpha-BHC, 13C6-			48.0		%		16-129	08-APR-22
Surrogate: Heptachlor, 13C10-			93.0		%		5-120	08-APR-22
Surrogate: Oxychlordane, 13C10-			57.0		%		23-135	08-APR-22
Surrogate: trans-Nonachlor, 13C10-			72.0		%		14-136	08-APR-22
Surrogate: Dieldrin, 13C12-			73.0		%		40-151	08-APR-22
Surrogate: Endrin, 13C12-			68.0		%		35-155	08-APR-22
Surrogate: Endosulfan II, 13C9-			63.0		%		5-122	08-APR-22
Surrogate: 4,4'-DDE, 13C12-			68.0		%		21-125	08-APR-22
Surrogate: 4,4'-DDT, 13C12-			53.0		%		5-120	08-APR-22
Surrogate: Mirex, 13C10-			55.0		%		5-120	08-APR-22
Surrogate: 4,4'-DDD, 13C12-			52.0		%		5-150	08-APR-22
Heptachlor Epoxide A			<0.066	[U]	ng/g		0.1	08-APR-22
Surrogate: gamma-BHC, 13C6-			34.0		%		11-120	08-APR-22
Surrogate: Methoxychlor, 13C12-			41.0		%		5-120	08-APR-22
Surrogate: beta-BHC, 13C6-			12.0	M	%		11-120	08-APR-22

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OCPEST-1699-HRMS-BU	**Tissue**							
Batch	**R5767500**							
WG3676513-1	**MB**							
Surrogate: delta-BHC, 13C6-			16.0		%		11-120	08-APR-22
WG3676513-4	**MB**							
alpha-BHC			<0.25	[U]	ng/g		0.1	08-APR-22
beta-BHC			<0.74	[U]	ng/g		0.1	08-APR-22
delta-BHC			<0.58	[U]	ng/g		0.39	08-APR-22
gamma-BHC			<0.42	[U]	ng/g		0.1	08-APR-22
Heptachlor			<0.032	[U]	ng/g		0.1	08-APR-22
Aldrin			<0.033	[U]	ng/g		0.1	08-APR-22
Heptachlor Epoxide			<0.042	[U]	ng/g		0.1	08-APR-22
trans-Chlordane			<0.25	[U]	ng/g		0.1	08-APR-22
cis-Chlordane			<0.23	[U]	ng/g		0.1	08-APR-22
Dieldrin			<0.15	[U]	ng/g		0.1	08-APR-22
Endrin			<0.17	[U]	ng/g		0.1	08-APR-22
Endrin Aldehyde			<0.12	[U]	ng/g		0.1	08-APR-22
Endosulfan I			<0.27	[U]	ng/g		0.1	08-APR-22
Endosulfan II			<0.46	[U]	ng/g		0.1	08-APR-22
Endosulfan Sulfate			<0.048	[U]	ng/g		0.1	08-APR-22
4,4-DDE			<0.14	[U]	ng/g		0.1	08-APR-22
4,4-DDD			<0.095	[U]	ng/g		0.1	08-APR-22
4,4-DDT			<0.078	[U]	ng/g		0.1	08-APR-22
Methoxychlor			<0.063	[U]	ng/g		0.1	08-APR-22
Mirex			<0.014	[U]	ng/g		0.1	08-APR-22
Surrogate: alpha-BHC, 13C6-			30.0		%		16-129	08-APR-22
Surrogate: Heptachlor, 13C10-			62.0		%		5-120	08-APR-22
Surrogate: Oxychlordane, 13C10-			63.0		%		23-135	08-APR-22
Surrogate: trans-Nonachlor, 13C10-			74.0		%		14-136	08-APR-22
Surrogate: Dieldrin, 13C12-			82.0		%		40-151	08-APR-22
Surrogate: Endrin, 13C12-			81.0		%		35-155	08-APR-22
Surrogate: Endosulfan II, 13C9-			77.0	M	%		5-122	08-APR-22
Surrogate: 4,4'-DDE, 13C12-			79.0		%		21-125	08-APR-22
Surrogate: 4,4'-DDT, 13C12-			83.0		%		5-120	08-APR-22
Surrogate: Mirex, 13C10-			92.0		%		5-120	08-APR-22
Surrogate: 4,4'-DDD, 13C12-			85.0		%		5-150	08-APR-22
Heptachlor Epoxide A			<0.27	[U]	ng/g		0.1	08-APR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OCPEST-1699-HRMS-BU	**Tissue**							
Batch	**R5767500**							
WG3676513-4	**MB**							
Surrogate: gamma-BHC, 13C6-			26.0		%		11-120	08-APR-22
Surrogate: Methoxychlor, 13C12-			78.0	R	%		5-120	08-APR-22
Surrogate: beta-BHC, 13C6-			16.0		%		11-120	08-APR-22
Surrogate: delta-BHC, 13C6-			19.0		%		11-120	08-APR-22
PCB-C428-LRMS-BU	**Tissue**							
Batch	**R5755457**							
WG3676521-6	**DUP**	**L2657806-12**						
Total PCB		<0.0060	<0.0060	RPD-NA	ng/g	N/A	50	24-FEB-22
WG3676521-2	**LCS**							
Total PCB			90.1		%		50-150	24-FEB-22
WG3676521-5	**LCS**							
Total PCB			92.6		%		50-150	24-FEB-22
WG3676521-1	**MB**							
Total PCB			<0.0050		ng/g		0.005	24-FEB-22
Surrogate: 13C12 PCB 1			6.2		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 3			17.0		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 4			9.6		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 15			34.0		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 19			10.9		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 37			51.9		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 54			12.8		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 81			45.9		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 104			25.5		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 123			62.9		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 118			45.3		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 114			40.9		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 105			43.9		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 126			42.9	M	%		10-145	24-FEB-22
Surrogate: 13C12 PCB 155			50.0		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 167			57.4		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 156			52.1	M	%		10-145	24-FEB-22
Surrogate: 13C12 PCB 157			54.7		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 169			62.0		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 188			56.3		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 202			58.4		%		10-145	24-FEB-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-C428-LRMS-BU	**Tissue**							
Batch	**R5755457**							
WG3676521-1	**MB**							
Surrogate: 13C12 PCB 205			55.7		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 208			52.8		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 206			64.0		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 209			57.9		%		10-145	24-FEB-22
WG3676521-4	**MB**							
Total PCB			<0.0050		ng/g		0.005	24-FEB-22
Surrogate: 13C12 PCB 1			5.9		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 3			15.6		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 4			8.5		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 15			26.5		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 19			10.4		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 37			46.9		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 54			13.8		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 81			41.2		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 104			16.0		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 123			60.3		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 118			37.2		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 114			31.5		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 105			34.9		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 126			35.3	M	%		10-145	24-FEB-22
Surrogate: 13C12 PCB 155			41.0		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 167			48.7		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 156			42.5	M	%		10-145	24-FEB-22
Surrogate: 13C12 PCB 157			47.9		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 169			58.3		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 188			44.6		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 202			43.8		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 205			45.8		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 208			41.2		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 206			50.1		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 209			49.5		%		10-145	24-FEB-22
Batch	**R5755637**							
WG3693512-2	**LCS**							
Total PCB			103.1		%		50-150	24-FEB-22
WG3693512-4	**LCS**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-C428-LRMS-BU	**Tissue**							
Batch R5755637								
WG3693512-4 LCS								
Total PCB			102.7		%		50-150	24-FEB-22
WG3693512-1 MB								
Total PCB			<0.10		ng/g		0.1	24-FEB-22
Surrogate: 13C12 PCB 1			16.7		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 3			22.0		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 4			24.3		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 15			35.5		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 19			26.3		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 37			51.2		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 54			33.0		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 81			68.9		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 104			46.3		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 123			71.8		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 118			63.8		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 114			60.5		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 105			64.9		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 126			50.3	M	%		10-145	24-FEB-22
Surrogate: 13C12 PCB 155			53.8		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 167			73.0		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 156			73.4	M	%		10-145	24-FEB-22
Surrogate: 13C12 PCB 157			73.3		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 169			72.9		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 188			63.2		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 202			70.8		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 205			71.2		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 208			62.8		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 206			80.8		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 209			65.5		%		10-145	24-FEB-22
S-DRY-CCMS-N-VA	**Tissue**							
Batch R5724000								
WG3695370-3 CRM		**VA-NRC-DOLT5**						
Sulfur (S)-Total			102.0		%		70-130	14-FEB-22
WG3695370-2 DUP		**L2657806-29**						
Sulfur (S)-Total		820	820		mg/kg	0.6	40	14-FEB-22
WG3695370-4 LCS								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
S-DRY-CCMS-N-VA	**Tissue**							
Batch R5724000								
WG3695370-4 LCS								
Sulfur (S)-Total			102.5		%		70-130	14-FEB-22
WG3695370-1 MB								
Sulfur (S)-Total			<100		mg/kg		100	14-FEB-22
Batch R5727266								
WG3695941-3 CRM		**VA-NRC-DOLT5**						
Sulfur (S)-Total			98.0		%		70-130	17-FEB-22
WG3695941-2 DUP		**L2657806-6**						
Sulfur (S)-Total		4200	4270		mg/kg	1.7	40	17-FEB-22
WG3695941-4 LCS								
Sulfur (S)-Total			102.4		%		70-130	17-FEB-22
WG3695941-1 MB								
Sulfur (S)-Total			<100		mg/kg		100	17-FEB-22
TI-DRY-CCMS-N-VA	**Tissue**							
Batch R5724000								
WG3695370-2 DUP		**L2657806-29**						
Titanium (Ti)-Total		<0.25	<0.25	RPD-NA	mg/kg	N/A	40	14-FEB-22
WG3695370-4 LCS								
Titanium (Ti)-Total			101.2		%		80-120	14-FEB-22
WG3695370-1 MB								
Titanium (Ti)-Total			<0.25		mg/kg		0.25	14-FEB-22
Batch R5727266								
WG3695941-2 DUP		**L2657806-6**						
Titanium (Ti)-Total		1.29	1.15		mg/kg	11	40	17-FEB-22
WG3695941-4 LCS								
Titanium (Ti)-Total			98.4		%		80-120	17-FEB-22
WG3695941-1 MB								
Titanium (Ti)-Total			<0.25		mg/kg		0.25	17-FEB-22
OCPEST-1699-HRMS-BU	**Solid**							
Batch R5769474								
WG3676505-4 DUP		**L2657806-1**						
alpha-BHC		<0.0095	<0.0062	RPD-NA	ng/g	N/A	50	07-APR-22
beta-BHC		<0.014	<0.0098	RPD-NA	ng/g	N/A	50	07-APR-22
delta-BHC		<0.012	<0.0085	RPD-NA	ng/g	N/A	50	07-APR-22
gamma-BHC		<0.013	<0.0084	RPD-NA	ng/g	N/A	50	07-APR-22
Heptachlor		<0.0011	0.00220	G	ng/g	N/A	50	07-APR-22
Aldrin		<0.0016	<0.0012	RPD-NA	ng/g	N/A	50	07-APR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OCPEST-1699-HRMS-BU	**Solid**							
Batch R5769474								
WG3676505-4 DUP		**L2657806-1**						
Heptachlor Epoxide		0.0101	0.0129		ng/g	24	50	07-APR-22
trans-Chlordane		0.0130	<0.0084	RPD-NA	ng/g	N/A	50	07-APR-22
cis-Chlordane		<0.0071	<0.0075	RPD-NA	ng/g	N/A	50	07-APR-22
Dieldrin		0.0211	0.0151		ng/g	33	50	07-APR-22
Endrin		<0.0067	0.0065	RPD-NA	ng/g	N/A	50	07-APR-22
Endrin Aldehyde		<0.0066	<0.0022	RPD-NA	ng/g	N/A	50	07-APR-22
Endosulfan I		<0.0058	<0.011	RPD-NA	ng/g	N/A	50	07-APR-22
Endosulfan II		<0.019	<0.020	RPD-NA	ng/g	N/A	50	07-APR-22
Endosulfan Sulfate		<0.0031	<0.0022	RPD-NA	ng/g	N/A	50	07-APR-22
4,4-DDE		0.206	0.210		ng/g	1.9	50	07-APR-22
4,4-DDD		0.0064	0.0067		ng/g	4.6	50	07-APR-22
4,4-DDT		0.181	0.172		ng/g	5.1	50	07-APR-22
Methoxychlor		<0.0053	<0.0030	RPD-NA	ng/g	N/A	50	07-APR-22
Mirex		0.00690	0.00920		ng/g	29	50	07-APR-22
Heptachlor Epoxide A		<0.0059	<0.0076	RPD-NA	ng/g	N/A	50	07-APR-22
COMMENTS: Duplicate does not pass for Heptachlor.								
WG3676505-2 LCS								
alpha-BHC			98.0		%		50-120	07-APR-22
beta-BHC			111.0		%		50-120	07-APR-22
delta-BHC			92.0		%		50-120	07-APR-22
gamma-BHC			94.0		%		50-120	07-APR-22
Heptachlor			101.0		%		50-120	07-APR-22
Aldrin			89.0		%		50-120	07-APR-22
Heptachlor Epoxide			108.0		%		20-200	07-APR-22
trans-Chlordane			96.0		%		50-120	07-APR-22
cis-Chlordane			92.0		%		50-120	07-APR-22
Dieldrin			101.0		%		50-120	07-APR-22
Endrin			90.0		%		50-120	07-APR-22
Endrin Aldehyde			115.0		%		20-200	07-APR-22
Endosulfan I			100.0		%		50-120	07-APR-22
Endosulfan II			94.0		%		5-200	07-APR-22
Endosulfan Sulfate			104.0		%		50-200	07-APR-22
4,4-DDE			95.0		%		50-120	07-APR-22
4,4-DDD			98.0		%		42-120	07-APR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OCPEST-1699-HRMS-BU	**Solid**							
Batch R5769474								
WG3676505-2 LCS								
4,4-DDT			97.0		%		50-120	07-APR-22
Methoxychlor			99.0		%		50-120	07-APR-22
Mirex			100.0		%		50-120	07-APR-22
Heptachlor Epoxide A			101.0		%		50-150	07-APR-22
WG3676505-1 MB								
alpha-BHC			<0.010	[U]	ng/g		0.14	07-APR-22
beta-BHC			<0.015	[U]	ng/g		0.14	07-APR-22
delta-BHC			<0.013	[U]	ng/g		0.51	07-APR-22
gamma-BHC			<0.013	[U]	ng/g		0.14	07-APR-22
Heptachlor			<0.0011	[U]	ng/g		0.14	07-APR-22
Aldrin			<0.0012	[U]	ng/g		0.14	07-APR-22
Heptachlor Epoxide			<0.0013	[U]	ng/g		0.14	07-APR-22
trans-Chlordane			<0.0089	[U]	ng/g		0.14	07-APR-22
cis-Chlordane			<0.0078	[U]	ng/g		0.14	07-APR-22
Dieldrin			<0.0022	[U]	ng/g		0.14	07-APR-22
Endrin			<0.0033	[U]	ng/g		0.14	07-APR-22
Endrin Aldehyde			0.0068	M,J,R	ng/g		0.14	07-APR-22
Endosulfan I			<0.0080	[U]	ng/g		0.14	07-APR-22
Endosulfan II			<0.018	[U]	ng/g		0.14	07-APR-22
Endosulfan Sulfate			<0.0037	[U]	ng/g		0.14	07-APR-22
4,4-DDE			<0.0035	[U]	ng/g		0.14	07-APR-22
4,4-DDD			<0.0030	[U]	ng/g		0.14	07-APR-22
4,4-DDT			<0.0030	[U]	ng/g		0.14	07-APR-22
Methoxychlor			<0.0018	[U]	ng/g		0.14	07-APR-22
Mirex			0.00073	M,J,R	ng/g		0.14	07-APR-22
Surrogate: alpha-BHC, 13C6-			70.0		%		16-129	07-APR-22
Surrogate: Heptachlor, 13C10-			75.0		%		5-120	07-APR-22
Surrogate: Oxychlordane, 13C10-			80.0		%		23-135	07-APR-22
Surrogate: trans-Nonachlor, 13C10-			80.0		%		14-136	07-APR-22
Surrogate: Dieldrin, 13C12-			84.0		%		40-151	07-APR-22
Surrogate: Endrin, 13C12-			73.0		%		35-155	07-APR-22
Surrogate: Endosulfan II, 13C9-			81.0		%		5-122	07-APR-22
Surrogate: 4,4'-DDE, 13C12-			85.0		%		21-125	07-APR-22
Surrogate: 4,4'-DDT, 13C12-			86.0		%		5-120	07-APR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OCPEST-1699-HRMS-BU	**Solid**							
Batch	**R5769474**							
WG3676505-1	**MB**							
Surrogate: Mirex, 13C10-			84.0		%		5-120	07-APR-22
Heptachlor Epoxide A			<0.0076	[U]	ng/g		0.14	07-APR-22
Surrogate: 4,4'-DDD, 13C12-			84.0		%		5-120	07-APR-22
Surrogate: gamma-BHC, 13C6-			69.0		%		11-120	07-APR-22
Surrogate: Methoxychlor, 13C12-			80.0		%		5-120	07-APR-22
Surrogate: beta-BHC, 13C6-			67.0		%		11-120	07-APR-22
Surrogate: delta-BHC, 13C6-			75.0		%		11-120	07-APR-22
PCB-C428-LRMS-BU	**Solid**							
Batch	**R5755385**							
WG3676514-5	**DUP**	**L2657806-14**						
Total PCB		3.35	2.36		ng/g	35	50	24-FEB-22
WG3676514-2	**LCS**							
Total PCB			100.8		%		50-150	24-FEB-22
WG3676514-4	**LCS**							
Total PCB			102.5		%		50-150	24-FEB-22
WG3676514-1	**MB**							
Total PCB			<0.0050		ng/g		0.005	24-FEB-22
Surrogate: 13C12 PCB 1			35.2		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 3			40.2		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 4			44.1		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 15			47.9		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 19			41.4		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 37			65.6		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 54			47.3		%		5-145	24-FEB-22
Surrogate: 13C12 PCB 81			70.4		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 104			57.5		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 123			86.0		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 118			62.2		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 114			72.5		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 105			72.8		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 126			55.5	M	%		10-145	24-FEB-22
Surrogate: 13C12 PCB 155			60.2		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 167			79.0		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 156			78.6	M	%		10-145	24-FEB-22
Surrogate: 13C12 PCB 157			82.7		%		10-145	24-FEB-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-C428-LRMS-BU	**Solid**							
Batch R5755385								
WG3676514-1 MB								
Surrogate: 13C12 PCB 169			81.5		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 188			69.0		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 202			75.5		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 205			78.4		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 208			68.9		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 206			90.0		%		10-145	24-FEB-22
Surrogate: 13C12 PCB 209			73.4		%		10-145	24-FEB-22
DX-1613B-HRMS-BU	**Biota**							
Batch R5743237								
WG3676484-4 DUP		**L2657806-2**						
2,3,7,8-TCDD		<0.065	<0.040	RPD-NA	pg/g	N/A	50	11-MAR-22
1,2,3,7,8-PeCDD		<0.058	<0.016	RPD-NA	pg/g	N/A	50	11-MAR-22
1,2,3,4,7,8-HxCDD		<0.036	<0.022	RPD-NA	pg/g	N/A	50	11-MAR-22
1,2,3,6,7,8-HxCDD		<0.036	<0.021	RPD-NA	pg/g	N/A	50	11-MAR-22
1,2,3,7,8,9-HxCDD		<0.034	<0.020	RPD-NA	pg/g	N/A	50	11-MAR-22
1,2,3,4,6,7,8-HpCDD		<0.059	0.043	RPD-NA	pg/g	N/A	50	11-MAR-22
OCDD		0.940	0.438	G	pg/g	73	50	11-MAR-22
2,3,7,8-TCDF		<0.043	<0.028	RPD-NA	pg/g	N/A	50	11-MAR-22
1,2,3,7,8-PeCDF		<0.026	<0.016	RPD-NA	pg/g	N/A	50	11-MAR-22
2,3,4,7,8-PeCDF		<0.024	<0.014	RPD-NA	pg/g	N/A	50	11-MAR-22
1,2,3,4,7,8-HxCDF		<0.020	<0.014	RPD-NA	pg/g	N/A	50	11-MAR-22
1,2,3,6,7,8-HxCDF		<0.019	<0.015	RPD-NA	pg/g	N/A	50	11-MAR-22
2,3,4,6,7,8-HxCDF		<0.022	<0.016	RPD-NA	pg/g	N/A	50	11-MAR-22
1,2,3,7,8,9-HxCDF		<0.028	<0.020	RPD-NA	pg/g	N/A	50	11-MAR-22
1,2,3,4,6,7,8-HpCDF		0.038	0.049		pg/g	25	50	11-MAR-22
1,2,3,4,7,8,9-HpCDF		0.035	<0.037	RPD-NA	pg/g	N/A	50	11-MAR-22
OCDF		0.31	0.307		pg/g	1.0	50	11-MAR-22
Total-TCDD		<0.065	<0.040	RPD-NA	pg/g	N/A	50	11-MAR-22
Total-PeCDD		<0.058	<0.016	RPD-NA	pg/g	N/A	50	11-MAR-22
Total-HxCDD		<0.036	<0.022	RPD-NA	pg/g	N/A	50	11-MAR-22
Total-HpCDD		<0.059	0.043	RPD-NA	pg/g	N/A	50	11-MAR-22
Total-TCDF		<0.043	<0.028	RPD-NA	pg/g	N/A	50	11-MAR-22
Total-PeCDF		<0.026	<0.016	RPD-NA	pg/g	N/A	50	11-MAR-22
Total-HxCDF		<0.028	<0.020	RPD-NA	pg/g	N/A	50	11-MAR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-1613B-HRMS-BU	**Biota**							
Batch R5743237								
WG3676484-4 DUP		**L2657806-2**						
Total-HpCDF		<0.032	<0.037	RPD-NA	pg/g	N/A	50	11-MAR-22
COMMENTS: Sample and Duplicate do not meet replication criteria for the very low level of OCDD detected								
WG3676484-2 LCS								
2,3,7,8-TCDD			88.0		%		67-158	11-MAR-22
1,2,3,7,8-PeCDD			105.0		%		70-142	11-MAR-22
1,2,3,4,7,8-HxCDD			101.0		%		70-164	11-MAR-22
1,2,3,6,7,8-HxCDD			95.0		%		76-134	11-MAR-22
1,2,3,7,8,9-HxCDD			104.0		%		64-162	11-MAR-22
1,2,3,4,6,7,8-HpCDD			103.0		%		70-140	11-MAR-22
OCDD			99.0		%		78-144	11-MAR-22
2,3,7,8-TCDF			97.0		%		75-158	11-MAR-22
1,2,3,7,8-PeCDF			109.0		%		80-134	11-MAR-22
2,3,4,7,8-PeCDF			98.0		%		68-160	11-MAR-22
1,2,3,4,7,8-HxCDF			103.0		%		72-134	11-MAR-22
1,2,3,6,7,8-HxCDF			107.0		%		84-130	11-MAR-22
2,3,4,6,7,8-HxCDF			101.0		%		70-156	11-MAR-22
1,2,3,7,8,9-HxCDF			110.0		%		78-130	11-MAR-22
1,2,3,4,6,7,8-HpCDF			105.0		%		82-122	11-MAR-22
1,2,3,4,7,8,9-HpCDF			107.0		%		78-138	11-MAR-22
OCDF			90.0		%		63-170	11-MAR-22
WG3676484-1 MB								
2,3,7,8-TCDD			<0.064	[U]	pg/g		0.064	11-MAR-22
1,2,3,7,8-PeCDD			<0.038	[U]	pg/g		0.038	11-MAR-22
1,2,3,4,7,8-HxCDD			<0.019	[U]	pg/g		0.019	11-MAR-22
1,2,3,6,7,8-HxCDD			<0.020	[U]	pg/g		0.02	11-MAR-22
1,2,3,7,8,9-HxCDD			<0.019	[U]	pg/g		0.019	11-MAR-22
1,2,3,4,6,7,8-HpCDD			<0.059	[U]	pg/g		0.059	11-MAR-22
OCDD			0.550	J,R	pg/g		0.021	11-MAR-22
2,3,7,8-TCDF			<0.066	[U]	pg/g		0.066	11-MAR-22
1,2,3,7,8-PeCDF			<0.032	[U]	pg/g		0.032	11-MAR-22
2,3,4,7,8-PeCDF			<0.025	[U]	pg/g		0.025	11-MAR-22
1,2,3,4,7,8-HxCDF			<0.012	[U]	pg/g		0.012	11-MAR-22
1,2,3,6,7,8-HxCDF			<0.014	[U]	pg/g		0.014	11-MAR-22
2,3,4,6,7,8-HxCDF			<0.013	[U]	pg/g		0.013	11-MAR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-1613B-HRMS-BU	**Biota**							
Batch	**R5743237**							
WG3676484-1	**MB**							
1,2,3,7,8,9-HxCDF			<0.016	[U]	pg/g		0.016	11-MAR-22
1,2,3,4,6,7,8-HpCDF			<0.027	[U]	pg/g		0.027	11-MAR-22
1,2,3,4,7,8,9-HpCDF			<0.038	[U]	pg/g		0.038	11-MAR-22
OCDF			0.130	J,R	pg/g		0.025	11-MAR-22
Total-TCDD			<0.064	[U]	pg/g		0.064	11-MAR-22
Total-PeCDD			<0.038	[U]	pg/g		0.038	11-MAR-22
Total-HxCDD			<0.020	[U]	pg/g		0.02	11-MAR-22
Total-HpCDD			<0.059	[U]	pg/g		0.059	11-MAR-22
Total-TCDF			<0.066	[U]	pg/g		0.066	11-MAR-22
Total-PeCDF			<0.032	[U]	pg/g		0.032	11-MAR-22
Total-HxCDF			<0.016	[U]	pg/g		0.016	11-MAR-22
Total-HpCDF			<0.038	[U]	pg/g		0.038	11-MAR-22
Surrogate: 13C12-2,3,7,8-TCDD			42.0		%		25-164	11-MAR-22
Surrogate: 13C12-1,2,3,7,8-PeCDD			51.0		%		25-181	11-MAR-22
Surrogate: 13C12-1,2,3,4,7,8-HxCDD			64.0		%		32-141	11-MAR-22
Surrogate: 13C12-1,2,3,6,7,8-HxCDD			58.0		%		28-130	11-MAR-22
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD			69.0		%		23-140	11-MAR-22
Surrogate: 13C12-OCDD			73.0		%		17-157	11-MAR-22
Surrogate: 13C12-2,3,7,8-TCDF			40.0		%		24-169	11-MAR-22
Surrogate: 13C12-1,2,3,7,8-PeCDF			49.0		%		21-192	11-MAR-22
Surrogate: 13C12-2,3,4,7,8-PeCDF			51.0		%		21-178	11-MAR-22
Surrogate: 13C12-1,2,3,4,7,8-HxCDF			73.0		%		26-152	11-MAR-22
Surrogate: 13C12-1,2,3,6,7,8-HxCDF			60.0		%		26-123	11-MAR-22
Surrogate: 13C12-2,3,4,6,7,8-HxCDF			68.0		%		29-147	11-MAR-22
Surrogate: 13C12-1,2,3,7,8,9-HxCDF			68.0		%		28-136	11-MAR-22
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF			69.0		%		28-143	11-MAR-22
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF			71.0		%		26-138	11-MAR-22
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)			44.0		%		31-197	11-MAR-22
Batch	**R5746458**							
WG3676486-4	**DUP**	**L2657806-28**						
2,3,7,8-TCDD		<0.043	<0.040	RPD-NA	pg/g	N/A	50	12-MAR-22
1,2,3,7,8-PeCDD		0.068	0.063		pg/g	8.1	50	12-MAR-22
1,2,3,4,7,8-HxCDD		0.063	0.071		pg/g	12	50	12-MAR-22
1,2,3,6,7,8-HxCDD		0.121	0.085		pg/g	35	50	12-MAR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-1613B-HRMS-BU	**Biota**							
Batch R5746458								
WG3676486-4 DUP		**L2657806-28**						
1,2,3,7,8,9-HxCDD		0.100	0.133		pg/g	28	50	12-MAR-22
1,2,3,4,6,7,8-HpCDD		1.19	0.830		pg/g	36	50	12-MAR-22
OCDD		5.98	3.38	G	pg/g	56	50	12-MAR-22
2,3,7,8-TCDF		0.061	<0.032	RPD-NA	pg/g	N/A	50	12-MAR-22
1,2,3,7,8-PeCDF		<0.019	<0.014	RPD-NA	pg/g	N/A	50	12-MAR-22
2,3,4,7,8-PeCDF		<0.015	<0.012	RPD-NA	pg/g	N/A	50	12-MAR-22
1,2,3,4,7,8-HxCDF		0.057	0.048		pg/g	17	50	12-MAR-22
1,2,3,6,7,8-HxCDF		0.055	0.071		pg/g	26	50	12-MAR-22
2,3,4,6,7,8-HxCDF		0.100	0.062		pg/g	47	50	12-MAR-22
1,2,3,7,8,9-HxCDF		0.048	0.034		pg/g	33	50	12-MAR-22
1,2,3,4,6,7,8-HpCDF		0.322	0.247		pg/g	26	50	12-MAR-22
1,2,3,4,7,8,9-HpCDF		<0.032	0.070	RPD-NA	pg/g	N/A	50	12-MAR-22
OCDF		0.569	0.323	G	pg/g	55	50	12-MAR-22
Total-TCDD		<0.043	<0.040	RPD-NA	pg/g	N/A	50	12-MAR-22
Total-PeCDD		1.18	0.173	G	pg/g	149	50	12-MAR-22
Total-HxCDD		1.28	1.29		pg/g	0.8	50	12-MAR-22
Total-HpCDD		1.19	0.830		pg/g	36	50	12-MAR-22
Total-TCDF		0.485	0.519		pg/g	6.8	50	12-MAR-22
Total-PeCDF		0.465	0.049	G	pg/g	162	50	12-MAR-22
Total-HxCDF		0.483	0.167	G	pg/g	97	50	12-MAR-22
Total-HpCDF		0.322	0.317		pg/g	1.6	50	12-MAR-22
COMMENTS: Sample and duplicate are outside method RPD criteria for select targets.								
WG3676486-2 LCS								
2,3,7,8-TCDD			90.0		%		67-158	11-MAR-22
1,2,3,7,8-PeCDD			102.0		%		70-142	11-MAR-22
1,2,3,4,7,8-HxCDD			96.0		%		70-164	11-MAR-22
1,2,3,6,7,8-HxCDD			94.0		%		76-134	11-MAR-22
1,2,3,7,8,9-HxCDD			100.0		%		64-162	11-MAR-22
1,2,3,4,6,7,8-HpCDD			93.0		%		70-140	11-MAR-22
OCDD			83.0		%		78-144	11-MAR-22
2,3,7,8-TCDF			92.0		%		75-158	11-MAR-22
1,2,3,7,8-PeCDF			104.0		%		80-134	11-MAR-22
2,3,4,7,8-PeCDF			92.0		%		68-160	11-MAR-22
1,2,3,4,7,8-HxCDF			99.0		%		72-134	11-MAR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-1613B-HRMS-BU	**Biota**							
Batch	**R5746458**							
WG3676486-2	**LCS**							
1,2,3,6,7,8-HxCDF			100.0		%		84-130	11-MAR-22
2,3,4,6,7,8-HxCDF			93.0		%		70-156	11-MAR-22
1,2,3,7,8,9-HxCDF			99.0		%		78-130	11-MAR-22
1,2,3,4,6,7,8-HpCDF			97.0		%		82-122	11-MAR-22
1,2,3,4,7,8,9-HpCDF			94.0		%		78-138	11-MAR-22
OCDF			88.0		%		63-170	11-MAR-22
WG3676486-1	**MB**							
2,3,7,8-TCDD			<0.026	[U]	pg/g		0.026	12-MAR-22
1,2,3,7,8-PeCDD			0.040	M,J	pg/g		0.014	12-MAR-22
1,2,3,4,7,8-HxCDD			0.023	M,J,R	pg/g		0.021	12-MAR-22
1,2,3,6,7,8-HxCDD			0.032	M,J,R	pg/g		0.02	12-MAR-22
1,2,3,7,8,9-HxCDD			0.054	M,J	pg/g		0.019	12-MAR-22
1,2,3,4,6,7,8-HpCDD			0.065	M,J	pg/g		0.026	12-MAR-22
OCDD			0.155	M,J	pg/g		0.028	12-MAR-22
2,3,7,8-TCDF			<0.017	[U]	pg/g		0.017	12-MAR-22
1,2,3,7,8-PeCDF			<0.011	[U]	pg/g		0.011	12-MAR-22
2,3,4,7,8-PeCDF			<0.0086	[U]	pg/g		0.0086	12-MAR-22
1,2,3,4,7,8-HxCDF			0.0297	M,J	pg/g		0.008	12-MAR-22
1,2,3,6,7,8-HxCDF			0.0409	M,J	pg/g		0.0079	12-MAR-22
2,3,4,6,7,8-HxCDF			0.0348	M,J	pg/g		0.0072	12-MAR-22
1,2,3,7,8,9-HxCDF			0.047	M,J	pg/g		0.012	12-MAR-22
1,2,3,4,6,7,8-HpCDF			0.044	M,J	pg/g		0.012	12-MAR-22
1,2,3,4,7,8,9-HpCDF			0.057	M,J	pg/g		0.02	12-MAR-22
OCDF			0.100	M,J,R	pg/g		0.017	12-MAR-22
Total-TCDD			<0.026	[U]	pg/g		0.026	12-MAR-22
Total-PeCDD			0.040	A	pg/g		0.014	12-MAR-22
Total-HxCDD			0.054	A	pg/g		0.021	12-MAR-22
Total-HpCDD			0.065	A	pg/g		0.026	12-MAR-22
Total-TCDF			<0.017	[U]	pg/g		0.017	12-MAR-22
Total-PeCDF			<0.011	[U]	pg/g		0.011	12-MAR-22
Total-HxCDF			0.152	A	pg/g		0.012	12-MAR-22
Total-HpCDF			0.101	A	pg/g		0.02	12-MAR-22
Surrogate: 13C12-2,3,7,8-TCDD			54.0		%		25-164	12-MAR-22
Surrogate: 13C12-1,2,3,7,8-PeCDD			54.0		%		25-181	12-MAR-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-1613B-HRMS-BU	**Biota**							
Batch	**R5746458**							
WG3676486-1	**MB**							
Surrogate: 13C12-1,2,3,4,7,8-HxCDD			70.0		%		32-141	12-MAR-22
Surrogate: 13C12-1,2,3,6,7,8-HxCDD			65.0		%		28-130	12-MAR-22
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD			62.0		%		23-140	12-MAR-22
Surrogate: 13C12-OCDD			54.0		%		17-157	12-MAR-22
Surrogate: 13C12-2,3,7,8-TCDF			55.0		%		24-169	12-MAR-22
Surrogate: 13C12-1,2,3,7,8-PeCDF			50.0		%		21-192	12-MAR-22
Surrogate: 13C12-2,3,4,7,8-PeCDF			53.0		%		21-178	12-MAR-22
Surrogate: 13C12-1,2,3,4,7,8-HxCDF			62.0		%		26-152	12-MAR-22
Surrogate: 13C12-1,2,3,6,7,8-HxCDF			61.0		%		26-123	12-MAR-22
Surrogate: 13C12-2,3,4,6,7,8-HxCDF			69.0		%		29-147	12-MAR-22
Surrogate: 13C12-1,2,3,7,8,9-HxCDF			64.0		%		28-136	12-MAR-22
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF			58.0		%		28-143	12-MAR-22
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF			56.0		%		26-138	12-MAR-22
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)			67.0		%		31-197	12-MAR-22

COMMENTS: Blank has low levels of select targets that were within the reference method control limits

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
A	Method Blank exceeds ALS DQO. Refer to narrative comments for further information.
G	QC result did not meet ALS DQO. Refer to narrative comments for further information.
J	Duplicate results and limits are expressed in terms of absolute difference.
J,R	The analyte was detected below the calibrated range but above the EDL, and the ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
M	A peak has been manually integrated.
M,J	A peak has been manually integrated, and the analyte was detected below the calibrated range but above the EDL.
M,J,R	A peak has been manually integrated, the analyte was detected below the calibrated range but above the EDL, and the ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
M,U	A peak has been manually integrated, and the analyte was not detected above the EDL.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.
[J]	The analyte was detected below the calibrated range but above the EDL.
[U]	The analyte was not detected above the EDL.

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier

Quality Control Report

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier

Legend & Qualifier Definitions:

EHTR-FM:	Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR:	Exceeded ALS recommended hold time prior to sample receipt.
EHTL:	Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT:	Exceeded ALS recommended hold time prior to analysis.
Rec. HT:	ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2657806 were received on 20-OCT-21 13:00.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 21 -

Page 1 of 5

L2657806-COFC

Report To	Contact and company name below will appear on the final report
Company:	Stantec Consulting Ltd.
Contact:	Katherine Ketis
Phone:	519-830-1478
	Company address below will appear on the final report
Street:	70 Southgate Drive
City/Province:	Guelph, Ontario
Postal Code:	N1G 4P5
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	Clean Harbors Canada
Contact:	-- FRANK WAGNER

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Merge QC/QCI Reports with COA: ☑ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: katherine.ketis@stantec.com

Email 2: bilal.siddiqui2@stantec.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: frank.wagner@safety-kleen.com

Email 2:

Turnaround Time (TAT)

☑ Routine [R] if received by 3pm M-F - no
☐ 4 day [P4] if received by 3pm M-F - 20
☐ 3 day [P3] if received by 3pm M-F - 25
☐ 2 day [P2] if received by 3pm M-F - 50
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:	
Job #:	122160252
PO / AFE:	ALS quote: ALSEQ18-108
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only):

ALS Contact: Lynne Wrona

Sampler: M. Bilal Siddiqui

Analysis Request

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals (List Attached)		Chloride		OCPs		PCBs (No Arochlors)		PCP		PCDD/DF				SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
						Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																
1 ✓	21-W2-SS-CH-001	20-Sep-21	12:30	Soil	1	R		R		R		R		X		R						
2 ✓	21-W2-SB-CH-005	20-Sep-21	12:55	Plant Tissue	1	R		R		R		R		R		R						
3 ✓	21-W2-NG-CH-003	20-Sep-21	12:45	Plant Tissue	2	R		R		R		R		X		R						
4 ✓	21-W4-SS-CH-007	9-Jul-21	14:35	Soil	1	R		R								R						
5 ✓	21-W4-WW-CH-011	9-Jul-21	14:35	Plant Tissue	2	R		R		R		R		R		R						
6 ✓	21-W4-NG-CH-009	20-Sep-21	15:30	Plant Tissue	2	R		R								R						
7 ✓	21-N2-SS-CH-103	5-Oct-21	10:00	Soil	1	R		R								R						
8 ✓	21-N2-SD-CH-015	5-Oct-21	10:00	Sediment	1	R		R														
9 ✓	21-N2-NG-CH-019	5-Oct-21	10:00	Plant Tissue	2	R		R								R						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☑ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☑ YES ☐ N/A Sample Custody Seals Intact: ☑ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.8°C							

SHIPMENT RELEASE (client use)

Released by: (MBS)	Date:	Time:
Bilal Siddiqui	2021-10-19	17:50

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
AARON BOLTON	20-OCT-2021	13:00

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Chain of Custody (COC) / Analytical Request Form

COC Number: 21 -

Page 2 of 5

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L2657806-COFC

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Contact:	Katherine Ketis
Phone:	519-830-1478
	Company address below will appear on the final report
Street:	70 Southgate Drive
City/Province:	Guelph, Ontario
Postal Code:	N1G 4P5
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: katherine.ketis@stantec.com

Email 2: bilal.siddiqui2@stantec.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Turnaround Time (TAT)

☑ Routine [R] if received by 3pm M-F - no surcharge

☐ 4 day [P4] if received by 3pm M-F - 20%

☐ 3 day [P3] if received by 3pm M-F - 25%

☐ 2 day [P2] if received by 3pm M-F - 50%

☐ 1 day [E] if received by 3pm M-F - 100%

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:	
Job #:	122160252
PO / AFE:	ALS quote: ALSEQ18-108
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only):

ALS Contact:

Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals (List Attached)		Chloride		OCPs		PCBs (No Arochlors)		PCP		PCDD/DF				SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
10 ✓	21-N2-FC-CH-021	5-Oct-21	10:00	Plant Tissue	2	R		R								R						
11 ✓	21-N4-SS-CH-023	21-Sep-21	14:00	Soil	1	R		R								R						
12 ✓	21-N4-SB-CH-027	21-Sep-21	14:30	Plant Tissue	1	R		R		R		R		R		R						
13 ✓	21-N4-NG-CH-025	21-Sep-21	14:10	Plant Tissue	2	R		R		R		R		R		R						
14 ✓	21-N5-SS-CH-029	22-Sep-21	14:30	Soil	1	R		R		R		R		R		R						
15 ✓	21-N5-SD-CH-031	22-Sep-21	14:30	Sediment	1	R		R		R		R		R		R	MBS					
16 ✓	21-N5-NG-CH-035	22-Sep-21	14:40	Plant Tissue	2	R		R		R		R		R		R						
17 ✓	21-E1-SS-CH-037	6-Oct-21	10:30	Soil	1	R		R								R						
18 ✓	21-E1-NG-CH-309	6-Oct-21	10:30	Plant Tissue	2	R		R								R						
19 ✓	21-E1-FC-CH-041	6-Oct-21	10:30	Plant Tissue	2	R		R		R		R		R		R						
20 ✓	21-E2-SS-CH-043	21-Sep-21	11:00	Soil	1	R		R								R						
21 ✓	21-E2-SD-CH-045	21-Sep-21	11:10	Sediment	1	R		R														

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☑ ICE PACKS ☐ FROZEN ☑ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.8°C							

SHIPMENT RELEASE (client use)		
Released by:	Date:	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)		
Received by: AARON BURTON	Date: 20-Oct-2021	Time: 13:00

FINAL SHIPMENT RECEPTION (ALS use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 21 -

Page 3 of 5

L2657806-COFC

Report To	Contact and company name below will appear on the final report
Company:	Stantec Consulting Ltd.
Contact:	Katherine Ketis
Phone:	519-830-1478
	Company address below will appear on the final report
Street:	70 Southgate Drive
City/Province:	Guelph, Ontario
Postal Code:	N1G 4P5
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	katherine.ketis@stantec.com
Email 2	bilal.siddiqui2@stantec.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Turnaround Time (TAT)
☑ Routine [R] if received by 3pm M-F - no s
☐ 4 day [P4] if received by 3pm M-F - 20%
☐ 3 day [P3] if received by 3pm M-F - 25%
☐ 2 day [P2] if received by 3pm M-F - 50%
☐ 1 day [E] if received by 3pm M-F - 100%
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.
Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.
Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm
For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information	
ALS Account # / Quote #:	
Job #:	122160252
PO / AFE:	ALS quote: ALSEQ18-108
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): **ALS Contact:** **Sampler:**

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals (List Attached)		Chloride		OCPs		PCBs (No Arochlors)		PCP		PCDD/DF				SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
22 ✓	21-E2-NG-CH-049	21-Sep-21	11:20	Plant Tissue	2	R		R								R						
23 ✓	21-E2-SU-CH-051	21-Sep-21	11:30	Plant Tissue	2	R		R		R		R		R		R						
24 ✓	21-E5-SS-CH-053	5-Oct-21	14:00	Soil	1	R		R								R						
25 ✓	21-E5-NG-CH-055	5-Oct-21	14:00	Plant Tissue	2	R		R								R						
26 ✓	21-E5-FC-CH-057	5-Oct-21	14:00	Plant Tissue	2	R		R								R						
27 ✓	21-E7-SS-CH-303	4-Oct-21	13:00	Soil	1	R		R								R						
28 ✓	21-E7-NG-CH-305	4-Oct-21	13:00	Plant Tissue	2	R		R								R						
29 ✓	21-E7-FC-CH-300	4-Oct-21	13:00	Plant Tissue	2	R		R		R		R		R		R						
30 ✓	21-S2-SS-CH-073	4-Oct-21	14:00	Soil	1	R		R								R						
31 ✓	21-S2-NG-CH-075	4-Oct-21	14:00	Plant Tissue	2	R		R								R						

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☑ ICE PACKS ☐ FROZEN ☑ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.8°C							

SHIPMENT RELEASE (client use)		
Released by:	Date:	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)		
Received by: AARON BURTON	Date: 20-oct-2021	Time: 13:00

FINAL SHIPMENT RECEPTION (ALS use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Chain of Custody (COC) / Analytical Request Form

COC Number: 21 -

Page 4 of 5

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L2657806-COFC

Report To	Contact and company name below will appear on the final report
Company:	Stantec Consulting Ltd.
Contact:	Katherine Ketis
Phone:	519-830-1478
	Company address below will appear on the final report
Street:	70 Southgate Drive
City/Province:	Guelph, Ontario
Postal Code:	N1G 4P5
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	katherine.ketis@stantec.com
Email 2	bilal.siddiqui2@stantec.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Turnaround Time (TAT) Rec
☑ Routine [R] if received by 3pm M-F - no surch
☐ 4 day [P4] if received by 3pm M-F - 20% rush
☐ 3 day [P3] if received by 3pm M-F - 25% rus
☐ 2 day [P2] if received by 3pm M-F - 50% rus
☐ 1 day [E] if received by 3pm M-F - 100% rush
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:	122160252	Major/Minor Code:	Routing Code:
PO / AFE:	ALS quote: ALSEQ18-108	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):		ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals (List Attached)		Chloride		OCPs		PCBs (No Arochlors)		PCP		PCDD/DF				SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
32 ✓	21-S2-FC-CH-077	4-Oct-21	14:00	Plant Tissue	2	R		R								R						
33 ✓	21-S4-SS-CH-087	9-Jul-21	12:15	Soil	1	R		R								R						
34 ✓	21-S4-SD-CH-089	21-Sep-21	10:00	Sediment	1	R		R		R		R		X								
35 ✓	21-S4-NG-CH-093	21-Sep-21	10:15	Plant Tissue	2	R		R								R						
36 ✓	21-S4-WW-CH-095	9-Jul-21	12:15	Plant Tissue	2	R		R		R		R		R		R						
37 ✓	21-S8-SS-CH-079	22-Sep-21	16:00	Soil	1	R		R		R		R		X		R						
38 ✓	21-S8-SD-CH-001	22-Sep-21	16:00	Sediment	1	R		R		R		R		X		X						
39 ✓	21-S8-NG-CH-085	22-Sep-21	16:00	Plant Tissue	2	R		R		R		R		X		R						
	~~21-W4-RB-CH~~ MBS	9-Jul-21	14:30	Water	1	R		R														
	~~21-W4-FB-CH~~ MBS	9-Jul-21	14:35	Water	4	R		R														

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☑ ICE PACKS ☐ FROZEN ☑ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.8°C							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date:	Time:	Received by: AARON BURTON	Date: 20-Oct-2021	Time: 13:00	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY AUG 2020 FRONT

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Chain of Custody (COC) / Analytical Request Form

COC Number: 21 -

Page 5 of 5

Canada Toll Free: 1 800 668 9878

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L2657806-COFC

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	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
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Email 1 or Fax	katherine.ketis@stantec.com
Email 2	bilal.siddiqui2@stantec.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	

Turnaround Time (TAT)
☑ Routine [R] if received by 3pm M-F - no s
☐ 4 day [P4] if received by 3pm M-F - 20%
☐ 3 day [P3] if received by 3pm M-F - 25%
☐ 2 day [P2] if received by 3pm M-F - 50%
☐ 1 day [E] if received by 3pm M-F - 100%
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.
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Job #:	122160252	Major/Minor Code:	Routing Code:
PO / AFE:	ALS quote: ALSEQ18-108	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):		ALS Contact:	Sampler:

Analysis Request

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals (List Attached)		Chloride		OCPs		PCBs (No Arochlors)		PCP		PCDD/DF				SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																					
40 ✓	21-N4-RB-CH-215	21-Sep-21	–	Water	2	R		R														
41 ✓	21-N4-FB-CH-213	21-Sep-21	–	Water	4	R		R														
42 ✓	21-E1-RB-CH-217	7-Oct-21	–	Water	1 MCS	R		R														
43	21-E1-FB-CH-218	7-Oct-21	–	Water	4	R		R														
44 ✓	21-D1-SS-CH-200	20-Sep-21	--	Soil	1	R		R		R		R		R		R						
45 ✓	21-D5-SB-CH-205	20-Sep-21	--	Plant Tissue	1	R		R		R		R		R		R						
46 ✓	21-D3-NG-CH-203	20-Sep-21	--	Plant Tissue	2	R		R		R		R		R		R						
47 ✓	21-D8-SU-CH-210	21-Sep-21	--	Plant Tissue	2	R		R		R		R		R		R						
48 ✓	21-D6-FC-CH-207	4-Oct-21	--	Plant Tissue	2	R		R		R		R		R		R						
49 ✓	21-D4-SD-CH-204	21-Sep-21	--	Sediment	1	R		R		R		R		R								
50 ✓	21-D7-WW-CH-209	9-Jul-21	--	Plant Tissue	2	R		R		R		R		R		R						

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☑ ICE PACKS ☐ FROZEN ☑ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4.8°C							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date:	Time:	Received by: Aaron Burton	Date: 29-oct-2021	Time: 13:00	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Table 1: List of Analytes, by Group, to be Monitored during the 2021 Biomonitoring Program, Lambton Facility

GROUP 1 ANALYTES			
Barium	Fluoride[2]	Potassium	Zirconium
Beryllium	Iron	Silicon	
Boron	Magnesium	Silver	
Calcium	Manganese	Sodium	
Chloride	Molybdenum	Strontium	
Chromium	Nickel	Sulphur	
Cobalt	Phosphorus	Titanium	
Cyanide[1]			
GROUP 2 ANALYTES			
Aluminum	Copper	Thallium	ANTIMONY MB
Arsenic	Lead	Vanadium	
Cadmium	Mercury	Zinc	

GROUP 3 ANALYTES		
Organochlorine Pesticides (OCPs)		
Aldrin	p,p' DDD	Endrin
a-BHC	p,p' DDE	Endrin Aldehyde
b-BHC	p,p' DDT	Heptachlor
g-BHC (Lindane)	Dieldrin	Heptachlor Epoxide
d-BHC	a Endosulfan	Methoxychlor
a-Chlordane	b Endosulfan	Mirex
g Chlordane	Endosulfan Sulphate	
Total Polychlorinated Biphenyls (PCB)		
Pentachlorophenol (PCP)		
Furans and Dioxins (PCDD/DF)		
Total Tetrachlorodibenzofurans (T4CDF)	Total Tetrachlorodibenzo-p-dioxins (T4CDD)	
Total Pentachlorodibenzofurans (T5CDF)	Total Pentachlorodibenzo-p-dioxins (T5CDD)	
Total Hexachlorodibenzofurans (T6CDF)	Total Hexachlorodibenzo-p-dioxins (T6CDD)	
Total Heptachlorodibenzofurans (T7CDF)	Total Heptachlorodibenzo-p-dioxins (T7CDD)	
Octachlorodibenzofuran (8CDF)	Octochlorodibenzo-p-dioxin (8CDD)	

[1] Cyanide is being added on a 3-year trial basis starting in 2021. We understand that ALS can only provide this analysis in soil/sediment.

[2] The monitoring of fluoride was added to the Biomonitoring Program in the 2018 Field Year as per the MECP approved changes.

Preferred detection limits for the 2020 Field Year:

Chemical	Units	Detection Limit for Natural Grasses/Crops	Detection Limit for Soil/Sediment
Aluminum	mg/Kg	2	50
Arsenic	mg/Kg	0.02	0.1
Barium	mg/Kg	0.05	0.5
Beryllium	mg/Kg	0.01	0.1
Boron	mg/Kg	1	5
Cadmium	mg/Kg	0.005	0.02
Calcium	mg/Kg	20	50
Chloride	mg/Kg	10 (2018 was 20)	0.5 (2018 was 5)
Chromium	mg/Kg	0.05	0.5
Cobalt	mg/Kg	0.02	0.1
Copper	mg/Kg	0.1	0.5
Fluoride	mg/Kg	8	0.2
Iron	mg/Kg	3	50
Lead	mg/Kg	0.02	0.5
Magnesium	mg/Kg	2	20
Manganese	mg/Kg	0.05	1
Mercury	mg/Kg	0.005	0.005
Molybdenum	mg/Kg	0.02	0.1
Nickel	mg/Kg	0.2	0.5
Phosphorus	mg/Kg	10	50
Potassium	mg/Kg	20	100
Silicon	mg/Kg	N/A	N/A
Silver	mg/Kg	0.005	0.1
Sodium	mg/Kg	20	50
Strontium	mg/Kg	0.05	0.5
Sulfur	mg/Kg	N/A	100 (2018 was 1000)
Thallium	mg/Kg	0.002	0.05
Titanium	mg/Kg	0.1	1
Vanadium	mg/Kg	0.1	0.2
Zinc	mg/Kg	0.5	2
Zirconium	mg/Kg	0.2	1

We recognize that there are limitations to what DLs the labs can achieve, but if possible we would like to further reduce the following list of DLs in 2019:

- Sulfur DL – soil/sediment: 100 mg/kg
- Chloride DL – soil/sediment: 0.50 mg/kg
- Chloride DL – tissue: 10 mg/kg
- Fluoride DL – tissue: 8 mg/kg

CERTIFICATE OF ANALYSIS

Work Order	: **LE2200302**	Page	: 1 of 8
Client	: **ALS Enviromental Burlington**	Project	: 122160252 CLEAN HARBORS
Contact	: Lynne Wrona	Purchase Number	: L2657806
Address	: 1435 Norjohn Court, Unit 1 L7L 0E6 Burlington Canada	Sampler Site Date Samples Received	: M. Bilal Siddiqui : ---- : 2022-01-12 13:24
E-mail	: lynne.wrona@alsglobal.com	Date Analysis Commenced	: 2022-01-18
Telephone	: 905 331 3111	Issue Date	: 2022-02-02 15:36
C-O-C number	: ----	No. of samples received	: 22
Quote number	: ----	No. of samples analysed	: 22

General Comments

This certificate represents the original certificate and may not be modified or reproduced other than in full, except with the prior written approval of the issuing lab. The results apply only to the material that has been identified, received, and tested. Regarding the laboratory's liability in relation to assignment, please refer to our website http://www.alsglobal.se

Signatories	*Position*
Ilia Rodushkin	Laboratory Manager

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Laboratory	: ALS Scandinavia AB Luleå	Webpage	: www.alsglobal.com
Address	: Aurorum 10 977 75 Luleå Sweden	E-mail Telephone	: info.lu@alsglobal.com : +46 920 28 99 00

Analytical Results

Sub-Matrix: SOIL	Client sample ID	L2657806-1 21-W2-SS-CH-001					
	Laboratory sample ID	LE2200302-001					
	Client sampling date / time	2021-09-20					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	371000	± 37100	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	85.5	± 2.00	%	1.00	TC-2	TS-105	LE
Other							
Dummy Analyte	Yes *	----	-	-	S-EU-not	S-EU-not	LE

Sub-Matrix: SOIL	Client sample ID	L2657806-4 21-W4-SS-CH-007					
	Laboratory sample ID	LE2200302-002					
	Client sampling date / time	2021-07-09					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	323000	± 32300	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	78.7	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SOIL	Client sample ID	L2657806-7 21-N2-SS-CH-103					
	Laboratory sample ID	LE2200302-003					
	Client sampling date / time	2021-10-05					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	308000	± 30800	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	77.0	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SEDIMENT	Client sample ID	L2657806-8 21-N2-SD-CH-015					
	Laboratory sample ID	LE2200302-004					
	Client sampling date / time	2021-10-05					
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	224000	± 22400	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	82.0	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SOIL	Client sample ID	L2657806-11 21-N4-SS-CH-023					
	Laboratory sample ID	LE2200302-005					
	Client sampling date / time	2021-09-21					
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	370000	± 37000	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	84.4	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SOIL	Client sample ID	L2657806-14 21-N5-SS-CH-029					
	Laboratory sample ID	LE2200302-006					
	Client sampling date / time	2021-09-22					
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	335000	± 33500	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	74.8	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SEDIMENT	Client sample ID	L2657806-15 21-N5-SD-CH-031					
	Laboratory sample ID	LE2200302-007					
	Client sampling date / time	2021-09-22					
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							

Sample Preparation - Continued							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	264000	± 26400	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	63.3	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: **SOIL**

Client sample ID	**L2657806-17 21-E1-SS-CH-037**
Laboratory sample ID	*LE2200302-008*
Client sampling date / time	*2021-10-06*

Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	362000	± 36200	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	83.0	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: **SOIL**

Client sample ID	**L2657806-20 21-E2-SS-CH-043**
Laboratory sample ID	*LE2200302-009*
Client sampling date / time	*2021-09-21*

Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	352000	± 35200	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	83.5	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: **SEDIMENT**

Client sample ID	**L2657806-21 21-E2-SD-CH-045**
Laboratory sample ID	*LE2200302-010*
Client sampling date / time	*2021-09-21*

Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	214000	± 21400	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	69.4	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SOIL	Client sample ID	L2657806-24 21-E5-SS-CH-053
	Laboratory sample ID	LE2200302-011
	Client sampling date / time	2021-10-05

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	373000	± 37300	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	79.7	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SOIL	Client sample ID	L2657806-27 21-E7-SS-CH-303
	Laboratory sample ID	LE2200302-012
	Client sampling date / time	2021-10-04

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	353000	± 35300	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	79.5	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SOIL	Client sample ID	L2657806-30 21-S2-SS-CH-073
	Laboratory sample ID	LE2200302-013
	Client sampling date / time	2021-10-04

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	345000	± 34500	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	80.9	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SOIL	Client sample ID	L2657806-33 21-S4-SS-CH-087
	Laboratory sample ID	LE2200302-014
	Client sampling date / time	2021-07-09

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							

Sample Preparation - Continued							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	312000	± 31200	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	76.0	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: **SEDIMENT**

Client sample ID	**L2657806-34 21-S4-SD-CH-089**
Laboratory sample ID	*LE2200302-015*
Client sampling date / time	*2021-09-21*

Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	268000	± 26800	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	58.4	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: **SOIL**

Client sample ID	**L2657806-37 21-S8-SS-CH-079**
Laboratory sample ID	*LE2200302-016*
Client sampling date / time	*2021-09-22*

Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	319000	± 31900	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	76.4	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: **SEDIMENT**

Client sample ID	**L2657806-38 21-S8-SD-CH-001**
Laboratory sample ID	*LE2200302-017*
Client sampling date / time	*2021-10-05*

Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	71400	± 7140	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	78.8	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SOIL	Client sample ID	L2657806-44 21-D1-SS-CH-200					
	Laboratory sample ID	LE2200302-018					
	Client sampling date / time	2021-09-20					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	363000	± 36300	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	85.3	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SEDIMENT	Client sample ID	L2657806-49 21-D4-SD-CH-204					
	Laboratory sample ID	LE2200302-019					
	Client sampling date / time	2021-09-21					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	238000	± 23800	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	62.1	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SOIL	Client sample ID	L2657806-44 Duplicate					
	Laboratory sample ID	LE2200302-020					
	Client sampling date / time	2021-09-20					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Milling	Yes	----	-	-	PP-mill	S-PP-mill	LE
Drying	Yes	----	-	-	TC-2	S-PP-dry50	LE
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	369000	± 36900	mg/kg DW	400	TC-2	S-SFMS-49	LE
Physical Parameters							
Dry matter @ 105°C	86.5	± 2.00	%	1.00	TC-2	TS-105	LE

Sub-Matrix: SOIL	Client sample ID	QC					
	Laboratory sample ID	LE2200302-021					
	Client sampling date / time	2021-09-20					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	0.25	----	mg/kg DW	400	TC-2	S-SFMS-49	LE

Sub-Matrix: SOIL	Client sample ID	Blank					
	Laboratory sample ID	LE2200302-022					
	Client sampling date / time	2021-09-20					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Preparation							
Fusion	Yes	----	-	-	P-FU	S-PS49-FU	LE
Total Metals/Major Cations							
Silicon	60	----	mg/kg DW	400	TC-2	S-SFMS-49	LE

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Reference
S-EU-not*	Sample from outside EU
S-PP-dry50	Sample dried at 50°C.
S-PP-mill	Milling according to ISO 11464:2006.
S-SFMS-49	Determination of metals in solids by ICP-SFMS according to SS-EN ISO 17294-2:2016 and US EPA Method 200.8:1994. Prior to analysis the sample is fused and digested according to S-PS49-FU.
TS-105	Determination of dry weight (DW) according to SS-EN 15934:2012 ed 1.

Preparation Methods	Method Reference
S-PS49-FU	Fusion and digestion according to SE-SOP-0060 (ASTM D3682:2013; ASTM D4503:2008; An. Chem. 50:679-680)

Key: **LOR** = Limit of reporting represents the standard LOR for the respective parameters in each method. Note that limits of reporting may be affected if, e.g. additional dilution was required because of matrix effects, or the sample quantity was limited.

MU = Measurement Uncertainty

* = Symbol succeding any result indicates laboratory or subcontractor non-accredited test.

Measurement Uncertainty:

The uncertainty is given as extended uncertainty (according to the definition in "Guide to the Expression of Measurement", JCGM 100:2008 Corrected version 2010) calculated with a coverage factor of 2, which give level of approximately 95%. Measurement of uncertainty is reported only for detected substances with levels above the reporting limits.

The uncertainty from subcontractors is often given as extended uncertainty calculated with a coverage factor of 2. Contact the laboratory for further information.

Issuing lab

	Issuer
LE	*The analysis is provided by* ALS Scandinavia AB Luleå, Aurorum 10 Luleå Sweden 977 75 Accredited by: SWEDAC Accreditation Number: 2030

CERTIFICATE OF ANALYSIS

Work Order	: **LE2201303**	Page	: 1 of 10
Client	: **ALS Enviromental Burlington**	Project	: 122160252 CLEAN HARBORS
Contact	: Lynne Wrona	Purchase Number	: L2657806
Address	: 1435 Norjohn Court, Unit 1 L7L 0E6 Burlington Canada	Sampler Site Date Samples Received	: ---- : ---- : 2022-02-04 12:00
E-mail	: lynne.wrona@alsglobal.com	Date Analysis Commenced	: 2022-02-10
Telephone	: 905 331 3111	Issue Date	: 2022-02-18 12:59
C-O-C number	: ----	No. of samples received	: 30
Quote number	: ----	No. of samples analysed	: 30

General Comments

This certificate represents the original certificate and may not be modified or reproduced other than in full, except with the prior written approval of the issuing lab. The results apply only to the material that has been identified, received, and tested. Regarding the laboratory's liability in relation to assignment, please refer to our website http://www.alsglobal.se

Signatories	*Position*
Ilia Rodushkin	Laboratory Manager

Laboratory	: ALS Scandinavia AB Luleå	Webpage	: www.alsglobal.com
Address	: Aurorum 10 977 75 Luleå Sweden	E-mail Telephone	: info.lu@alsglobal.com : +46 920 28 99 00

Analytical Results

Sub-Matrix: PLANT	Client sample ID	L2657806-2 21-W2-SB-CH-005					
	Laboratory sample ID	LE2201303-001					
	Client sampling date / time	2022-02-07					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	87.9 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: PLANT	Client sample ID	L2657806-3 21-W2-NG-CH-003					
	Laboratory sample ID	LE2201303-002					
	Client sampling date / time	2022-02-07					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	11000 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	26.0 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: PLANT	Client sample ID	L2657806-5 W4-WW-CH-011					
	Laboratory sample ID	LE2201303-003					
	Client sampling date / time	2022-02-07					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	767 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	76.5 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: PLANT	Client sample ID	L2657806-6 W4-NG-CH-009					
	Laboratory sample ID	LE2201303-004					
	Client sampling date / time	2022-02-07					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer

Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	9010 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	15.0 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-9 21-N2-NG-CH-019**						
Laboratory sample ID	*LE2201303-005*						
Client sampling date / time	*2022-02-07*						
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	8650 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	22.1 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-10 21-N2-FC-CH-021**						
Laboratory sample ID	*LE2201303-006*						
Client sampling date / time	*2022-02-07*						
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	75.5 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-12 21-N4-SB-CH-027**						
Laboratory sample ID	*LE2201303-007*						
Client sampling date / time	*2022-02-07*						
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	77.7 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-13 21-N4-NG-CH-025**

Laboratory sample ID		*LE2201303-008*					
Client sampling date / time		*2022-02-07*					
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	7750 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	23.3 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID		**L2657806-16 21-N5-NG-CH-035**					
Laboratory sample ID		*LE2201303-009*					
Client sampling date / time		*2022-02-07*					
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	6920 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	17.7 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID		**L2657806-18 21-E1-NG-CH-039**					
Laboratory sample ID		*LE2201303-010*					
Client sampling date / time		*2022-02-07*					
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	9640 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	23.7 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID		**L2657806-19 21-E1-FC-CH-041**					
Laboratory sample ID		*LE2201303-011*					
Client sampling date / time		*2022-02-07*					
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	80.1 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: PLANT	Client sample ID	L2657806-22 21-E2-NG-CH-049
	Laboratory sample ID	LE2201303-012
	Client sampling date / time	2022-02-07

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	7150 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	17.1 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: PLANT	Client sample ID	L2657806-23 21-E2-SU-CH-051
	Laboratory sample ID	LE2201303-013
	Client sampling date / time	2022-02-07

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	1660 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	22.1 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: PLANT	Client sample ID	L2657806-25 21-E5-NG-CH-055
	Laboratory sample ID	LE2201303-014
	Client sampling date / time	2022-02-07

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	9260 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	21.9 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: PLANT	Client sample ID	L2657806-26 21-E5-FC-CH-057
	Laboratory sample ID	LE2201303-015
	Client sampling date / time	2022-02-07

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							

Physical Parameters - Continued							
Dry Matter 105°C	77.9 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-28 21-E7-NG-CH-305**
Laboratory sample ID	*LE2201303-016*
Client sampling date / time	*2022-02-07*

Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	9440 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	28.2 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-29 21-E7-FC-CH-300**
Laboratory sample ID	*LE2201303-017*
Client sampling date / time	*2022-02-07*

Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	80.1 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-31 21-S2-NG-CH-075**
Laboratory sample ID	*LE2201303-018*
Client sampling date / time	*2022-02-07*

Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	8050 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	31.0 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-32 21-S2-FC-CH-077**
Laboratory sample ID	*LE2201303-019*
Client sampling date / time	*2022-02-07*

Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							

Sample Preparation - Continued							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	72.0 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-35 21-S4-NG-CH-093**						
Laboratory sample ID	*LE2201303-020*						
Client sampling date / time	*2022-02-07*						
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	7550 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	26.9 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-36 21-S4-WW-CH-095**						
Laboratory sample ID	*LE2201303-021*						
Client sampling date / time	*2022-02-07*						
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	7280 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	71.3 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-39 21-S8-NG-CH-085**						
Laboratory sample ID	*LE2201303-022*						
Client sampling date / time	*2022-02-07*						
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	9900 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	23.2 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-45 21-D5-SB-CH-205**						
Laboratory sample ID	*LE2201303-023*						
Client sampling date / time	*2022-02-07*						

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	87.8 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-46 21-D3-NG-CH-203**
Laboratory sample ID	*LE2201303-024*
Client sampling date / time	*2022-02-07*

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	7930 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	29.1 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-47 21-D8-SU-CH-210**
Laboratory sample ID	*LE2201303-025*
Client sampling date / time	*2022-02-07*

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	2220 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	22.0 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: **PLANT**

Client sample ID	**L2657806-48 21-D6-FC-CH-207**
Laboratory sample ID	*LE2201303-026*
Client sampling date / time	*2022-02-07*

Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	78.3 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: PLANT	Client sample ID	L2657806-50 21-D7-WW-CH-209					
	Laboratory sample ID	LE2201303-027					
	Client sampling date / time	2022-02-07					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	2470 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	76.9 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: PLANT	Client sample ID	L2657806-50 Duplicate					
	Laboratory sample ID	LE2201303-028					
	Client sampling date / time	2022-02-07					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Pre-Preparation							
Drying	Yes *	----	-	-	PP-dry50	B-PP-dry50	LE
Sample Preparation							
Digestion	Yes *	----	-	-	P-F-HNO3HF-MW	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	5720 *	----	mg/kg DW	200	F-15HF-sol2	B-SFMS-51	LE
Physical Parameters							
Dry Matter 105°C	77.6 *	----	%	0.1	DW105	B-DW105	LE

Sub-Matrix: PLANT	Client sample ID	QC					
	Laboratory sample ID	LE2201303-029					
	Client sampling date / time	2022-02-07					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg	200	F-15HF-sol2	B-SFMS-51	LE

Sub-Matrix: PLANT	Client sample ID	Blank					
	Laboratory sample ID	LE2201303-030					
	Client sampling date / time	2022-02-07					
Parameter	Result	MU	Unit	LOR	Package	Method	Issuer
Sample Preparation							
Digestion	Yes *	----	-	-	F-15HF-sol2	B-PF51HF-MW	LE
Total Metals/Major Cations							
Silicon	<200 *	----	mg/kg	200	F-15HF-sol2	B-SFMS-51	LE

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Reference
B-DW105*	Determination of dry matter at 105°C according to SE-SOP-0067 (SS-EN 15934:2012).
B-PF51HF-MW	Nitric acid/hydroperoxide digestion with trace of hydrofluoric acid in microwave oven according to SE -SOP-0128 (SS-EN 13805:2014).
B-PP-dry50*	Sample dried at 50°C
B-SFMS-51	Determination of metals in food according to SS-EN ISO 17294-2:2016, US EPA Method 200.8:1994. Prior to analysis the sample is digested according to B-PF51HF-MW or B-PF51-MW.

Key: **LOR** = Limit of reporting represents the standard LOR for the respective parameters in each method. Note that limits of reporting may be affected if, e.g. additional dilution was required because of matrix effects, or the sample quantity was limited.

MU = Measurement Uncertainty

* = Symbol succeding any result indicates laboratory or subcontractor non-accredited test.

Measurement Uncertainty:

The uncertainty is given as extended uncertainty (according to the definition in "Guide to the Expression of Measurement", JCGM 100:2008 Corrected version 2010) calculated with a coverage factor of 2, which give level of approximately 95%. Measurement of uncertainty is reported only for detected substances with levels above the reporting limits.

The uncertainty from subcontractors is often given as extended uncertainty calculated with a coverage factor of 2. Contact the laboratory for further information.

Issuing lab

	Issuer
LE	*The analysis is provided by* ALS Scandinavia AB Luleå, Aurorum 10 Luleå Sweden 977 75 Accredited by: SWEDAC Accreditation Number: 2030

Analysis Report
GS21-04725

Received: 21-Oct-2021
Completed: 26-Oct-2021
Description: Kate Ketis - Clean Harbors - Pkg III

Report File Reference Number: 0000196146

Sample ID	Laboratory ID	pH	BpH	Total Salts (mmhos/cm)	Organic Matter (%)	Nitrogen NO3-N (ppm)	Phosphorus - P (ppm) Sodium Bicarb.	Bray Phosph.	Potassium K (ppm)	Magnessium Mg (ppm)	Calcium Ca (ppm)
21-58-SS-F-131	GS21-04725.001	7.9	-	-	4.0	-	6	-	143	407	5340
21-58-SD-F-001	GS21-04725.002	8.0	-	-	2.4	-	8	-	135	331	4390

Sample ID	Zinc Zn (ppm)	Zn Index	Manganese Mn (ppm)	Mn Index	Copper Cu (ppm)	Iron Fe (ppm)	Boron B (ppm)	Texture	Cation Exchange MEQ/100g	K%	Base Saturation Mg%	Ca%
	-	-	-	-	-	-	-	M	31.7	1.2	10.7	84.3
	-	-	-	-	-	-	-	F	26.3	1.3	10.5	83.6

Sample ID	Sodium Na (ppm)	Sulpahte Sulphur SO4-S (ppm)	Chloride Cl (ppm)	Aluminum Al (ppm)	K/Mg Ratio	Exchangeable Acidity	Ammonium (ppm)
	-	-	-	-	0.4	-	-
	-	-	-	-	0.4	-	-

NOTE:
The analysis report above refers to the time and place of testing, and strictly to the supplied sample(s) only, without reference to any other matter. This report does not evidence or refer to any consignment or shipment or/and SGS sampling and inspection.

For and on behalf of SGS Canada Inc., Agriculture and Food

Jack Legg, CCA-ON, 4R NMS
Branch Manager, Agronomist

Signed and dated in Guelph, ON
On 26-Oct-2021

Analysis Report

GS21-04733

Received : 21-Oct-2021
Completed : 03-Nov-2021
Order Reference : Kate - Clean Harbors - SSC

Laboratory ID:	GS21-04733.001	GS21-04733.002
Client Sample #:		
Description:	21-58-SS-C-132	21-58-SD-C-001
Sand (%)	32	29
Silt (%)	36	39
Clay (%)	32	32
Texture	Clay Loam	Clay Loam

NOTE:
The analysis report above refers to the time and place of testing, and strictly to the supplied sample(s) only, without reference to any other matter. This report does not evidence or refer to any consignment or shipment or/and SGS sampling and inspection.

Report File Reference Number: 0000197166

Signed and dated in Guelph, ON
On 03-Nov-2021

For and on behalf of SGS Canada Inc., Agriculture and Food

Jack Legg, CCA-ON, 4R NMS
Branch Manager, Agronomist

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