Lower Duwamish Waterway Superfund Site
Terminal 117 Early Action Area

DIOXIN INVESTIGATION AND PCB SEDIMENT REMOVAL BOUNDARY DELINEATION DATA REPORT

FINAL

Prepared for:

The Port of Seattle
and
The City of Seattle

For submittal to:

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Acronyms

AET	apparent effects threshold
AP	Analytical Perspectives
ARI	Analytical Resources, Inc.
ASTM	American Society for Testing and Materials
bgs	below ground surface
CAS	Columbia Analytical Services, Inc.
CB5	catch basin 5
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
City	City of Seattle
COC	chain of custody
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSL	cleanup screening level
dw	dry weight
EAA	early action area
Ecology	Washington State Department of Ecology
EE/CA	engineering evaluation/cost analysis
EPA	US Environmental Protection Agency
FC	field coordinator
FS	feasibility study
HPAH	high-molecular-weight polycyclic aromatic hydrocarbon
Integral	Integral Consulting, Inc.
KCCWD1	King County Commercial Waterway District No. 1
LDW	Lower Duwamish Waterway
LDWG	Lower Duwamish Waterway Group
LPAH	low-molecular-weight polycyclic aromatic hydrocarbon
MLLW	mean lower low water
MTCA	Model Toxics Control Act
NTCRA	non-time-critical removal action
OC	organic carbon normalized
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
Port	Port of Seattle
PSEP	Puget Sound Estuary Program
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RI	remedial investigation

RM	river mile
ROW	City rights-of-way
SMS	Washington State Sediment Management Standards
SQS	Sediment Quality Standard
T-117	Terminal 117
TEF	toxic equivalency factor
TEQ	toxic equivalent
TPH	total petroleum hydrocarbons
TOC	total organic carbon
Windward	Windward Environmental LLC

1 Introduction

This data report presents the results of additional sediment and soil dioxin and polychlorinated biphenyl (PCB) investigations conducted August through September 2008 at the Terminal 117 (T-117) Early Action Area (EAA) of the Lower Duwamish Waterway (LDW) Superfund Site. The City of Seattle (City) and the Port of Seattle (Port) are currently performing a non-time critical removal action (NTCRA) at the T-117 EAA under the authority of the Administrative Settlement Agreement and Order on Consent (ASAOC) for the T-117 EAA (EPA 2005) pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). These additional environmental investigations were necessary to further investigate site conditions due to uncertainty regarding chemicals of potential concern and the extent of contamination from the site. The primary purposes of these investigations were to:

- Determine the presence and concentrations of dioxin and furans in all three T-117 EAA subareas: Sediment Study Area, T-117 Upland Area, and the Adjacent Streets; and in surface soils of residential properties near the Adjacent Streets.
- Determine the extent of PCB concentrations above the Washington State Sediment Quality Standard (SQS) in order to delineate a final sediment removal boundary based on PCB contamination in the Sediment Study Area.

Three independent/separate investigations were performed to comprise of this data report. At the completion of data validation, the project team issued to EPA a 'data receipt' confirming that data QA/QC was completed in accordance with EPA guidelines, so that the results could be distributed to the community prior to the distribution of this data report. The results will be incorporated into the revised engineering evaluation/cost analysis (EE/CA) (Windward et al. 2008a) where they will be further evaluated for the NTCRA.

1.1 PROBLEM DEFINITION AND BACKGROUND

1.1.1 Dioxin investigation

As part of the City's source tracing program for the LDW (Herrera 2004), two samples from the area now designated as the Adjacent Streets portion of the T-117 EAA were analyzed for dioxin and furan congeners. The samples included one street dust sample collected at the intersection of Dallas Avenue S and 16th Avenue S (within the Adjacent Streets portion of the T-117 EAA) and a sample collected from a settling tank (later replaced by an oil-water separator) located on the Basin Oil property. Analytical results from this sampling program were compiled and reviewed by the City in 2008 (Integral 2008b). The dioxin concentration for the street dust and the settling tank, expressed as the toxic equivalent (TEQ) concentration of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD), was 90.5 ng/kg and 15.2 ng/kg, respectively. Based on these two

source tracing samples, uncertainty emerged regarding the presence of dioxin and furans throughout the T-117 EAA.

1.1.2 Sediment Study Area PCB removal boundary delineation

The Sediment Study Area includes the sediment in the aquatic portion of the T-117 EAA offshore of the T-117 Upland Area out to the navigation channel. The northern and southern limits of the Sediment Study Area boundary were expanded in the EE/CA Work Plan (Windward et al. 2008b) to include sample locations where concentrations of chemicals of concern in the sediment may potentially be associated with the T-117 EAA. The Sediment Study Area Boundary is presented as the solid black line on Map 1-1.

The PCB sediment removal boundary (as indicated by a dashed black line within the Sediment Study Area) from the 2005 EE/CA (Windward et al. 2005) was established by comparing site sediment chemistry data to Washington Sediment Management Standards (SMS) along with consideration of risk reduction for exposure scenarios identified in the LDW Human Health Risk Assessment (HHRA) and Ecological Risk Assessment (ERA) that were underway at that time. Since that time, the LDW HHRA and ERA have been approved by EPA (Windward 2007a, b) and a draft of the LDW Remedial Investigation (RI) report (Windward 2007c) has been reviewed by EPA. Although these documents do not specify any sediment cleanup standards, some preliminary risk based cleanup decisions can be determined, such as those based on direct sediment contact. Final LDW cleanup standards will be set in a Record of Decision after public input and consideration of all supporting documents, including a final RI and final Feasibility Study (FS) (EPA 2008). However, since cleanup decisions at T-117 are likely to occur prior to the final RI and FS for the LDW, EPA has determined that the SQS for PCBs (12 mg/kg organic carbon [OC]), based on a point-by-point cleanup action level, is an appropriate standard on which to base the PCB sediment removal boundary for the purpose of establishing EAA boundaries (EPA 2008).

Establishing a PCB sediment removal boundary based on the SQS and a point-by-point approach resulted in some uncertainty along portions of the 2005 sediment removal boundary with respect to the extent of T-117 PCB contamination above the SQS in the navigation channel.

1.2 SITE DESCRIPTION

The T-117 EAA is located on the west bank of the LDW between River Mile (RM) 3.5 and RM 3.7, as measured from the southern tip of Harbor Island (Map 1-1). The site is approximately 6 miles due south of the Seattle downtown core area within a narrow strip of unincorporated King County that lies between the LDW to the east and the South Park neighborhood of Seattle to the west. The Port's T-117 property, which encompasses the T-117 Upland Area, is located at 8700 Dallas Avenue S and is just south of the 16th Avenue S bridge (also known as the South Park Bridge) (Map1-1). The

T-117 EAA is characterized by gently sloping intertidal mudflat habitat, a steep vegetated riprap bank, and a relatively flat adjacent upland portion. The T-117 EAA encompasses approximately 6.4 acres and consists of the three defined areas: the Sediment Study Area within the LDW, the T-117 Upland Area (Port-owned T-117 property), and the Adjacent Streets (City rights-of-way [ROWs]). Each area of the T-117 EAA is described in further detail in the subsections that follow.

1.2.1 Sediment Study Area

The Sediment Study Area, as defined by the sediment study boundary (Map 1-1), is the aquatic portion of the T-117 EAA located within the LDW and consists primarily of intertidal sediment with some subtidal sediment. This area extends from the top of the shoreline bank (approximately+13.8 ft mean lower low water [MLLW]) to 60 to 80 ft into the LDW at an elevation between 0 and -5 ft MLLW, encompassing approximately 1.4 acres. This area is bordered by the LDW navigation channel to the east, and by the T-117 Upland Area to the west. A preliminary sediment removal boundary based on PCB concentrations is shown within the Sediment Study Area. The sediment removal boundary will be finalized in the final EE/CA.

1.2.2 T-117 Upland Area

The T-117 Upland Area consists of the Port's T-117 upland property located between the Sediment Study Area and the Adjacent Streets. This property, which includes the former Malarkey Asphalt Plant area, is located at 8700 Dallas Avenue S. In 1963, the Port accepted the assets of the King County Commercial Waterway District No. 1 (KCCWD1) (Map 1-1), which included a 500-ft-wide ROW. In 2000, the Port acquired the inland parcels that made up the former Malarkey property between the shoreline KCCWD1 parcel and Dallas Avenue S. These properties were consolidated to form the present-day T-117, which encompasses approximately 3.3 acres. This area is relatively flat with an elevation that ranges from approximately +14 ft MLLW at the top of the river bank to approximately +21 ft MLLW along the property boundaries at Dallas Avenue S and the South Park Marina. The T-117 Upland Area is bordered by the South Park Marina to the north, Boeing South Park to the south, Dallas Avenue S to the west, and the Sediment Study Area to the east.

1.2.3 Adjacent Streets

The Adjacent Streets encompass approximately 1.75 acres and comprise the street ROWs along sections of 16th and 17th Avenue S, Dallas Avenue S, and S Donovan Street. The northern part of the Adjacent Streets, along Dallas Avenue S, is relatively flat with an elevation of approximately +21 ft MLLW but rises gradually to a localized high point, approximately +30 ft MLLW, at the intersection of S Donovan Street and 17th Avenue S.

The Adjacent Streets are bordered by the T-117 Upland Area, the South Park Marina, and residential properties to the south and west; the Adjacent Streets also surround,

but do not include, the former Basin Oil property. Until 2007, a former chocolate confectionery company, Seattle Chocolate Company, occupied a large building at 8620 16th Avenue S, north of Donovan Street, between 16th and 17th Avenues S. Previous occupants of this parcel included the Allied Bolt Company during the 1980s and 1990s; Fasteners, Inc., also reportedly occupied this property in 1999 (Windward et al. 2003b).

Surrounding the Adjacent Streets portion of the T-117 EAA are several private parcels. These parcels are not currently within the T-117 EAA NTCRA boundary; however several are included in the investigation discussed in this data report. Collectively with the Adjacent Streets, these areas are referred to as the Streets and Yards in this document.

1.3 SAMPLING OBJECTIVES

The primary focus of the investigations presented in this report was to:

- Determine the presence and concentrations of dioxin and furans in all three T-117 EAA subareas: Sediment Study Area, T-117 Upland Area, and the Adjacent Streets; and in surface soils of residential properties near the Adjacent Streets.
- Determine the extent of PCB concentrations above the SQS in order to delineate a final sediment removal boundary based on PCB contamination in the Sediment Study Area.

In addition to the primary objectives the soil and sediment investigations also included secondary objectives as follows:

- Evaluate the potential for PCB contaminated bank soils as a potential source of dioxins and furans to the sediment.
- Evaluate the potential for T-117 sediment recontamination from mercury and dieldrin detected in South Park Marina groundwater.
- Examine the co-location of dioxin and furan concentrations at select locations and depths with varying concentrations of PCBs (from non-detected to the highest found in the T-117 Upland Area).
- Provide an initial indication of whether the upland soil removal boundaries presented in the draft Revised EE/CA (Windward et al. 2008a) to address PCBs and other T-117 soil chemicals of concern will be sufficient to address dioxins and furans, should they be identified as a contaminant of concern at the T-117 EAA.
- Obtain information on dioxins and furans for purposes of future waste profiling as needed during design and implementation of the NTCRA.
- Find the bottom excavation depth based on the PCB action level of 1 mg/kg at two locations in the T-117 Upland Area where a vertical extent was not previously defined.

- Determine whether the current EAA removal boundary for the Adjacent Streets, as presented in the draft Revised EE/CA (Windward et al. 2008a) to address PCBs, will be sufficient to address dioxin and furans should they be identified as a contaminant of concern at the T-117 EAA.
- Evaluate whether stormwater discharges from catch basin 5 (CB5) located in the T-117 Upland Area are a potential source of dioxins and furans to the T-117 sediments.

1.4 REPORT ORGANIZATION

This report is organized into sections addressing field methods, laboratory methods, results, and references. The following Appendices support the text:

- Appendix A – Streets and Yards investigation sample IDs, sample numbers, and analyses
- Appendix B - chain of custody forms
- Appendix C – field forms, logs and notes
- Appendix D – data validation reports
- Appendix E – results tables
- Appendix F – analytical laboratory data
- Appendix G – data management

2 Field Methods

2.1 SAMPLE COLLECTION

All field activities were performed under the direction of the field coordinator (FC) or other oversight personnel, with EPA oversight as appropriate. Sampling was accomplished by a joint operation of Windward Environmental LLC (Windward), AECOM, and Integral Consulting, Inc. (Integral). Sediment sampling was conducted under the direction of Windward with assistance from Mullins Guide Service. Soil sampling in the T-117 Upland Area was accomplished under the direction of Windward and AECOM with assistance from Cascade Drilling. Soil sampling in the Street ROWs was accomplished under the direction of Integral with assistance from Cascade Drilling. Hand collected soil samples from residential yards and the grab from CB5 on the T-117 Upland Area was conducted by Integral. The various sampling methods are discussed below.

2.1.1 Sediment collection

The field procedures used to collect the sediment samples are described in greater detail in the QAPP (Windward et al. 2003a). Surface samples (0-10 cm) were collected using an Eckman grab or by hand with a stainless steel spoon. A sediment sample was also collected from CB5 on the T-117 Upland Area with an Eckman grab. Due to poor recovery, the sample from the catch basin was composited from multiple grabs from within the structure.

2.1.2 T-117 Upland Area soil boring collection

Soil borings were collected using a hollow-stem auger drill deployed from a drill rig, penetrating from 2 to 19 ft below ground surface (bgs), depending on the location. Eight soil borings were completed throughout the T-117 Upland Area. Detailed descriptions of soil boring sampling methods are found in the QAPP (Windward et al. 2003a) and the QAPP addenda (Windward 2008a, b).

2.1.3 Streets and yards soil sample collection

Street samples were collected from fourteen soil borings as part of the Streets and Yards investigation according to the methods described in the QAPP (Integral 2008a). To minimize cross-contamination, care was taken to avoid collecting material in contact with the pushprobe core tube liner to the extent possible. In some cases pushprobe core sample depths were adjusted, due to apparent soil compaction that occurred during collection, to represent the expected *in situ* depth interval (e.g., if the sampler was driven 4 ft into the ground and the thickness of the recovered core was 44 in., the bottom of the sample intervals were adjusted upward by 1 in. per foot).

Yard samples were collected using hand tools. Details of the sampling procedure not provided in the QAPP (Integral 2008a) are described here. Typically a stainless steel

shovel was used to cut a large diameter area of the surface vegetation (when present) at each sample location. The base of the vegetation was then pulled up and separated from the underlying soil using a stainless steel trowel. After clearing loose plant or soil debris resulting from removal of the surface vegetation, the soil from the surface interval (to 0.5 ft bgs) was collected from the approximate center of the clearing using a decontaminated stainless steel spoon and placed in a decontaminated stainless steel bowl. The bowl was then covered with foil and sample information (ID, time, thickness of surface vegetation removed, if any) was written on the foil for transcribing onto the sampling form. The subsurface (0.5 to 1.0 ft bgs) interval was collected using a decontaminated hand auger. The material was similarly placed in a stainless steel bowl, which was covered with foil and labeled before being taken to the sample processing area for logging and sample processing.

2.2 SAMPLE PROCESSING

Sample processing occurred in the field. For all surface sediment, the upper 10 cm was collected from acceptable grab samples and placed into a stainless steel mixing bowl and homogenized. For all soil samples, material was collected from the appropriate depth and placed into a stainless steel mixing bowl and homogenized following description.

After homogenization, soil or sediment samples were placed in appropriate-sized, certified-clean, wide-mouth glass jars capped with Teflon®-lined lids as described in the QAPP (Integral 2008a) or QAPP addenda (Windward 2008a, b). Each container was sealed, labeled, and stored under ice until delivery to the analytical lab. Observed organisms and debris were removed prior to distribution to sample containers; removed materials were noted in the field logbooks or sampling forms.

2.3 FIELD EQUIPMENT DECONTAMINATION

To prevent cross-contamination of samples, all sampling equipment that came in contact with the sediment or soil underwent the following decontamination procedures prior to collection activities at each station:

- Rinse with site water or tap water and wash with scrub brush until free of sediment
- Wash with phosphate-free detergent and site or tap water
- Rinse with site or tap water
- Rinse with distilled or deionized water

There were no cases in which samples were suspected of having higher levels of contaminants, so no extra decontamination steps were conducted.

2.4 FIELD QUALITY ASSURANCE AND QUALITY CONTROL

Field duplicate samples were collected to evaluate the effectiveness of field homogenization procedures. Field duplicate samples were collected at a minimum frequency of one field duplicate per 20 samples collected per analysis, including the archived samples. Sediment and soil duplicates were prepared from the same batch of homogenized material. All samples collected were documented in the site logbook or on field forms. Table 2-1 lists the field duplicate sample IDs and the corresponding sample IDs collected from the same location.

Rinsate blank and field swipe samples were collected to evaluate the effectiveness of decontamination procedures. Three rinsate blanks were collected after processing samples. Rinsate blanks were collected by running deionized water over decontaminated sample processing equipment and collecting the water in clean sample jars. The sediment rinsate blank was submitted for PCB analyses and the two soil rinsate blanks were submitted for PCBs and one for TPH and PAHs. No rinsate blanks were analyzed for dioxin/furans, which is acceptable due to the ultra trace detection limits of the dioxin and furans analysis.

Equipment filter wipes were used to assess whether and/or to what degree contamination may have crossed from one sample to the next during sample collection or processing. A filter wipe was created by wiping the decontaminated sample equipment with a clean ashless filter paper (Whatman 42 ashless filter papers). A filter wipe was prepared for each anticipated analyte, per sample. The filters were placed in a clean jar and submitted to the laboratory for analysis or archiving. Filter wipe samples were prepared at a frequency of one per 20 samples analyzed, per sample equipment type. The filter wipe samples submitted for analysis are listed in Table 2-2.

2.5 DISPOSAL OF UNUSED SAMPLE MATERIAL

All sediment remaining in the sampling gear and on the deck of the sampling vessel after sampling was washed overboard at the collection site prior to moving to the next sampling station.

Unused soil and decontamination water from the soil borings were collected in drums and stored on the T-117 Upland Area property or at the Seattle Public Utilities enclosure located at the intersection of S Donovan Street between 17th Avenue S and Dallas Avenue S, until transferred to a disposal facility.

Excess soil from the yard discrete samples was returned to the sampling locations. All excess soil in the yard composite samples was placed in sampling jars and submitted to the analytical lab for archiving.

All disposable sampling materials and personnel protective equipment used in sample processing, such as disposable gloves and paper towels, were placed in heavyweight garbage bags, removed from the site by sampling personnel, and placed in a normal refuse container for disposal.

2.6 SAMPLE IDENTIFICATION SCHEME

The location ID naming conventions for the T-117 Sediment Study Area, Upland Area, and Streets and Yards investigations are described below.

2.6.1 T-117 Sediment and Upland Area sample identification

The first four characters are T-117, to designate the T-117 area. The next characters identify the type of location, based on the medium sampled, with consecutive numbers to identify the specific location within the T-117 area as follows:

- Soil borings - followed by "SB" a soil boring, followed by consecutive numbers 53 to 60
- Sediment grab – followed by consecutive numbers 96 to 119, followed by a "G" to indicate a surface sediment grab

Each location shown on the maps has been assigned a map ID to facilitate viewing the results on a single map. However, the location IDs as described above differs from the map IDs, which only the unique number followed by G (grab) or beginning with SB (soil boring) is shown. For example, T-117-96-G is shown as 96-G on the map.

Sample IDs are the same as location IDs, except for some that contain additional information, as follows:

- SB followed by two characters identifying the depth interval of soil collected, e.g., T-117-SB-53-0.5-2.0 is a sample collected from the 0.5 to 2 ft depth interval from location SB53.
- Surface sediment grab samples are followed by "SG" instead of "G" to distinguish a location from a sample. For example, the sample collected from location T-117-96-G is T-117-96-SG.

QA/QC sample IDs are the same as sample IDs, but contain the following additional information:

- Rinsate blanks were assigned the same characters as the sample ID, followed by the identifier "RB"

2.6.2 T-117 Streets and Yards sample identification

Samples were identified and tracked using both sample IDs and sample numbers. Sample IDs include the unique location code (made up of the sample type code, followed by a sequential number), a dash, then two to three digit numbers identifying the sample interval (rounded to the nearest 0.1 ft), separated by a dash. When the sample is a component of a composite sample, a lowercase letter (e.g., a, b, c) was appended to the location code. The top of discrete surface sample intervals indicates the start of the actual surface sample interval (i.e., it excludes depths of surface pavement or grass as applicable).

Sample type codes used in sample IDs for this investigation are listed below:

- CB5 - catch basin 5 sample
- HA - hand auger sample
- P - pushprobe sample
- YC - residential area composite sample
- YC followed by a, b, or c - residential area discrete sample
- FW - filter wipe

For field QA duplicate samples, the suffix "Dup" follows the sample interval numbers.

Each Streets and Yards investigation sample was also assigned a sample number, which is an arbitrary number assigned to each distinct sample shipped to the laboratory. Sample numbers are intended to obscure relationships between samples in order to ensure any potential laboratory bias is minimized; thus, sample numbers took the place of sample IDs on sample Chain-of-custody (COC) forms submitted to the analytical laboratory.

Sample numbers for this investigation were generated in the field, and consisted of an investigation code SPD, followed by a four-digit number assigned sequentially to each individual sample (e.g., SPD0001). Unlike sample IDs, sample numbers for this investigation do not indicate sample type or whether a sample is a field duplicate. Sample IDs and sample numbers for each sample collected for the Streets and Yards investigation are listed in the table in Appendix A.

2.7 SAMPLE DOCUMENTATION PROCEDURES

Field data logs or field sampling forms were used to record the date, time, as well as additional parameters recorded in the field (see Appendix C). The following data were included in the field data records:

- Names of field coordinators and person(s) collecting and logging the samples
- Unique station identifier
- Date and time of collection
- Collection method
- Observations made during sample collection, including weather conditions, complications, and other details associated with sampling equipment or procedures

Sediment samples contained the following additional information that was recorded on the sediment grab collection form:

- Station coordinates (from field GPS)
- Penetration depth of the sampler

- Uncorrected water depth at each station, tide elevation, and mudline elevation (i.e., tide-corrected water depth of each station relative to MLLW)
- Physical observations of sediment, including the presence of foreign objects, color, presence of sheens, apparent grain size, and odor
- Lithology observations

Soil borings contained the following additional information that was recorded on a soil boring log:

- Station coordinates (from Port surveyors)
- Geologic stratigraphy, including physical observations of soil, including the presence of foreign objects, color, presence of sheens, apparent grain size, moisture, and odor
- Total soil boring depth
- Standard penetration test results (applicable to split-spoon sampling)

Streets, yards, and catch basin soil samples contained the following additional information that was recorded on field sampling collection forms:

- Sample numbers and sample IDs (including field duplicate samples)
- Sample intervals
- Sample location sketches (for yard samples)

2.8 CHAIN OF CUSTODY AND SAMPLE TRANSPORT PROCEDURES

COC forms were used to track sample custody (see Appendix B). Samples collected in the field were placed in a cooler with ice. All sediment, soil and water samples were hand-delivered to Analytical Resources, Inc. (ARI) in Tukwila, WA or, in the case of the Streets and Yards samples, shipped via FedEx to Columbia Analytical Services (CAS) in Kelso, WA.

2.9 FIELD DEVIATIONS FROM THE QAPP

Field deviations from the QAPPs and QAPP addenda are discussed in detail below. These field deviations did not affect data quality.

- Not all soil sample intervals for the Upland Area investigation were collected as described in the QAPP addenda (Windward 2008a, b). At all locations the sample depth intervals were collected deeper than anticipated since the locations were covered with asphalt, crushed rock, or concrete. For example at SB54 the first sample interval was supposed to be collected from 0-1.5ft, however due to the presence of 2ft crushed rock on top of the soil surface, the first sample was collected from 2 to 3.5ft in order to avoid sampling the crushed rock.

- Boring location SB57 was moved and re-drilled due to poor sample interval recovery at the original location. The subsequent soil boring location was identified as SB57b.
- Some soil boring sampling locations in the T-117 Upland Area were moved off target locations identified in the QAPP addenda (Windward 2008) due to the presence of obstacles or apparent imprecision of target coordinates based on field observations. Adjustments to the soil boring sampling locations from target coordinates and the rationale for each are presented in Table 2-3 below.
- The sediment core from sample stations 104-SC and 111-SC could not be collected due to insufficient penetration. As stated in the QAPP addenda (Windward 2008a, b), the minimum required penetration depth for the subsurface core samples was 2ft.; the maximum penetration achieved in the field was 11 inches.
- Some pushprobe sampling locations in the Adjacent Streets were moved off target locations identified in the QAPP (Integral 2008a) due to the presence of marked underground utilities (Section 4.1), or apparent imprecision of target coordinates based on field observations. Adjustments to the pushprobe sampling locations from target coordinates and the rationale for each are presented in Table 2-3 below. As stated in the QAPP (Integral 2008a), yard sample locations were generally placed at the approximate target locations but were adjusted in the field based on observations of apparent use areas.
- Samples from the residential property at 8519 Dallas Avenue South (YC01) were not collected because access permission could not be obtained.
- The drill shoe was inadvertently not decontaminated in all instances during the collection of cores P96, P97, and P98 on August 18, 2008; therefore, due to QA concerns, these locations were re-sampled on August 19 and samples collected from these locations on August 18 were archived.
- Because the gravelly nature of the fill material underlying the ROWs made it difficult to distinguish from the base coarse gravels, some base course gravels were included in some sample intervals from the ROWs; however, in accordance with the QAPP (Integral 2008a), gravels greater than 0.5 in. were generally excluded from the material submitted for analysis.
- Chunks of friable asphalt may have been included in the 1.0 to 2.0 ft bgs sample (and duplicate) from P100.
- The hand auger boring HA1 was terminated at 3.2 ft bgs due to refusal.
- As mentioned above, due to poor recovery of sediment from CB5, the sample from the catch basin consisted of a composite of multiple grabs from within the structure, rather than a single grab as anticipated in the QAPP (Integral 2008a).

3 Laboratory Analyses

Several labs were used to conduct the various analyses. Table 3-1 presents the lab conducting the analyses by sample type.

3.1 Sample Analyses

Sample analyses for the sediment, T-117 Upland Area, and Streets and Yards investigation followed a tiered approach. Samples were submitted for initial (Tier 1) analyses as outlined in the QAPPs and QAPP addenda (Integral 2008a; Windward 2008a, b). Subsequent additional analyses were requested based on evaluation of the Tier 1 results. Unlike what is called for in the QAPP, the "z" interval samples (i.e., those below the planned EAA excavation depth) in street borings have not yet been submitted for Tier 2 analysis. The purpose of these samples is to assess the adequacy of the proposed EAA vertical boundary.

3.2 Analytical Methods

The chemical and physical testing was performed in accordance with the QAPPs and QAPP addenda (Integral 2008a; Windward 2008a, b). Table 3-2 summarizes specific methods used to analyze the samples.

3.2 QA/QC for Chemical/Physical Testing

Data quality objectives and laboratory quality control procedures are discussed in the QAPP and addenda (Integral 2008a; Windward 2008a, b). Analytical results were validated by EcoChem. All results were considered acceptable for use as qualified by the validator. The data validation reports are presented in Appendix D.

3.3 Laboratory Deviations from the QAPP

No laboratory deviations occurred in the handling, analysis, or reporting of the sediment, T-117 Upland Area, and Streets and Yards samples. All laboratory procedures for the sample analyses followed the methods and procedures identified in the QAPPs and QAPP addenda (Integral 2008a; Windward 2008a, b).

4 Results

Results of the sediment and soil chemistry analyses are summarized below by T-117 EAA subarea. These results have undergone data validation, as described in detail in Appendix D. The results presented in this report are of good quality and should be considered acceptable for all project uses. All chemistry results are presented in Appendix E and raw laboratory data can be found in Appendix F.

Significant figure rules were applied when summing and during carbon normalizing. For carbon normalized averages, results from the two samples were averaged before normalizing (average value dw/average TOC value). A detailed discussion of the hierarchical approach used in averaging laboratory replicates, calculating totals, carbon normalization and application of significant figures is presented in Appendix G.

On the PCB and dioxin TEQ map, sample locations are color coded by concentration ranges. For mapping purposes, when there are multiple results for a sample location (e.g., field duplicate or multiple sample intervals) the sample location is represented by the highest results at the location.

4.1 SAMPLING LOCATIONS AND SAMPLE CHARACTERISTICS

The sample locations, descriptions and analyses are presented in Table 4-1 (surface sediment samples), Table 4-2 (soil borings from the T-117 Upland Area), Table 4-3 (soil borings from the Adjacent Streets), and Table 4-4a and 4-4b (soil samples from the residential yards). All coordinates are reported in Washington State Plane North (NAD 83, US survey feet).

The yard samples consisted of both discrete and composite samples. As part of the tier one analyses, the yard samples were collected as three discrete samples (a, b, and c), which were composited and analyzed for dioxin and furans. Each discrete yard sample was also archived for potential tier two analyses, which was dependent on the results of the tier one analyses. Table 4-4a presents the discrete sample locations, depth intervals, and analyses. Table 4-4b presents the composite sample IDs and analyses conducted on each sample.

4.2 PHYSICAL CHARACTERISTICS

The sediment grabs generally consisted of fine to medium sands and silts with organic matter (e.g., leaves, rootlets, wood fragments) that were drab olive to grey in color with a silty brown surface layer. The southern intertidal sediment samples (114-G thru 117-G) near the mouth of the south drainage ditch (between T-117 Upland Area and Boeing South Park) contained less fine sands, silts and organic matter and consisted mostly of medium to coarse sand with gravel with a brown color and no discernible surface layer.

The borings from the T-117 Upland Area generally consisted of silts, fine to medium sand with trace to some amounts of coarse sand and small gravel. Two northern shoreline bank locations (SB54, SB55) contained trace rootlet material and debris likely used to reinforce the bank which included asphalt and concrete, gravel and rock. Notable observations include the presence of material described as friable (SB53, SB54, SB55, SB58), slight sheen (SB57b), hydrocarbon odor (SB56, SB57b, SB58, SB59, SB60), tar like staining on gloves (SB56, SB58) and brick fragments (SB56, SB58, SB59).

The borings from the Adjacent Streets investigation generally consisted of a fill layer (approximately 1 to 2 feet thick) beneath surface asphalt, gravel, or grass cover (Appendix C). The fill material consisted of gravel, sand, and silt mixtures, overlying native deposits that may have included sands, interbedded sands and fines, and/or stiff, mottled, silts and clays, depending on location. Observations of fill material include the presence of material described as ash or asphalt (P91, P94, P96, P98, P100), petroleum odor (P89), and possible staining with no odor (P91, P93).

Yard soils generally consisted of silt and sand mixtures, though some samples comprised up to an estimated 60% gravel (Appendix C). Observations of debris in the yard soils include apparent coal fragments (YC02a, YC03, YC12b, YC13a, YC14c), charcoal (YC08b, YC19b), ash (YC08b), a cigarette butt filter (YC04b), concrete (YC03b), pottery or brick fragments (YC03a, YC04b, YC12b, YC18b, YC19c), broken glass (YC03b, YC04c, YC08b, YC10b, YC13a, YC15a, YC18a), plastic debris (YC04b, YC09a, c, YC11a, YC13b, YC14a), metal debris (YC15c), and unidentified friable debris (YC16b, YC18c).

4.3 SEDIMENT CHEMISTRY RESULTS

4.3.1 PCBs

Table 4-5 presents the total PCB results compared to SMS for the surface sediment grab samples. The carbon normalized PCB concentrations compared to SMS for the surface grab samples are shown on Map 4-1. The dry weight PCB concentrations for the surface grab samples are shown on Map 4-2.

4.3.2 Dioxin and furans

Eight surface sediment samples (T-117-100-SG, 101-SG, 107-SG, 109-SG, 110-SG, 111-SG, 113-SG, and 115-SG) were analyzed for dioxin and furans. Table 4-6 presents the dioxin TEQs for the individual surface sediment grab samples and the field duplicates. The dioxin TEQs ranged from 2.11 to 9.36 ng/kg dw. The dioxin and furan TEQ concentrations for the surface grab samples are shown on Map 4-3.

4.3.3 Mercury and dieldrin

Two surface sediment samples (T117-98-SG and T117-99-SG) were analyzed for mercury and dieldrin to evaluate the recontamination potential of these chemicals from groundwater in the upland portion of the South Park Marina. There were no exceedances of SQS or CSL for mercury and dieldrin was not detected. Table 4-7 presents the mercury and dieldrin results from these two samples.

4.4 SOIL CHEMISTRY RESULTS

4.4.1 PCBs

Table 4-8 summarizes the PCB results from soil samples collected from the T-117 Upland Area and the Streets and Yards. The PCB concentrations for all soil samples are shown on Map 4-2.

4.4.2 Dioxin and furans

Table 4-9 summarizes the dioxin and furan TEQ results from soil samples collected from the T-117 Upland Area and the Streets and Yards. The dioxin and furan TEQs concentrations for soil samples are shown on Map 4-3.

4.4.3 TPH and PAH

PAH and TPH analyses were conducted on specified T-117 Upland Area soil samples as described in the QAPP (Windward 2008b). Tables 4-10 and 4-11 presents a summary of the PAH and TPH results from the T-117 Upland Area, respectively. The cPAH and total TPH concentrations are shown on Map 4-4.

5 References

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6 Tables

Table 2-1. Field duplicate sample IDs

SAMPLE ID	DUPLICATE SAMPLE ID	MATRIX	DUPLICATE ANALYSES
T-117-109-SG	T-117-120-SG	sediment	PCBs
T-117-SB53-0.5-2.0	T-117-SB61-0.5-2.0	soil	Dioxin/furans
T-117-SB58 -2.0-3.5	T-117-SB62-2.0-3.5	soil	PAH, TPH, PCBs
T-117-SB56 -2.5-4.0	T-117-SB63 -2.5-4.0	soil	PCBs
CB5-00	CB5-00DUP	catch basin sediment	Dioxin/furans, PCBs, total solids
YC02a-0.1-0.5	YC02a-0.1-0.5DUP	soil	Archive duplicate[a]
YC05-0.0-0.5	YC05-0.0-0.5DUP	soil	Archive duplicate[a]
YC04a-0.2-0.5	YC04a-0.2-0.5DUP	soil	Archive duplicate[a]
YC06a-0.2-0.5	YC06a-0.2-0.5DUP	Soil	PCBs, total solids
YC08a-0.2-0.5	YC08a-0.2-0.5DUP	soil	Dioxin/furans, PCBs, total solids
YC10-0.0-0.5	YC10-0.0-0.5DUP	soil	Archive duplicate[a]
YC10a-0.2-0.5	YC10a-0.2-0.5DUP	soil	PCBs, total solids
YC12a-0.1-0.5	YC12a-0.1-0.5DUP	soil	PCBs, total solids
HA1-0.0-1.0	HA1-0.0-1.0DUP	soil	Archive duplicate[a]
P100-1.0-2.0	P100-1.0-2.0DUP	soil	Dioxin/furans, PCBs, total solids

[a] duplicate samples not required to achieve the 1 per 20 QA frequency were archived.

Table 2-2. Equipment filter wipe and rinsate blank sample IDs

SAMPLE ID	SAMPLE NUMBER	BLANK TYPE	ANALYSES	EQUIPMENT
T-117-19-RB	na	Rinsate	PCBs	Bowl and spoon
T-117-SB57b-10-11.5-RB	na	Rinsate	PCBs, TPH and PAHs	Bowl and spoon
T-117-SB58-0.5-3.5-RB	na	Rinsate	PCB	Bowl and spoon
FW01	SPD0001	Filter	Archive	Drilling shoe, bowl, and spoon
FW02	SPD0002	Filter	Dioxin/furans, PCBs	Drilling shoe, bowl, and spoon
FW03	SPD0065	Filter	Archive	Drilling shoe, bowl, and spoon
FW04	SPD0063	Filter	Archive	Hand auger, bowl, and spoon
FW05	SPD0064	Filter	Dioxin/furans, PCBs	Hand auger, bowl, and spoon
FW06	SPD0171	Filter	Archive	Hand auger, bowl, and spoon
FW07	SPD0173	Filter	Archive	Bowl and spoon
FW08	SPD0176	Filter	Archive	Bowl and spoon
FW09	SDP0175	Filter	Archive	Bowl and spoon
FW10	SPD0174	Filter	Archive	Hand auger and trowel
FW11	SPD0177	Filter	Archive	Filter blank
FW12	SPD0238	Filter	Archive	Trowel, bowl, and spoon
FW13	SPD0239	Filter	Dioxin/furans	Grab sampler, bowl, and spoon

Table 2-3. Deviations from target boring locations

Location ID	Distance from Target Location (ft)	General Direction	Reason for Move
T-117-SB-54	5	Northwest	Too close to asphalt edge curb.
T-117-SB-55	5	South	Too close to asphalt edge curb.
T-117-SB-57 T-117-SB-57b	50	Southeast	Not enough room between asphalt edge curb and blackberry bushes and poor recovery in 1st boring, re-located for 2nd boring. Re-named location to T-117-SB-57b
T-117-SB-60	10	Northeast	Avoid concrete and moved to lower surface elevation where greater likelihood of historical ponding occurred.
P88	3.5	North	Underground utility (gas line).
P89	2.8	Northeast	Underground utility (gas line).
P90	7.3	North	Underground utility (gas and water lines).
P91	1.5	Southwest	Adjusted to align with P88.
P92	3.4	Southwest	Underground utility (gas line); placement also based on field measurement of 3 ft from apparent EAA boundary location.
P93	2.4	South	Apparent precision error with target coordinate; placement based on field measurement of 3 ft from apparent EAA boundary location.
P94	0.9	South	Placement based on field measurement of 3 ft from apparent EAA boundary location and mapped location of TP41.
P95	1.7	Southwest	Apparent precision error with target coordinate; placement based on field measurement of 3 ft from apparent EAA boundary location and mapped location of TP40.
P96	4.3	West	Apparent precision error with target coordinate; placement based on field measurement of 3 ft from apparent EAA boundary location and mapped location of TP46.
P97	10.6	South	Underground utility (storm drain lines).
P98	3.4	South	Apparent precision error with target coordinate; placement based on field measurement of 3 ft from apparent EAA boundary location.
P99	2.6	Northeast	Presence of curbing.
100	0.6	Northeast	Located adjacent to former P81 location.
HA1	1.4	Southeast	Based on field measurement of target coordinates.

Table 3-1. Laboratory analyses by sample event

Sample type/Area	Laboratory	Analyses	Sample Count[a]
Sediment - Sediment Study Area	ARI	PCBs, TOC, and total solids	18
		Mercury and dieldrin	2
		Archive	6
	Analytical Perspectives	Dioxin/ furans	8
Soil - T-117 Upland Area	ARI	PCBs and total solids	28
		TPH and PAHs	18
	Analytical Perspectives	Dioxin/furans	21
		Archive	2
Soil - Streets and Yards Sediment - T-117 Upland Area catch basin	CAS	Dioxin/furans	44
		PCBs	66
		Total solids	84
		Archive	227

[a] includes field duplicates and QA/QC samples

Table 3-2. Summary of analytical methods

Chemical	Units	Sensitivity		Analytical Method	Reference
		RDL	MDL		
Sediment					
Dioxin/furans	ng/kg dw	0.5 – 5.0	0.074 – 0.62	EPA 1613B	HRGC/HRMS
PCBs	µg/kg dw	20	4.1	EPA 8082	GC/ECD
Dieldrin	µg/kg dw	2.0	0.84	EPA 8081A	GC/ECD
Mercury	mg/kg dw	0.05	0.005	EPA 7471A	CVAAS
TOC	% dw	0.02	0.01	Plumb, 1981	combustion
Total solids	% ww	0.1	na	SM254-G	oven-dried
T-117 Upland Area Soil					
Dioxin/furans	ng/kg dw	0.5 – 5.0	0.074 – 0.62	EPA 1613B	HRGC/HRMS
PAHs	µg/kg dw	20	4.1	EPA 8270/8081	GC/MS
PCBs	µg/kg dw	67	6 – 27	EPA 8082	GC/ECD
TPH	% dw	5.0 – 10	0.50 – 1.9	Plumb, 1981	combustion
Total solids	% ww	0.1	na	SM254-G	oven-dried
Streets and Yards Soil					
Dioxin/furans	ng/kg dw	0.2 - 1.0	0.03 - 0.12	EPA 1613B	HRGC/HRMS
PCBs	µg/kg dw	19 - 20	1.7	EPA 8082	GC/ECD
Total solids	% ww	0.01	0.01	EPA160.3M	balance

ASTM – American Society for Testing and Materials
CVAA – cold vapor atomic absorption
ICP – inductively coupled plasma-atomic emission spectrometry
dw – dry weight basis
ECD – electron capture detection
GC – gas chromatography
MDL – method detection limit
MS – mass spectrometry
PSEP – Puget Sound Estuary Program
RDL – reporting detection limitww – wet weight basis

Table 4-1. Surface sediment locations, sample penetration depths, and analyses

Location ID	Map ID	Date	Northing[a]	Easting[a]	Penetration Depth (cm)	Analyses
T-117-96-G	96-G	8/29/08	195866	1275062	6[b]	Archive
T-117-97-G	97-G	8/29/08	195848	1275082	6[b]	Archive
T-117-98-G	98-G	8/29/08	195835	1275094	6[b]	PCBs, mercury, dieldrin
T-117-99-G	99-G	8/29/08	195817	1275094	6[b]	PCBs, mercury, dieldrin
T-117-100-G	100-G	8/29/08	195822	1275139	10	PCBs, D/F
T-117-101-G	101-G	8/29/08	195828	1275176	12	PCBs
T-117-102-G	102-G	8/29/08	195846	1275173	12	PCBs, D/F
T-117-103-G	103-G	8/29/08	195775	1275406	10	PCBs
T-117-105-G	105-G	8/29/08	195737	1275442	9	PCBs
T-117-106-G	106-G	8/29/08	195700	1275487	9	PCBs
T-117-107-G	107-G	8/29/08	195676	1275495	7	PCBs, D/F
T-117-108-G	108-G	8/29/08	195663	1275523	8	PCBs
T-117-109-G	109-G	8/29/08	195429	1275647	11	PCBs, D/F
T-117-110-G	110-G	8/29/08	195369	1275650	12	PCBs, D/F
T-117-111-G	111-G	8/29/08	195326	1275657	9	PCBs, D/F
T-117-112-G	112-G	8/29/08	195184	1275770	9	Archive
T-117-113-G	113-G	8/29/08	195172	1275728	12	PCBs, D/F
T-117-114-G	114-G	8/29/08	195173	1275683	8	PCBs
T-117-115-G	115-G	8/29/08	195168	1275662	7	PCBs, D/F
T-117-116-G	116-G	8/29/08	195132	1275624	6[b]	Archive
T-117-117-G	117-G	8/29/08	195143	1275662	3[c]	PCBs
T-117-118-G	118-G	8/29/08	195131	1275682	8	Archive
T-117-119-G	119-G	8/29/08	195154	1275732	10	Archive

[a] coordinates collected in with a GPS, NAD 83 WA State Plane N

[b] collected by hand with stainless steel spoon

[c] due to insufficient penetration, the top 2-3 cm from 3 grabs were composited into one sample for analyses

D/F – dioxin and furans

PCBs –polychlorinated biphenyls

Table 4-2. T-117 Upland Area soil boring locations, core recoveries, and analyses

Location ID	Map ID	Date	Northing[a]	Easting[a]	Depth Interval (ft)	Overall Recovery (%)[b]	Analyses
T-117-SB-53	SB53	9/3/08	195678.97	1275124.889	0.5 – 2.0	72	PCBs, PAHs, TPH, D/F
T-117-SB-54	SB54	9/3/08	195738.948	1275223.724	2.0 - 3.5	61	PCBs, PAHs, TPH, D/F
					3.5 – 5.0	38	PCBs, PAHs, TPH, D/F
					8.5 - 10.0	44	PCBs, D/F
T-117-SB-55	SB55	9/3/08	195679.634	1275332.71	2.0 - 3.5	66	PCBs, PAHs, TPH, D/F
					3.5 – 5.0	100	PCBs, PAHs, TPH, D/F
					11.5 – 13.0	44	PCBs, D/F
T-117-SB-56	SB56	9/3/08	195442.507	1275335.126	1.0 - 2.5	72	PCBs, PAHs, TPH, D/F
					2.5 – 4.0	77	PCBs, PAHs, TPH
					4.0 - 5.5	88	PCBs, PAHs, TPH
					5.5 – 7.0	88	Archive
T-117-SB-57b	SB57b	9/2/08	195459.794	1275480.869	2.0 - 3.5	72	PCBs, PAHs, TPH, D/F
					3.5 – 5.0	66	PCBs, PAHs, TPH, D/F
					10.0 - 11.5	50	PCBs, D/F
T-117-SB-58	SB58	9/3/08	195388.952	1275309.992	0.5 – 2.0	61	PCBs, PAHs, TPH, D/F
					2.0 - 3.5	83	PCBs, PAHs, TPH, D/F
					3.5 – 5.0	88	Archive
T-117-SB-59	SB59	9/3/08	195335.788	1275381.38	2.0 - 3.5	77	PCBs, PAHs, TPH, D/F
					3.5 – 5.0	83	PCBs, PAHs, TPH, D/F
					10.0 - 11.5	88	PCBs
					15.0 - 16.5	100	PCBs
					17.5 – 19.0	83	PCBs
T-117-SB-60	SB60	9/2/08	195344.91	1275507.839	0.5 – 2.0	88	PCBs, PAHs, TPH, D/F
					2.0 - 3.5	77	PCBs, PAHs, TPH, D/F
					3.5 – 5.0	66	PCBs, PAHs, TPH, D/F
					9.0 - 10.5	100	PCBs
					12.5 – 14.0	94	PCBs, D/F
					15.0 - 16.5	94	PCBs

[a] coordinates provided by Port land surveyors, NAD 83 WA State Plane N

[b] overall recovery = (soil boring recovery/drive length) x 100

[c] sample selected in February 2009 for D/F and/or PCB analysis, results will be reported in the final data report

D/F – dioxin and furans

PAHs – polycyclic aromatic hydrocarbons

TPH – total petroleum hydrocarbon

PCBs – polychlorinated biphenyls

Table 4-3. Adjacent Streets soil boring sample locations, core recoveries, and analyses

Location ID/ Map ID	Date	Northing[a]	Easting[a]	Depth Interval (ft)	Overall Recovery (%)[b]	Analysis
P88	8/19/2008	195669.884	1274896.510	0.2 – 1.0	75	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0		Archive
P89	8/19/2008	195664.027	1274917.793	0.3 – 1.0	94	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0		Archive
P90	8/20/2008	195696.473	1274897.669	0.4 – 1.0	90	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0		Archive
P91	8/19/2008	195643.524	1274895.588	0.2 – 1.0	91	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0		Archive
P92	8/20/2008	195786.661	1274667.494	0.2 – 1.0	100	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0	100	Archive
				4.0 – 6.0		Archive
P93	8/19/2008	195574.547	1274902.864	0.2 – 1.0	98	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0		Archive
P94	8/19/2008	195652.287	1274954.101	0.1 – 1.0	100	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0	90	Archive
				4.0 – 6.0		Archive
P95	8/19/2008	195585.572	1275116.119	0.0 – 1.0	85	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0		Archive
				4.0 – 6.0	71	Archive
				6.0 – 8.0		Archive
P96	8/19/2008	195540.768	1275139.772	0.0 – 1.0	100	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0	71	Archive
				4.0 – 6.0		Archive
P97	8/19/2008	195201.160	1275132.809	0.0 – 1.0	96	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0		Archive
P98	8/19/2008	195197.561	1275155.247	0.0 – 1.0	98	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0		Archive

Location ID/ Map ID	Date	Northing[a]	Easting[a]	Depth Interval (ft)	Overall Recovery (%)[b]	Analysis
P99	8/20/08	195197.686	1275333.779	0.0 – 1.0	79	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 4.0		Archive
				4.0 – 6.0	83	Archive
				6.0 – 8.0		Archive
P100	8/20/08	195221.533	1275315.578	0.0 – 1.0	100	PCBs, D/F
				1.0 – 2.0		PCBs, D/F
				2.0 – 4.0	79	Archive
				4.0 – 6.0		Archive
HA1	8/21/08	195664.872	1274874.935	0.0 – 1.0	100	PCBs, D/F
				1.0 – 2.0		Archive
				2.0 – 3.2		Archive

[a] coordinates provided by City of Seattle land surveyors, NAD 83 WA State Plane N

[b] overall recovery = (core recovery/drive length) x 100; overall recovery reported is based on the maximum core recovery per drive

D/F – dioxin and furans

PCBs – polychlorinated biphenyls

Table 4-4a. Discrete yard sample locations, depth intervals, and analyses

YARD ID	LOCATION ID	DATE	NORTHING	EASTING	DEPTH INTERVAL (ft)[a]	ANALYSES
YC02	YC02a	8/22/08	195767.659	1274648.811	0.1-0.5	Archive
					0.5-1.0	Archive
	YC02b		195753.671	1274651.741	0.1-0.5	Archive
					0.5-1.0	Archive
	YC02c		195761.346	1274659.179	0.1-0.5	Archive
					0.5-0.9	Archive
YC03	YC03a	8/25/08	195727.885	1274730.921	0.1-0.5	Archive
					0.5-1.0	Archive
	YC03b		195734.629	1274731.246	0.0-0.5	Archive
					0.5-1.0	Archive
	YC03c		195729.238	1274746.380	0.0-0.5	Archive
					0.5-1.0	Archive
YC04	YC04a	8/21/2008	195716.934	1274766.075	0.2-0.5	Archive
					0.5-1.0	Archive
	YC04b		195721.828	1274766.406	0.1-0.5	Archive
					0.5-1.0	Archive
	YC04c		195710.404	1274780.771	0.1-0.5	Archive
					0.5-1.0	Archive
YC05	YC05a	8/21/2008	195691.774	1274814.129	0.2-0.5	Archive
					0.5-1.0	Archive
	YC05b		195682.538	1274838.179	0.2-0.5	Archive
					0.5-1.0	Archive
	YC05c		195665.212	1274870.372	0.0-0.5	Archive
					0.5-1.0	Archive
YC06	YC06a	8/21/2008	195583.659	1274873.851	0.2-0.5	PCBs
					0.5-1.0	Archive
	YC06b		195563.814	1274835.822	0.2-0.5	PCBs
					0.5-1.0	Archive
	YC06c		195576.903	1274817.903	0.1-0.5	PCBs
					0.5-1.0	Archive
YC07	YC07a	8/21/2008	195605.103	1274738.130	0.1-0.5	PCBs
					0.5-1.0	Archive
	YC07b		195580.949	1274763.860	0.1-0.5	PCBs
					0.5-1.0	Archive
	YC07c		195564.844	1274793.920	0.1-0.5	PCBs
					0.5-1.0	Archive

Yard ID	Location ID	Date	Northing	Easting	Depth Interval (ft)[a]	Analyses
YC08	YC08a	8/26/2008	195592.506	1274688.269	0.2-0.5	PCBs, D/F
					0.5-1.0	PCBs
	YC08b		195576.127	1274710.436	0.2-0.5	PCBs, D/F
					0.5-1.0	PCBs
	YC08c		195567.294	1274720.158	0.1-0.5	PCBs, D/F
					0.5-1.0	PCBs
YC09	YC09a	8/22/2008	195586.644	1274633.656	0.1-0.5	PCBs
					0.5-1.0	Archive
	YC09b		195581.482	1274620.184	0.1-0.5	PCBs
					0.5-1.0	Archive
	YC09c		195568.862	1274627.162	0.1-0.5	PCBs
					0.5-1.0	Archive
YC10	YC10a	8/25/2008	195583.979	1274566.386	0.2-0.5	PCBs
					0.5-1.0	Archive
	YC10b		195583.621	1274571.498	0.2-0.5	PCBs
					0.5-1.0	Archive
	YC10c		195570.014	1274575.712	0.2-0.5	PCBs
					0.5-0.9	Archive
YC11	YC11a	8/25/2008	195583.522	1274525.946	0.2-0.5	PCBs
					0.5-1.0	Archive
	YC11b		195584.211	1274530.958	0.2-0.5	PCBs
					0.5-1.0	Archive
	YC11c		195570.932	1274536.921	0.2-0.5	PCBs
					0.5-1.0	Archive
YC12	YC12a	8/26/2008	195514.5930	1274577.351	0.1-0.5	PCBs
					0.5-1.0	Archive
	YC12b		195529.633	1274567.854	0.2-0.5	PCBs
					0.5-1.0	Archive
	YC12c		195530.396	1274524.024	0.2-0.5	PCBs
					0.5-1.0	Archive
YC13	YC13a	8/25/2208	195506.314	1274625.710	0.0-0.5	PCBs
					0.5-1.0	Archive
	YC13b		195511.160	1274633.422	0.0-0.5	PCBs
					0.5-1.0	Archive
	YC13c		195528.473	1274632.263	0.2-0.5	PCBs
					0.5-1.0	Archive
YC14	YC14a	8/22/2008	195509.764	1274662.893	0.1-0.5	PCBs
					0.5-1.0	Archive
	YC14b		195515.250	1274677.214	0.1-0.5	PCBs
					0.5-1.0	Archive
	YC14c		195526.986	1274679.548	0.1-0.5	PCBs

YARD ID	LOCATION ID	DATE	NORTHING	EASTING	DEPTH INTERVAL (ft)[a]	ANALYSES
					0.5-1.0	Archive
YC15	YC15a	8/25/2008	195506.529	1274722.339	0.0-0.5	PCBs
					0.5-1.0	Archive
	YC15b		195525.446	1274729.031	0.1-0.5	PCBs
					0.5-0.8	Archive
	YC15c		195507.827	1274727.323	0.0-0.5	PCBs
					0.5-1.0	Archive
YC16	YC16a	8/20/2008	195521.580	1274866.789	0.0-0.5	PCBs
					0.5-1.0	Archive
	YC16b		195506.952	1274802.050	0.1-0.5	PCBs
					0.5-1.0	Archive
	YC16c		195491.167	1274757.871	0.0-0.5	PCBs
					0.5-1.0	Archive
YC17	YC17a	8/20/2008	195581.804	1274937.936	0.0-0.5	PCBs
					0.5-0.8	Archive
	YC17b		195566.915	1274981.549	0.0-0.5	PCBs
					0.5-0.8	Archive
	YC17c		195573.232	1275001.094	0.0-0.5	PCBs
					0.5-1.0	Archive
YC18	YC18a	8/20/2008	195536.608	1274929.009	0.1-0.5	PCBs
					0.5-1.0	Archive
	YC18b		195530.308	1274950.913	0.1-0.5	PCBs
					0.5-1.0	Archive
	YC18c		195513.115	1274972.876	0.1-0.5	PCBs
					0.5-1.0	Archive
YC19	YC19a	8/18/2008	195562.447	1275042.913	0.1-0.5	Archive
					0.5-1.0	Archive
	YC19b		195521.420	1275058.778	0.1-0.5	Archive
					0.5-1.0	Archive
	YC19c		195522.831	1275085.589	0.2-0.5	Archive
					0.5-1.0	Archive
YC20	YC20a	8/18/2008	195467.085	1275047.831	0.2-0.5	Archive
					0.5-1.0	Archive
	YC20b		195459.731	1275069.821	0.1-0.5	Archive
					0.5-1.0	Archive
	YC20c		195458.871	1275094.777	0.1-0.5	Archive
					0.5-1.0	Archive

[a] Yard samples were collected using hand tools; the depth intervals shown represent total recovered depths.

D/F – dioxin and furans

PCBs – polychlorinated biphenyls

Table 4-4b. Composite yard sample depth intervals and analyses

YARD ID	COMPOSITE SAMPLE ID[a]	DEPTH INTERVAL (ft)[a]	ANALYSES
YC02	YC02-0.0-0.5	0.0–0.5	D/F
	YC02-0.5-1.0	0.5–1.0	Archive
YC03	YC03-0.0-0.5	0.0–0.5	D/F
	YC03-0.5-1.0	0.5–1.0	Archive
YC04	YC04-0.0-0.5	0.0–0.5	D/F
	YC04-0.5-1.0	0.5–1.0	Archive
YC05	YC05-0.0-0.5	0.0–0.5	D/F
	YC05-0.5-1.0	0.5–1.0	Archive
YC06	YC06-0.0-0.5	0.0–0.5	D/F
	YC06-0.5-1.0	0.5–1.0	Archive
YC07	YC07-0.0-0.5	0.1-0.5	D/F
	YC07-0.5-1.0	0.5-1.0	Archive
YC08	YC08-0.0-0.5	0.0–0.5	D/F
	YC08-0.5-1.0	0.5–1.0	Archive
YC09	YC09-0.0-0.5	0.0–0.5	D/F
	YC09-0.5-1.0	0.5–1.0	Archive
YC10	YC10-0.0-0.5	0.0-0.5	D/F
	YC10-0.5-1.0	0.5-1.0	Archive
YC11	YC11-0.0-0.5	0.0-0.5	D/F
	YC11-0.5-1.0	0.5-1.0	Archive
YC12	YC12-0.0-0.5	0.0-0.5	D/F
	YC12-0.5-1.0	0.5-1.0	Archive
YC13	YC13-0.0-0.5	0.0-0.5	D/F
	YC13-0.5-1.0	0.5-1.0	Archive
YC14	YC14-0.0-0.5	0.0-0.5	D/F
	YC14-0.5-1.0	0.5-1.0	Archive
YC15	YC15-0.0-0.5	0.0–0.5	D/F
	YC15-0.5-1.0	0.5–1.0	Archive
YC16	YC16-0.0-0.5	0.0–0.5	D/F
	YC16-0.5-1.0	0.5–1.0	Archive
YC17	YC17-0.0-0.5	0.0–0.5	D/F
	YC17-0.5-1.0	0.5–1.0	Archive
YC18	YC18-0.0-0.5	0.0-0.5	D/F
	YC18-0.5-1.0	0.5-1.0	Archive
YC19	YC19-0.0-0.5	0.0-0.5	D/F
	YC19-0.5-1.0	0.5-1.0	Archive
YC20	YC20-0.0-0.5	0.0-0.5	D/F
	YC20-0.5-1.0	0.5-1.0	Archive

[a] Composite sample consists of the corresponding yard IDs and actual depths from the three discrete samples presented in Table 4-4a

D/F – dioxin and furans

Table 4-5. Total PCB surface sediment results compared to SMS

MAP ID	SAMPLE ID	TOTAL PCBS (mg/kg dw)	TOTAL PCBS (mg/kg-OC)
98-G	T117-98-SG	0.118	6.2
99-G	T117-99-SG	0.28	**15**
100-G	T117-100-SG	0.059	1.9
101-G	T117-101-SG	0.57	**21**
102-G	T117-102-SG	0.206	6.7
103-G	T117-103-SG	0.038	2.3
105-G	T117-105-SG	0.020 U	1.4 U
106-G	T117-106-SG	0.030	1.6
107-G	T117-107-SG	0.12	**14**
108-G	T117-108-SG	0.019 U	2.4 U
109-G	T117-109-SG	0.046	3.5
120-G	T117-120-SG[a]	0.059	3.6
110-G	T117-110-SG	0.020 U	1.3 U
111-G	T117-111-SG	0.020 U	1.3 U
113-G	T117-113-SG	0.020 U	0.90 U
114-G	T117-114-SG	0.054	4.6
115-G	T117-115-SG	0.24	**15**
117-G	T117-117-SG	0.020 U	2.3 U

[a] field duplicate

dw – dry weight

OC – carbon normalized

U – not detected at reported concentration

PCBs –polychlorinated biphenyls

SQS – Sediment Quality Standards (12 mg/kg-OC)

CSL – Cleanup Screening Level (65 mg/kg-OC)

bold indicates SQS exceedance

Table 4-6. Dioxin and furan calculated TEQ surface sediment results

MAP ID	SAMPLE ID	TEQ (ng/kg dw)[a]
100-G	T117-100-SG	9.36 J
102-G	T117-102-SG	6.54 J
107-G	T117-107-SG	2.11 J
109-G	T117-109-SG	4.35 J
110-G	T117-110-SG	4.08 J
111-G	T117-111-SG	3.50 J
113-G	T117-113-SG	4.04 J
115-G	T117-115-SG	4.15 J

[a] TEQs were calculated using the mammalian dioxin and furan TEFs from Van den Berg et al. (2006) and one-half the RL for undetected congeners.

dw – dry weight

J – estimated concentration

TEQ – toxic equivalent

Table 4-7. Mercury and dieldrin surface sediment results

MAP ID	SAMPLE ID	MERCURY (mg/kg dw)	DIELDRIN (µg/kg dw)
98-G	T117-98-SG	0.15	7.6 U
99-G	T117-99-SG	0.07	4.6 U

Mercury

SQS – Sediment Quality Standards (0.41 mg/kg)

CSL – Cleanup Screening Level (0.59 mg/kg)

dw – dry weight

U – not detected at reported concentration

Table 4-8 Total PCB soil sample results

MAP ID	SAMPLE ID	DEPTH (bgs-ft)	TOTAL PCBS (mg/kg dw)
T-117 Upland Area			
SB53	T117-SB53-0.5-2.0	0.5 – 2.0	60
SB54	T117-SB54-2.0-3.5	2.0 – 3.5	150
	T117-SB54-3.5-5.0	3.5 – 5.0	82
	T117-SB54-8.5-10.0	8.5 – 10.0	23
SB55	T117-SB55-2.0-3.5	2.0 – 3.5	190
	T117-SB55-3.5-5.0	3.5 – 5.0	2.4
	T117-SB55-11.5-13.0	11.5 – 13.0	39
SB56	T117-SB56-1.0-2.5	1.0 – 2.5	1.5
	T117-SB56-2.5-4.0	2.5 – 4.0	5.7
	T117-SB62-2.5-4.0[a]	2.5 – 4.0	1.2
	T117-SB56-4.0-5.5	4.0 – 5.5	0.82
	T117-SB56-5.5-7.0	5.5 – 7.0	0.93 J
SB57	T117-SB57b-2.0-3.5	2.0 – 3.5	14
	T117-SB57b-3.5-5.0	3.5 – 5.0	110
	T117-SB57b-10.0-11.5.0	10.0 – 11.5	23
SB58	T117-SB58-0.5-2.0	0.5 – 2.0	42
	T117-SB58-2.0-3.5	2.0 – 3.5	1.5
	T117-SB63-2.0-3.5[a]	2.0 – 3.5	1.5
	T117-SB58-3.5-5.0	3.5 – 5.0	7.4
SB59	T117-SB59-1.5-3.0	1.5 – 3.0	450
	T117-SB59-3.0-4.5	3.0 – 4.5	0.26
	T117-SB59-15.0-16.5	15.0 – 16.5	6.5
	T117-SB59-17.5-19.0	17.5 – 19.0	22
SB60	T117-SB60-0.5-2.0	0.5 – 2.0	33
	T117-SB60-2.0-3.5	2.0 – 3.5	300
	T117-SB60-3.5-5.0	3.5 – 5.0	4.0
	T117-SB60-12.5-14.0	12.5 – 14.0	0.041
	T117-SB60-15.0-16.5	15.0 – 16.5	0.024
CB5	CB5-00	0 - 0	5.8
	CB5-00DUP[a]	0 - 0	7.0
Adjacent Streets			
HA1	HA1-0.0-1.0	0 – 1.0	0.18
P100	P100-0.4-1.0	0.4 – 1.0	21
	P100-1.0-2.0	1.0 – 2.0	98
	P100-1.0-2.0DUP[a]	1.0 – 2.0	0.16
P88	P88-0.2-1.0	0.2 – 1.0	2.0
P89	P89-0.3-1.0	0.3 – 1.0	0.73

MAP ID	SAMPLE ID	DEPTH (bgs-ft)	TOTAL PCBS (mg/kg dw)
P90	P90-0.4-1.0	0.4 – 1.0	1.6
P91	P91-0.2-1.0	0.2 – 1.0	1.6
P92	P92-0.2-1.0	0.2 – 1.0	0.19 J
P93	P93-0.2-1.0	0.2 – 1.0	1.5
P94	P94-0.1-1.0	0.1 – 1.0	7.4
P95	P95-0.1-1.0	0.1 – 1.0	57
P96	P96-0.4-1.0	0.4 – 1.0	0.027
P97	P97-0.1-1.0	0.1 – 1.0	0.057
P98	P98-0.3-1.0	0.3 – 1.0	0.017 U
P99	P99-0.3-1.0	0.3 – 1.0	0.14
Yards			
YC06	YC06a-0.2-0.5	0.2 – 0.5	0.61 U
	YC06a-0.2-0.5DUP[a]	0.2 – 0.5	0.59 U
	YC06b-0.2-0.5	0.2 – 0.5	2.4
	YC06c-0.1-0.5	0.1 – 0.5	0.64 U
YC07	YC07a-0.1-0.5	0.1 – 0.5	0.20
	YC07b-0.1-0.5	0.1 – 0.5	0.27
	YC07c-0.1-0.5	0.1 – 0.5	1.3
YC08	YC08a-0.2-0.5	0.2 – 0.5	0.018
	YC08a-0.2-0.5DUP[a]	0.2 – 0.5	0.02
	YC08a-0.5-1.0	0.5 – 1.0	0.12
	YC08b-0.2-0.5	0.2 – 0.5	2.9
	YC08b-0.5-1.0	0.5 – 1.0	1.1
	YC08c-0.1-0.5	0.1 – 0.5	4.7
	YC08c-0.5-1.0	0.5 – 1.0	1.9
YC09	YC09a-0.1-0.5	0.1 – 0.5	0.13
	YC09b-0.1-0.5	0.1 – 0.5	0.19
	YC09c-0.1-0.5	0.1 – 0.5	1.6
YC10	YC10a-0.2-0.5	0.2 – 0.5	0.34
	YC10a-0.2-0.5DUP[a]	0.2 – 0.5	0.33
	YC10b-0.2-0.5	0.2 – 0.5	0.19
	YC10c-0.2-0.5	0.2 – 0.5	1.7
YC11	YC11a-0.2-0.5	0.2 – 0.5	1.5
	YC11b-0.2-0.5	0.2 – 0.5	0.46
	YC11c-0.2-0.5	0.2 – 0.5	0.54
YC12	YC12a-0.1-0.5	0.1 – 0.5	0.13
	YC12a-0.1-0.5DUP[a]	0.1 – 0.5	0.11
	YC12b-0.2-0.5	0.2 – 0.5	0.58
	YC12c-0.2-0.5	0.2 – 0.5	0.64

MAP ID	SAMPLE ID	DEPTH (bgs-ft)	TOTAL PCBS (mg/kg dw)
YC13	YC13a-0.0-0.5	0 – 0.5	0.16
	YC13b-0.0-0.5	0 – 0.5	0.17
	YC13c-0.2-0.5	0.2 – 0.5	0.67
YC14	YC14a-0.1-0.5	0.1 – 0.5	0.2
	YC14b-0.1-0.5	0.1 – 0.5	0.44
	YC14c-0.1-0.5	0.1 – 0.5	1.2
YC15	YC15a-0.0-0.5	0 – 0.5	0.19
	YC15b-0.1-0.5	0.1 – 0.5	0.42
	YC15c-0.0-0.5	0 – 0.5	0.19
YC16	YC16a-0.0-0.5	0 – 0.5	0.11
	YC16b-0.1-0.5	0.1 – 0.5	0.43 U
	YC16c-0.0-0.5	0 – 0.5	0.13 U
YC17	YC17a-0.0-0.5	0 – 0.5	0.12
	YC17b-0.0-0.5	0 – 0.5	0.17
	YC17c-0.0-0.5	0 – 0.5	0.145
YC18	YC18a-0.1-0.5	0.1 – 0.5	0.26
	YC18b-0.1-0.5	0.1 – 0.5	0.14
	YC18c-0.1-0.5	0.1 – 0.5	0.12

[a] field duplicate

bgs – below ground surface

dw – dry weight

J – estimated value

PCB – polychlorinated biphenyl

U– not detected at reported concentration

Table 4-9. Dioxin TEQ soil sample results

LOCATION	SAMPLE ID	DEPTH (bgs-ft)	TEQ (ng/kg dw)
T-117 Upland Area			
T-117-SB53	T117-SB53-0.5-2.0	0.5 – 2.0	18.9
	T117-SB61-0.5-2.0[b]	0.5 – 2.0	22.2 J
T-117-SB54	T117-SB54-2.0-3.5	2.0 – 3.5	91.2
	T117-SB54-3.5-5.0	3.5 – 5.0	39.8
	T117-SB54-8.5-10.0	8.5 – 10.0	20.0 J
T-117-SB55	T117-SB55-2.0-3.5	2.0 – 3.5	53.0
	T117-SB55-3.5-5.0	3.5 – 5.0	296 J
	T117-SB55-11.5-13.0	11.5 – 13.0	58.6 J
T-117-SB56	T117-SB56-1.0-2.5	1.0 – 2.5	19.9
T117-SB57	T117-SB57b-2.0-3.5	2.0 – 3.5	12.0 J
	T117-SB57b-3.5-5.0	3.5 – 5.0	33.9 J
	T117-SB57b-10.0-11.5.0	10.0 – 11.5	20.9 J
T-117-SB58	T117-SB58-0.5-2.0	0.5 – 2.0	33.3
	T117-SB58-2.0-3.5	2.0 – 3.5	150
	T117-SB58-3.5-5.0	3.5 – 5.0	3.52 J
T-117-SB59	T117-SB59-1.5-3.0	1.5 – 3.0	113
	T117-SB59-3.0-4.5	3.0 – 4.5	2.45 J
T-117-SB60	T117-SB60-0.5-2.0	0.5 – 2.0	17.8 J
	T117-SB60-2.0-3.5	2.0 – 3.5	93.3
	T117-SB60-3.5-5.0	3.5 – 5.0	3.61 J
	T117-SB60-15.0-16.5	15.0 – 16.5	0.272 J
CB5	CB5-00	0 - 0	26.0 J
	CB5-00DUP[b]	0 - 0	35.8 J
Streets			
HA1	HA1-0.0-1.0	0 – 1.0	11.5 J
P100	P100-0.4-1.0	0.4 – 1.0	30.0 J
	P100-1.0-2.0	1.0 – 2.0	1.50 J
	P100-1.0-2.0DUP[b]	1.0 – 2.0	50.0 J
P88	P88-0.2-1.0	0.2 – 1.0	11.4 J
P89	P89-0.3-1.0	0.3 – 1.0	15.9 J
P90	P90-0.4-1.0	0.4 – 1.0	21.4 J
P91	P91-0.2-1.0	0.2 – 1.0	12.2 J
P92	P92-0.2-1.0	0.2 – 1.0	4.53 J
P93	P93-0.2-1.0	0.2 – 1.0	7.30 J
P94	P94-0.1-1.0	0.1 – 1.0	84.0 J
P95	P95-0.1-1.0	0.1 – 1.0	32.4 J
P96	P96-0.4-1.0	0.4 – 1.0	3.65 J
P97	P97-0.1-1.0	0.1 – 1.0	4.91 J

LOCATION	SAMPLE ID	DEPTH (bgs-ft)	TEQ (ng/kg dw)
P98	P98-0.3-1.0	0.3 – 1.0	1.79 J
P99	P99-0.3-1.0	0.3 – 1.0	0.495 J
YC02	YC02-0.0-0.5	0 – 0.5	27.1 J
YC03	YC03-0.0-0.5	0 – 0.5	50.0 J
YC04	YC04-0.0-0.5	0 – 0.5	22.0 J
YC05	YC05-0.0-0.5	0 – 0.5	12.4 J
YC06	YC06-0.0-0.5	0 – 0.5	18.6 J
YC07	YC07-0.0-0.5	0 – 0.5	27.9 J
YC08	YC08a-0.2-0.5	0.2 – 0.5	1.81 J
	YC08a-0.2-0.5DUP[b]	0.2 – 0.5	2.99 J
	YC08b-0.2-0.5	0.2 – 0.5	14.4 J
	YC08c-0.1-0.5	0.1 – 0.5	21.6 J
	YC08-0.0-0.5	0 – 0.5	395 J
YC09	YC09-0.0-0.5	0 – 0.5	12.5 J
YC10	YC10-0.0-0.5	0 – 0.5	15.6 J
YC11	YC11-0.0-0.5	0 – 0.5	6.32 J
YC12	YC12-0.0-0.5	0 – 0.5	16.0 J
YC13	YC13-0.0-0.5	0 – 0.5	11.5 J
YC14	YC14-0.0-0.5	0 – 0.5	13.4 J
YC15	YC15-0.0-0.5	0 – 0.5	8.63 J
YC16	YC16-0.0-0.5	0 – 0.5	4.69 J
YC17	YC17-0.0-0.5	0 – 0.5	6.42 J
YC18	YC18-0.0-0.5	0 – 0.5	6.60 J
YC19	YC19-0.0-0.5	0 – 0.5	11.8
YC20	YC20-0.0-0.5	0 – 0.5	7.88 J

[a] TEQs were calculated using the mammalian dioxin and furan TEFs from Van den Berg et al. (2006) and one-half the RL for undetected congeners.

[b] field duplicate

bgs – below ground surface

dw – dry weight

J – estimated value

Table 4-10. PAH soil sample results

Location	Sample ID	Depth (bgs-ft)	Total PAHs (mg/kg dw)	Total HPAH (mg/kg dw)	Total LPAH (mg/kg dw)	cPAH (mg/kg dw)
T-117 Upland Area						
T-117-SB53	T117-SB53-0.5-2.0	0.5 – 2.0	0.081	0.081	0.071 U	0.0640 UJ
T-117-SB54	T117-SB54-2.0-3.5	2.0 – 3.5	0.45 J	0.45 J	0.069 U	0.0680 J
	T117-SB54-3.5-5.0	3.5 – 5.0	0.241 J	0.241 J	0.071 U	0.0680 J
T-117-SB55	T117-SB55-2.0-3.5	2.0 – 3.5	0.071 U	0.071 U	0.071 U	0.0640 U
	T117-SB55-3.5-5.0	3.5 – 5.0	0.64 J	0.55 J	0.096	0.0710
T-117-SB56	T117-SB56-1.0-2.5	1.0 – 2.5	0.50 J	0.50 J	0.072 U	0.0820 J
	T117-SB56-2.5-4.0	2.5 – 4.0	0.062 U	0.062 U	0.062 U	0.0560 U
	T117-SB62-2.5-4.0[a]	2.5 – 4.0	0.069 UJ	0.069 UJ	0.069 U	0.0620 UJ
	T117-SB56-4.0-5.5	4.0 – 5.5	2.6	2.6	0.83 U	0.760
T117-SB57	T117-SB57b-2.0-3.5	2.0 – 3.5	0.28 J	0.28 J	0.069 U	0.0630
	T117-SB57b-3.5-5.0	3.5 – 5.0	3.75 J	2.90 J	0.85	0.370 J
T-117-SB58	T117-SB58-0.5-2.0	0.5 – 2.0	5.0 J	3.5 J	1.50	0.420 J
	T117-SB58-2.0-3.5	2.0 – 3.5	0.21	0.11	0.098	0.0670 UJ
T-117-SB59	T117-SB59-1.5-3.0	1.5 – 3.0	1.29	0.97	0.32	0.128
	T117-SB59-3.0-4.5	3.0 – 4.5	0.070 U	0.070 U	0.070 U	0.0630 U
T-117-SB60	T117-SB60-0.5-2.0	0.5 – 2.0	1.84 J	1.84 J	0.13 U	0.280
	T117-SB60-2.0-3.5	2.0 – 3.5	2.05 J	1.75 J	0.30	0.230
	T117-SB60-3.5-5.0	3.5 – 5.0	0.072 U	0.072 U	0.072 U	0.0650 U

[a] field duplicate

bgs – below ground surface

dw – dry weight

J – estimated value

U– not detected at reported concentration

HPAH – high-molecular-weight polycyclic aromatic hydrocarbon

LPAH – low-molecular-weight polycyclic aromatic hydrocarbon

PAH – polycyclic aromatic hydrocarbon

cPAH – carcinogenic polycyclic aromatic hydrocarbon

Table 4-11. TPH soil sample results

LOCATION	SAMPLE ID	DEPTH (BGS-FT)	TPH - DIESEL RANGE (mg/kg dw)	TPH - MOTOR OIL RANGE (mg/kg dw)	TPH (mg/kg dw) (OIL + DIESEL)
T-117 Upland Area					
T-117-SB53	T117-SB53-0.5-2.0	0.5 – 2.0	160	690	850
T-117-SB54	T117-SB54-2.0-3.5	2.0 – 3.5	350	2,800	3,200
	T117-SB54-3.5-5.0	3.5 – 5.0	390	2,100	2,500
T-117-SB55	T117-SB55-2.0-3.5	2.0 – 3.5	210	590	800
	T117-SB55-3.5-5.0	3.5 – 5.0	160	980	1,140
T-117-SB56	T117-SB56-1.0-2.5	1.0 – 2.5	1,200	2,000	3,200
	T117-SB56-2.5-4.0	2.5 – 4.0	160	300	460
	T117-SB62-2.5-4.0[a]	2.5 – 4.0	220	260	480
	T117-SB56-4.0-5.5	4.0 – 5.5	17,000	13,000	30,000
T117-SB57	T117-SB57b-2.0-3.5	2.0 – 3.5	47	290	340
	T117-SB57b-3.5-5.0	3.5 – 5.0	320	1,200	1,500
T-117-SB58	T117-SB58-0.5-2.0	0.5 – 2.0	1,600	4,100	5,700
	T117-SB58-2.0-3.5	2.0 – 3.5	820	2,000	2,800
T-117-SB59	T117-SB59-1.5-3.0	1.5 – 3.0	1,800	2,800	4,600
	T117-SB59-3.0-4.5	3.0 – 4.5	5.2 U	10 U	10 U
T-117-SB60	T117-SB60-0.5-2.0	0.5 – 2.0	1,900	3,800	5,700
	T117-SB60-2.0-3.5	2.0 – 3.5	1,300	6,400	7,700
	T117-SB60-3.5-5.0	3.5 – 5.0	120	280	400

[a] field duplicate

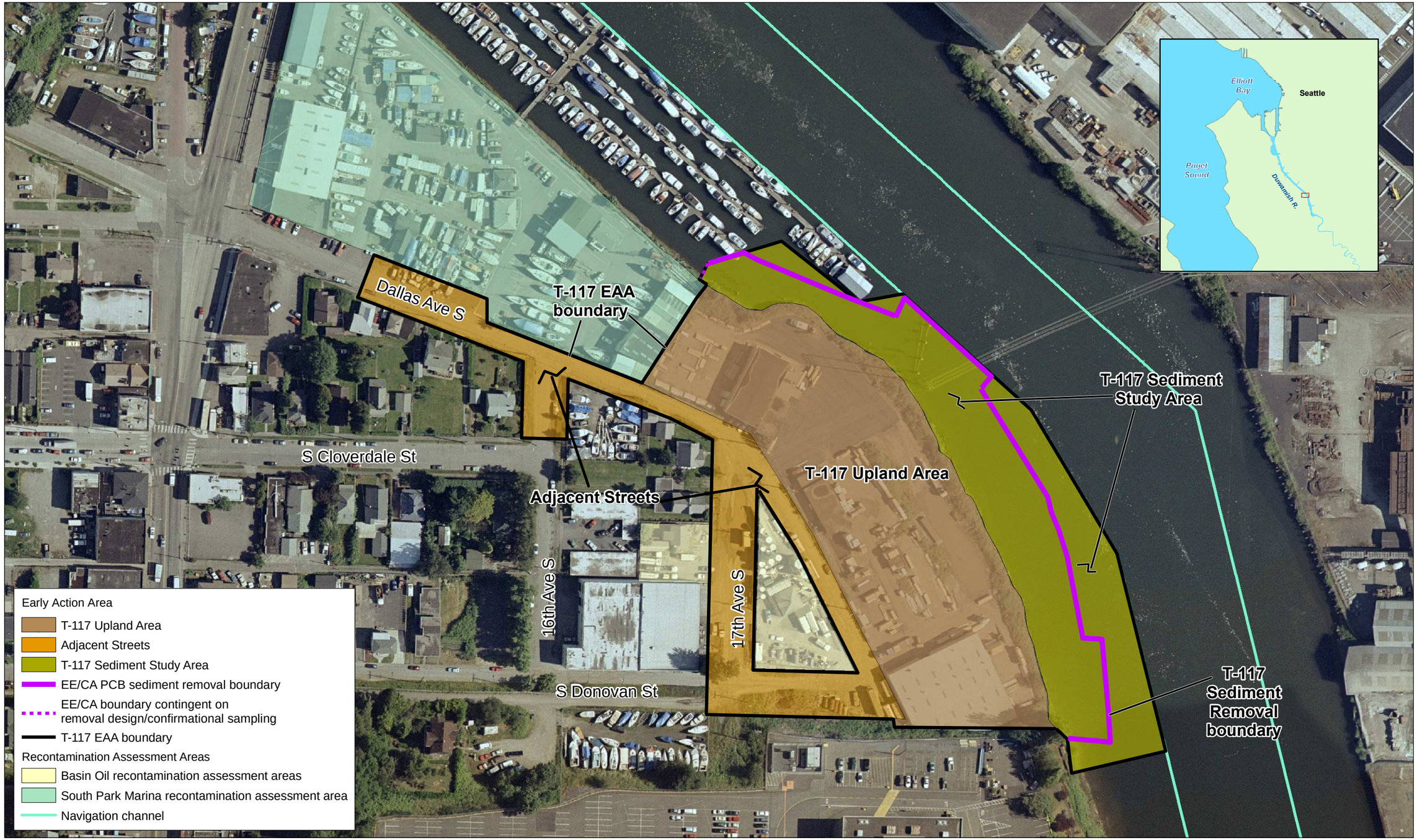
bgs – below ground surface

dw – dry weight

U– not detected at reported concentration

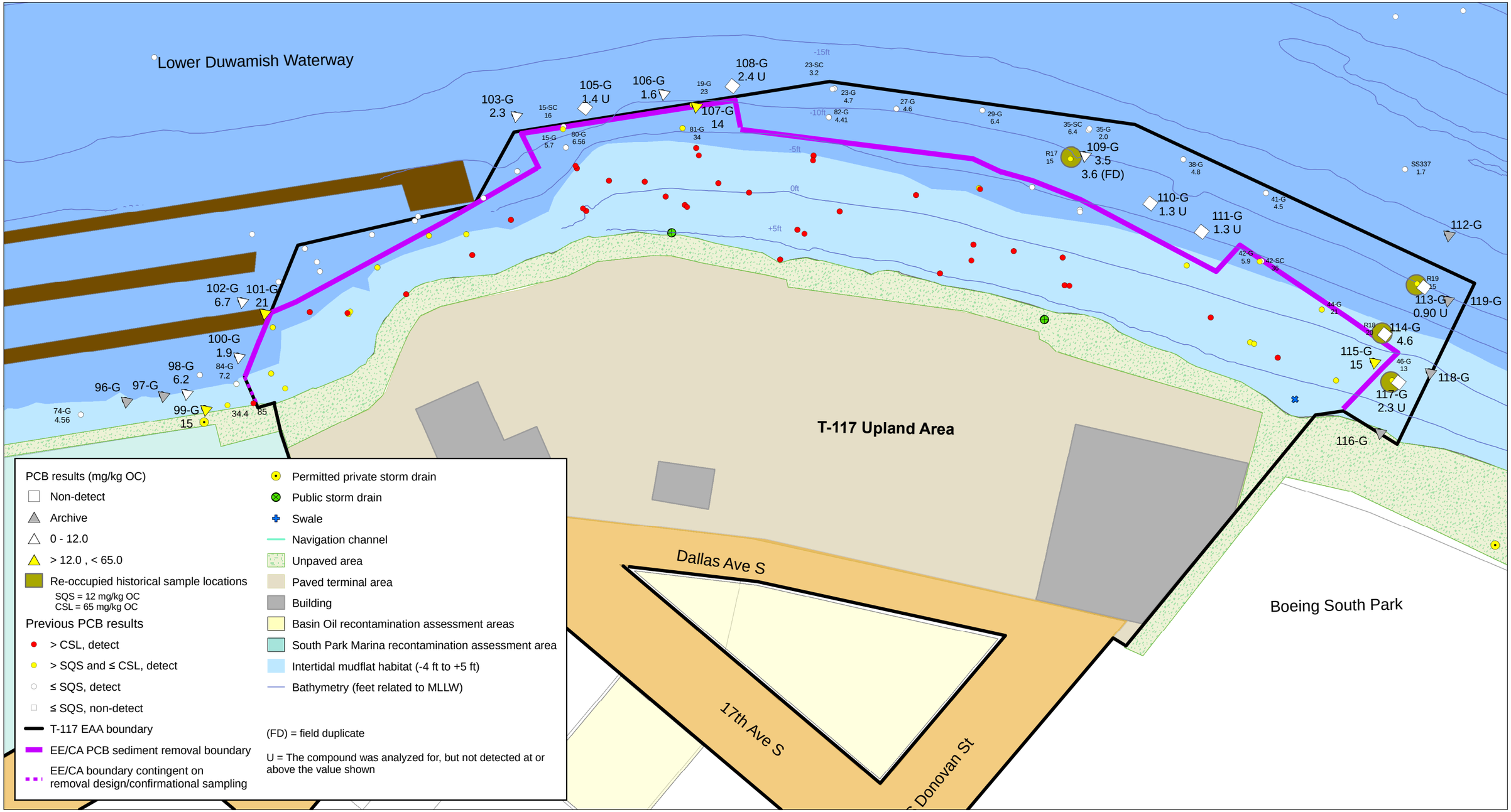
TPH – total petroleum hydrocarbon

7 Maps



Map 1-1. T-117 EAA site overview

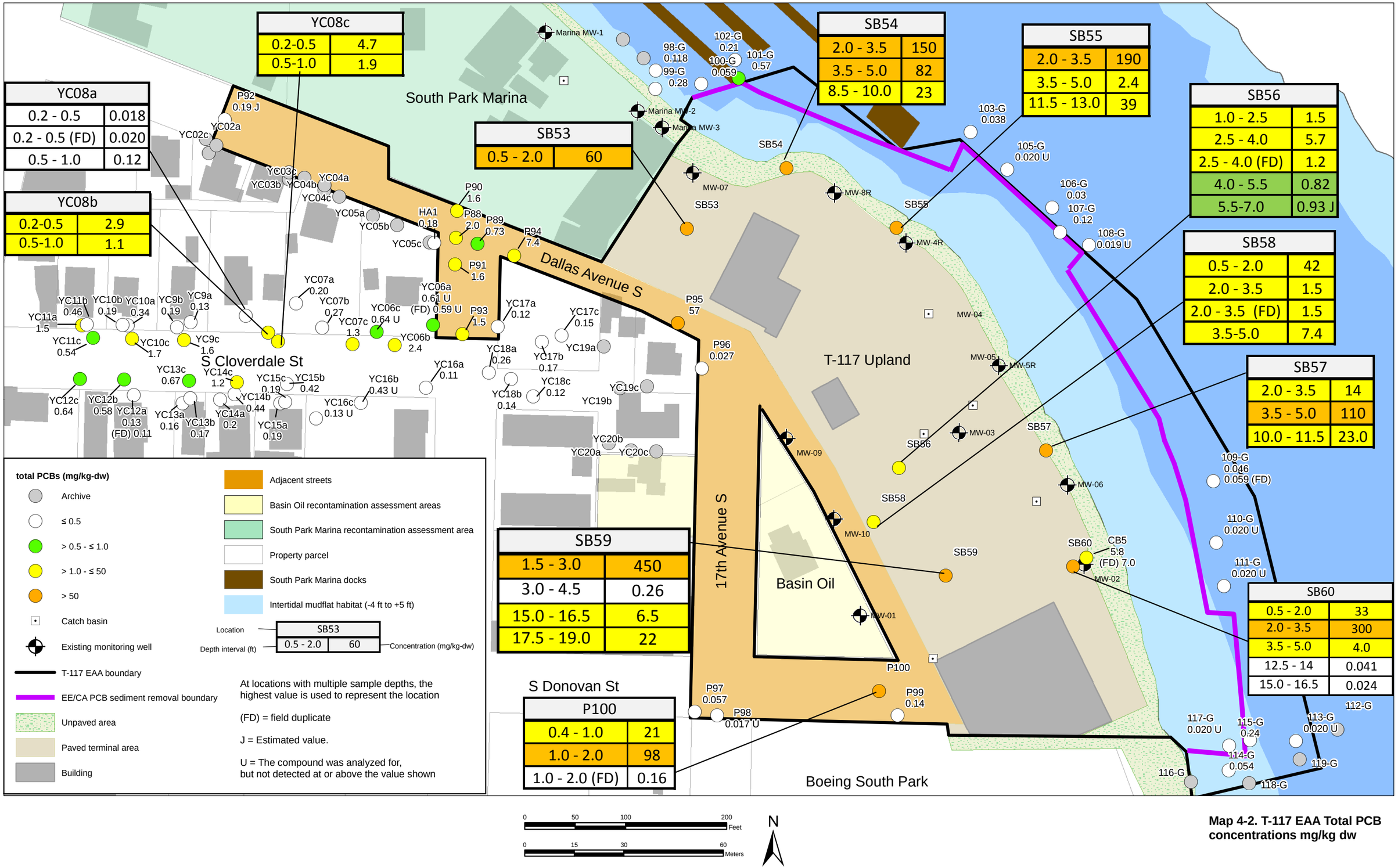
Prepared by CEH 06/11/07, revised 07/02/08. Map 2939.W:\Projects\03-08-12 T-117 (Malarkey)\Data\GIS\2008 EECA



Map 4-1. Surface sediment total PCB concentrations mg/kg-OC

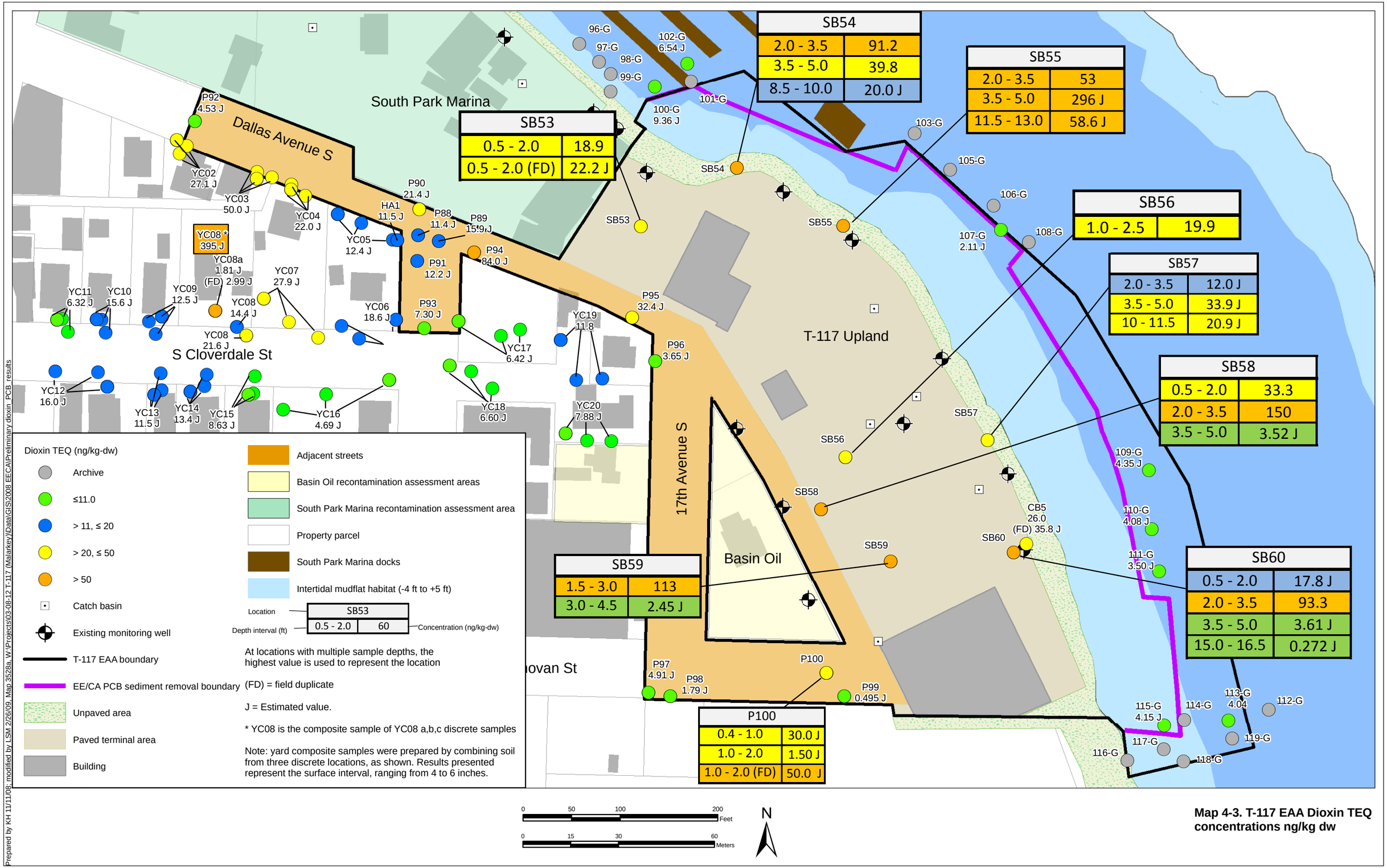
Wind Ward LLC environmental

Prepared by KH (06/3/2008). MAP #3481; W:\Projects\03-08-12 T-117 (Malarkey)\Data\GIS\2008 EE\CA\Sediment boundary\3481 2008 sediment_upland sample locs



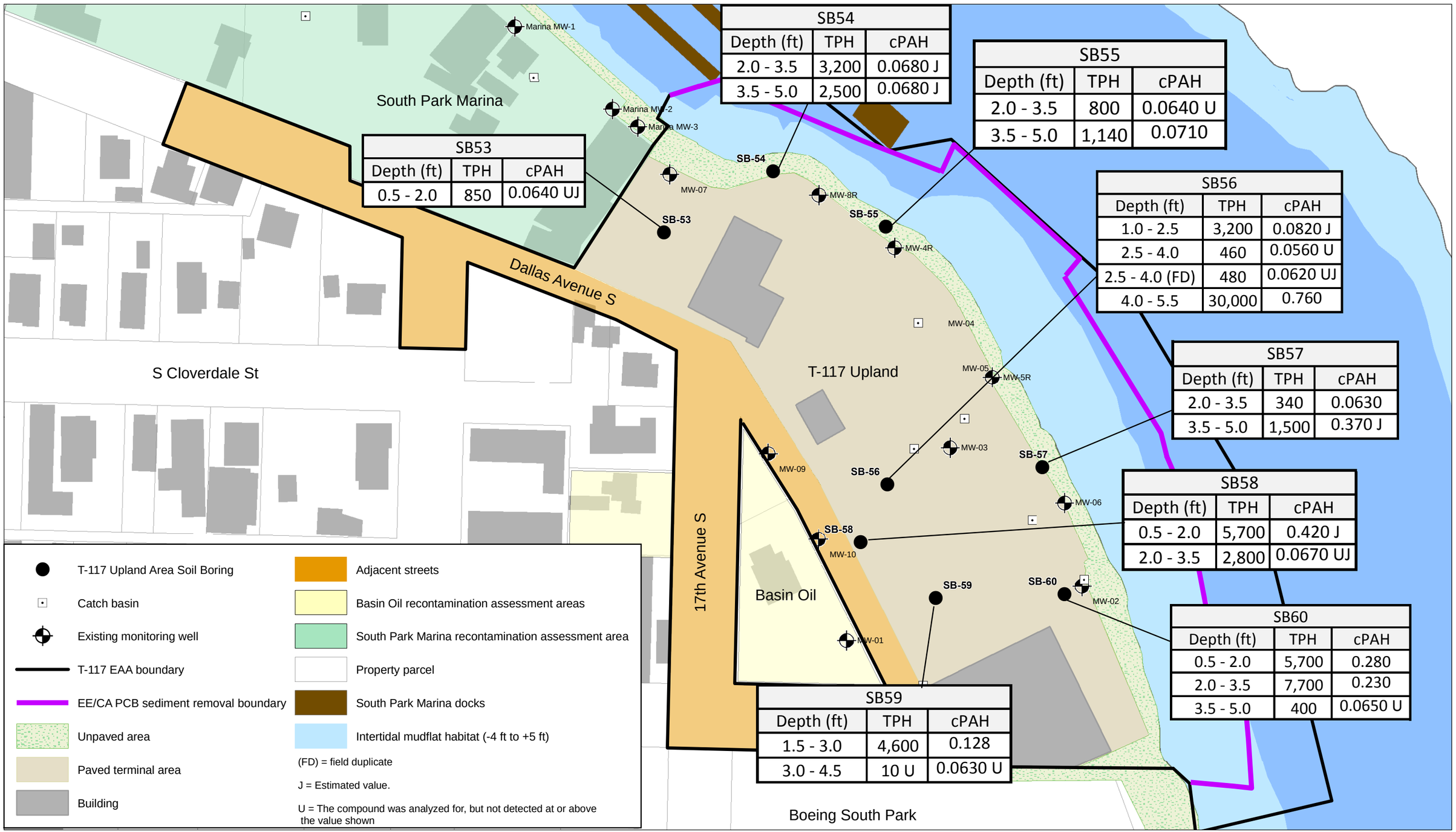
Map 4-2. T-117 EAA Total PCB concentrations mg/kg dw

Prepared by KH 11/11/08; Map 3529, W:\Projects\03-08-12 T-117 (Malarkey)\Data\GIS\2008 EECA\Preliminary dioxin_PCB results



Prepared by KH 11/11/08; modified by LSM 2/26/09. Map 3528a. W:\Projects\03-08-12 T-117 (Malarkey)\Data\GIS\2008 EECA\Preliminary dioxin_PCB results

Map 4-3. T-117 EAA Dioxin TEQ concentrations ng/kg dw



Map 4-4. T-117 Upland Area TPH and cPAH concentrations mg/kg dw

Prepared by KH 11/11/08; Map 3529, W:\Projects\03-08-12 T-117 (Malarkey)\Data\GIS\2008 EECA\Preliminary dioxin_PCB results

APPENDIX A

Streets and Yards Sample IDs

Table A-1. Streets and Yards investigation sample IDs, sample numbers, and analyses

Sample ID	Sample Interval (ft bgs)	Sample Number	Sample Date	Sample Time	Analyses
YC02-0.0-0.5	0.0–0.5	SPD0145	22-Aug-08	1040	PCDDs/PCDFs, TS
YC02-0.5-1.0	0.5–1.0	SPD0150	22-Aug-08	1050	archived
YC02a-0.1-0.5	0.1–0.5	SPD0146	22-Aug-08	0840	archived
YC02a-0.1-0.5DUP	0.1–0.5	SPD0147	22-Aug-08	0835	archived
YC02a-0.5-1.0	0.5–1.0	SPD0151	22-Aug-08	0840	archived
YC02b-0.1-0.5	0.1–0.5	SPD0148	22-Aug-08	0836	archived
YC02b-0.5-1.0	0.5–1.0	SPD0152	22-Aug-08	0841	archived
YC02c-0.1-0.5	0.1–0.5	SPD0149	22-Aug-08	0845	archived
YC02c-0.5-0.9	0.5–0.9	SPD0153	22-Aug-08	0900	archived
YC03-0.0-0.5	0.0–0.5	SPD0204	25-Aug-08	1300	PCDDs/PCDFs, TS
YC03-0.5-1.0	0.5–1.0	SPD0208	25-Aug-08	1320	archived
YC03a-0.1-0.5	0.1–0.5	SPD0205	25-Aug-08	1200	archived
YC03a-0.5-1.0	0.5–1.0	SPD0209	25-Aug-08	1215	archived
YC03b-0.0-0.5	0.0–0.5	SPD0206	25-Aug-08	1128	archived
YC03b-0.5-1.0	0.5–1.0	SPD0210	25-Aug-08	1130	archived
YC03c-0.0-0.5	0.0–0.5	SPD0207	25-Aug-08	1150	archived
YC03c-0.5-1.0	0.5–1.0	SPD0211	25-Aug-08	1156	archived
YC04-0.0-0.5	0.0–0.5	SPD0143	21-Aug-08	1904	PCDDs/PCDFs, TS
YC04-0.5-1.0	0.5–1.0	SPD0144	21-Aug-08	1924	archived
YC04a-0.2-0.5	0.2–0.5	SPD0096	21-Aug-08	1707	archived
YC04a-0.2-0.5DUP	0.2–0.5	SPD0097	21-Aug-08	1708	archived
YC04a-0.5-1.0	0.5–1.0	SPD0098	21-Aug-08	1715	archived
YC04b-0.1-0.5	0.1–0.5	SPD0099	21-Aug-08	1712	archived
YC04b-0.5-1.0	0.5–1.0	SPD0141	21-Aug-08	1720	archived
YC04c-0.1-0.5	0.1–0.5	SPD0140	21-Aug-08	1640	archived
YC04c-0.5-1.0	0.5–1.0	SPD0142	21-Aug-08	1644	archived
YC05-0.0-0.5	0.0–0.5	SPD0077	21-Aug-08	1338	PCDDs/PCDFs, TS
YC05-0.0-0.5DUP	0.0–0.5	SPD0078	21-Aug-08	1339	archived
YC05-0.5-1.0	0.5–1.0	SPD0076	21-Aug-08	1340	archived
YC05a-0.2-0.5	0.2–0.5	SPD0070	21-Aug-08	1300	archived
YC05a-0.5-1.0	0.5–1.0	SPD0071	21-Aug-08	1302	archived
YC05b-0.2-0.5	0.2–0.5	SPD0072	21-Aug-08	1240	archived
YC05b-0.5-1.0	0.5–1.0	SPD0073	21-Aug-08	1250	archived
YC05c-0.0-0.5	0.0–0.5	SPD0074	21-Aug-08	1210	archived
YC05c-0.5-1.0	0.5–1.0	SPD0075	21-Aug-08	1220	archived
YC06-0.0-0.5	0.0–0.5	SPD0086	21-Aug-08	1425	PCDDs/PCDFs, TS
YC06-0.5-1.0	0.5–1.0	SPD0087	21-Aug-08	1430	archived
YC06a-0.2-0.5	0.2–0.5	SPD0079	21-Aug-08	1335	PCBs, TS
YC06a-0.2-0.5DUP	0.2–0.5	SPD0080	21-Aug-08	1336	PCBs, TS
YC06a-0.5-1.0	0.5–1.0	SPD0081	21-Aug-08	1340	archived
YC06b-0.2-0.5	0.2–0.5	SPD0082	21-Aug-08	1420	PCBs, TS
YC06b-0.5-1.0	0.5–1.0	SPD0083	21-Aug-08	1425	archived
YC06c-0.1-0.5	0.1–0.5	SPD0084	21-Aug-08	1435	PCBs, TS
YC06c-0.5-1.0	0.5–1.0	SPD0085	21-Aug-08	1443	archived
YC07-0.0-0.5	0.0–0.5	SPD0094	21-Aug-08	1620	PCDDs/PCDFs, TS
YC07-0.5-1.0	0.5–1.0	SPD0095	21-Aug-08	1635	archived
YC07a-0.1-0.5	0.1–0.5	SPD0088	21-Aug-08	1530	PCBs, TS
YC07a-0.5-1.0	0.5–1.0	SPD0089	21-Aug-08	1535	archived
YC07b-0.1-0.5	0.1–0.5	SPD0093	21-Aug-08	1550	PCBs, TS
YC07b-0.5-1.0	0.5–1.0	SPD0092	21-Aug-08	1555	archived
YC07c-0.1-0.5	0.1–0.5	SPD0090	21-Aug-08	1615	PCBs, TS
YC07c-0.5-1.0	0.5–1.0	SPD0091	21-Aug-08	1620	archived
YC08-0.0-0.5	0.0–0.5	SPD0220	26-Aug-08	0930	PCDDs/PCDFs, TS
YC08-0.5-1.0	0.5–1.0	SPD0225	26-Aug-08	0935	archived
YC08a-0.2-0.5	0.2–0.5	SPD0221	26-Aug-08	0810	PCDDs/PCDFs, PCB Aroclors, TS

Table A-1. Streets and Yards investigation sample IDs, sample numbers, and analyses

Sample ID	Sample Interval (ft bgs)	Sample Number	Sample Date	Sample Time	Analyses
YC08a-0.2-0.5DUP	0.2–0.5	SPD0222	26-Aug-08	0820	PCDDs/PCDFs, PCB Aroclors, TS
YC08a-0.5-1.0	0.5–1.0	SPD0226	26-Aug-08	0815	PCBs, TS
YC08b-0.2-0.5	0.2–0.5	SPD0223	26-Aug-08	0813	PCDDs/PCDFs, PCB Aroclors, TS
YC08b-0.5-1.0	0.5–1.0	SPD0227	26-Aug-08	0820	PCBs, TS
YC08c-0.1-0.5	0.1–0.5	SPD0224	26-Aug-08	0820	PCDDs/PCDFs, PCB Aroclors, TS
YC08c-0.5-1.0	0.5–1.0	SPD0228	26-Aug-08	0825	PCBs, TS
YC09-0.0-0.5	0.0–0.5	SPD0156	22-Aug-08	1310	PCDDs/PCDFs, TS
YC09-0.5-1.0	0.5–1.0	SPD0160	22-Aug-08	1315	inadvertently analyzed by lab for TS
YC09a-0.1-0.5	0.1–0.5	SPD0157	22-Aug-08	1050	PCBs, TS
YC09a-0.5-1.0	0.5–1.0	SPD0161	22-Aug-08	1100	archived
YC09b-0.1-0.5	0.1–0.5	SPD0158	22-Aug-08	1110	PCBs, TS
YC09b-0.5-1.0	0.5–1.0	SPD0162	22-Aug-08	1118	archived
YC09c-0.1-0.5	0.1–0.5	SPD0159	22-Aug-08	1130	PCBs, TS
YC09c-0.5-1.0	0.5–1.0	SPD0163	22-Aug-08	1136	archived
YC10-0.0-0.5	0.0–0.5	SPD0194	25-Aug-08	1125	PCDDs/PCDFs, TS
YC10-0.0-0.5DUP	0.0–0.5	SPD0195	25-Aug-08	1130	archived
YC10-0.5-1.0	0.5–1.0	SPD0200	25-Aug-08	1132	archived
YC10a-0.2-0.5	0.2–0.5	SPD0196	25-Aug-08	1017	PCBs, TS
YC10a-0.2-0.5DUP	0.2–0.5	SPD0197	25-Aug-08	1030	PCBs, TS
YC10a-0.5-1.0	0.5–1.0	SPD0201	25-Aug-08	1023	archived
YC10b-0.2-0.5	0.2–0.5	SPD0198	25-Aug-08	1027	PCBs, TS
YC10b-0.5-1.0	0.5–1.0	SPD0202	25-Aug-08	1030	archived
YC10c-0.2-0.5	0.2–0.5	SPD0199	25-Aug-08	1037	PCBs, TS
YC10c-0.5-0.9	0.5–0.9	SPD0203	25-Aug-08	1042	archived
YC11-0.0-0.5	0.0–0.5	SPD0212	25-Aug-08	1515	PCDDs/PCDFs, TS
YC11-0.5-1.0	0.5–1.0	SPD0216	25-Aug-08	1510	archived
YC11a-0.2-0.5	0.2–0.5	SPD0213	25-Aug-08	1400	PCBs, TS
YC11a-0.5-1.0	0.5–1.0	SPD0217	25-Aug-08	1406	archived
YC11b-0.2-0.5	0.2–0.5	SPD0214	25-Aug-08	1418	PCBs, TS
YC11b-0.5-1.0	0.5–1.0	SPD0218	25-Aug-08	1427	archived
YC11c-0.2-0.5	0.2–0.5	SPD0215	25-Aug-08	1430	PCBs, TS
YC11c-0.5-1.0	0.5–1.0	SPD0219	25-Aug-08	1434	archived
YC12-0.0-0.5	0.0–0.5	SPD0229	26-Aug-08	1055	PCDDs/PCDFs, TS
YC12-0.5-1.0	0.5–1.0	SPD0234	26-Aug-08	1100	archived
YC12a-0.1-0.5	0.1–0.5	SPD0230	26-Aug-08	1020	PCBs, TS
YC12a-0.1-0.5DUP	0.1–0.5	SPD0231	26-Aug-08	1030	PCBs, TS
YC12a-0.5-1.0	0.5–1.0	SPD0235	26-Aug-08	1025	archived
YC12b-0.2-0.5	0.2–0.5	SPD0232	26-Aug-08	1001	PCBs, TS
YC12b-0.5-1.0	0.5–1.0	SPD0236	26-Aug-08	1007	archived
YC12c-0.2-0.5	0.2–0.5	SPD0233	26-Aug-08	0950	PCBs, TS
YC12c-0.5-1.0	0.5–1.0	SPD0237	26-Aug-08	0954	archived
YC13-0.0-0.5	0.0–0.5	SPD0186	25-Aug-08	1015	PCDDs/PCDFs, TS
YC13-0.5-1.0	0.5–1.0	SPD0190	25-Aug-08	1025	archived
YC13a-0.0-0.5	0.0–0.5	SPD0187	25-Aug-08	0926	PCBs, TS
YC13a-0.5-1.0	0.5–1.0	SPD0191	25-Aug-08	0932	archived
YC13b-0.0-0.5	0.0–0.5	SPD0188	25-Aug-08	0930	PCBs, TS
YC13b-0.5-1.0	0.5–1.0	SPD0192	25-Aug-08	0940	archived
YC13c-0.2-0.5	0.2–0.5	SPD0189	25-Aug-08	0915	PCBs, TS
YC13c-0.5-1.0	0.5–1.0	SPD0193	25-Aug-08	0922	archived
YC14-0.0-0.5	0.0–0.5	SPD0164	22-Aug-08	1405	PCDDs/PCDFs, TS
YC14-0.5-1.0	0.5–1.0	SPD0168	22-Aug-08	1415	inadvertently analyzed by lab for TS
YC14a-0.1-0.5	0.1–0.5	SPD0165	22-Aug-08	1250	PCBs, TS
YC14a-0.5-1.0	0.5–1.0	SPD0169	22-Aug-08	1252	archived
YC14b-0.1-0.5	0.1–0.5	SPD0166	22-Aug-08	1240	PCBs, TS
YC14b-0.5-1.0	0.5–1.0	SPD0170	22-Aug-08	1243	archived

Table A-1. Streets and Yards investigation sample IDs, sample numbers, and analyses

Sample ID	Sample Interval (ft bgs)	Sample Number	Sample Date	Sample Time	Analyses
YC14c-0.1-0.5	0.1–0.5	SPD0167	22-Aug-08	1305	PCBs, TS
YC14c-0.5-1.0	0.5–1.0	SPD0171	22-Aug-08	1311	archived
YC15-0.0-0.5	0.0–0.5	SPD0184	25-Aug-08	0920	PCDDs/PCDFs, TS
YC15-0.5-1.0	0.5–1.0	SPD0185	25-Aug-08	0925	archived
YC15a-0.0-0.5	0.0–0.5	SPD0180	25-Aug-08	0827	PCBs, TS
YC15a-0.5-1.0	0.5–1.0	SPD0182	25-Aug-08	0838	archived
YC15b-0.1-0.5	0.1–0.5	SPD0178	25-Aug-08	0820	PCBs, TS
YC15b-0.5-0.8	0.5–0.8	SPD0181	25-Aug-08	0825	archived
YC15c-0.0-0.5	0.0–0.5	SPD0179	25-Aug-08	0825	PCBs, TS
YC15c-0.5-1.0	0.5–1.0	SPD0183	25-Aug-08	0840	archived
YC16-0.0-0.5	0.0–0.5	SPD0136	20-Aug-08	1815	PCDDs/PCDFs, TS
YC16-0.5-1.0	0.5–1.0	SPD0137	20-Aug-08	1810	archived
YC16a-0.0-0.5	0.0–0.5	SPD0128	20-Aug-08	1645	PCBs, TS
YC16a-0.5-1.0	0.5–1.0	SPD0129	20-Aug-08	1650	archived
YC16b-0.1-0.5	0.1–0.5	SPD0130	20-Aug-08	1700	PCBs, TS
YC16b-0.5-1.0	0.5–1.0	SPD0131	20-Aug-08	1705	archived
YC16c-0.0-0.5	0.0–0.5	SPD0134	20-Aug-08	1715	PCBs, TS
YC16c-0.5-1.0	0.5–1.0	SPD0135	20-Aug-08	1720	archived
YC17-0.0-0.5	0.0–0.5	SPD0138	20-Aug-08	1630	PCDDs/PCDFs, TS
YC17-0.5-1.0	0.5–1.0	SPD0139	20-Aug-08	1645	archived
YC17a-0.0-0.5	0.0–0.5	SPD0116	20-Aug-08	1510	PCBs, TS
YC17a-0.5-0.8	0.5–0.8	SPD0119	20-Aug-08	1515	archived
YC17b-0.0-0.5	0.0–0.5	SPD0117	20-Aug-08	1450	PCBs, TS
YC17b-0.5-0.8	0.5–0.8	SPD0120	20-Aug-08	1455	archived
YC17c-0.0-0.5	0.0–0.5	SPD0118	20-Aug-08	1600	PCBs, TS
YC17c-0.5-1.0	0.5–1.0	SPD0121	20-Aug-08	1605	archived
YC18-0.0-0.5	0.0–0.5	SPD0132	20-Aug-08	1700	PCDDs/PCDFs, TS
YC18-0.5-1.0	0.5–1.0	SPD0133	20-Aug-08	1705	archived
YC18a-0.1-0.5	0.1–0.5	SPD0122	20-Aug-08	1530	PCBs, TS
YC18a-0.5-1.0	0.5–1.0	SPD0125	20-Aug-08	1543	archived
YC18b-0.1-0.5	0.1–0.5	SPD0123	20-Aug-08	1558	PCBs, TS
YC18b-0.5-1.0	0.5–1.0	SPD0126	20-Aug-08	1602	archived
YC18c-0.1-0.5	0.1–0.5	SPD0124	20-Aug-08	1615	PCBs, TS
YC18c-0.5-1.0	0.5–1.0	SPD0127	20-Aug-08	1620	archived
YC19-0.0-0.5	0.0–0.5	SPD0114	18-Aug-08	1705	PCDDs/PCDFs, TS
YC19-0.5-1.0	0.5–1.0	SPD0115	18-Aug-08	1710	archived
YC19a-0.1-0.5	0.1–0.5	SPD0108	18-Aug-08	1425	archived
YC19a-0.5-1.0	0.5–1.0	SPD0109	18-Aug-08	1450	archived
YC19b-0.1-0.5	0.1–0.5	SPD0110	18-Aug-08	1530	archived
YC19b-0.5-1.0	0.5–1.0	SPD0111	18-Aug-08	1540	archived
YC19c-0.2-0.5	0.2–0.5	SPD0112	18-Aug-08	1645	archived
YC19c-0.5-1.0	0.5–1.0	SPD0113	18-Aug-08	1655	archived
YC20-0.0-0.5	0.0–0.5	SPD0106	18-Aug-08	1145	PCDDs/PCDFs, TS
YC20-0.5-1.0	0.5–1.0	SPD0107	18-Aug-08	1200	archived
YC20a-0.2-0.5	0.2–0.5	SPD0100	18-Aug-08	0935	archived
YC20a-0.5-1.0	0.5–1.0	SPD0101	18-Aug-08	0945	archived
YC20b-0.1-0.5	0.1–0.5	SPD0102	18-Aug-08	1025	archived
YC20b-0.5-1.0	0.5–1.0	SPD0103	18-Aug-08	1040	archived
YC20c-0.1-0.5	0.1–0.5	SPD0104	18-Aug-08	1105	archived
YC20c-0.5-1.0	0.5–1.0	SPD0105	18-Aug-08	1130	archived
HA1-0.0-1.0	0.0–1.0	SPD0066	21-Aug-08	1027	PCDDs/PCDFs, PCB Aroclors, TS
HA1-0.0-1.0DUP	0.0–1.0	SPD0067	21-Aug-08	1028	archived
HA1-1.0-2.0	1.0–2.0	SPD0068	21-Aug-08	1031	archived
HA1-2.0-3.2	2.0–3.2	SPD0069	21-Aug-08	1054	archived
P88-0.2-1.0	0.2–1.0	SPD0030	19-Aug-08	1410	PCDDs/PCDFs, PCB Aroclors, TS

Table A-1. Streets and Yards investigation sample IDs, sample numbers, and analyses

Sample ID	Sample Interval (ft bgs)	Sample Number	Sample Date	Sample Time	Analyses
P88-1.0-2.0	1.0–2.0	SPD0031	19-Aug-08	1420	archived
P88-2.0-4.0	2.0–4.0	SPD0032	19-Aug-08	1430	archived
P89-0.3-1.0	0.3–1.0	SPD0024	19-Aug-08	1145	PCDDs/PCDFs, PCB Aroclors, TS
P89-1.0-2.0	1.0–2.0	SPD0025	19-Aug-08	1220	archived
P89-2.0-4.0	2.0–4.0	SPD0026	19-Aug-08	1230	archived
P90-0.4-1.0	0.4–1.0	SPD0046	20-Aug-08	0840	PCDDs/PCDFs, PCB Aroclors, TS
P90-1.0-2.0	1.0–2.0	SPD0047	20-Aug-08	0855	archived
P90-2.0-4.0	2.0–4.0	SPD0048	20-Aug-08	0910	archived
P91-0.2-1.0	0.2–1.0	SPD0027	19-Aug-08	1320	PCDDs/PCDFs, PCB Aroclors, TS
P91-1.0-2.0	1.0–2.0	SPD0028	19-Aug-08	1330	archived
P91-2.0-4.0	2.0–4.0	SPD0029	19-Aug-08	1340	archived
P92-0.2-1.0	0.2–1.0	SPD0059	20-Aug-08	1245	PCDDs/PCDFs, PCB Aroclors, TS
P92-1.0-2.0	1.0–2.0	SPD0060	20-Aug-08	1300	archived
P92-2.0-4.0	2.0–4.0	SPD0061	20-Aug-08	1315	archived
P92-4.0-6.0	4.0–6.0	SPD0062	20-Aug-08	1330	archived
P93-0.2-1.0	0.2–1.0	SPD0033	19-Aug-08	1445	PCDDs/PCDFs, PCB Aroclors, TS
P93-1.0-2.0	1.0–2.0	SPD0034	19-Aug-08	1515	archived
P93-2.0-4.0	2.0–4.0	SPD0035	19-Aug-08	1530	archived
P94-0.1-1.0	0.1–1.0	SPD0020	19-Aug-08	1015	PCDDs/PCDFs, PCB Aroclors, TS
P94-1.0-2.0	1.0–2.0	SPD0021	19-Aug-08	1030	archived
P94-2.0-4.0	2.0–4.0	SPD0022	19-Aug-08	1055	archived
P94-4.0-6.0	4.0–6.0	SPD0023	19-Aug-08	1105	archived
P95-0.1-1.0	0.1–1.0	SPD0015	19-Aug-08	0900	PCDDs/PCDFs, PCB Aroclors, TS
P95-1.0-2.0	1.0–2.0	SPD0016	19-Aug-08	0905	archived
P95-2.0-4.0	2.0–4.0	SPD0017	19-Aug-08	0920	archived
P95-4.0-6.0	4.0–6.0	SPD0018	19-Aug-08	0945	archived
P95-6.0-8.0	6.0–8.0	SPD0019	19-Aug-08	0955	archived
P96-0.3-1.0	0.3–1.0	SPD0003	18-Aug-08	1235	archived
P96-1.0-2.0	1.0–2.0	SPD0004	18-Aug-08	1245	archived
P96-2.0-4.0	2.0–4.0	SPD0005	18-Aug-08	1330	archived
P96-4.0-6.0	4.0–6.0	SPD0006	18-Aug-08	1400	archived
P96-0.4-1.0	0.4–1.0	SPD0036	19-Aug-08	1600	PCDDs/PCDFs, PCB Aroclors, TS
P96-1.0-2.0	1.0–2.0	SPD0037	19-Aug-08	1610	archived
P96-2.0-4.0	2.0–4.0	SPD0038	19-Aug-08	1625	archived
P96-4.0-6.0	4.0–6.0	SPD0039	19-Aug-08	1630	archived
P97-0.1-1.0	0.1–1.0	SPD0007	18-Aug-08	1550	archived
P97-1.0-2.0	1.0–2.0	SPD0008	18-Aug-08	1600	archived
P97-2.0-4.0	2.0–4.0	SPD0009	18-Aug-08	1610	archived
P97-4.0-6.0	4.0–6.0	SPD0010	18-Aug-08	1620	archived
P97-6.0-8.0	6.0–8.0	SPD0011	18-Aug-08	1645	archived
P97-0.1-1.0	0.1–1.0	SPD0043	19-Aug-08	1710	PCDDs/PCDFs, PCB Aroclors, TS
P97-1.0-2.0	1.0–2.0	SPD0044	19-Aug-08	1720	archived
P97-2.0-4.0	2.0–4.0	SPD0045	19-Aug-08	1730	archived
P98-0.3-1.0	0.3–1.0	SPD0012	18-Aug-08	1715	archived
P98-1.0-2.0	1.0–2.0	SPD0013	18-Aug-08	1730	archived
P98-2.0-4.0	2.0–4.0	SPD0014	18-Aug-08	1800	archived
P98-0.3-1.0	0.3–1.0	SPD0040	19-Aug-08	1700	PCDDs/PCDFs, PCB Aroclors, TS
P98-1.0-2.0	1.0–2.0	SPD0041	19-Aug-08	1710	archived
P98-2.0-4.0	2.0–4.0	SPD0042	19-Aug-08	1720	archived
P99-0.3-1.0	0.3–1.0	SPD0049	20-Aug-08	0930	PCDDs/PCDFs, PCB Aroclors, TS
P99-1.0-2.0	1.0–2.0	SPD0050	20-Aug-08	0945	archived
P99-2.0-4.0	2.0–4.0	SPD0051	20-Aug-08	1000	archived
P99-4.0-6.0	4.0–6.0	SPD0052	20-Aug-08	1015	archived
P99-6.0-8.0	6.0–8.0	SPD0053	20-Aug-08	1030	archived
P100-0.4-1.0	0.4–1.0	SPD0054	20-Aug-08	1115	PCDDs/PCDFs, PCB Aroclors, TS

Table A-1. Streets and Yards investigation sample IDs, sample numbers, and analyses

Sample ID	Sample Interval (ft bgs)	Sample Number	Sample Date	Sample Time	Analyses
P100-1.0-2.0	1.0–2.0	SPD0055	20-Aug-08	1130	PCDDs/PCDFs, PCB Aroclors, TS
P100-1.0-2.0DUP	1.0–2.0	SPD0056	20-Aug-08	1140	PCDDs/PCDFs, PCB Aroclors, TS
P100-2.0-4.0	2.0–4.0	SPD0057	20-Aug-08	1150	archived
P100-4.0-6.0	4.0–6.0	SPD0058	20-Aug-08	1200	archived
CB5-00	NA	SPD0154	22-Aug-08	1150	PCDDs/PCDFs, PCB Aroclors, TS
CB5-00DUP	NA	SPD0155	22-Aug-08	1155	PCDDs/PCDFs, PCB Aroclors, TS
FW01 (push probe shoe, bowl, spoon)	NA	SPD0001	18-Aug-08	1215	archived
FW02 (push probe shoe, bowl, spoon)	NA	SPD0002	18-Aug-08	1220	PCDDs/PCDFs, PCB Aroclors
FW03 (push probe shoe, bowl, spoon)	NA	SPD0065	20-Aug-08	1210	archived
FW04 (hand auger, bowl, spoon)	NA	SPD0063	21-Aug-08	0820	archived
FW05 (hand auger, bowl, spoon)	NA	SPD0064	21-Aug-08	0840	PCDDs/PCDFs
FW06 (hand auger, bowl, spoon)	NA	SPD0172	22-Aug-08	0830	archived
FW07 (bowl, spoon)	NA	SPD0173	22-Aug-08	0825	archived
FW08 (bowl, spoon)	NA	SPD0176	25-Aug-08	0800	archived
FW09 (bowl, spoon)	NA	SPD0175	25-Aug-08	0755	archived
FW10 (hand auger, trowel)	NA	SPD0174	25-Aug-08	0745	archived
FW11 (filter blank)	NA	SPD0177	25-Aug-08	0805	archived
FW12 (trowel, bowl, spoon)	NA	SPD0238	26-Aug-08	1105	archived
FW13 (sediment sampler, bowl, spoon)	NA	SPD0239	27-Aug-08	1420	PCDDs/PCDFs

ft	feet
NA	not applicable
PCB	polychlorinated biphenyl
PCDDs	polychlorinated dibenzo-p-dioxins
PCDFs	polychlorinated dibenzofurans
TS	total solids

Note that because in many cases the top depth of discrete samples contributing to the residential property surface composite samples

APPENDIX B

Chain of Custody Forms

B-1 Sediment

1 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

NM89

№ 2425

Project/Client Name: T-117 sediment
Project Number: 08-08-12-12
Contact Name: Marina Mitchell or Joanna Florer
Sampled By: RDB, JMF

Ship to: ARI
Attn: Sue Dunnihoo
Shipper: hand del'd
Form filled out by: JMF

Shipping Date: 8-29-08
Airbill Number: —
Turnaround requested: standard

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) PCBs	TOC	total solids	Hg	Dieldrin	Archive		Comments / Instructions [Jar tag number(s)]
8-29-08	0900	T117-100-SG	2-8oz 1-4oz	sediment	X	X	X			X		
	0915	T117-101-SG	8oz/2 4oz/1		X	X	X			X		
	0928	T117-102-SG								X		
	0939	T117-103-SG			X	X	X			X		
	0955	T117-96-SG								X		
	0959	T117-97-SG								X		
	1009	T117-98-SG			X	X	X	X	X	X		
	1017	T117-99-SG			X	X	X	X	X	X		
	1043	T117-105-SG			X	X	X			X		
	1057	T117-106-SG			X	X	X			X		
	1116	T117-107-SG			X	X	X			X		
	1140	T117-108-SG	8oz-2 4oz-1	sediment	X	X	X			X		
8-29-08		Total Number of Containers	36	Purchase Order / Statement of Work #								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Joanna Florer	Jonathon Walter	Print name:	
Signature: J. Florer	Company: ARI	Signature:	Company:
Company: Wind Ward Env.		Company:	
Date/Time: 8-29-08 1704	Date/Time: 8/29/08 1704	Date/Time:	Date/Time:

2000

* Distribution: White copies accompany shipment; yellow retained by consignor.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

2 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

№ 2430

MM89

Project/Client Name: 08-08-12-12

Project Number:

Contact Name:

Sampled By: JMF

Ship to: ARI

Attn: Sue Dunnihoo

Shipper: hand del'd

Form filled out by: JMF

Shipping Date:

Airbill Number:

Turnaround requested:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) PCBs	TOC	total solids	Hg	Dieldrin	Archive		Comments / Instructions [Jar tag number(s)]
8-29-08	1236	T117-109-SG	802-2 402-1	Sediment	X	X	X			X		
	1253	T117-110-SG	802-4 402-1		X	X	X			X		Includes MS/MSD
	1310	T117-111-SG	802-2 402-1		X	X	X			X		
	1355	T117-112-SG								X		
	1236	T117-120-SG			X	X	X			X		
	1355	T117-113-SG			X	X	X			X		
	1410	T117-114-SG			X	X	X			X		
	1427	T117-115-SG			X	X	X			X		
	1443	T117-116-SG								X		
	1516	T117-117-SG			X	X	X			X		
	1532	T117-118-SG								X		
8-29-08	1542	T117-119-SG	802-2 402-1	Sediment								
		Total Number of Containers	38	Purchase Order / Statement of Work #								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Joanna Flower	Jonathon Walter	Print name:	
Signature: J. Flower		Signature:	
Company: Windward	Company: ARI	Company:	Company:
Date/Time: 8/29/08 1705	Date/Time: 8/29/08 1705	Date/Time:	Date/Time:

* Distribution: White copies accompany shipment; yellow retained by consignor.

0003

To be completed by Laboratory upon sample receipt:

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Wind/Ward environmental LLC

200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

3 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

№ 2432

NM89

Project/Client Name: TH7 Sediment Sampling
Project Number: 08-08-7-12
Contact Name: Marina Mitchell
Sampled By: JMF

Ship to: ARI
Attn: Sue Dunnihoo
Shipper: hand del'd
Form filled out by: JMF

Shipping Date: 8/29/08
Airbill Number: NA
Turnaround requested: Standard

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)							Comments / Instructions [Jar tag number(s)]
					PCBs							
8/29/08	1605	TH7-119-RB	500mL-2	H_2O	X							
		Total Number of Containers	2	Purchase Order / Statement of Work #								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Johnny Rhodes	Jonathan Walter	Print name:	
Signature:	Company: ARI	Signature:	Company:
Company: WindWard		Company:	
Date/Time: 8/29/08 1706	Date/Time: 8/29/08 1706	Date/Time:	Date/Time:

* Distribution: White copies accompany shipment; yellow retained by consignor.

0004

Wind Ward environmental LLC

200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

P9732

1 of 1

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Windward Environmental – ~~T117 Sediment~~	Ship to:	Analytical Perspectives, 2714 Exchange Dr, Wilmington NC 28405		
Project Number:	08-08-12-12	Attn:	Tamara Morgan	Shipping Date:	
Contact Name:	Marina Mitchell	Shipper:		Airbill Number:	
Sampled By:	JF	Form filled out by:	Marina Mitchell	Turnaround requested:	

Sample Collection Date / Time	ARI ID	Windward Sample ID	Sample Volume	Matrix	T117 Sediment	Comments / Instructions
✱ 8/29/08 11:16	NM89K	T117-107-SG	one 8-oz	sediment	**Dioxins and Furans by EPA 1631B** ARCHIVE all samples FROZEN after analysis until Windward authorizes sample disposal.	✱ Samples to analyze 17Sep08
✱ 8/29/08 12:36	NM89M	T117-109-SG	one 8-oz	sediment		
✱ 8/29/08 12:53	NM89N	T117-110-SG	one 8-oz	sediment		
✱ 8/29/08 13:10	NM89O	T117-111-SG	one 8-oz	sediment		
✱ 8/29/08 13:55	NM89R	T117-113-SG	one 8-oz	sediment		
✱ 8/29/08 14:27	NM89T	T117-115-SG	one 8-oz	sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
		Total Number of Containers	6		Purchase Order/Statement of Work #	

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name:	M Musselwhite	Print name:	
Signature:	Company: Analytical Perspectives	Signature:	Company:
Company:	Date/Time: 17 Sept 08 10:11 AM	Company:	
Date/Time:		Date/Time:	Date/Time:

To be completed by Laboratory upon sample receipt:

Date of receipt:: 17 Sept 08	Laboratory W.O. #: P9732
Condition upon receipt: good	Time of receipt: 10:11 AM
Cooler temperature: 1°	Received by: M Musselwhite

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

P9735

1 of 2

CHAIN-OF-CUSTODY/TEST REQUEST FORM

COPY

Project/Client Name:	Windward Environmental – T117 Sediment	Ship to:	Analytical Perspectives, 2714 Exchange Dr, Wilmington NC 28405		
Project Number:	08-08-12-12	Attn:	Tamara Morgan	Shipping Date:	
Contact Name:	Marina Mitchell	Shipper:		Airbill Number:	
Sampled By:	JF	Form filled out by:	Marina Mitchell	Turnaround requested:	

Sample Collection Date / Time	ARI ID	Windward Sample ID	Sample Volume	Matrix	T117 Sediment	Comments / Instructions
8/29/08 09:00	NM89A	T117-100-SG	one 8-oz	sediment	ARCHIVE all samples FROZEN for potential future analysis until Windward authorizes sample disposal.	
8/29/08 09:15	NM89B	T117-101-SG	one 8-oz	sediment		
8/29/08 09:28	NM89C	T117-102-SG	one 8-oz	sediment		
8/29/08 09:39	NM89D	T117-103-SG	one 8-oz	sediment		
8/29/08 09:55	NM89E	T117-96-SG	one 8-oz	sediment		
8/29/08 09:59	NM89F	T117-97-SG	one 8-oz	sediment		
8/29/08 10:09	NM89G	T117-98-SG	one 8-oz	sediment		
8/29/08 10:17	NM89H	T117-99-SG	one 8-oz	sediment		
8/29/08 10:43	NM89I	T117-105-SG	one 8-oz	sediment		
✱ 8/29/08 10:57	NM89J	T117-106-SG	one 8-oz	sediment		
✱ 8/29/08 11:40	NM89L	T117-108-SG	one 8-oz	sediment		
✱ 8/29/08 13:55	NM89P	T117-112-SG	one 8-oz	sediment		
✱ 8/29/08 12:36	NM89Q	T117-120-SG	one 8-oz	sediment		
✱ 8/29/08 14:10	NM89S	T117-114-SG	one 8-oz	sediment		
✱ 8/29/08 14:43	NM89U	T117-116-SG	one 8-oz	sediment		
		Total Number of Containers		Purchase Order/Statement of Work #		

✱ = INDICATES SAMPLES ANALYZED IN THIS PROJECT.

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name:		Print name:	
Signature:	Company:	Signature:	Company:
Company:		Company:	
Date/Time:	Date/Time:	Date/Time:	Date/Time:

Wind Ward environmental LLC

200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt: 17 Sept 08	Laboratory W.O. #: P9735
Condition upon receipt: good	Time of receipt: 10:11 AM
Cooler temperature: 1°	Received by: [illegible]

p9735

2 of 2

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Copy EE 18Sep08

Project/Client Name:	Windward Environmental – T117 Sediment	Ship to:	Analytical Perspectives, 2714 Exchange Dr, Wilmington NC 28405
Project Number:	08-08-12-12	Attn:	Tamara Morgan
Contact Name:	Marina Mitchell	Shipper:	
Sampled By:	JF	Form filled out by:	Marina Mitchell

Shipping Date:

Airbill Number:

Turnaround requested:

Sample Collection Date / Time	ARI ID	Windward Sample ID	Sample Volume	Matrix	T117 Sediment	Comments / Instructions
✱ 8/29/08 15:16	NM89V	T117-117-SG	one 8-oz	sediment	ARCHIVE all samples FROZEN for potential future analysis until Windward authorizes sample disposal. ✱ =INDICATES SAMPLES ANALYZED IN THIS PROJECT:	
✱ 8/29/08 15:32	NM89W	T117-118-SG	one 8-oz	sediment		
✱ 8/29/08 15:42	NM89X	T117-119-SG	one 8-oz	sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
				sediment		
		Total Number of Containers	18		Purchase Order/Statement of Work #	

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name:		Print name:	
Signature:	Company:	Signature:	Company:
Company:		Company:	
Date/Time:	Date/Time:	Date/Time:	Date/Time:

WindWard environmental LLC

200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt: 17 Sept 08	Laboratory W.O. #: P9735
Condition upon receipt: good	Time of receipt: 10:11 AM
Cooler temperature: 1°	Received by: Russell Pate

P9732 1/2

CUSTODY TRANSFER
Printed: 09/16/08
ARI Job No: NM89

COPY

ANALYTICAL RESOURCES INCORPORATED
4611 South 134th Place, Suite 100
Tukwila WA 98168
206-695-6200 206-695-6201 (fax)

ARI Project Manager: Sue Dunnihoo	Client Contact: Marina Mitchell	Sampling Event: 08-08-12-12	Samples Received: 08/29/08
	Client: Windward Environmental, LLC	Project: T-117 SEDIMENT	Sample Site: NA

	LOGNUM ARI ID	CLIENT ID	MATRIX	# CONTAINERS	ANALYTICAL REQUEST	ANALYTICAL REQUEST	ANALYTICAL REQUEST	COMMENTS
	08-22116 NM89A	T117-100-SG	Sediment	1				
	08-22117 NM89B	T117-101-SG	Sediment	1				
	08-22118 NM89C	T117-102-SG	Sediment	1				
	08-22119 NM89D	T117-103-SG	Sediment	1				
	08-22120 NM89E	T117-96-SG	Sediment	1				
	08-22121 NM89F	T117-97-SG	Sediment	1				
	08-22122 NM89G	T117-98-SG	Sediment	1				
	08-22123 NM89H	T117-99-SG	Sediment	1				
	08-22124 NM89I	T117-105-SG	Sediment	1				
	08-22125 NM89J	T117-106-SG	Sediment	1				
*	08-22126 NM89K	T117-107-SG	Sediment	1	~~NOT included UM 9/17/08~~ EE 18Sep08			
	08-22127 NM89L	T117-108-SG	Sediment	1				
*	08-22128 NM89M	T117-109-SG	Sediment	1				
*	08-22129 NM89N	T117-110-SG	Sediment	1				
*	08-22130 NM89O	T117-111-SG	Sediment	1				

* =INDICATES SAMPLES ANALYZED IN THIS PROJECT:

NMusselwhite
NMusselwhite 17 Sept 08 10:11 AM

P97322/2

Copy

CUSTODY TRANSFER
Printed: 09/16/08
ARI Job No: NM89

ANALYTICAL RESOURCES INCORPORATED
4611 South 134th Place, Suite 100
Tukwila WA 98168
206-695-6200 206-695-6201 (fax)

ARI Project Manager: Sue Dunnihoo	Client Contact: Marina Mitchell	Sampling Event: 08-08-12-12	Samples Received: 08/29/08
	Client: Windward Environmental, LLC	Project: T-117 SEDIMENT	Sample Site: NA

	LOGNUM ARI ID	CLIENT ID	MATRIX	# CONTAINERS	ANALYTICAL REQUEST	ANALYTICAL REQUEST	ANALYTICAL REQUEST	COMMENTS
	08-22131 NM89P	T117-112-SG	Sediment	1				
	08-22132 NM89Q	T117-120-SG	Sediment	1				
*	08-22133 NM89R	T117-113-SG	Sediment	1				
	08-22134 NM89S	T117-114-SG	Sediment	1				
*	08-22135 NM89T	T117-115-SG	Sediment	1				
	08-22136 NM89U	T117-116-SG	Sediment	1				
	08-22137 NM89V	T117-117-SG	Sediment	1				
	08-22138 NM89W	T117-118-SG	Sediment	1				
	08-22139 NM89X	T117-119-SG	Sediment	1				

* = INDICATES SAMPLES ANALYZED IN THIS PROJECT:

Comments/Special Instructions:	Relinquished By:	Received by: (Signature)	Relinquished By:	Received by: (Signature)
UPS TRICK	Printed Name: BRIAN MCLEAN	Printed Name: N. Musselwhite	Printed Name:	Printed Name:
1Z 832 C95 01 4408 9777	Company: ARI	Company: Analytical Perspectives	Company:	Company:
	Date/Time: 9/16/08 1600	Date/Time: 17 Sept 08 10:11 AM	Date/Time:	Date/Time:

B-2 T-117 Upland

1 of 1

CHAIN-OF-CUSTODY/TEST REQUEST FORM

No 2642

Project/Client Name: T-117 / Windward
Project Number: 08-08-12-12
Contact Name: Marina Mitchell / Joanna Flower
Sampled By: JMF

Ship to: ARI
Attn: Sue Dinihoo
Shipper: hand del'd
Form filled out by: JMF

Shipping Date: 9/2/08
Airbill Number: NA
Turnaround requested: Standard

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) PCBs	PAH	TPH	total solids				Comments / Instructions [Jar tag number(s)]
9/2/08	1310	T117-SB60-0.5-2.0	2-16oz 4oz	soil	X	X	X	X				
	1315	T117-SB60-2.0-3.5	2-16oz 4oz		X	X	X	X				T117-SB60-X.X-X.X not "SB-53"
	1320	T117-SB60-3.5-5.0	2-16oz 4oz		X	X	X	X				
	1350	T117-SB60-12.5-14.0	1-8oz		X			X				
*	1400	T117-SB60-15.0-16.5	1-8oz		X			X				
	1535	T117-SB57b-2.0-3.5	1-8oz		X			X				PAH/TPH-Dx added via email. MM 9/3/08
	1540	T117-SB57b-3.5-5.0	1-8oz	soil	X			X				
	1605	T117-SB57b-10.0-11.5	5-500mL	H_2O	X	X	X					ID corrected to: "T117-SB57b-10.0-11.5-RB" via email to ARI. MM 9/2/08
9/2/08												
		Total Number of Containers	15	Purchase Order / Statement of Work #								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Joanna Flower	Jonathan Walter	Print name:	
Signature:	Company: ARI	Signature:	Company:
Company: Windward		Company:	
Date/Time: 9/2/08 1309	Date/Time: 9/2/08 1709	Date/Time:	Date/Time:

* Distribution: White copies accompany shipment; yellow retained by consignor.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

1 of 2

CHAIN-OF-CUSTODY/TEST REQUEST FORM

NW19

№ 2637

Project/Client Name: T-117
Project Number: 08-08-1212
Contact Name: Marina Mitchell | Joanna Flower
Sampled By: JMF

Ship to: ARI
Attn: Sue Dunnihoo
Shipper: hand delivered
Form filled out by: JMF

Shipping Date: 9/3/08
Airbill Number: NA
Turnaround requested: Standard

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) PCBs	PAHs	TPH-Dx	total Solids				Comments / Instructions [Jar tag number(s)]
9/3/08	0740	T117-SB55-2.0-3.5	2-1602 2-402	Soil	X	X	X	X				
	0750	T117-SB55-3.5-5.0	2-1602 2-402		X	X	X	X				
	0820	T117-SB54-2.0-3.5	2-8oz 2-4oz		X	X	X	X				
	0830	T117-SB54-3.5-5.0	2-1602 2-402		X	X	X	X				
	0855	T117-SB53-0.5-2.0	2-1602 2-402		X	X	X	X				
	0855	~~T117-SB61-0.5-2.0~~										
	0925	T117-SB56-1.0-2.5	2-1602 4oz		X	X	X	X				
	0930	T117-SB56-2.5-4.0	2		X	X	X	X				
	0935	T117-SB56-4.0-5.5	2		X	X	X	X				
	0940	T117-SB56-5.5-7.0	2		X	X	X	X				Archive
	0930	T117-SB62-2.5-4.0	2		X	X	X	X				
9/3/08	1005	T117-SB58-0.5-2.0	2-1602 4oz	Soil	X	X	X	X				
		Total Number of Containers	22	Purchase Order / Statement of Work #								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Joanna Flower		Print name:	
Signature:		Signature:	
Company: Wind Ward	Company: Brian Kegel	Company:	Company:
Date/Time: 9/3/08 1230	Date/Time: 9/3/08 1230	Date/Time:	Date/Time:

* Distribution: White copies accompany shipment; yellow retained by consignor.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature: 0.2	Received by:

2 of 2

CHAIN-OF-CUSTODY/TEST REQUEST FORM

NN19

№ 2431

Project/Client Name: T-117
Project Number: 08-08-72-12
Contact Name: Marina Mitchell | Joanna Flower
Sampled By: JMF

Ship to: ARI
Attn: Sue Dunnihoo
Shipper: hand delivered
Form filled out by: JMF

Shipping Date: 9/3/08
Airbill Number: NA
Turnaround requested: Standard

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) PCBs	PAHs	TPHdx	total Solids				Comments / Instructions [Jar tag number(s)]
9/3/08	1010	T117-SB58-2.0-3.5	2-16oz 4oz	Soil	X	X	X	X				
	1010	T117-SB63-2.0-3.5	1-8oz	Soil	X			X				
	1015	T117-SB58-0.5-3.5-RB	2-500mL	H_2O	X	X	X					PCBs only
	1035	T117-SB59-1.5-3.0	2-16oz 4oz	Soil	X	X	X	X				
	1040	T117-SB59-3.0-4.5	2-16oz 4oz	Soil	X	X	X	X				
	1055	T117-SB59-15.0-16.5	1-8oz	Soil	X							
	1100	T117-SB59-17.5-19.0	1-8oz	Soil	X							
9/3/08												
		Total Number of Containers	11		Purchase Order / Statement of Work #							

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Joanna Flower		Print name:	
Signature:		Signature:	
Company: Windward	Company: ARI	Company:	Company:
Date/Time: 9/3/08 1230	Date/Time: 9/3/08 1230	Date/Time:	Date/Time:

* Distribution: White copies accompany shipment; yellow retained by consignor.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

1 of P9678

CHAIN-OF-CUSTODY/TEST REQUEST FORM

№ 2643

Project/Client Name: T-117 / Windward
Project Number: 08-08-12-12
Contact Name: Marina Mitchell / Joanna Florer
Sampled By: JMF

Ship to: Analytical Perspectives
Attn: Tamara Morgan
Shipper: Fed Ex
Form filled out by: JMF

Shipping Date: 9/2/08
Airbill Number:
Turnaround requested: 3 WK

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required): Dioxins + Furans by EPA 1613B						Comments / Instructions [Jar tag number(s)]
9/2/08	1310	T117-SB60-0.5-2.0	1-8oz	Soil	X						
	1315	T117-SB60-2.0-3.5			X						
	1320	T117-SB60-3.5-5.0			X						
	1350	T117-SB60-12.5-14.0			X						Archive
	1400	T117-SB60-15.0-16.5			X						Archive
	1535	T117-SB57b-2.0-3.5			X						
	1540	T117-SB57b-3.5-5.0			X						
9/2/08	1550	T117-SB57b-10.0-11.5	1-8oz	Soil	X						Archive
		Total Number of Containers	8	Purchase Order / Statement of Work #							

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Heide Andersen		Print name:	
Signature: Heide Andersen	Company:	Signature:	Company:
Company: Wind Ward		Company:	
Date/Time: 9/3/08 10:00am	Date/Time:	Date/Time:	Date/Time:

* Distribution: White copies accompany shipment; yellow retained by consignor.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt:: 4-SEPT-08	Laboratory W.O. #: P9678
Condition upon receipt: GOOD	Time of receipt: 12:13 PM
Cooler temperature: 5°	Received by: Suzanne R Hudson

1 of 2 — P9676

CHAIN-OF-CUSTODY/TEST REQUEST FORM

№ 2644

Project/Client Name: T-117
Project Number: 08-0872-12
Contact Name: Marina Mitchell
Sampled By: JMF

Ship to: Analytical Perspectives
Attn:
Shipper: FedEx
Form filled out by: JMF

Shipping Date: 9/3/08
Airbill Number:
Turnaround requested: Standard

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required): Dioxins + Furans by EPA 1613 TMC as Septa						Comments / Instructions [Jar tag number(s)]
9/3/08	0740	T117-SB55-2.0-3.5	1-8oz	Soil	X						
	0750	T117-SB55-3.5-5.0			X						
	0800	T117-SB55-11.5-13.0			X						Archive
	0820	T117-SB54-2.0-3.5			X						
	0830	T117-SB54-3.5-5.0			X						
	0840	T117-SB54-8.5-10.0			X						Archive
	0855	T117-SB53-0.5-2.0			X						
	0855	T117-SB61-0.5-2.0			X						
	0925	T117-SB56-1.0-2.5			X						
	0930	T117-SB56-2.5-4.0			X						Archive
	0935	T117-SB56-4.0-5.5			X						Archive
9/3/08	0940	T117-SB56-5.5-7.0	1-8oz	Soil	X						Archive
		Total Number of Containers	12	Purchase Order / Statement of Work #							

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Joanna Flavor		Print name:	
Signature:	Company:	Signature:	Company:
Company: Windward		Company:	
Date/Time: 9/3/08 1745	Date/Time:	Date/Time:	Date/Time:

* Distribution: White copies accompany shipment; yellow retained by consignor.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt:: 4-Sept-08	Laboratory W.O. #: D 9676
Condition upon receipt: GOOD	Time of receipt: 12:13 pm
Cooler temperature: 5°	Received by: Shawn R Hudson

2 of 2 P9676

CHAIN-OF-CUSTODY/TEST REQUEST FORM

№ 2645

Project/Client Name: T-117
Project Number: 08-08-12-12
Contact Name: Marina Mitchell
Sampled By: JMF

Ship to: Analytical Perspectives
Attn:
Shipper: Fed Ex
Form filled out by: JMF

Shipping Date: 9/3/08
Airbill Number:
Turnaround requested: Standard

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required): Dioxin + furans (by EPA 1613)	8260						Comments / Instructions [Jar tag number(s)]
9/3/08	1005	T117-SB58-0.5-2.0	1-8oz	Soil	X							
	1010	T117-SB58-2.0-3.5			X							
	1015	T117-SB58-3.5-5.0			X							Archive
	1035	T117-SB59-1.5-3.0			X							
	1040	T117-SB59-3.0-4.5			X							
	1055	T117-SB59-15.0-16.5			X							Archive
9/3/08	1100	T117-SB59-17.5-19.0	1-8oz	Soil	X							Archive
		Total Number of Containers	2	Purchase Order / Statement of Work #								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: JoannaFlorer		Print name:	
Signature:	Company:	Signature:	Company:
Company: Windward		Company:	
Date/Time: 9/3/08 1445	Date/Time:	Date/Time:	Date/Time:

* Distribution: White copies accompany shipment; yellow retained by consignor.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt:: 4-SEPT-08	Laboratory W.O. #: P9676
Condition upon receipt: GOOD	Time of receipt: 12:13 PM
Cooler temperature: 5°	Received by: Suanne R. Hudson

Marina Mitchell

From: Marina Mitchell
Sent: Wednesday, September 03, 2008 1:07 PM
To: Sue Dunnihoo
Cc: Marina Mitchell
Subject: RE: T117 soil sample test request correction - CoC #2642

Hi Sue,

Please include TPH-Dx and PAH analysis on samples:
T117-SB57b-2.0-3.5
T117-SB57b-3.5-5.0

Please let me know if sample volume is a concern for these added analyses.

Thanks!
Marina

Marina Mitchell
Windward Environmental
206-812-5424

From: Marina Mitchell
Sent: Tuesday, September 02, 2008 7:45 PM
To: 'Sue Dunnihoo'
Cc: Marina Mitchell
Subject: T117 soil sample ID correction - CoC #2642

Hi Sue,

Would you please amend the sample ID for the water sample collected on 9/2/08 @ 1605 delivered today on CoC #2642 from:
"T117-SB57b-10.0-11.5" (as listed on the CoC)
To:
"T117-SB57b-10.0-11.5-RB"

Thanks – sorry for the confusion!
Marina

Marina Mitchell
Windward Environmental, LLC
QA Manager / Lab Coordinator
ph: 206-812-5424
e: marinam@windwardenv.com

B-3 Streets and Yards

CHAIN OF CUSTODY

SR#: 8667 2293 3451

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PAGE 1 OF 1 COC # 1

PROJECT NAME: T-117 EAA SOILS INV.
PROJECT NUMBER: A0006-15-F
PROJECT MANAGER: KEN CARSTADIEN / SUSAN FITZGERALD
COMPANY/ADDRESS: 3100 SE 29TH STREET
SUITE 410
CITY/STATE/ZIP: MERCER ISLAND WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0852 FAX#:
SAMPLER'S SIGNATURE: K. Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
SPD0001	8/18/08	1215		FW	1	
SPD0002	8/18/08	1220		FW	1	USE 1 FILTER PAPER PER ANALYSIS
SPD0003	8/18/08	1235		SOIL	4	
SPD0004	8/18/08	1245			6	
SPD0005	8/18/08	1330			6	
SPD0006	8/18/08	1400			6	
SPD0007	8/18/08	1550			6	
SPD0008	8/18/08	1600		↓	12	

Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCB's Aroclors ☒ 8082-LL Congeners☐
Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
PAHS 8310☐ SIM☐
Metals; Total or Dissolved (See list below)
Cyanide☐ Hex-Chrom☐
pH; Cond; Cl; SO_4; PO_4; F; NO_2, NO_3; BOD; TSS; TDS (circle)
NH_3-N; COD; Total-P; TKN; TOC; DOC (circle) NO_2+NO_3
TOX 9020☐ AOX 1650☐ 506☐
PCB/PCDF 8290A/1613B
TOTAL SOLIDS (EPA LEC. 3rd)
KAC ARCHIVE ARCHIVE (FROZEN)

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #358
BELLINGHAM WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results
____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: 10-DAY PRELIM VIA EMAIL. PLEASE CONTACT KIM MADRUDER-CARLTON OR SUSAN FITZGERALD W/QUESTIONS:
KMADRUDER@INTEGRALCORP.COM
360-319-2579

LAB CONTACT = GREG SPLATA

* REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS01

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: K. Carlton	Signature:	Signature:	Signature:
Date/Time: 8/19/08 1800	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

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SR#: ~~8607 2293 3462~~

PAGE 1 OF 1 COC # 2

PROJECT NAME: TT+1/7 EAA SOILS NV.
PROJECT NUMBER: A0006 15F
PROJECT MANAGER: REID CASCADDEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING INC
7100 SE 28TH ST, STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐	Hex-Chrom ☐	pH, Cond, Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	PCDD/PCDF EPA 1613B	Total Solids EPA 160.3M	Archive (Frozen)	REMARKS
SPD 0009	8/18/08	1610		SOIL	15																		15	
SPD 0010		1620			7																		7	
SPD 0011		1645			6																		6	
SPD 0012		1715			2																		2	
SPD 0013	↓	1730		↓	10																		10	
~~SPD 0014~~		~~1400~~			15																		15	
SPD 0014	8/18/08	1730		SOIL	15																		15	

8/19/08 KAC

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 COMMERCIAL AVE # 208
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: PLEASE CONTACT GREG SALATA.
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01.
CONTACT KIM MAERKLER CARLTON OR SUSAN FITZGERALD FOR QUESTIONS.
KMAERKLER@INTEGRAL-CORP.COM
360-319-2579

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/19/08 1800			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
Kim Carlton / Integral			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

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SR#: ~~2417 2293 3473~~

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PAGE 1 OF 3 COC # 3

PROJECT NAME: T117 EAA SOILS INV.
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID CORSCADDEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7800 SE 28TH ST, STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-950-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐Fuel Fingerprint (FIQ) ☐NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	RCRA/RCRA EPA 1613B	TOTAL SOLIDS EPA 160.3M	ARCHIVE (FROZEN)	REMARKS
~~SPD~~ Ø114	8/18/08	1705		SOIL	6														1	1	4		KLC
SPD Ø115		1710		SOIL	6																6		
SPD Ø111		~~1570~~		1540	2																2		1540 TIME
SPD Ø1Ø9		1450			2																2		
SPD Ø1Ø8		1425			2																2		
SPD Ø113		1655			2																2		
SPD Ø11Ø		1530			2																2		
SPD Ø112		1645			2																2		
SPD Ø1Ø7		1200			4																4		
SPD Ø1ØØ	↓	0935		↓	2																2		

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #206
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA.
PLEASE REFER TO WORK ASSIGNMENT (INTEGRAL) # A0006-15F-CAS-01
CONTACT KIM MARRUDER CARLTON OR SUSAN FITZGERALD W/QUESTIONS.
KIMARRUDER@INTEGRAL-CORP.COM
360-319-2879

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/19/08 1800			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
KIM CARLTON / INTEGRAL			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

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SR#: ~~8667 2293 3473~~

PAGE 2 OF 3 COC # 4

PROJECT NAME: TI17 EAA SOILS INV
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: KEN CARSCADDEN / SUSAN FITZGERALD
COMPANY/ADDRESS: 2100 SE 28TH STREET, SUITE 410
INTEGRAL CONSULTING
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
SPD@101	8/18/08	0945		SOIL	2	
SPD@103		1040			2	
SPD@105		1130			2	
SPD@104		1105			2	
SPD@102		1025			2	

Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCB's Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
PAHS 8310☐ SIM☐
Metals, Total or Dissolved (See list below)
Cyanide☐ Hex-Chrom☐
pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)
NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3
TOX 9020☐ AOX 1650☐ 506☐
PCDD/PCDF EPA 1613B
TOTAL SOLIDS EPA160.3M
ARCHIVE (FROZEN)

SPD@101																								2				
SPD@103																								2				
SPD@105																								2				
SPD@104																								2				
SPD@102																								2				

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE, #305
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
____ Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GIGI SALATA.
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01
CONTACT KIM MAGRUDER CARLTON OR SUSAN FITZGERALD W/QUESTIONS.
KMAGRUDER@INTEGRAL-CORP.COM
360-391-2879

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Kim Carlton	8/19/08 1800						
Signature	Date/Time	Signature	Date/Time	Signature	Date/Time	Signature	Date/Time
Kim Carlton	Integral						
Printed Name	Firm	Printed Name	Firm	Printed Name	Firm	Printed Name	Firm

RCOC #1 06/03

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SR#: ~~8607 2293 3473~~

PAGE 3 OF 3 COC # 5

PROJECT NAME: T117 EAA SOILS INV
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID CARSCADDEN/SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7900 SE 28TH ST, STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: K. Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐Fuel Fingerprint (FIQ) ☐NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ 8082-LL Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	Reid/Reid EPA 1633	Total Solids EPA 160.3M	Archive (Frozen)	REMARKS
SPD01016	8/18/08	1145		SOIL	4																1	1	2	
SPD0114	↓	1705		↓	6																1	1	4	

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #307
BELLINGHAM WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT 14 A0006-15F-CAS-01.
FOR QUESTIONS CONTACT KIM MARRINER-CARLTON OR SUSAN FITZGERALD
KIMC@KODIAKRE@INTEGRAL-CORP.COM
360-319-2599

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
K. Carlton / 8/19/08 1500			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
KIM CARLTON / INTEGRAL			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

CHAIN OF CUSTODY

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SR#: ~~3467 3393~~ 3440

PAGE 1 OF 1 COC # 6

PROJECT NAME: T117 EAA SOILS INV
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID CARSCADDEN/SUSAN FITZGERALD
COMPANY/ADDRESS: 1800 SE 25TH ST, STE 410
INTEGRAL CONSULTING
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: K. Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
SPD0021	8/19/08	1030		SOIL	6	
SPD0016		905			8	
SPD0017		0920			11	
SPD0018		0945			5	
SPD0019		0955			4	
SPD0022		1055			5	
SPD0023		1105			6	

Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCB's Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
PAHs 8310☐ SIM☐
Metals, Total or Dissolved (See list below)
Cyanide☐ Hex-Chrom☐
pH, Cond, Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)
NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3
TOX 9020☐ AOX 1650☐ 506☐
ARCHIVE (FROZEN)

SPD0021	6				
SPD0016	8				
SPD0017	11				
SPD0018	5				
SPD0019	4				
SPD0022	5				
SPD0023	6				

K. Carlton

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE, # 208
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01.
CONTACT KIM MAGRUDER CARLTON OR SUSAN FITZGERALD FOR QUESTIONS
KMAGRUDER@INTEGRAL-CORP.COM
360-319-2379

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/19/08 1900			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
Kim Carlton / INTEGRAL			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

Columbia Analytical Services INC.
An Employee - Owned Company

CHAIN OF CUSTODY

COOLER 1 of 2

SR#: 8672 3335 3490

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PAGE 1 OF 1 COC # 1

PROJECT NAME: T117 EAA SOILS INV.
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID CARSADDEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7800 SE 28TH ST, STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: K. Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐	BTEX☐ 8021☐	Diesel☐ Oil☐	Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐	1664 SGT☐	PCB's Aroclors☐ 8082-IL Congeners☐	Pesticides/Herbicides 608☐ 8081A☐	8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐	PCP☐	PAHS 8310☐	SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐	AOX 1650☐ 506☐	DIOXINS/FURANS 1613B	TOTAL SOLIDS 160.3M	ARCHIVE (FROZEN)	REMARKS
SPD 0015	8/19/08	0900		SOIL	4							↓															1	↓	2		TS & PCBs from 0035
SPD 0020	↓	1015		↓	4							↓															1	↓	2		
SPD 0024		1145			4							↓															1	↓	2		
SPD 0027		1320			4							↓															1	↓	2		
SPD 0030		1410			4							↓															1	↓	2		
SPD 0033		1445			4							↓															1	↓	2		
SPD 0035	↓	1530		↓	9																								9		

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #208
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01.
CONTACT KIM MAHRDER CARLTON OR SUSAN FITZGERALD FOR QUESTIONS
KIMMAHRDER@INTEGRAL-CORP.COM
360-319-2879
*email prelim data w/in 10 working days

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/19/08 1800			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
Kim Carlton / Integral			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

RCOC #1 06/03

Columbia Analytical Services, INC.
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CHAIN OF CUSTODY

COOLER 2 of 2

SR#: 8672 3335 3490

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PAGE 1 OF 1 COC # 8

PROJECT NAME: T117 EAA SOILS INV
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: KEITH CARSCADDEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7800 SE 28TH ST., STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: K. Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons Gas☐ 8021☐ BTEX☐ Diesel☐ (*see below) Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	ARCHIVE (FROZEN)			REMARKS
SPD 0026	8/18/09	1230		SOIL	8														8				
SPD 0025		1220			5														5				
SPD 0028		1330			4														4				
SPD 0029		1340			8														8				
SPD 0031		1420			4														4				
SPD 0032		1430			8														8				1
SPD 0034	↓	1515		↓	6 HAc														6 HAc				

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #206
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01.
CONTACT KIM MAGRUDER CARLTON OR SUSAN FITZGERALD FOR QUESTIONS.
KMAGRUDER@INTEGRAL-CORP.COM
360-319-2379

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: K. Carlton	Signature:	Signature:	Signature:
Date/Time: 8/19/09 1800	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

RCOC #1 06/03

Columbia Analytical Services INC.
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CHAIN OF CUSTODY

SR#: 8672-3335 3480 / 8672-3335-3480 KH

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PAGE 1 OF 1 COC # 9

BORING LOG ID

PROJECT NAME: 7717 EAA SOILS INV.
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID LARSCHADEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL
7000 SE 28TH ST, STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: Tom Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Diesel☐ Oil☐ Gas☐ ☐ Fuel Fingerprint (FIQ) ☐NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors ☒ 8082-LL Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	DIOXINS/FURANS 1613B	TOTAL SOLIDS 160.3M	ARCHIVE (FROZEN)	REMARKS
SPD0037	8/19/08	1610		SOIL	5																	5		
SPD0038		1625			4																	4		
SPD0039		1630			4																	4		
SPD0044		1720			4																	4		
SPD0045		1730			6																	6		
SPD0041		1710			4																	4		
SPD0042		1720			5																	5		
SPD0036		1600			4				↓										1	↓	2		PCB #TS FROM 1 JAR *
SPD0040		1700			4				↓										1	↓	2			*
SPD0043	↓	1710		↓	4				↓										1	↓	2		↓	*

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION
P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #308
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS
____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results
Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01.
CONTACT KIM MAGRUDER CARLTON OR SUSAN FITZGERALD W/QUESTIONS
KMAGRUDER@INTEGRAL-CORP.COM
320-319-2879
* PRELIM RESULTS BY EMAIL W/IN 10 WORKING DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Tom Carlton 8/20/08 1800	Signature	Signature	Signature
Printed Name: KIM CARLTON	Printed Name	Printed Name	Printed Name
Firm: INTEGRAL	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time

RCOC #1 06/03

CHAIN OF CUSTODY

SR#: 8672 3335 3480

Columbia Analytical Services INC.
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PAGE 1 OF 1 COC # 10

PROJECT NAME: T117 EAA SOIL-INV
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: KELLY CARSCADDEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7900 SE 28TH ST., STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	PCB's Aroclors 8082-LL	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	RCRA/RCAP EPA 1613B	TOTAL SOLIDS EPA 160.3M	ARCHIVE (FROZEN)	REMARKS
SPD0047	8/20/08	0855		SOIL	4				4		
SPD0048	"	0910		"	7				7		
SPD0050	"	0945		"	4				4		
SPD0051	"	1000		"	4				4		
SPD0052	"	1015		"	4				4		
SPD0053	"	1030		"	4				4		
SPD0055	"	1130		"	4				4		
SPD0049	"	0930		"	4	↓		1	2	*	TS & PCBs From Same Jar
SPD0046	"	0840		"	4	↓		1	2	*	↓
SPD0054	↓	1115		↓	5	↓		1	3	*	↓

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # INTEGRAL
Bill To: A0006-15F-CAS-01
2001 CORNWALL AVE #338
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA.
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01
CONTACT KIM MAGRUDER-CARLTON OR SUSAN FITZGERALD W/QUESTIONS.
KMAGRUDER@INTEGRAL-CORP.COM
310-319-2879
* EMAIL PRELIM DATA W/IN 10 WORKING DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/20/08 1800	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

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CHAIN OF CUSTODY

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SR#: 8672 3335 3480

PAGE 1 OF 1 COC # 11

PROJECT NAME: T117 EAA SOIL INV.
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID CARSCADDEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7900 SE 28TH ST., STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☒ 8082-LL Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHs 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	PCDD/PCDF EPA 1613B	Total Solids 160.3M	Archive (Frozen)	REMARKS
SPD0056	8/20/08	1140		SOIL	4						V									1	V	2	* TS & PCB FROM SAME JAR
SPD0059		1245			4						V									1	V	2	*
SPD0060		1300			4																	4	
SPD0061		1315			6																	6	
SPD0062		1330			6																	6	
SPD0057		1150			4																	4	
SPD0058		1200			4																	4	

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION
P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #308
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results
Requested Report Date

Circle which metals are to be analyzed:
Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01.
CONTACT KIM MAGRUDER CARLTON OR SUSAN FITZGERALD W/QUESTIONS.
KIMAGRUDER@INTEGRAL-CORP.COM
360-319-2579
* PRELIM RESULTS BY EMAIL W/IN 10 WORKING DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/20/08 1800	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

RCOC #1 06/03

Columbia Analytical Services, Inc.
An Employee - Owned Company

CHAIN OF CUSTODY

SR#: 8672 3335 3402

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PAGE 1 OF 2 COC # 12

PROJECT NAME: TIF: EDA SOILS INV.
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID CARLSON/SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7900 SE 28TH ST, STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: Kimberly Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐Fuel Fingerprint (FIQ) ☐NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors 5☐ 2082-LL Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	RCRA/PCDF EPA 1613B	Total Solids 160.3M Archive (Frozen)	REMARKS
SPD0137	8/20/08	1810		SOIL	5																	5	
SPD0128		1645			2																	2	
SPD0129		1650			2																	2	
SPD0131		1705			2																	2	
SPD0130		1700			2																	2	
SPD0134		1715			2																	2	
SPD0135		1720			2																	2	
SPD0121		1605			2																	2	
SPD0118		1600			2																	2	
SPD0120		1455			2																	2	

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION
P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #205
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS
____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results
____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01.
CONTACT KIM MAGRUDER CARLTON OR SUSAN FITZGERALD FOR QUESTIONS.
KIMAGRUDER@INTEGRAL-CORP.COM
360-319-2579

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/21/08 1800			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
KIM CARLTON / INTEGRAL			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

RCOC #1 06/03

CHAIN OF CUSTODY

Columbia Analytical Services INC.
An Employee - Owned Company

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: 8672 3335 3402

PAGE 2 OF 2 COC # 1312

PROJECT NAME: TIF: FAA SOILS INV.
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID CARSADEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING 7900 SE 28TH ST. STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-GRP.COM
PHONE #: 206-957-1052 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐	BTEX☐ 8021☐	Diesel☐ Oil☐ Fuel Fingerprint (FIQ)☐	NW-HCID Screen☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	EDD/PCDF EPA 1613B	TCLP: 1311 / SPLP: 1312 / 1312 MA	ARCHIVE (FREEZE)	REMARKS
SPD#117	8/20/08	1450		SOIL	2																			2		
SPD#119		1315			2																			2		
SPD#116		1510			2																			2		
SPD#126		1602			2																			2		
SPD#123		1558			2																			2		
SPD#124		1615			2																			2		
SPD#127		1620			2																			2		
SPD#125		1543			2																			2		
SPD#122	↓	1530		↓	2																			2		

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #201
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results
____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT #A0006-15F-CAS-01.
CONTACT KIM MAGRUDER CARLTON OR SUSAN FITZGERALD FOR QUESTIONS
KIMAGRUDER@INTEGRAL-CORP.COM
360-319-2579

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/21/08 1800	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

RCOC #1 06/03

CHAIN OF CUSTODY

Columbia Analytical Services, Inc.
An Employee - Owned Company

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SR#: 8672 3335 3407

PAGE 1 OF 1 COC # 14

PROJECT NAME: TIF EAA SITES INV
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID CARSCADDEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7900 SE 28TH ST, STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ Fuel Fingerprint (FIQ)☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors ☒ 8082-LL Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCDD/PCDF 1613B	TOTAL SOLIDS 1LD.3M	ARCHIVE (FROZEN)	REMARKS
SPD0136	8/20/08	1815		SOIL	6																1	1	4		*
SPD0133		1705			5																		5		
SPD0138		1630			4																1	1	2		*
SPD0139		1645			4																		4		
SPD0132		1700			5																1	1	3		*
SPD0000	8/21/08	1027			4					V											1	V	2	*	TCDF+TSSMM 1 jar

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #305
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01.
CONTACT KIM MAGRUDER CARLTON @INTEGRALCORP.COM OR SUSAN FITZGERALD FOR QUESTIONS.
KIMAGRUDER@INTEGRAL-CORP.COM
360-319-2579
* PRELIM RESULTS VIA EMAIL W/IN 10 WORKING DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/21/08 1900	Date/Time:	Date/Time:	Date/Time:
Printed Name: Kim Carlton	Printed Name:	Printed Name:	Printed Name:
Firm: Integral	Firm:	Firm:	Firm:

CHAIN OF CUSTODY

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An Employee - Owned Company

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SR#: 8672-3335 3402

PAGE 1 OF 1 COC # 15

PROJECT NAME: T117 EAA Soils Inv
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: Reid Carscadden/Susan Fitzgerald
COMPANY/ADDRESS: Integral Consulting
7900 SE 28th St., Suite 410
CITY/STATE/ZIP: Mercer Island, WA 98040
E-MAIL ADDRESS: sfitzgerald@integral-corp.com
PHONE #: (206)957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐	8021☐ BTEX☐ Diesel☐ Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐	PCB's Aroclors ☒ 8082-LL	1664 SGT☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐	8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐	PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCDD/PCDF 1613B	Total Solids 160.3M	Archive (60 days)	REMARKS
SPD08U03	8/21/08	0820		Filters	1																					1			
SPD08U04	8/21/08	0840		↓	1							V												V		V	*	All filters in 1 jar
SPD08U05	8/20/08	1210		↓	1																					1			
SPD08U07	8/21/08	1028		Soil	7							V														5 7			PCBs* TS All in 1 jar archive
SPD08U08	8/21/08	1031		↓	7																					7			
SPD08U09	8/21/08	1054		↓	6																					6			

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE. # 308
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA.
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01.
CONTACT KIM MAGRUDER CARLTON OR SUSAN FITZGERALD W/QUESTIONS.
KIMAGRUDER@INTEGRAL-CORP.COM
360-319-2579
* PRELIM RESULTS WITHIN 10 WORKING DAYS VIA EMAIL

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/21/08 1800	Date/Time:	Date/Time:	Date/Time:
Printed Name: Kim Carlton	Printed Name:	Printed Name:	Printed Name:
Firm: Integral	Firm:	Firm:	Firm:

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SR#: 8672-3335 3402

PAGE 1 OF 2 COC # 110

PROJECT NAME: T117 EAA Soils Inv
PROJECT NUMBER: REDEVELOP ADOO6-15F
PROJECT MANAGER: REID CARSCADDEN AND SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7900 SE 28TH ST, STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: Ron Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors X 8082-LL Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHs 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCDD/PCDF 1613B	Total Solids 160.3M	Archive (FROZEN)	REMARKS
SPD 0070	8/21/08	1300		Soil	2																2		
SPD 0071	8/21/08	1302			2																2		
SPD 0072	8/21/08	1240			2																2		
SPD 0073	8/21/08	1250			2																2		
SPD 0074	8/21/08	1210			2																2		
SPD 0075	8/21/08	1220			2																2		
SPD 0076	8/21/08	1340			5																5		
SPD 0077	8/21/08	1338			4														1	1	2		*
SPD 0078	8/21/08	1339			4																4		
SPD 0080	8/21/08	1330		↓	2																2		

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # ADOO6-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #308
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT # ADOO6-15F-CAS-01.
CONTACT KIM MARINDER CARLTON OR SUSAN FITZGERALD W/QUESTIONS.
KMARINDER@INTEGRAL-CORP.COM
360-319-2879

* PRELIM RESULTS W/IN 10 WORKING DAYS VIA EMAIL

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton 8/21/08 1500	Signature:	Signature:	Signature:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:
Date/Time	Date/Time	Date/Time	Date/Time

RCOC #1 06/03

CHAIN OF CUSTODY

Columbia Analytical Services INC.
An Employee - Owned Company

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: 8672 3335 3402

PAGE 2 OF 2 COC # 10

PROJECT NAME: 117 EAA SOIL INV
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID CARSCADDEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7900 SE 28TH ST, STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☒ Congeners ☐ 8082-LL	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	PCDD/PCDF 1613B	Total Solids 1003M	Archive (Frozen)	REMARKS
SPD 0081	8/21/08	1340		Soil	2																	2		
SPD 0079	8/21/08	1335		"	2																	2		
SPD 0082	8/21/08	1420		"	2																	2		
SPD 0083	8/21/08	1425		"	2																	2		
SPD 0084	8/21/08	1435		"	2																	2		
SPD 0085	8/21/08	1443		"	2																	2		
SPD 0086	8/21/08	1425		"	H															1	1	2		*
SPD 0087	8/21/08	1430		↓	5																	5		
						XRT																		

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: INTEGRAL
1201 CORNWALL AVE #308
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SOLATA
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01.
CONTACT KIM MAERUDER CARLTON OR SUSAN FITZGERALD W/QUESTIONS.
KMAERUDER@INTEGRAL-CORP.COM
360-319-2574

* PRELIM RESULTS W/IN 10 WORKING DAYS VIA EMAIL

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/21/08 1800	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

RCOC #1 06/03

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An Employee - Owned Company

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SR#: 8672 3335 3424

PAGE 1 OF 2 COC # 17

PROJECT NAME: T117-EAA Soils Inv
PROJECT NUMBER: A0006-ISF
PROJECT MANAGER: Reid Carscadden / Susan Fitzgerald
COMPANY/ADDRESS: Integral Consulting
7900 SE 28th St, Ste 410
CITY/STATE/ZIP: Mercer Island WA 98040
E-MAIL ADDRESS: sfitzgerald@integral-corp.com
PHONE #: 260-957-0352 FAX#:
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) 8021☐ BTEX☐ Gas☐ Diesel☐ Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCB/PCDF 1613B	Total Solids 160.3M	Archive (Fridge)	REMARKS
SPD0088	8/21/08	1530		SOIL	2																2		
SPD0089		1535			2																2		
SPD0090		1605			2																2		
SPD0091		1620			2																2		
SPD0092		1555			2																2		
SPD0093		1550			2																2		
SPD0095		1635			5																5		
SPD0096		1707			2																2		
SPD0097		1708			2																2		
SPD0094	↓	1620		↓	4															1 1	2	*	

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-ISF-CAS-01
Bill To: Integral
1201 Cornwall Ave # 208
Bellingham WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: Grey Salata
Refer to Integral work assignment # A0006-ISF-CAS01
Contact Kim Mugruder Carlton or Susan Fitzgerald w/questions
kmugruder@integral-corp.com 360-319-2879

* PRELIM RESULTS W/IN 10 WORKING DAYS via Email

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/22/08 15:00			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
Kim Carlton / Integral			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

RCOC #1 06/03

CHAIN OF CUSTODY

Columbia Analytical Services INC.
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SR#: 8672 3335 3424

PAGE 2 OF 2 COC # 1817

PROJECT NAME: T117 EAA Soils Inv
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: Reid Carscadden / Susan Fitzgerald
COMPANY/ADDRESS: Integral Consulting
7900 SE 28th ST STE 410
CITY/STATE/ZIP: Mercer Island WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.com
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons Gas☐ 8021☐ BTEX☐ Diesel☐ (*see below) Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID	Oil & Grease/TRPH 1664 HEM☐ Screen 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	REDOX/PEDF 1613B	TOTAL SOLIDS 160.3M	PERCHLORATE (FROZEN)	REMARKS
SPDØØ98	8/21/08	1715		SOIL	2																	2		
SPDØØ99		1712			2																	2		
SPDØ14Ø		1640			2																	2		
SPDØ141		1720			2																	2		
SPDØ142		1644			2																	2		
SPDØ144		1924			4																	4		
SPDØ143		1904			5															1	1	3	*	

K. Carlton

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: Integral
1201 Cornwall Ave #206
Bellingham, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: Greg Salata
Refer to Integral Work Assignment # A0006-15F-CAS-01
Contact Kim Magruder Carlton or Susan Fitzgerald w/ questions
KMAGRUDER@Integral-Corp.com 360-319-2579

* Prelim Results w/in 10 Working Days via Email

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/22/08 1500	Date/Time:	Date/Time:	Date/Time:
Printed Name: Kim Carlton	Printed Name:	Printed Name:	Printed Name:
Firm: Integral	Firm:	Firm:	Firm:

RCOC #1 06/03

Columbia Analytical Services INC.
An Employee - Owned Company

CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: 8672 3335 3424

PAGE 2 OF 2 COC # 18

PROJECT NAME: TIT EAA Soils INV
PROJECT NUMBER: A0006 - 15F
PROJECT MANAGER: Reid Carscadden / Susan Fitzgerald
COMPANY/ADDRESS: Integral Consulting
7900 SE 28th St. Ste 410
CITY/STATE/ZIP: Mercer Island, WA 98040
E-MAIL ADDRESS: SFitzgerald@Integral-corp.com
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
~~SPØ155~~	~~8/22/08~~	11:55		Sediment	4	CH8/26/08
SPØ155	8/22/08	11:55		Sediment	4	
SPØ157		10:54		Soil	2	
SPØ161		11:00			2	
SPØ156		13:10			4	
SPØ157		10:50			2	
SPØ158		11:10			2	
SPØ159		11:30			2	
SPØ172	8/22/08	0830		FW	1	
SPØ173	↓	0825		FW	1	

Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
☐ Fuel Fingerprint (FIQ)
☐ NW-HCID Screen
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCB's Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
PAHS 8310☐ SIM☐
Metals, Total or Dissolved (See list below)
Cyanide☐ Hex-Chrom☐
pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)
NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3
TOX 9020☐ AOX 1650☐ 506☐
PCBs by 1668
Total Solids 1613B
Archive (Frozen)

SPØ155	1	1	2	*
SPØ155	1	1	2	*
SPØ157			2	
SPØ161			2	
SPØ156	1	1	2	*
SPØ157			2	
SPØ158			2	
SPØ159			2	
SPØ172			1	
SPØ173			1	

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: Integral
1201 Cornwall Ave #208
Bellingham WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results
____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Attn: Greg Salatas
Refer to Integral Work assignment # A0006-15F-CAS-01
Contact Kim Magruder Carlton or Susan Fitzgerald w/ question
k Magruder@Integral-corp.com 360-319-2879
* Prelim results w/in 10 working days via Email

Use Sample IDs on COC.

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/22/08 15:00	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

RCOC #1 06/03

Columbia Analytical Services INC.
An Employee - Owned Company

CHAIN OF CUSTODY

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SR#: 8672 3335 3424

PAGE 1 OF 2 COC # 18

PROJECT NAME: TIT EAA Soils Inv
PROJECT NUMBER: A0006-ISF
PROJECT MANAGER: Keil Carscadden / Susan Fitzgerald
COMPANY/ADDRESS: 7900 SE 28th St, Ste 410 Mercer Island, WA 98040 Integral Consulting
CITY/STATE/ZIP:
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0357 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons Gas☐ 8021☐ BTEX☐ ☐ Fuel Fingerprint (*see below) Diesel☐ Oil☐ ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCDD/PCDF 1613B	Total Solids 1603,M	Archive (Frozen)	REMARKS
~~SPD116~~ SPD0116	8/22/08	8:40		Soil	2																2		
SPD0147		8:33			2																2		
SPD0148		8:36			2																2		
SPD0151		8:40			2																2		
SPD0152		8:41			2																2		
SPD0149		8:45			2																2		
SPD0153		9:00			2																2		
SPD0150		10:50			5																5		
SPD0145		10:40			4															1	1	2	X
SPD0154		11:50		Solid	4															1	1	2	X

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-ISF-CAS01
Bill To: Integral
1201 Cornwall Ave # 208
Bellingham WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results
Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Attn: Greg Salata
Refer to Integral Work Assignment # A0006-ISF-CAS-01
Contact Kim Magruder or Susan Fitzgerald w/ questions
KMAGRUDER@Integral-corp.com 360-319-2879
USE Sample ID on COC
* Prelim Results w/IN 10 Working Days via Email

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/22/08 1500	Date/Time:	Date/Time:	Date/Time:
Printed Name: Kim Carlton	Printed Name:	Printed Name:	Printed Name:
Firm: Integral	Firm:	Firm:	Firm:

RCOC #1 06/03

CHAIN OF CUSTODY

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SR#: 8672 3335 3424

PAGE 1 OF 2 COC # 19

PROJECT NAME	T117 EAA Soils INV
PROJECT NUMBER	A0006-15F
PROJECT MANAGER	Reid Carscaden / Susan Fitzgerald
COMPANY/ADDRESS	Integral Consulting
	7400 SE 28th St, Ste 410
CITY/STATE/ZIP	Mercer Island WA 98040
E-MAIL ADDRESS	SFitzgerald@Integral-Corp.com
PHONE #	206-957-0352 FAX#
SAMPLER'S SIGNATURE	Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐	8021☐ BTEX☐ Diesel☐ Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐	1664 SGT☐	PCB's Aroclors☐	Congeners☐	Pesticides/Herbicides 608☐ 8081A☐	8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐	PCP☐	PAHs 8310☐	SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐	AOX 1650☐	506☐	PCDD/PCDF 1613B	Total Solids 160.3M	Archive (Frozen)	REMARKS
SPD0160	8/22/08	13:15		Soil	5																						1	1	3	X	
SPD0161		11:00			2																								2		
SPD0162		11:18			2																								2		
SPD0163		11:36			2																								2		
SPD0164		12:52			2																								2		
SPD0171		13:11			2																								2		
SPD0164		14:05			4																						1	1	2	X	
SPD0168		14:15			4																						1	1	2	X	
SPD0166		12:40			2																								2		
SPD0165		12:50			2																								2		

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

X III. Data Validation Report (includes all raw data)

___ IV. CLP Deliverable Report

X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01

Bill To: Integral
1201 Cornwall Ave #208
Bellingham WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.

____ 5 Day

Y Standard (10-15 working days)

____ Provide FAX Results

____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Attn: Greg Salata
Refer to Integral Work assignment # A0006-15F-CAS-01
Contact Kim Magruder Carlton or Susan Fitzgerald w/questions
kmagruder@Integral-corp.com 360-319-2879

* Prelim Results in 10 working days via email

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/22/08 1500			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
KIM CARLTON / INTEGRAL			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

Columbia Analytical Services INC.
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CHAIN OF CUSTODY

SR#: 8612 3335 3424

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

PAGE 2 OF 2 COC # 19

PROJECT NAME: 7117 EAA SOILS INV
PROJECT NUMBER: A0006-15F
PROJECT MANAGER: REID CARLSCADDEN / SUSAN FITZGERALD
COMPANY/ADDRESS: INTEGRAL CONSULTING
7900 SE 28TH ST. STE 410
CITY/STATE/ZIP: MERCER ISLAND, WA 98040
E-MAIL ADDRESS: SFITZGERALD@INTEGRAL-CORP.COM
PHONE #: 206-957-0352 FAX#:
SAMPLER'S SIGNATURE: K. Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐	BTEX☐ Diesel☐ Oil☐	Fuel Fingerprint (FIQ)☐ NW-HCID Screen☐	Oil & Grease/TRPH 1664 HEM☐	PCB's Aroclors 1664 SGT☐	Congeners☐	Pesticides/Herbicides 608☐ 8081A☐	8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐	PCP☐	PAHS 8310☐	SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, NH_3-N, BOD, TSS, TDS (circle)	COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐	AOX 1650☐ 506☐	PCDD/PCDF EPA 1613B	TOTAL SOLIDS EPA 160.3M	ARCHIVE	REMARKS
SP00170	8/22/08	12:47		Soil	2																						2		
SP00167	"	13:05		"	2																						2		

K. Carlton

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F CAS-01
Bill To: INTEGRAL
201 CORNWALL AVE #201
BELLINGHAM, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results
____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: ATTN: GREG SALATA
REFER TO INTEGRAL WORK ASSIGNMENT # A0006-15F-CAS-01
CONTACT KIM MAGRUDER-CARLTON OR SUSAN FITZGERALD FOR QUESTIONS
KMAGRUDER@INTEGRAL-CORP.COM
360-319-2579
* PRELIM RESULTS VIA EMAIL WITHIN 10 WORKING DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: K. Carlton	Signature:	Signature:	Signature:
Date/Time: 8/22/08 1500	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

RCOC #1 06/03

Columbia Analytical Services INC.
An Employee - Owned Company

CHAIN OF CUSTODY

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SR#: 8665 6345 4005

PAGE 1 OF 2 COC # 20

PROJECT NAME: T117 EAA 50115 NW
PROJECT NUMBER: A0006-15-F
PROJECT MANAGER: Reid Carscadden | Susan Fitzgerald
COMPANY/ADDRESS: 7900 SE 28th St., Suite 410
CITY/STATE/ZIP: Mercer Island, WA 98040
E-MAIL ADDRESS: sfitzgerald@integral-corp.com
PHONE #: (206) 957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☒ 8082-LL Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐	Hex-Chrom ☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	PCDD/PCDF EPA 1613B	Total Solids EPA 160.3M	Archive (FROZEN)	REMARKS
FW10	8/25/08	0745		FW	1																		1	
FW09		0755			1																		1	
FW08		0800			1																		1	
FW11		0805		↓	1																		1	
SPD0180		0827		Soil	2																		2	
SPD0182		0838			2																		2	
SPD0178		0820			2																		2	
SPD0181		0825			2																		2	
SPD0179		0825			2																		2	
SPD0183	↓	0840		↓	2																		2	

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: Integral
1201 Cornwall Ave #208
Bellingham, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results
____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: 10-day prelim via email. Please contact: Kim Magruder-Carlton or Susan Fitzgerald w/ questions kmagruder@integral-corp.com (360) 319-2879
Lab contact: Greg Salata
Refer to Integral work assignment #A0006-15F-CAS-01

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/25/08 16:30	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

RCOC #1 06/03

Columbia Analytical Services, Inc.
An Employee - Owned Company

CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: 8665 6345 4005

PAGE 2 OF 2 COC # 20

PROJECT NAME: T117 EAA Soils NW
PROJECT NUMBER: A0006-15-F
PROJECT MANAGER: Reid Carscadden/Susan Fitzgerald
COMPANY/ADDRESS: 7900 SE 28th St., Suite 410
CITY/STATE/ZIP: Mercer Island, WA 98040
E-MAIL ADDRESS: sfitzgerald@integral-corp.com
PHONE #: (206) 957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐	8021☐ BTEX☐ Diesel☐ Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐	PCB's Aroclors ☒ 8082-LL	1664 SGT☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐	8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐	PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCDD/PCDF EPA 1613B	Total Solids EPA 1ω.3M	Archive (Frozen)	REMARKS
SPD0184	8/25/08	0920		Soil	5																			1	1	3		
SPD0185		0925			4																					4		
SPD0189		0915			2																					2		
SPD0193		0922			2																					2		
SPD0187		0920			2																					2		
SPD0188		0930			2																					2		
SPD0191		0932			2																					2		
SPD0186		1015			4																			1	1	2		
SPD0192		0940			2																					2		

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: ~~Integral~~ Integral
1201 Cornwall Ave #208
Bellingham, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results
____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Attn: Greg Salata
10-day prelim via email. Please contact:
Kim Magruder-Carlton or Susan Fitzgerald w/ questions
kmagruder@integral-corp.com (360) 319-2879
Refer to Integral work assignment #A0006-15F-CAS-01

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/25/08 16:30			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
Kim Carlton / Integral			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

CHAIN OF CUSTODY

Columbia Analytical Services INC.
An Employee - Owned Company

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: 8605 6345 4005

PAGE 1 OF 2 COC # 21

PROJECT NAME: 117 EAA Soils NW
PROJECT NUMBER: A0006-15-F
PROJECT MANAGER: Reid Carscadden/Susan Fitzgerald
COMPANY/ADDRESS: 7900 SE 28th St., Suite 410
CITY/STATE/ZIP: Mercer Island, WA 98040
E-MAIL ADDRESS: sfitzgerald@integral-corp.com
PHONE #: (206) 957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐Fuel Fingerprint (FIQ) ☐NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors ☒ 8082-LL Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond, Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCDD/PCDF EPA 1613B	Total solids EPA 1003.1M	Archive (FROZEN)	REMARKS
SPD0190	8/25/08	1025		Soil	4																	4	
SPD0196		1017			2																	2	
SPD0197		1030			2																	2	
SPD0198		1027			2																	2	
SPD0201		1023			2																	2	
SPD0199		1037			2																	2	
SPD0202		~~1040~~ 1030			2																	2	
SPD0203		1042			2																	2	
SPD0194		1125			~~2~~ 1 MS															1	1	2	
SPD0195		1130			4																	4	

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: Integral
1201 Cornwall Ave #208
Bellingham, WA 98225

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Attn: Greg Salata
10-day prelim via email. Please contact:
Kim Magruder-Carlton or Susan Fitzgerald w/ questions
kmagruder@integral-corp.com (360) 319-2879
Refer to Integral work assignment #A0006-15F-CAS-01

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/25/08 16:30	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

Columbia Analytical Services INC.
An Employee - Owned Company

CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: 8605 6345 4005

PAGE 2 OF 2 COC # 21

PROJECT NAME: 1117 EAA Soils NW
PROJECT NUMBER: A00016-15-F
PROJECT MANAGER: Reid Carscadden/Susan Fitzgerald
COMPANY/ADDRESS: 7900 SE 28th St, Suite 410
CITY/STATE/ZIP: Mercer Island, WA 98040
E-MAIL ADDRESS: sfitzgerald@integral-corp.com
PHONE #: (206)957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors 8082-44 Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCDD/PCDF EPA 1613B	Total Solids EPA 1003M	Archive (FROZEN)	REMARKS
SPD0200	8/25/08	1132		Soil	4																4		
SPD0205		1200			2																2		
SPD0207		1150			2																2		
SPD0206		1128			2																2		
SPD0204		1300			4														1	1	2		
SPD0211		1150			2																2		

REPORT REQUIREMENTS

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X III. Data Validation Report (includes all raw data)
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X V. EDD

INVOICE INFORMATION

P.O. # A00016-15F-(AS-01)
Bill To: Integral
1201 Cornwall Ave #208
Bellingham, WA 98225

TURNAROUND REQUIREMENTS

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X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

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Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Attn: Greg Salata
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Kim Magruder-Carlton or Susan Fitzgerald w/questions
kmagruder@integral-corp.com (360) 319-2879
Refer to Integral work assignment #A00016-15F-(AS-01)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/25/08 16:30			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
Kim Carlton Integral			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

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PAGE 1 OF 2 COC # 22

PROJECT NAME: TIIF EAA Soils NW
PROJECT NUMBER: A0006-15-F
PROJECT MANAGER: Reid Carscaddin/Susan Fitzgerald
COMPANY/ADDRESS: 7900 SE 28th St., Suite 410
CITY/STATE/ZIP: Mercer Island, WA 98040
E-MAIL ADDRESS: sfitzgerald@integral-corp.com
PHONE #: (206) 937-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors ☒ 8082-44 Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHs 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle) NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCDD/PCDF EPA 1613B	Total Solids EPA 160.3M	Archive (Frozen)	REMARKS
SPD0208	8/25/08	1320		Soil	5																5		
SPD0209		1215			2																2		
SPD0210		1130			2																2		
SPD0213		1400			2																2		
SPD0214		1418			2																2		
SPD0217		1406			2																2		
SPD0215		1430			2																2		
SPD0218		1427			2																2		
SPD0219		1434			2																2		
SPD0216		1510			4																4		

REPORT REQUIREMENTS

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X III. Data Validation Report (includes all raw data)
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1201 Cornwall Ave #208
Bellingham, WA 98225

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____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
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Requested Report Date

Circle which metals are to be analyzed:

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Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

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SPECIAL INSTRUCTIONS/COMMENTS: Attn: Greg Salata
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Kim Magruder-Carlton or Susan Fitzgerald w/questions
kmagruder@integral-corp.com (360) 319-2879
Refer to Integral Work assignment #A0006-15F-CAS-01

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/26/08 16:30			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
Kim Carlton / Integral			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

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SR#: 8605 6345 4005

PAGE 2 OF 2 COC # 22

PROJECT NAME: T117 EAA Soils NW
PROJECT NUMBER: A0006-15-F
PROJECT MANAGER: Reid Carscadden / Susan Fitzgerald
COMPANY/ADDRESS: 7900 SE 28th St., Suite 410
CITY/STATE/ZIP: Mercer Island, WA 98040
E-MAIL ADDRESS: sfitzgerald@integral-corp.com
PHONE #: (206) 957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☒ 8082-LL Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals; Total or Dissolved (See list below)	Cyanide ☐	Hex-Chrom ☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	PCDD/PCDF EPA 1613B	Total solids EPA 160.3M	Archive (Frozen)	REMARKS
SRD0212	8/25/08	1515		Soil	4															1	1	2		

REPORT REQUIREMENTS

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X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

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Bill To: Integral
1201 Cornwall Ave #208
Bellingham, WA 98225

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____ 5 Day
X Standard (10-15 working days)
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Requested Report Date

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*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Attn: Greg Salata
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Kim Magruder-Carlton or Susan Fitzgeral w/ questions
kmagruder@integral-corp.com (360) 319-2879
Refer to Integral Work assignment #A0006-15F-CAS-01

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/25/08 16:30			
Signature / Date/Time	Signature / Date/Time	Signature / Date/Time	Signature / Date/Time
Kim Carlton / Integral			
Printed Name / Firm	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

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SR#: 8672 3335 3435

PAGE 2 OF 2 COC # 23

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PROJECT NAME: TI17 EAA Soils Inv.
PROJECT NUMBER: A0006-15-F
PROJECT MANAGER: Reid Carscaddon / Susan Fitzgerald
COMPANY/ADDRESS: 7900 SE 28th Street, Suite 410
CITY/STATE/ZIP: Mercer Island, WA 98040
E-MAIL ADDRESS: sfitzgerald@integral-corp.com
PHONE #: (206) 957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors ☒ 8082-LL Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHs 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle) Hex-Chrom☐	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCDD/PCDF EPA 1613B	Total Solids EPA 160.3M	Archive (Frozen)	REMARKS
SPD0233	8/26/08	0950		Soil	2																2		
SPD0230	8/26/08	1007		↓	2																2		
SPD0232	8/26/08	1020		↓	2																2		
SPD0231	8/26/08	1030		↓	2																2		
SPD0235	8/26/08	1025		↓	2																2		
SPD0237	8/26/08	0954		↓	2																2		
SPD0238	8/26/08	1105		FW	1																1		
SPD0229	8/26/08	1055		Soil	4														1	1	2		*
SPD0234	8/26/08	1100		↓	4					**											4		

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION

P.O. # A0006-15F-CAS-01
Bill To: Integral
1201 Cornwall Ave. #208
Bellingham, WA 98225

TURNAROUND REQUIREMENTS

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X Standard (10-15 working days)
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Requested Report Date

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Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Attn: Greg Salata
*10-day prelim via email. Please contact:
Kim Magruder-Carlton or Susan Fitzgerald w/questions
Kmagruder@integral-corp.com (360) 319-2879
Refer to Integral Work assignment #A0006-15F-CAS-01

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kim Carlton	Signature:	Signature:	Signature:
Date/Time: 8/26/08 12:00	Date/Time:	Date/Time:	Date/Time:
Printed Name: KIM CARLTON	Printed Name:	Printed Name:	Printed Name:
Firm: INTEGRAL	Firm:	Firm:	Firm:

RCOC #1 06/03

CHAIN OF CUSTODY

SR#: 8672.3335 3435

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PAGE 1 OF 2 COC # 23

PROJECT NAME: TTF EAA Soils Inv.
PROJECT NUMBER: A0006-15-F
PROJECT MANAGER: Reid Carscadden/Susan Fitzgerald
COMPANY/ADDRESS: 7900 SE 28th Street, Suite 410
CITY/STATE/ZIP: Mercer Island, WA 98040
E-MAIL ADDRESS: sfitzgerald@integral-corp.com
PHONE #: (206)957-0352 FAX#:
SAMPLER'S SIGNATURE: Kim Carlton

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐ 8021☐ BTEX☐ Diesel☐* Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☒ 8082-44 Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	PCDD/PCDF EPA 1613B	Total Solids EPA 160.3M	Archive (Frozen)	REMARKS
SPD0221	8/20/08	0810		Soil	2																2		
SPD0222		0820			2																2		
SPD0220		0815			2																2		
SPD0223		0813			2																2		
SPD0227		0820			2																2		
SPD0224		0820			2																2		
SPD0228		0825			2																2		
SPD0226		0930			4														1	1	2		*
SPD0225		0935			5																5		
SPD0232	↓	1001		↓	2																2		

REPORT REQUIREMENTS

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X III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

INVOICE INFORMATION
P.O. # A0006-15F-CAS-01
Bill To: Integral
1201 Cornwall Ave #208
Bellingham, WA 98225

TURNAROUND REQUIREMENTS
____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results
____ Requested Report Date

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Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS: Attn: Greg Salata
X10-day prelim via email. Please contact:
Kim Magruder-Carlton or Susan Fitzgerald w/ questions
Kmagruder@integral-corp.com (360)319-2879
Refer to Integral Work assignment #A0006-15F-CAS-01

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kim Carlton 8/26/08 12:00			
Signature Date/Time	Signature Date/Time	Signature Date/Time	Signature Date/Time
Kim Carlton Integral			
Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm

RCOC #1 06/03

APPENDIX C

Field Forms, Logs & Notes

C-1 Sediment

J. Flower 9/29/08

T-117 Supplemental Seed. sampling
crew: Joanna Flower + Rickeborg (Windward)
Ben Starr (Integral)
Dave Mullins (Mullins Dude Service)
weather: clear + sunny ~ 65°F

0:800 - began at 1st Ave S boat ramp
0:830 - arrive T-117

10:30 Piper kayaked by w/ a troop of kayakers
11:30 lunch break
12:10 resumed sampling
13:05 Roy called about gate + surveyors
1515 location T-117-#17-5 material is very coarse + rocky. Sample was difficult to obtain 5 attempts were made followed by three grabs w/ partial penetration 2-3cm. These grabs were composited. The boat was anchored + samples were collected from the same location.

J. Flower 8/29/08

~~1530~~ JMF 8/29/08

1550 -Gravity core attempt @ 111-SC
-1st attempt successful however only 9" of penetration was achieved

depth 5.5 m
47 31.556
122 18.585

1555 -2nd attempt: 9.5 inches not enough penetration

1559 -3rd attempt: 10 inches not enough penetration

1605 RB collected from eckman + bowls + spoons

1605 Gravity core attempt @ 104-SC
depth: 5.2m
47 31.627
122 18.648

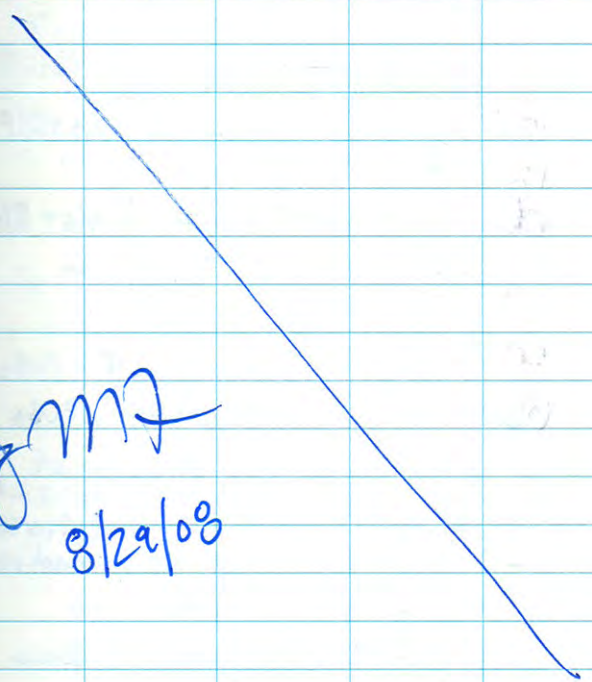
1607 -1st attempt: unsuccessful

1609 -2nd attempt: 8 inches not enough penetration
-3rd attempt: 7.5 inches not enough penetration

J. Flower 8/29/08

1615 Sampling effort completed headed back to 1st Ave boat ramp

1427 Arrive 1st Ave boat ramp - End of day



SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: _____ Project no.: 08-08-12-12

Date: 08/29/08 Weather: _____

Sampling Method: Grab by Spoon Crew: _____

GRAB DATA	Location ID: T117 - 96 - SG			
Latitude: 47° 31.640		Longitude: 122° 18.~~744~~ 734		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
9:55A	0.1	6	Y	Collected by hand w/ spoon

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color	Sediment odor		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	(none)	H_2S	
gravel	(drab olive)	slight	petroleum	Trace Org. - plant
sand (F M C)	brown	moderate	other:	
(silt)	gray	strong		
clay	black			

GRAB DATA	Location ID: T117 - 97 - SG			
Latitude: 47° 31.637		Longitude: 122° 18.729		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
9:59A	0.1	6	Y	collected by hand w/ spoon

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color:	Sediment odor:		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	(none)	H_2S	
gravel	(drab olive)	slight	petroleum	Trace org. - plant
sand (F M C)	brown	moderate	other:	
(silt)	gray	strong		
clay	black			

SURFACE SEDIMENT COLLECTION FORM

SURFACE SEDIMENT COLLECTION FORM

Project Name: _____ Project no.: 08-08-12-12

Date: 08/29/08 Weather: _____

Sampling Method: Grab by spoon Crew: _____

GRAB DATA	Location ID: T117-98-SG			
Latitude: 47° 31.635		Longitude: 122° 18.726		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
10:09A	0.1	6	Y	Collected by hand w/ spoon

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color	Sediment odor		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	(none)	H_2S	plant matter
(gravel)	(drab olive)	slight	petroleum	
sand (F M C)	brown	moderate	other:	
(silt)	gray	strong		
clay	black			

GRAB DATA	Location ID: T117-99-SG			
Latitude: 47° 31.632		Longitude: 122° 18.726		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
10:17A	0.1	6	Y	Collected by hand w/ spoon

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color:	Sediment odor:		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	(brown surface)	(none)	H_2S	plant matter
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	
(silt)	gray	strong		
clay	black			

SURFACE SEDIMENT COLLECTION FORM

SURFACE SEDIMENT COLLECTION FORM

Project Name: T117 sediment sampling Project no.: 08-08-12-12

Date: 08/29/08 Weather: Sunny

Sampling Method: Eckman Grab Crew: ROB, JMF, BIS, DM

GRAB DATA	Location ID: T117-100-SG			
Latitude: 47° 31.633 N	Longitude: 122° 18.715 W			
Grab time	Bottom depth (m) ~~(m)~~ ~~ft~~	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
9:00A	~~5.6~~ 1.8	10	Y	

SAMPLE DATA	Sample ID:		
Sediment type (%)	Sediment color	Sediment odor	Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none / H_2S	Trace organics = plant
gravel	drab olive	slight / petroleum	
sand (F M C)	brown	moderate / other:	
silt	gray	strong	
clay	black		

GRAB DATA	Location ID: T117-101-SG			
Latitude: 47° 31.634	Longitude: 122° 18.706			
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
9:15A	1.5	12	Y	

SAMPLE DATA	Sample ID:		
Sediment type (%)	Sediment color:	Sediment odor:	Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none / H_2S	Softy on top
gravel	drab olive	slight / petroleum	
sand (F M C)	brown	moderate / other:	Sand % increased downward
silt	gray	strong	
clay	black		

SURFACE SEDIMENT COLLECTION FORM

SURFACE SEDIMENT COLLECTION FORM

Project Name: _____ Project no.: 08-08-12-12.

Date: 08/29/08 Weather: _____

Sampling Method: Ekman Grab Crew: _____

GRAB DATA	Location ID: T117-102-SG			
Latitude: 47° 31.637		Longitude: 122° 18.707		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
9:28A	2.8	12	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color	Sediment odor		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	(brown surface)	(none)	H_2S	Org. matter - plant
gravel	(drab olive)	slight	petroleum	Sheen
sand (F M C)	brown	moderate	other:	
(silt)	gray	strong		
clay	black			

GRAB DATA	Location ID: T117-103-SG			
Latitude: 47° 31.626		Longitude: 122° 18.650		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
9:39A	2.6	10	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color:	Sediment odor:		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	(brown surface)	none	H_2S	Org. debris on top & throughout
gravel	(drab olive)	(slight)	(petroleum)	wood debris
sand (F M C)	brown	moderate	other:	Sheen
(silt)	gray	strong		
clay	black			

SURFACE SEDIMENT COLLECTION FORM

SURFACE SEDIMENT COLLECTION FORM

Project Name: _____ Project no.: 08-08-12-12

Date: 08/29/08 Weather: _____

Sampling Method: Eckman Grab Crew: _____

GRAB DATA	Location ID: T117-105-SG			
Latitude: 47° 31.620		Longitude: 122° 18.640		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments: All rejects
10:28A	2.5	4	N	
10:31A	2.5	6	N	
10:40A	2.5	2	N	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color	Sediment odor		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	
silt	gray	strong		
clay	black			

GRAB DATA	Location ID: T117-105-SG			
Latitude: 47° 31.620		Longitude: 122° 18.641		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
10:43A	2.5	9	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color:	Sediment odor:		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	(brown surface)	none	(H₂S)	
gravel	drab olive	(slight)	petroleum	Wood debris (a lot)
sand (F) M C)	brown	moderate	other:	
(silt)	(gray) dark	strong		
clay	black			

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC SURFACE SEDIMENT COLLECTION FORM

Project Name: _____ Project no.: 08-08-12-12

Date: 08/29/08 Weather: _____

Sampling Method: Eckman Grab Crew: _____

GRAB DATA	Location ID: T117-106-SG			
Latitude: 47° 31.614		Longitude: 122° 18.630		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
10:55A	2.8	8	N	
10:57A	2.8	9	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color	Sediment odor		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	Org mat - straw
silt	gray	strong		
clay	black			

GRAB DATA	Location ID: T117-107-SG			
Latitude: 47° 31.610		Longitude: 122° 18.628		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
11:12A	2.4	7	N	
11:14A	2.4	—	N	misfire
11:16A	2.4	7	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color:	Sediment odor:		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	org matt
silt	gray	strong		
clay	black			

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC

SURFACE SEDIMENT COLLECTION FORM

Project Name: T117 Sed Sampling Project no.: 08-08-12-12

Date: 08/29/08 Weather: sunny some clouds

Sampling Method: Ekman Grab Crew: RDB, BIS, JMF

GRAB DATA	Location ID: T117-108-SG			
Latitude: 47° 31.608		Longitude: 122° 18.621		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
11:40A	3.5	8	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color	Sediment odor		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	
silt	gray	strong		
clay	black			

GRAB DATA	Location ID: T117-104-SG			
Latitude: 47 31.570		Longitude: 122 18.570		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
12:27	2.7	0	N	mixed
12:31	2.7	6	N	not enough penetration
12:36	2.7	11	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color:	Sediment odor:		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	some wood debris & other organic matter - plant debris
gravel	drab olive	slight	petroleum	
sand (F M C) trace	brown	moderate	other:	
silt	gray dark	strong		Duplicate: 120-G
clay	black			

SURFACE SEDIMENT COLLECTION FORM

SURFACE SEDIMENT COLLECTION FORM

Project Name: T117 sed. sampling Project no.: 08-08-12-12

Date: 8-29-08 Weather: SUNNY, Some clouds

Sampling Method: Ekman grab Crew: RDB, BJS, JMF

GRAB DATA	Location ID: T-117-160-SG			
Latitude: 47 31.560		Longitude: 122 18.589		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1253	3.1	12	Y	

SAMPLE DATA	Sample ID:		
Sediment type (%)	Sediment color	Sediment odor	Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S
gravel	drab olive	slight	petroleum
sand (F M C)	brown	moderate	other:
silt	gray dark	strong	
clay	black		

piece of rubber
trace organic matter-plant
MS/MSD collected

GRAB DATA	Location ID: T-117-111-G			
Latitude: 47 31.553		Longitude: 122 18.587		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1307	2.7	2	N	not enough penetration
1310	2.7	9	Y	

SAMPLE DATA	Sample ID:		
Sediment type (%)	Sediment color:	Sediment odor:	Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S
gravel	drab olive	slight	petroleum
sand (F M C) trace	brown	moderate	other:
silt	gray dark	strong	
clay	black		

trace organic matter
Caught a lure

SURFACE SEDIMENT COLLECTION FORM

Wind Ward environmental LLC SURFACE SEDIMENT COLLECTION FORM

Project Name: T-117 sediment sampling Project no.: 08-08-12-12

Date: 8-29-08 Weather: sunny

Sampling Method: Eckman grab Crew: JAF, RDB, BIS

31.530

GRAB DATA	Location ID: T-117-112-G			
Latitude: 47 31.530		Longitude: 122 18.559		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1337	4.5	9	Y	

SAMPLE DATA	Sample ID: T-117-112-SG		
Sediment type (%)	Sediment color	Sediment odor	Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none H_2S	
gravel	drab olive	slight petroleum	trace organic matter
sand (F M C)	brown	moderate other:	
silt	gray	strong	
clay	black		

GRAB DATA	Location ID: T-117-113-G			
Latitude: 47 31.528		Longitude: 122 18.569		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1348	2.8	4	N	stick in jaw
1350	2.9	0	N	misfire
1355	4.0	12	Y	

SAMPLE DATA	Sample ID:		
Sediment type (%)	Sediment color:	Sediment odor:	Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none H_2S	
gravel	drab olive	slight petroleum	
sand (F M C)	brown	moderate other:	
silt	gray	strong	
clay	black		

SURFACE SEDIMENT COLLECTION FORM

SURFACE SEDIMENT COLLECTION FORM

Project Name: T-117 sed sampling Project no.: 08-08-12-12

Date: 8-29-08 Weather: sunny

Sampling Method: eckmangrab Crew: JMF, RDB, BIS

GRAB DATA	Location ID: T-117-114-G			
Latitude: 47 31.528		Longitude: 122 18.580		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1407	1.2	0	N	wash out - rock in jaw
1406	1.2	0	N	wash out - rock in jaw
1408	1.2	0	N	wash out - rock in jaw

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color	Sediment odor		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	
silt	gray	strong		
clay	black			

GRAB DATA	Location ID: T-117-114-G			
Latitude:		Longitude:		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1410	1.3	8	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color:	Sediment odor:		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	
gravel tr	drab olive	slight	petroleum	2-clams (macoma)
sand (F M C)	brown	moderate	other:	
silt	gray dark	strong		
clay	black			

SURFACE SEDIMENT COLLECTION FORM

SURFACE SEDIMENT COLLECTION FORM

Project Name: _____ Project no.: _____

Date: 8-29-08 Weather: _____

Sampling Method: ekman grab Crew: RDB, JMF, BIS

GRAB DATA	Location ID: T-117-115-G			
Latitude: 47 31.527		Longitude: 122 18.585		
Grab time	**Bottom depth (m)**	**Penetration depth (cm)**	**Acceptable grab (Y/N)**	**Comments:**
1421	1.7	Ø	N	wash out: rock in jaws
1422	1.7	Ø	N	wash out: rock in jaws
1427	2.0	7	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	**Sediment color**	**Sediment odor**		**Comments:** (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	(none)	H_2S	large gravel + rocks
(gravel) – trace	drab olive	slight	petroleum	
sand (F M C)	(brown)	moderate	other:	
(silt) – trace	gray	strong		
clay ~	black			

GRAB DATA	Location ID: T-117-116-G			
Latitude: 47 31.521		Longitude: 122 18.594		
Grab time	**Bottom depth (m)**	**Penetration depth (cm)**	**Acceptable grab (Y/N)**	**Comments:**
1435	0.8	Ø	N	rocks in jaws
1443	0.3	6	Y	collected by hand w/ spoon

SAMPLE DATA	Sample ID:			
Sediment type (%)	**Sediment color:**	**Sediment odor:**		**Comments:** (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	(none)	H_2S	no fines, just sand + gravel - no organic material
(gravel)	drab olive	slight	petroleum	
sand (F M C)	(brown)	moderate	other:	
silt	gray	strong		
clay	black			

SURFACE SEDIMENT COLLECTION FORM

SURFACE SEDIMENT COLLECTION FORM

Project Name: T-117 Sediment sampling Project no.: 08-08-12-12

Date: 8-29-08 Weather: overcast

Sampling Method: ekman grab Crew:

GRAB DATA	Location ID: T-117-117-SG			
Latitude: 47 31.523		Longitude: 122 18.585		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1453	2.1	0	N	- rocks in jaw
1456	2.0	0	N	- Rocks in jaw + partial grab up to 5 attempts - may abandon
1459	2.2	0	N	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color	Sediment odor		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	
silt	gray	strong		
clay	black			

GRAB DATA	Location ID: T-117-117-SG			
Latitude: 47 31.523		Longitude: 122 18.585		= seshore
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1512	2.2	3cm	Y	partial grab — combined
1514	2.2	2cm	Y	partial grab — to make
1516	2.2	3cm	Y	partial grab — one sample

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color:	Sediment odor:		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	(none)	H_2S	coarse + md sand
(gravel)	drab olive	slight	petroleum	w/ gravel
(sand) (F) (M) (C)	(brown)	moderate	other:	
silt	gray	strong		
clay	black			

SURFACE SEDIMENT COLLECTION FORM

WindWard environmental LLC SURFACE SEDIMENT COLLECTION FORM

Project Name: _____ Project no.: 08-08-12-12

Date: 8-29-08 Weather: Overcast

Sampling Method: Ekmangrab Crew: JMF, DM, BIS, RDB

GRAB DATA	Location ID: T-17-118-SG			
Latitude: 47 31.521		Longitude: 122 18.580		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1523	3.1	0	N	rocks in jaws
1525	3.2	0	N	
1528	3.2	0	N	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color	Sediment odor		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	
silt	gray	strong		
clay	black			

GRAB DATA	Location ID: T-17-118-SG			
Latitude: 47 31.521		Longitude: 122 18.580		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1530	3.1	0	N	rocks in jaws
1532	3.3	0	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color:	Sediment odor:		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	
silt	gray dark	strong		
clay	black			

SURFACE SEDIMENT COLLECTION FORM

SURFACE SEDIMENT COLLECTION FORM

Project Name: T117 sediment sampling Project no.: 08-08-12-12

Date: 8-29-08 Weather: Overcast

Sampling Method: Ekman grab Crew: BIS, JMF, DM, RDB

GRAB DATA	Location ID: T117-119-SG			
Latitude: 47 31.525		Longitude: 122 18.568		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:
1540	7.1	10	N	lost sample overboard
1542	7.0	10	Y	

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color	Sediment odor		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	trace organic matter - rootlets + leaves
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	
silt	gray dark	strong		
clay	black			

*Collected RB @ 1605 *

GRAB DATA	Location ID:			
Latitude:		Longitude:		
Grab time	Bottom depth (m)	Penetration depth (cm)	Acceptable grab (Y/N)	Comments:

SAMPLE DATA	Sample ID:			
Sediment type (%)	Sediment color:	Sediment odor:		Comments: (i.e. organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, rinsate blank, etc.)
cobble	brown surface	none	H_2S	
gravel	drab olive	slight	petroleum	
sand (F M C)	brown	moderate	other:	
silt	gray	strong		
clay	black			

C-2 T-117 Upland

9/2/08 J. Flower

T117 Upland D/F Soil Investigation

1200 - Arrive site
crew: Ben Starr (Integral)
Renee Knecht (ENSR)
Joanna Flower (TWW)
Rick Berg (TWW)
Andy, Josh + Toby (Cascade)

1300 - Started ~~SB-53~~ SB-60 JMF 9/2/08
1310 - SB-60 - 0.5-2.0 • Analysis all COCs + D/F
1315 - SB-60 - 2.0-3.5 • " "
1320 - SB-60 - 3.5-5.0 • Analysis all COCs + D/F
1340 - lithology sample collected from 9.0-10.5
1350 - SB-60 - 12.5-14.0 • Archive D/F + PCBs
1400 - SB-60 - 15.0-16.5 • Archive D/F + PCBs

1430 - Started at SB-57 covered w/ ~2ft of crushed rock fill.
1435 - T117-SB57-0.5-2.0 - sample was crushed rock fill * not collected for analyses
-2-4ft encountered rubble - no sample collected. Equipment failure on drill. had to drill down
1450 - T117-SB57-0.5-2.0 - sample contained surface fill, kept but depends on results of 2nd boring.

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1530 - Decided to re-sample SB-57b moved 2ft north
1535 - T117-SB57b-2.0-3.5 - All COCs + D/F
1540 - T117-SB57b-3.5-5.0 - All COCs + D/F
1545 - ~~T117~~ no material collected from 8.5-10.0 - no recovery
1550 - T117-SB57b-10.0-11.5 - D/F Archive only
1605 - Collected rinsate blank T117-SB57b-10.0-11.5-RB rinsate was collected from spoons + bowls for all SB57b intervals
1630 - End of day

JMF
9/2/08

9/3/08 J. Flower

T117 Upland D/F soil investigation

0700 - Arrive site
0730 - Started at SB-55
~2ft of crushed rock covering location. Auger through rock before taking 1st sample from 2.0-3.5
0740 - T117-SB55-2.0-3.5 - All COCs
0750 - T117-SB55-3.5-5.0 - All COCs.
0800 - T117-SB55-11.5-13.0 - Archive dioxin

0810 - Started at SB-54
~2' crushed rock covering location. Auger ~~1st~~ through rock before taking 1st sample. (2-3.5) ←
0820 T117-SB54-2.0-3.5 - All COCs
0830 T117-SB54-3.5-5.0 - All COCs
0840 T117-SB54-8.5-10.0 - D/F Archive

0850 Started at SB-53
0855 T117-SB53-0.5-2.0 - All COCs collected duplicate T117-SB61-0.5-2.0 - ~~All COCs~~ ~~TPH, PAH~~ D/F ~~PCBs~~ only

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0905 - Started at SB56 concrete below asphalt ~8" thick
0925 T117-SB56-1.0-2.5 - All COCs w/ D/F
0930 T117-SB56-2.5-4.0 - ~~PCBs~~ - All COCs archive D/F
0935 T117-SB56-4.0-5.5 - ~~PCBs~~ - All COCs
0940 T117-SB56-5.5-7.0 - ~~PCBs~~ - All COCs Archive

0930 - Collected duplicate from T117-SB56-2.5-4.0 T117-SB62-2.5-4.0 - TPH, PCB, PAH + TS
1000 - Started at SB58
1005 - T117-SB58-0.5-2.0 - All COCs
1010 - T117-SB58-2.0-3.5 - All COCs
1015 - T117-SB58-3.5-5.0 - Archive D/F

1010 - Collected duplicate from T117-SB58-2.0-3.5 T117-SB63-2.0-3.5 - PCBs Only
1015 - Collected rinsate T117-SB58-0.5-3.5-RB - PCBs Only

1025 - Started at SB59 ~1ft of concrete under asphalt sample collection began @ 1.5 bgs
1035 T117-SB59-1.5-3.0 - All COCs
1040 T117-SB59-3.0-~~4.5~~ - All COCs

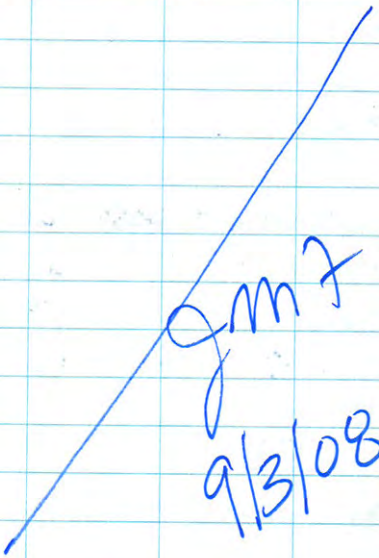
1045 T117-SB59-10-11.5 -collected + logged for lithology only

1055 T117-SB59-150-16.5 : PCBs, archived/F

1100 T117-SB59-17.5-19.0-PCBs, archived/F

1130 - ~~Returned~~ Decontaminated + cleaned up site

1200 - Returned to office
Ends day



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Boring Log

Boring #: SB-53
Sheet 1 of 1

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: **195678.97** Easting: **1275124.889**
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation: **21.51 ft. MLLW**
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **2 ft.**
Start Date & Time: **9/3/2008 0845**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/3/2008 0850**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample					Graphic	Depth (ft.)	Soil and Rock Description Classification Scheme: **USCS/ASTM**	Elevation (ft.)	Comments & Sample
Type & Number	Depth Range (ft.)	Blows Per 6 Inch	% Rec	PID (ppm)					
SS-1	0.5-2	35 24 14	72	-		0	(0.0-0.5) Not sampled.		
							(0.5-2.0) SW: WELL GRADED SAND, brown, fine to medium, sub angular, equant, dense, dry. 15% sub angular, fine gravel. Trace, sub angular, coarse gravel up to 2". At 1.7-2', red mottles, fine sand, 10% friable silt. Trace fine gravel up to 1/4". No odor or visible contamination.	21 20	

Remarks and Datum Used: HSA = Hollow Stem Auger

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Sample Type
SS = SPT
DP = Direct Push
GS = Grab Sample
C = Core

Groundwater		
Date	Time	Depth (ft.)

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Boring Log

Boring #: SB-54
Sheet 1 of 1

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: **195738.948** Easting: **1275223.724**
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation: **19.97 ft. MLLW**
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **10 ft.**
Start Date & Time: **9/3/2008 0810**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/3/2008 0824**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample					Graphic	Depth (ft.)	Soil and Rock Description Classification Scheme: **USCS/ASTM**	Elevation (ft.)	Comments & Sample
Type & Number	Depth Range (ft.)	Blows Per 6 Inch	% Rec	PID (ppm)					
						0	(0.0-2.0) Not sampled.	19	
SS-1	2-3.5	4 6 6	61	-			(2.0-3.5) SP: POORLY GRADED SAND, brown, fine, medium dense, dry. 10-15% silt. Trace to 10% sub angular to sub rounded coarse sand and 2" fine gravel at 2.75'. Trace roots and rootlets. 1" diameter asphalt peices at 2.75'. Friable from 3-3.5'. Slight organic odor, no visible contamination.	18 17	
SS-2	3.5-5	5 6 6	38	-			(3.5-5.0) SP: POORLY GRADED GRAVEL, yellowish brown grading to light yellowish brown, fine, medium dense, dry. 10-20% silt. Trace, sub angular, fine gravel up to 1/4" in diameter. Trace clay. No odor or visible contamination.	16	
						5	(5.0-8.5) Not sampled.	15 14 13 12	
SS-3	8.5-10	12 13 18	44	-			(8.5-10.0) SW: WELL GRADED SAND, brown, fine to medium, dense, moist. 20% sub angular, fine gravel and coarse sand. Trace silt. Large concrete piece, 2.5" in diameter. No odor or visible contamination.	11	
						10		10	

Remarks and Datum Used: HSA = Hollow Stem Auger

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DP = Direct Push
GS = Grab Sample
C = Core

Groundwater		
Date	Time	Depth (ft.)

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Boring Log

Boring #: SB-55
Sheet 1 of 1

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: **195679.634** Easting: **1275332.71**
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation: **19.33 ft. MLLW**
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **13 ft.**
Start Date & Time: **9/3/2008 0728**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/3/2008 0753**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample					Graphic	Depth (ft.)	Soil and Rock Description Classification Scheme: **USCS/ASTM**	Elevation (ft.)	Comments & Sample
Type & Number	Depth Range (ft.)	Blows Per 6 Inch	% Rec	PID (ppm)					
SS-1	2-3.5	24 10 10	66	-		0	(0.0-2.0) Not Sampled.	19	
							(2.0-3.5) SP: POORLY GRADED SAND, very fine, medium dense, dry. 15% yellowish brown silt. 15% coarse sand and fine gravel in light yellow, fine, crushed rock. Trace rootlets. No odor or visible contamination.	18 17	
SS-2	3.5-5	10 12 12	100	-			(3.5-5.0) SP: POORLY GRADED SAND, yellowish brown grading to dark yellow, fine, medium dense, dry. 20% yellowish brown, friable, medium sand. 20% sub rounded, fine gravel from 4.5-5.2'. At 4.5-5', 3x2", asphalt-like conglomerate material. No odor or visible contamination.	16 15	
						5		14	
SS-3	6-7.5	2 2 4	50	-			(5.0-6.0) Not sampled. (6.0-7.5) SP: POORLY GRADED SAND, dark yellowish brown, fine, loose, dry. 15% rounded, fine gravel up to 1/2" in diameter. 15% medium sand. Trace, sub rounded, coarse gravel up to 1.5" in diameter. No odor or visible contamination.	13 12	
							(7.5-11.5) Not sampled.	11	
						10		10 9	
SS-4	11.5-13	3 5 7	44	-			(11.5-13.0) SP: POORLY GRADED SAND, dark yellowish brown, fine, medium dense, wet at 12.5'. 15-20% sub rounded to sub angular, fine gravel and coarse sand. 10% silt. Large, rounded cobble up to 4" long in catcher. Small piece of woven material at 12'. No odor or visible contamination.	8 7	

Remarks and Datum Used: HSA = Hollow Stem Auger

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C = Core

Groundwater		
Date	Time	Depth (ft.)

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Boring Log

Boring #: SB-56
Sheet 1 of 1

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: **195442.507** Easting: **1275335.126**
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation: **20.28 ft. MLLW**
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **7 ft.**
Start Date & Time: **9/3/2008 0910**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/3/2008 0950**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample Type & Number	Sample Depth Range (ft.)	Sample Blows Per 6 Inch	Sample % Rec	Sample PID (ppm)	Graphic	Depth (ft.)	Soil and Rock Description (Classification Scheme: USCS/ASTM)	Elevation (ft.)	Comments & Sample
						0	(0.0-1.0) Not sampled.	20	
SS-1	1-2.5	7 9 10	72	-			(1.0-2.5) SW: WELL GRADED SAND, yellowish brown to dark brown at 2.25', fine to medium, sub angular, equant, medium dense, dry. 15% rounded to sub angular, fine to coarse gravel up to 2" long from 1-2.25'. Trace silt. Flat piece of tar-like material, 2" long. No odor or visible contamination.	19	
								18	
SS-2	2.5-4	4 3 4	77	-			(2.5-4.0) SP: POORLY GRADED SAND, grayish brown, fine, loose, moist. 20% medium sand. Trace coarse sand. Slight dry concrete odor, no visible contamination.	17	
SS-3	4-5.5	6 4 4	88	-		5	(4.0-5.5) SP: POORLY GRADED SAND, very dark grayish brown, fine, loose, moist. Trace silt. Trace medium sand. Staining on gloves. Moderate hydrocarbon-like odor, slight concrete-like odor. No visible contamination.	16	
								15	
SS-4	5.5-7	3 2 2	88	-			(5.5-7.0) SP: POORLY GRADED SAND, dark grayish brown, fine, loose, moist. Trace silt. Thin lense of yellowish brown sand at 5.75'. Broken brick fragments at 5.5'. Moderate hydrocarbon-like odor. No visible contamination.	14	

Remarks and Datum Used: HSA = Hollow Stem Auger

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SS = SPT
DP = Direct Push
GS = Grab Sample
C = Core

Groundwater		
Date	Time	Depth (ft.)

AECOM

Boring Log

Boring #: SB-57
Sheet 1 of 1

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: Easting:
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation:
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **10 ft.**
Start Date & Time: **9/2/2008 1426**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/2/2008 1517**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample					Graphic	Depth (ft.)	Soil and Rock Description Classification Scheme: **USCS/ASTM**	Elevation (ft.)	Comments & Sample
Type & Number	Depth Range (ft.)	Blows Per 6 Inch	% Rec	PID (ppm)					
SS-1	0.5-2	2 2 2	66			0	(0.0-0.5) Not sampled.	0	This borehole was replaced by SB-57B. No samples from this borehole were analyzed or archived.
							(0.5-2.0) SW: WELL GRADED SAND WITH GRAVEL, light yellowish brown, fine to medium, loose, dry. 30% crushed, sub angular to sub rounded rock from surface fill. 15-20% coarse sand. No odor or visible contamination.	-1	
								-2	
							(2.0-8.5) Not sampled.	-3	
								-4	
						5		-5	
								-6	
								-7	
								-8	
SS-2	8.5-10	2 2 2	33				(8.5-10.0) SW: WELL GRADED SAND WITH GRAVEL, yellowish brown, fine to medium, loose, moist. 30% crushed, sub angular rock from the top fill. 20% coarse sand. No odor or visible contamination.	-9	
						10		-10	

Remarks and Datum Used:

HSA = Hollow Stem Auger

CME85

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Sample Type
SS = SPT
DP = Direct Push
GS = Grab Sample
C = Core

Groundwater		
Date	Time	Depth (ft.)

AECOM

Boring Log

Boring #: SB-57B
Sheet 1 of 1

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: **195459.794** Easting: **1275480.869**
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation: **16.52 ft. MLLW**
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **11.5 ft.**
Start Date & Time: **9/2/2008 1525**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/2/2008 1545**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample					Graphic	Depth (ft.)	Soil and Rock Description Classification Scheme: **USCS/ASTM**	Elevation (ft.)	Comments & Sample
Type & Number	Depth Range (ft.)	Blows Per 6 Inch	% Rec	PID (ppm)					
						0	(0.0-2.0) Not sampled.	16	
SS-1	2-3.5	12 17 21	72	-			(2.0-3.5) SP: POORL Y GRADED SAND WITH GRAVEL, light brownish yellow, fine, medium dense, dry. 20% very fine sand. At 2.75', 20% sub angular to sub rounded, fine gravel, 2.5" long and 1/4" in diameter. No odor or visible contamination.	15 14	
SS-2	3.5-5	15 15 16	66	-		5	(3.5-5.0) SM: SILTY SAND, yellowish brown, fine, dense, dry. 15-20% sub angular to sub rounded fine gravel. Silt content increases with depth. Trace clay mottles. Trace rootlets. No odor or visible contamination.	13 12	
							(5.0-10.0) Not sampled.	11 10 9 8 7	
SS-3	10-11.5	2 2 4	50	-		10	(10.0-11.5) ML: SILT, brown, medium stiff, low plasticity, wet. 20% fine sand. 15% rounded to sub angular, fine gravel. Trace clay. Slight hydrocarbon-like odor. Slight rainbow sheen.	6	

Remarks and Datum Used: HSA = Hollow Stem Auger

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Sample Type
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DP = Direct Push
GS = Grab Sample
C = Core

Groundwater		
Date	Time	Depth (ft.)

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Boring Log

Boring #: SB-58
Sheet 1 of 1

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: **195388.952** Easting: **1275309.992**
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation: **22.89 ft. MLLW**
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **5 ft.**
Start Date & Time: **9/3/2008 0955**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/3/2008 1010**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample					Graphic	Depth (ft.)	Soil and Rock Description Classification Scheme: **USCS/ASTM**	Elevation (ft.)	Comments & Sample
Type & Number	Depth Range (ft.)	Blows Per 6 Inch	% Rec	PID (ppm)					
						0	(0.0-0.5) Not sampled.		
SS-1	0.5-2	21 22 30	61	-			(0.5-2.0) SW: WELL GRADED SAND, slightly reddish brown, fine to medium, very dense, dry. 20% angular, broken, rock from 0.75-1" long. Trace silt. At 2', trace brick fragments up to 1.5" long. Tarry-like stain on gloves from 1/2" lense with hydrocarbon-like odor. No visible contamination.	22	
								21	
SS-2	2-3.5	4 3 2	83	-			(2.0-3.5) SP: POORLY GRADED SAND, yellowish brown, very fine, loose, dry. 15% friable silt. No odor or visible contamination.	20	
SS-3	3.5-5	3 2 2	88	-			(3.5-5.0) SM: SILTY SAND, yellowish brown, very fine, loose, moist. Light gray mottles. At 4.25-5' yellow and gray mottles. No odor or visible contamination.	19	
						5		18	

Remarks and Datum Used: HSA = Hollow Stem Auger

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Sample Type
SS = SPT
DP = Direct Push
GS = Grab Sample
C = Core

Groundwater		
Date	Time	Depth (ft.)

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Boring Log

Boring #: SB-59
Sheet 1 of 2

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: **195335.788** Easting: **1275381.38**
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation: **20.55 ft. MLLW**
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **19 ft.**
Start Date & Time: **9/3/2008 1030**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/3/2008 1115**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample					Graphic	Depth (ft.)	Soil and Rock Description Classification Scheme: **USCS/ASTM**	Elevation (ft.)	Comments & Sample
Type & Number	Depth Range (ft.)	Blows Per 6 Inch	% Rec	PID (ppm)					
SS-1	1.5-3	5 6 7	77	-		0	(0.0-1.5) Concrete and asphalt.	20	
							(1.5-1.9) ML: SILT, light brown, rapid dilatency, high plasticity, soft, moist. Trace clay. No odor or visible contamination.	19	
SS-2	3-4.5	2 3 4	83	-			(1.9-2.3) SW: WELL GRADED SAND, grayish brown, fine to medium, sub rounded, equant, loose, moist. Trace coarse sand. No odor or visible contamination.	18	
							(2.3-3.0) SP: POORLY GRADED SAND, very dark brown, fine, loose, moist. 15% sub angular, fine gravel. 10% silt. Slight hydrocarbon-like odor. No visible contamination.	17	
						5	(3.0-4.5) SW: WELL GRADED SAND, brown to dark yellowish brown, fine to medium, sub angular to sub rounded, equant, loose, moist. Trace coarse sand. Lense of reddish brown at 4'. 1" lense of brick fragments at 3.25'. No odor or visible contamination.	16	
							(4.5-10.0) Not sampled.	15	
								14	
								13	
								12	
SS-3	10-11.5	1 1 2	88	-		10	(10.0-10.5) SP: POORLY GRADED SAND, grayish brown, fine, sub rounded, equant, loose, moist. 10-15% medium sand. No odor or visible contamination.	11	
							(10.5-11.5) ML: SILT, gray, rapid dilatency, high plasticity, soft, moist. 10% clay. 3/4" thick peice of burnt wood. No odor or visible contamination.	10	
							(11.5-15.0) Not sampled.	9	
								8	
								7	

Remarks and Datum Used: HSA = Hollow Stem Auger

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Sample Type
SS = SPT
DP = Direct Push
GS = Grab Sample
C = Core

Groundwater		
Date	Time	Depth (ft.)

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Boring Log

Boring #: SB-59
Sheet 2 of 2

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: **195335.788** Easting: **1275381.38**
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation: **20.55 ft. MLLW**
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **19 ft.**
Start Date & Time: **9/3/2008 1030**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/3/2008 1115**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample					Graphic	Depth (ft.)	Soil and Rock Description Classification Scheme: **USCS/ASTM**	Elevation (ft.)	Comments & Sample
Type & Number	Depth Range (ft.)	Blows Per 6 Inch	% Rec	PID (ppm)					
SS-4	15-16.5	2 2 2	100	-		15	(15.0-15.25) SP: POORLY GRADED SAND, grayish brown, fine, equant, loose, wet. 10% medium sand. No odor or visible contamination. (15.25-16.5) SM: SILTY SAND, brownish gray, very fine, loose, wet. Trace, soft saturated clay. 20% silt. No odor or visible contamination.	7 6 5	
							(16.5-17.5) Not sampled.	4	
SS-5	17.5-19	4 6 10	83	-			(17.5-19.0) SM: SILTY SAND, brownish gray, very fine, medium dense, wet. Silt content decreases with depth. Very slight hydrocarbon-like odor. No visible contamination.	3 2	

Remarks and Datum Used: HSA = Hollow Stem Auger

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Sample Type
SS = SPT
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GS = Grab Sample
C = Core

Groundwater		
Date	Time	Depth (ft.)

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Boring Log

Boring #: SB-60
Sheet 1 of 2

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: **195344.91** Easting: **1275507.839**
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation: **16.12 ft. MLLW**
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **16.5 ft.**
Start Date & Time: **9/2/2008 1300**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/2/2008 1350**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample Type & Number	Sample Depth Range (ft.)	Sample Blows Per 6 Inch	Sample % Rec	Sample PID (ppm)	Graphic	Depth (ft.)	Soil and Rock Description (Classification Scheme: USCS/ASTM)	Elevation (ft.)	Comments & Sample
						0	(0.0-0.5) Not sampled.	16	
SS-1	0.5-2	6 12 12	88	0.0			(0.5-2.0) SP: POORLY GRADED SAND, brown to dark brownish gray at 1.5', fine, sub rounded, equant, medium dense, moist. 15% medium sand. 10% rounded to sub rounded, fine gravel. At 1.75-2', 15% silt. Heavy hydrocarbon-like odor from 1-1.5', lessening downward. No visible contamination.	15	
SS-2	2-3.5	12 18 12	77	-				14	
SS-3	3.5-5	5 3 2	66	0.0			(2.0-3.5) SP: POORLY GRADED SAND, brownish gray, fine, sub rounded to sub angular, equant, dense, moist. 20% sub angular gravel with black cinder material from 2-2.75'. 15% silt. Trace to 10% angular to sub angular, fine gravel. Slight hydrocarbon-like odor at 3'. No visible contamination.	13	
								12	
						5	(3.5-5.0) SP: POORLY GRADED SAND, grayish brown to brownish gray, fine, sub rounded to sub angular, equant, loose, moist. 10% sub angular gravel, up to 1.3" long. No odor or visible contamination.	11	
								10	
							(5.0-9.0) Not sampled.	9	
								8	
SS-4	9-10.5	1 1 2	100	3.8			(9.0-9.5) SW: WELL GRADED SAND, brown and black, fine to medium, equant, very loose, moist. Trace sub angular to sub rounded gravel. Trace rootlets. Strong new plastic-like odor. No visible contamination.	7	
						10	(9.5-10.5) ML: SILT, light gray, soft, high plasticity, moist. Trace rootlets. Strong new plastic-like odor. No visible contamination.	6	
							(10.5-12.5) Not sampled.	5	
								4	
SS-5	12.5-14	1 2 2	94	0.3			(12.5-14.0) SM: SILTY SAND, brownish gray, very fine, loose, rapid dilatency, very loose, wet. Light gray layering up to 4mm thick. At 13.75-14', gray, fine sand. Trace rootlets. Trace silt. No odor or visible contamination.	3	

Remarks and Datum Used: HSA = Hollow Stem Auger

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C = Core

Groundwater		
Date	Time	Depth (ft.)

ENSR | AECOM

Boring Log

Boring #: SB-60
Sheet 2 of 2

Project: **T-117**	Operator: **Andy Flagan**	Location: **South Park, WA**
Project #: **05482-023-400**	Drill Rig Type: **CME85**	Northing: **195344.91** Easting: **1275507.839**
Client: **Port of Seattle**	Method: **HSA**	Ground Elevation: **16.12 ft. MLLW**
Contractor: **Cascade Drilling Inc.**	Casing ID: **-**	Total Depth: **16.5 ft.**
Start Date & Time: **9/2/2008 1300**	Bit Type: **4.25" HSA**	Seal: **Bentonite Chips**
Finish Date & Time: **9/2/2008 1350**	Boring ID: **4.25"**	Logged By: **R. Knecht**

Sample					Graphic	Depth (ft.)	Soil and Rock Description Classification Scheme: **USCS/ASTM**	Elevation (ft.)	Comments & Sample
Type & Number	Depth Range (ft.)	Blows Per 6 Inch	% Rec	PID (ppm)					
							(14.0-15.0) Not sampled.	2	
SS-6	15-16.5	1 2 2	94	0.0		15	(15.0-16.5) ML: SILT, brownish gray, low plasticity, soft, wet. 10% clay, content decreases with depth. Trace of colored layers, gray and light gray up to 2mm thick. Trace clay pockets up to 0.25" in diameter. At 15-15.25', wet, loose, dark gray, fine sand. At 15.5', trace, dark gray fine sand lenses. No odor or visible contamination.	1 0	

Remarks and Datum Used: HSA = Hollow Stem Auger

ENSR
1011 SW Klickitat Way, Suite 207
Seattle, WA 98134-1162
Phone: (206) 624-9349
Fax: (206) 624-2839

Sample Type
SS = SPT
DP = Direct Push
GS = Grab Sample
C = Core

Groundwater		
Date	Time	Depth (ft.)

C-3 Streets and Yards

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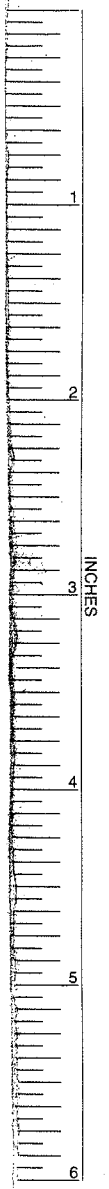

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CONTENTS

PAGE	REFERENCE	DATE

FRIDAY AUG 15 S. FITZGERALD

1110 ONSITE: SUSAN FITZGERALD, BEN STARR (INTEGRAL) to mark locations + place parking restriction signage.

1129 Finished marking P99 + P100 per GPS coordinates. May need to move P99 a little due to proximity of curbing.

– BLANK –

- 206-396-1558 J. MURNANE cell

Jerry (0331): Jerry stated that coordinates presented in QAPP were not precisely measured but rather ~~came from the graph~~ were based on the map graphics, so actual coordinates may need to be revised based on measurements in the field. This explains apparent error betw. proposed coordinates & planned loc. of P98 relative to EAA boundary. Placed P98 3' in from boundary. P97 placed 5' from S EAA boundary + 3' from W EAA Boundary, in order to avoid storm drain.

BLANK

05 AUG 2008 S. FITZGERALD

1219 Met w/ Property owner @ 8609 DALIAS, explained that were marking locations + sample on MONDAY ~~TUESDAY~~ Marked P109 ~29ft from fence corner (to South) & 3' from fence line (EAA boundary). Ben took GPS coords. Marked P95 25' from corner (to W), 2' from fenceline (3' from EAA boundary) Ben took GPS coordinates.

1230-1355 Lunch

1300 LOCATING P92, MARKED 40C 11' from Northern Asphalt edge 3' E of EAA BOUNDARY (As measured from actual loc. of P84 (45' W of P84). Ben collected coords. I believe this moves P92 about 1'S from planned location, in order to avoid suspected WATER MAIN LINE.

1320 Marking P88, moved 8.5' E of coordinates to avoid gas line while remaining outside remediated area, per QAPP.

1350 conferred w/ Reid & Ben. Then found the SFC gas line much more than on MAP,

15 AUG 2008 S. FITZGERALD

30 I relocated "STAR" AXIS to W of gas line along the very edge of the asphalt @ P91. Relocated P88 to 4' W of gas line (on asphalt). Located P90 26' N of P88, to be 3.5' N. of gas line. Located P89 25' E of P88 P88 = 14.5' E of fence line, ~10' S of S edge of utility pole @ corner of Dallas Ave & 16th.

1403 Called Jeny to check loc. of SD52 to check placement of P88. Jeny confirmed we are w/in 1' N of SD52 w/ our P88 marked location. I measured P88 to be 5' E of SD52. Ben collected coordinates.

1414 MARKED P93 @ 3' from S. EAA BOUNDARY ON 16th, Aligned w/ former P82 location. Ben collected COORDINATES for P93.

1424 MARKED P94 ~15' from corner, 3' N of S boundary of EAA, per map. Ben collected COORDINATES.

1435 Left site

1443 Confirmed P99 location ok relative to EAA BOUNDARY. Ben concurred.

15 AUG 2008 SFITZGERALD

1532 Back on site to mark NO Parking signs Received word of verbal Approval from EPA to proceed w/ sampling.

PARKING RESTRICTIONS MARKED:

1) 16th Ave S between Dallas & Cloverdale: 3 ON E SIDE 3 on W SIDE OF 16th
   Tues Aug 19th ~~8 SAF~~ 8AM-5PM
   Wed Aug 20th 8AM-5PM

2) DALLAS AVE S @ BOAT YARD: 2 on S side OF DALLAS
   MON Aug 18th 8AM-5PM
   TUES Aug 19th 8AM-5PM

3) DALLAS AVE S @ 8601: 2 ON S side of DALLAS
   MON Aug 18th 8AM-5PM
   TUES Aug 19th 8AM-5PM

4) DALLAS AVE S @ W. BOUNDARY 2 N SIDE 2 S SIDE OF DALLAS
   MON Aug 18th 8AM-5PM
   WED Aug 20th 8AM-5PM

5) 17th AVE S & DALLAS @ 8609 2 ON W SIDE
   MON Aug 18th 8AM-5PM
   ~~WED Aug 20th~~ TUES Aug 19th 8AM-5PM

6) DANUUAN & 17th AVE S
   H SIGNS ON S & E SIDE of INTERSECTION:
   MON Aug 18 8-5
   WED Aug 20th 8AM-5PM

1630 LEFT SITE. END 8/15/08 SAF

Monday Aug 18 2008 S. FitzGerald

0700 ON SITE @ SPU-leased property.

0910 Crew arrived on site:
Ben Starr, Jane Sund, Ian Stupakoff,
Kim Magruder-Carlton (Integral).

0750 Decanning sampling equipment.

0810 Reviewed Residential Yard Approach w/ team
Held H+S brief chem + phys. con hazards energ. ES, hosp. Loc.

0835 Mike CSN on site

0835 Recd call from Seattle Police Dept re parking sign forms. Needed to revise some of the location descriptions. Woman @ SPD made revisions as we spoke over the phone.

0850 Met w/ Mike Egan (SCL). He has more Access agreements. We reviewed

0925 At 8609 Dallas, w/crew. Walking through procedure for soil sampling @ YC20a

1010 Decided that jarring excess sample material from discrete intervals is impractical (time consuming). Will retain all material collected into composite bowls, however, per QAPP

8 Aug 2008 S. FitzGerald

1035 Working on YC20b. Procedure so far is: cutting a large area using SS shovel, collecting sample from middle. This way the sod can be removed in a large piece & easily returned + replaced.

1050 YC20c ~~coords~~ coordinates place it at the estimated edge of the remediated area. We moved it 5' West to be sure to avoid remediated area. Remediated area estimated from map to be up to 35' west of property fenceline

1120 Reviewing probe locs w/ Kacey Goble (Cascade Drilling).

1130 Reviewed HASP., Kacey signed.

1140 positioned sampling vehicles @ P96 + placed traffic cones.

1215 Collecting shoe, bowl + spoon ~~fd~~ for wipe samples FW01 + FW02

1230 started P96

1350 finished P96

Tom Mentor on site. Confirmed that not retaining all material from yard parcels

7 Aug 2008 — Susan FitzGerald

IS NOT IN VIOLATION OF QAPP.

1535 VAN LOCKED (BAG w/ keys inside TO AVOID FACTOR DELAY WHILE WE AWAIT ON "TRIPLE A". I ASKED KASEY to ~~retest~~ DRIVE TO 8' @ P97. He finished 1st drive @ ~1530.

1550 Kasey is starting P98 while we process P97.

1600 Kasey finished P98. We covered it w/ foil to await processing. Kasey left site.

1635 FINISHED LOGGING P97; samples still being processed

1640 STARTED LOGGING P98.

1715 FINISHED LOGGING P98.

1715 processed samples, decon, clean-up.

1940 LEFT SITE. END 8/18

19 Aug 2008 — Susan FitzGerald

0700 CREW ON SITE: S. FitzGerald, I Stupakoff, J. Sun, K. Mazurek

0705 Talked w/ Reid about Monday's sampling

0755 SET UP DECON & SAMPLE PROCESSING AREA @ Dallas & 16th

0805 Cascade on site. Kasey reported that they pressure-wash ALL shoes they use prior to use. The only shoes he used yesterday were the two we decanned. I told him every time we drive a length we need to use decanned shoes.

0815 We decanned all the drilling shoes & wrapped in foil, returned to Kasey

0825 Drove to 8' @ P95

0940 Finished logging P95
Samples avoiding taking material touching sides of liners. As practicable.

0955 Started drilling P94

1058 Finished describing P94 still processing samples. Beth Schmoyer & Jeanne Goldberg showed up w/ several people & asked me to describe how our sampling process works. They were on site ~5 min

19 Aug 08 S. Fitzgerald

1100 Called Non-emergency # for SPD to report road closure. (309036 ~~road~~ event no.)

1125 Setting up street closed signs. Kasey setting up on P89

1132 Kasey finished P89 (2 drives to 4')

1215 Finished logging P89. Ian went to FedEx to ship yesterday's samples. Still processing P89 samples.

1230 Kasey moving to P91.

1233 Started drilling @ P91.

~1235 Finished drilling @ P91.

1250 Reno Called - will need to resample yesterday's loc.s

1320 Finished logging P91.

1327 Kasey moves onto P88

1333 Finished drilling P88. Kasey reported top portion was pretty loose. Recovered thickness ~ 33"

1430 Finished drilling P93

1522 Finished logging P93; resampled P96

1605 Kasey left site after redrilling P97 + P98. We are processing

19 Aug 2008 S. Fitzgerald

P96. P97 + P98 are closed in their casings, awaiting logging + processing.

1615 All yard samples will be run on Tier I for dioxins - Tom Meyer (phone call).

1625 Finished logging P96; started P98. Similar to yesterday, but wet @ depth.

1705 Finished P98, v. close match to yesterday's log. Ben is logging P97. Processing samples from P98.

1805 Ian delivered 2 coolers of samples to Fed Ex. We had also shipped 3 coolers earlier today.

1820 Called non-emergency # for SPD to let them know the streets open.

1825 Jane S. swept sidewalk after equipment was packed

1840 Staged waste water + soil in labelled buckets w/ lids in SPU fenced area.
Stacked street signs on 16th near Cloverdale (off to side)

1845 Left site to get coolers @ office

1900 @ office, picked up coolers, disposed of garbage + recycling. END 8/19/08

20 Aug 2008 S. FitzGerald

0700 On site. Rainy. Note that P89 needed to be moved due to proximity to a marked water line. We adjusted the location ~3' to west of location marked last Friday.

0705 I stopped off J. Sunn, K. Maguire on site.

0740 Roger - surveyor for SPU - called; due to crew availability, they won't be able to come out til tomorrow. I told him that should work OK

Ben arrived ~0715.

0780 called Nonemergency #

625-5011

8523 - 8507 Dallas Ave S.

→ was referred to King Co. 296-3311

called King Co Nonemergency line operator 96 - call her back when Fire Dept. 253-852-2121

XF0827 - record #

no need to call back unless street closed past 9AM.

0810 Kasey arrived ~0800. We closed portion of street near P90.

0815 STARTED DRILLING P90

0818 FINISHED DRILLING P90; STARTED LOGGING.

20 Aug 2008 S. FitzGerald

0830 Kasey's concerned about location of P92 relative to gas line. Gas line not clearly marked on street near location. Kasey + Jon will go to P99 to drill there while I call locators.

0840 called Central Locating 253-939-5442

re ticket 8261060. They will have locator call me.

0925 Finished logging + sampling P90 (Ben + Jane)

Kasey had drilled P91 ~0915.

Jane + Ben logging P99.

Jon is observing Kasey. Kim is packaging samples + doing sample labels.

0930 called Linsey @ Central Locating. She is checking on locator - he is heading out, should be ~15 minutes

0940 Took photos of sampling locs between 16th + Along Dallas Ave S

0943 Kermit, Central Locating, on site, is marking area around P92.

He noted that it's rare for a gas line to go straight down middle of road.

0955 Locator finished marking gas line + left.

He said he couldn't mark the water line loc.

20 Aug 08 S. Fitzgerald

0955 Kasey finished drilling P100. He reports that the groundwater comes rushing up once he penetrates the asphalt. Ian noted he hauled off sfc puddled water w/ buckets.

1005. Jane reports she needs more volume for 0-1' interval of P99. We decanned shoes & Asked Kasey to punch 2 more tubes of 0-2' interval @ P99.

1140 Processing P100. Kasey mobd to P92.

1145 Started P92 (Drilling).

1149 Finished P92 (Drilling).

1150 Backfilling w/ bentonite chips. (Typical of all boreholes).

1300 Kasey left site, After we confirmed we have sufficient volume from P92. Ben is describing P92, Ian is sampling.
Called King Co Nonemerg. # to let them know street is open.
Called Nat'l Barricade to let them know we're done w/ signs, to sched. pickup

20 Aug 08 S Fitzgerald

1325 Had Disc. w/ Crew re: P92. There is a gravelly layer @ ~ 3' bgs that Appears similar to suspected slough material discarded in other cores (eg P94). However, paint flecks matching the sfc paint was observed in ~~the~~ the layer in these cores which lead to the conclusion that it was slough, even though A silty material was located on top of it At top of core. This (P92) has A similar Appearance, fine material on top of dry gravelly layer (suspected poss slough), but this gravel contains No paint, & Appears slightly different than the gravel @ the surface (sub-Asphalt). A piece of plastic film was observed in the material @ 1-2' in the core ~~tube~~ Above this gravel, ~~tube~~ suggesting that the gravel may be part of a fill sequence & therefore NOT slough.

20 Aug 2008 S. Fitzgerald

1400 Tom Meyer + Mike Egan on site. I took photos of puddle w/ sheen along 16th Ave S.

1415 Tom + Mike left site

1425 Stopped in @ marina office to let them know we're going to collect the boatyard sample. Making for yard sampling.

1515 Reid Arrived. Jane + I are sampling YC18; Ian + Ben are sampling YC17.

The GPS loc. for YC17a is not ON the property. We moved the location 5.5' South. (photo)

Ian reports he hit refusal at one of his locations @ 9" bgs. He has enough material to constitute to the subsite composite + make a discrete. We decided that accepting the refusal depth is sufficient

1535 At YC17a. Soil at 6" bgs is too hard + gravelly for the auger. Reid is hand digging w/ shovel to 1' bgs, then we'll sample the sidewall.

20 Aug 08 S. Fitzgerald

1755 Reid took samples to Fed Ex.

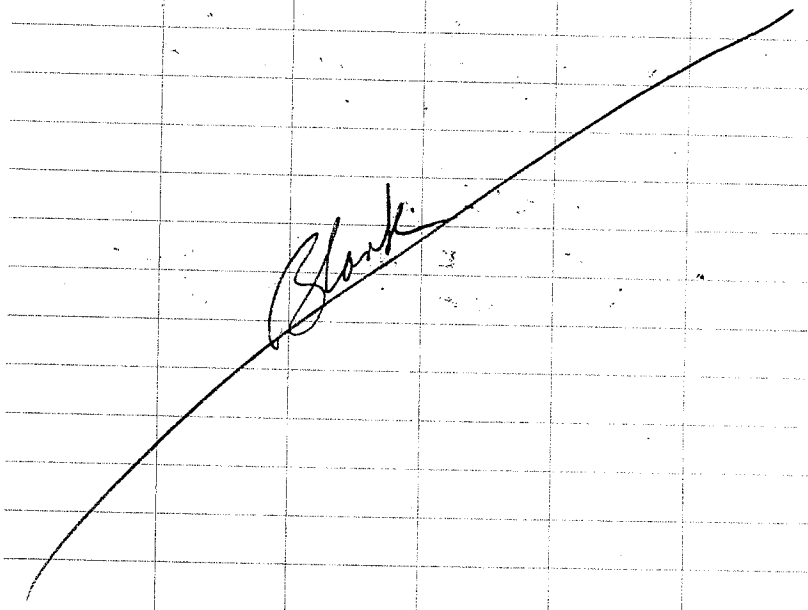
Crew is processing YC16.

1820 Finished processing YC16.

1825 WENT TO TALK TO EDWARD McCORMICK @ 1440 S. Cloverdale, About sampling his yard tomorrow. He's fine w/ that; his wife will be home til ~1100. I told him it might take most of the day.

1925 Loaded sheet rigs + waste buckets to fenced area.

1925 Left site CAS 8/20/08



21 Aug 08 S. Fitzgerald

0645 On site, windy, p.cloudy.

0655 Called Suzan Campbell about bringing us more supplies.

0702 Took photos of YC a, b, & c locations and YC a+b (couldn't see "c" from the street).

0714 Called Cascade - Dan noticed PG1 is open to mid bgs. Was it apparent previously (??) Perhaps RAIN made it more obvious.

0815 Preparing to take Hand auger composites:
1) of shorter auger we've been using for yard subsurface samples
2) of longer auger to be used for 4-ft boreholes.

0834 Kym Takasaki + Dana on site. We walked a few of the locations.

0846 Brian - city surveyor

0905 Ian is marking locations YC05 YC06 & HA1. Kym is reviewing logs. We walked Clowndale & discussed sample locs: ANDO gardening areas. Target bare dirt in obvious use areas & likely walkways from street to houses.
Ben + Kim are sorting yesterday's samples.

21 Aug 08 S Fitzgerald

0915 Kym + Dana left site

0930 Walked yard w/ Melissa. They excavate pond in side yard & spread the soil in garden area.
Placed HA1 near YC05 since coord. place HA1 in a planter.
Moved YC05b out of garden area to yard area.
Excavated pond in side yard is ~5' deep at N end & 2.5' deep S end ~5' across

0940 Roger Byerlay + John Hatch (Spen surveyors) on site. Ian will take them to YC19 & YC20 locations.

0954 Melissa gave me her husband's daytime contact #: 206-390-8433 (EDWARD)
called Rob for #'s: Rob: 206 728-3814
Joanna: 206 812-5438

0958 Ian let me know that 16a, b, c on map was sampled as 16c, b, a.

1006 Lisa Talbot on site. Kim will review HASP w/ Lisa.

1012 Phil: Ian clearing HA1 location.

1116 Cascade on site to patch & fill PG1.

1125 Cascade left site.

21 Aug 08 S. FitzGerald

1133 I called Joanna Flower about borrowing WW sediment sampler to possibly use it for CBS sampling today or tomorrow. Left msg.

1148 Joanna called back, she has keys Ekman sampler. I called Reid + left msg for him to pick them up if he's coming out.

~1½ hr lunch

Ian is collecting YC05 subsamples.

1237 Surveyors left site

1259 Daniel Arcieri (ENSR) called, checking if I need key to T117.

1355 Took photos + measurements of YC05a-c. The location YC06a where I took photos of Ben had to be moved - inadvertently added substr sample to sfc bowl. Described YC06a + b

1509 Finished taking photos + measurements of YC06a, b + c. Describing YC06c.

1522 Reid + Tom on site.

(Note: trowel used to loosen soil is decon'd between stations.).

Ian + Ben working on YC07.

21 Aug 08 S. FitzGerald

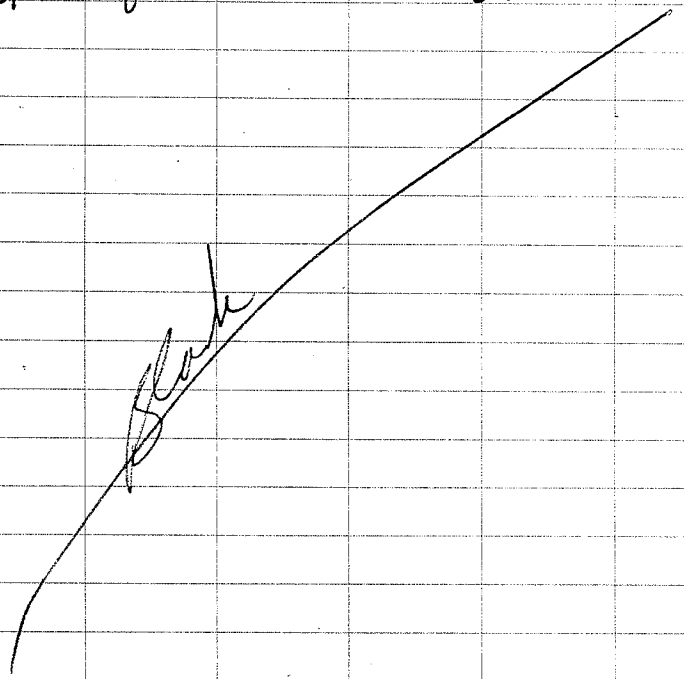
Tom Meyer: 419-1203 cell.
386-9168 office

1615 Tom Meyer left

1741 Finished taking photos of YC07a, b, c. Also took photo of backyard sidewalk - there isn't much room on the walkway due to the items stored there, ∴ may not be used much.

1900 Finished Describing YC04. Ian took photos of YC04a, b, c.

2017 Left site and 8-21-08 SW



22 Aug 08 S FitzGerald

0700 ON SITE

0725 Reviewed HASP w/ Craig Hutchings (Integral) and rest of crew: Ian Stapleton, Ben Sharp, Kim Mynuk Carlton.

0735 Called Enterprise & Honey Bucket to attend restrooms. Called Matt Fenicle. The plan for today is to walk through locations in yards w/ Ian to establish rationale, and sample CBS subsurface debris the keg.

0804 Introduced ourselves (Ian and I) to resident at 8523 Dallas. Marked locations in yard:
a) near mailbox & walkway
b+c) Along apparent walkways across lawn.

0811 Met resident @ 1420. He said he normally parks on the street we placed location where we observed him walking to his car, And the others in apparent walkways across the lawn.

22 Aug 08 S. FitzGerald

0815 Marked 1425 S. Cloverdale - No one home. put locations a) along street in apparent walkway across grass b+c - in front yard in apparent walkways across grass.

0835 Kim collecting bowl & spoon (FWO) & (FWO 6) (long HA+ bowl & spoon).

0915 Daniel from ENSR on site, not permitted to leave key w/ me. I cleaned Ekman grab sampler & mobed to CBS w/ Ian

0932 At CBS w/ Ian & Daniel. Removed grate & clear filter. Minor Amt of sediment & hay (from haybales) in filter. CBS filled w/ water to level of drain pipe. Surface of water has some froth & minor Amt of hay (poss slough when we opened it from opening process).

0936 1st Grab. Hay & plant debris in jaws - no recovery - removed most of debris from bowl.

0938 2nd Grab, similar, less organics, little recovery of sediment, murky water

0940 3rd grab. Similar.

0942 4th grab similar. Ian reported he felt sampler hit bottom.

22 Aug 08 S. Fitzgerald

0944 Moved sampler a little off to side of previous grabs to try to grab hard that contains some sediment (5th grab)

0946 Failure to deploy (6th attempt)

0947 7th grab. Light sheen has appeared in bowl

0948 8th grab

NOTE - water draining from sampler appears clear. Drained most of liquid into ~~sediment~~ CBS before retrieving.

0958 - Processing CB5 - took photo. Will try to winnow out sediment from plant debris & let sample settle.

1022 Back @ CB5 to collect more volume (w/Ben & Barrel).

1024 9th grab. Mostly sticks retrieved.

1032 10th grab. Water draining is slightly brown but clear. Negligible recovery. Ben reported sampler is touching bottom.

1036 11th grab. Water draining appears clear & colorless. NO recovery.

1040 12th grab. Moved 1x to NW corner of CB.

22 Aug 08 S. FITZGERALD

1041 13th grab. Same loc. Ben definitely feeling bottom.

1050 Put CB5 back together; Daniel Left.

1115 Took photos of YCO2a, b, c.

1120 Took measurements & locs.

1130 Processing CB5 sample (after allowing fines to settle. Siphoned off overlying site water using decanted stainless steel turkey baster. Stopped @ 1136 to allow remaining water to settle again.

1143 Finished decanting liquid off CB5 sample (took photo). Sample has abundant organics - plant debris & twigs. (tr/50/10). ~ 40% plant material by volume after processing (removed most plant material in original grabs. Sand is predom. med, but ranges from fine to coarse. Black, organic (sewage) odor.

1150 Collected CB5 sample into jars.

1225 Took photos of YCO9 a, b & c @ 1420 S. Cloverdale.

Blank

22 Aug 08 S. FitzGerald

1227 Ian is collecting YC14 @ 1425

1235 Mitch (Nat'l Barricade) picked up signs.

1255 Mitch hit + snapped off portion of pvc pipe that is part of stormwater pumping system. Left me his card... he was backing up while I was standing at the gate. I expected him to back through the gate but instead he tried to turn around. He said he saw the pipe while he was backing up but was more concerned about hitting the hose. I could tell he saw it because he slowed as he neared it.

1300 Tom called back re broken pipe
@ Beth Schmoyer: 386-1199
SPU @ Dave Schuchardt 615-1642
@ Louise Kulver: 733-9162

1305 called Beth Schmoyer about broken pipe. Left msg.

1307 called Dave S. - out til Sept

1310 called Louise Kulver - 733-9162 saveharbor info re incident

1318 Finished taking measurements @ YC09

1346 Finished taking meas. @ YC14. Ian has been collecting uncorrected GPS positions

22 Aug 08. S. FitzGerald.

at all discrete locations. I took photos at YC14a,b,cc also.

1535 Kim Magruder left site. Ian delivered samples to FedEx for SAT delivery to lab.

1600 Crew left site.
5-gallon waste buckets:
WATER IIII II
SOIL III

1610 Left site to buy supplies, + copy paperwork @ office

end 8/22/08 SAF

25 Aug 2008 S. FitzGerald

0654 On site. Started setup.

0715 Crew on site: L. Tolbert, I. Stepakoff, K. Mysnyk-Carlton, B. Starr.

0745 Preparing to collect wipe samples FW08, FW09, FW10

0806 called Roger Bygarlay 206-423-4576, City Surveyor. Suggested he come out tomorrow instead of today; he agreed

0813 Staked locations w/ Ian at 1429, 1421, 1412 S. Clowerdale and 8525 Dallas, in apparent high use areas.

0822 Ben collecting sfc interval @ YC15b (photo).

0847 Took photos + measurements @ YC15a,b,c (1429 S. Clowerdale).

1004 Taking photos + measurements @ YC13a,b,c.

1104 Took photos + measurements @ YC10a,b,c

1157 YC03a - most of ~~of~~ There is a lot of Asphalt in area along driveway. YC03a loc. selected based on plant cover (invasive soil underneath).

1230 Finished taking photos + measurements @ YC03a-c. Ben is logging soils.

1305 Called Mike Eagan - we have permission for both 1417 + 1425 S. Clowerdale. We could try knocking @ 8519 but Ian tried a couple of times already, with no luck

25 Aug 2008 S. FitzGerald

1335 Checked abandoned house - no response. Neighbor @ 8523 hasn't seen anyone there in the 6 months he's lived in neighborhood. Marked locs w/ Ian @ 1410 S. Clowerdale met owners/residents Tammy + Kelly.

1345 Looked at 1415/1417 parcel. Not much of a front yard area, but apparent foot traffic from street parking to dentist's office. Will likely place 2 samples along street + one in residential backyard. Front yard of residence doesn't show much use - a ramp from the front door ~~yard~~ to the yard is largely blocked by planters.

1439 Finished taking photos + measurements @ 1410 S. Clowerdale YC11a,b,c. Ben is logging soils.

1445 Tom called to check in. I observed resident of 8529 Dallas mowing the grass strip along Clowerdale, where we had sampled last week.

25 Aug 08 S. FitzGerald

I asked his permission to take his photo; he agreed.

1545 We're finished processing YC11. Ian is collecting GPS coordinates, crew is packing samples for shipment + decanning.

1620 Crew left site; Ian + Kim will drop off 3 coolers to FedEx. Add'l 2 5 gallon buckets to decon wastewater tally.

1627 Locked fence + left site - to office to download photos to server.

end 25 Aug 08

26 Aug 08 S. FitzGerald

0610 on site. called Suzanne & Harry Burkett for pickup.

0710 Lisa T. onsite. started setup.

0715 Ian S. + Kim M. on site. B-Starr onsite.

0745 Ian went to ARI to get DI water.

0805 Ben is starting sampling @ YC08. I am remarking locations for surveyors. Kim + Lisa are prepping jars.

0830 Surveyors are on site, surveying yards.

0855 Ben + Kim are processing YC08. Ian is collecting GPS coords in YC08.

0905 Marked loc. @ YC12 - noticed bird feeders in front yard area, so I placed a sample loc there, instead of the yard area farther off the street. The bird feeders were full, indicating access/use of that yard area by the residents. Got permission from resident to collect sample.

0920 Ian started sampling YC12

1010 Ive finished taking photos + measurements at YC08. Surveyors on break - will need to shoot coords for South side of Cloverdale "traditionally" instead of using GPS, due to trees over.

26 Aug 08 S. Fitzgerald

1040 Finished taking photos and measurements at VC08a, b, c.

1055 IAN preparing trowel for filter wipe.

1115 Surveyors returned. Finished jarring VC08 + FW of trowel.

1135 IAN re-recording coords for VC18a. (appear wrong in our GPS unit).

1140 left msg for Tom Meyer letting him know we're done. IAN took samples to FED Ex.

1155 Reviewed locations w/ surveyor on map + his notebook - confirmed they located them all.

1200 - 1230 Lunch.

IAN took EKMAN SAMPLER BACK TO JOANNA.

1240 Porta Potti packed up.

Final waste count (5-gallon buckets):

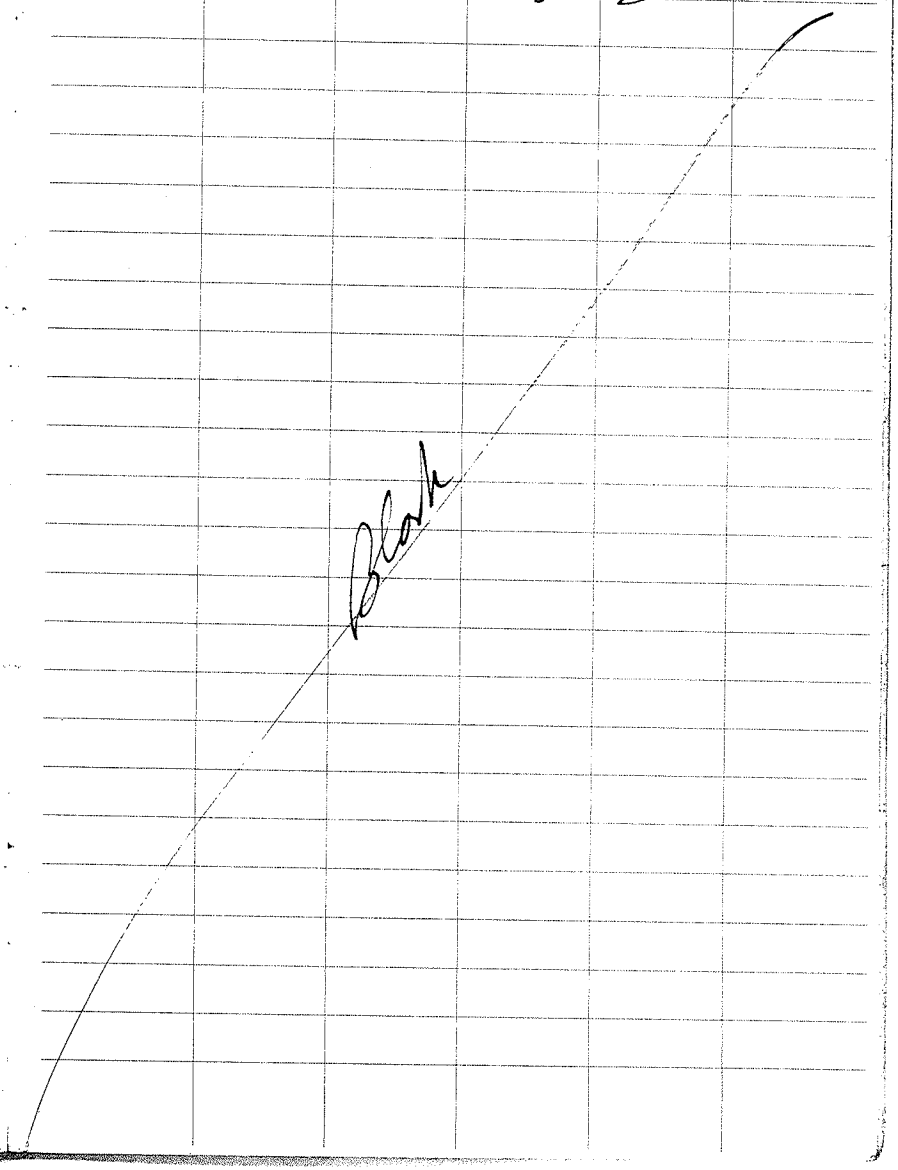
- 12 waste decon water
- 1 full waste soil
- 2 - ½ full waste soil

1347 Tom called to check in. Need to confirm prelim. data date from labs. Will need to revise QAPP. Submit WASP w/ revised QAPP.

26 Aug 08 S Fitzgerald

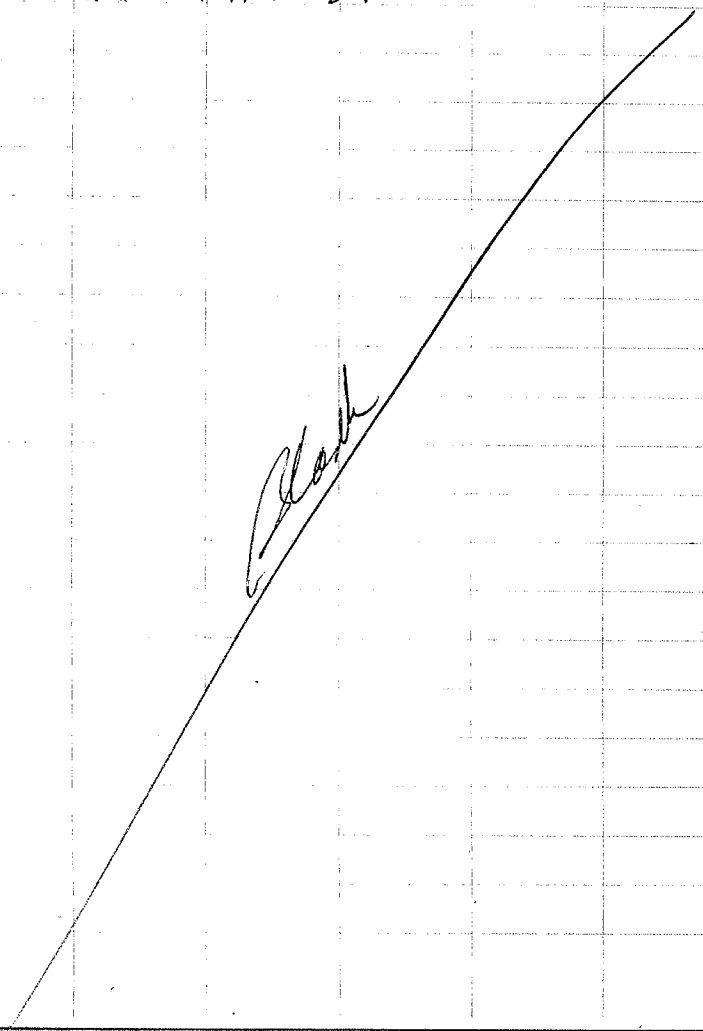
1250 locked gate, left site.

1315 @ office. END 26 Aug 08 SMF



27 Aug 08 S. FitzGerald

1420 collected wipe of decanned Ekman sediment sampler, bowl, & spoon. (FW13 ; SPD0239).
Packed in cooler & sent to CAS Houston.
end 8/27/08 SF



1 OCT 08 S. FitzGerald

1340 S. FitzGerald + Ben Starr (Integral) on site to sample IDW + existing drums for disposal, and to fix broken pvc pipe.
Opened existing drums: ~2/3 full
1) Soil : 35gal marked "Soil 2/6/06 SPU"
2) Soil : 55gal <10% full No markings
3) WATER: 35gal, 4/5 full, marked "WATER 2/6/06 SPU"
4) Water: 55gal 1/3 full (20gal) marked "WATER 2/8/06 SPU"
Decanted buckets of soil ~12 gallons into drum #2; now <1/3 full ~15 gallons?
Decanted buckets of decon water into New drum which was placed on plastic sheeting. New drum is ~4/5 full (~30gal.)
We wiped out buckets for reuse.
1410 collected IDW water sample @1400 (SPOIDW-W1) combined approx equal volumes from both water drums into A bucket & filled bottles by dipping. Used spoon to fill ~~test~~ VOA vials near top.
1437 Sample time for soil sample: 1430
Ben collected from drums using 2" PVC tube; homog. in bucket w/ss spoon.

10/1/08 S.F. TIGERINO

Sampled VOAs & TPHGx vials using syringe directly from drums. (SPDIDW-S1)

1516 Samples packed & ready for shipment. Ben is starting on repair of broken pipe.

1614 While making drum labels I realized we neglected to include volume from the drum #3 (existing, from 2006). I remixed samples to include an a representative portion of water from this drum. Preserved samples mixed separately to retain preservative. Repacked coolers.

1639 While attempting to excavate broken pipe Ben inadvertently punctured the adj pipe.

1750 At office; left site @ 1655; dropped of PCDD/PCDF samples to Fed Ex @ 1725. Will add ice & deliver other samples to lab on way home.

1847 Added ice to cooler, Signed COC added custody seals & left samples in Fremont Av. lockbox.

end 10/1/08 SFT

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 8523 DALLAS AVES
Composite Sample ID: YC02 - 0.0-0.5
Composite Sample No.: SPD 0145
SAMPLERS: IS BS SF KC
DATE/TIME: August 22 2008 1040

Any Field Duplicate? (Y/N)
If yes, provide sample ID, sample number, date, and time under "Notes"

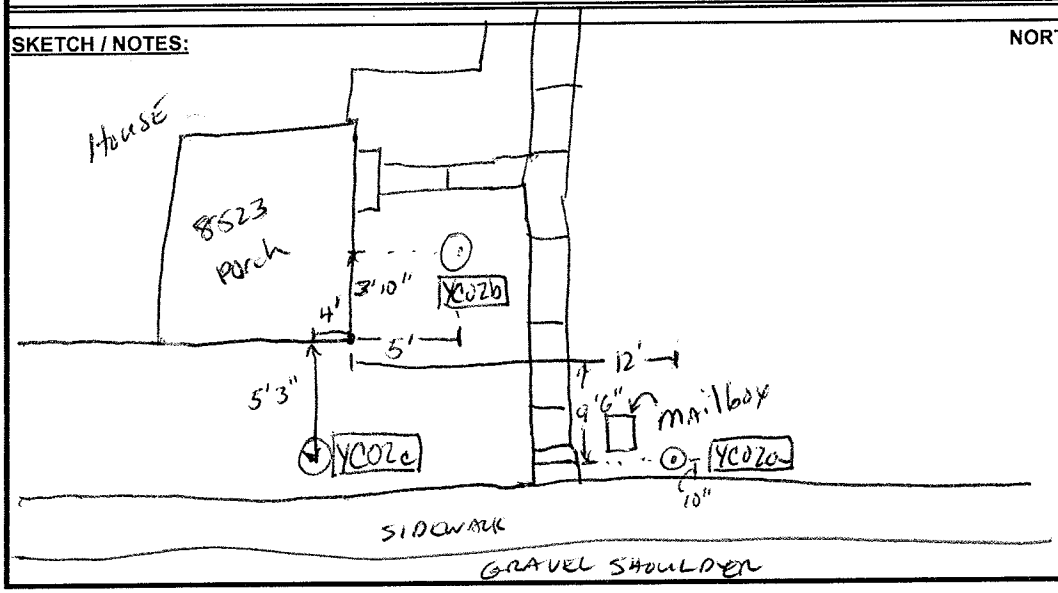
DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC02a-0.2-0.5 Coordinates: Sample Date August 22 2008
Sample Number: SPD 0146 Sample Time ~~0835~~ 0840
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.2-0.5
Sample Description:
(M-/Lo/40) Gravel is fine, max~1cm. Sand is v-fine-fine, fr coarse
fr rootlets + plant debris. 2.5Y 4/2. DRY. NO ODOR
fr plastic debris (white plastic film), 1 worm observed.
YC02a-0.2-0.5 Dup
8/22/08 ~~0844~~ 0845
SPD0147

Sample ID: YC02b-0.1-0.5 Coordinates: Sample Date August 22 2008
Sample Number: SPD 0148 Sample Time 0836
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.1-0.5
Sample Description:
~~0/10/40~~ BS O/TR/100
TR rootlets & grass blades & wood debris, 1 worm
7.5YR 2.5/3
no odor
moist

Sample ID: YC02c-0.1-0.5 Coordinates: Sample Date August 22 2008
Sample Number: SPD0149 Sample Time 8:45
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.1-0.5
Sample Description:
15/65/35 Gravel is 50/50 coarse & fine
Sand is med. - some coarse
fr rootlets Dry, no odor, trace wood (small sticks) & TR grass
7.5YR 6/3
1 small piece plastic observed

SKETCH / NOTES:



NORTH: ↓
- NOT TO SCALE
- MEASUREMENTS APPROXIMATE

8-24-08

DALLAS AVES

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 8523 DALLAS AVE S.
Composite Sample ID: YC02-0.5-1.0
Composite Sample No.: SPD 0150
SAMPLERS: TS BS SF KC
DATE/TIME: August 22 2008 1050

Any Field Duplicate? Y/N
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC02a-0.5-1.0 Coordinates: _____ Sample Date: August 22 2008
Sample Number: SPD 0151 Sample Time: 0840
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
Similar to surface but w/ increased gravel & coarse sand (5/55/40) Gravels are coarse & fine (MAX 3cm long). Fine gravels & coarse sands include apparent coal grains (black, vitreous luster, hard) Sands medium fine-v fine. Tr rootlets & plant debris. Dry, no odor. Color same as above.

Sample ID: YC 02 b 0.5-1.0 Coordinates: _____ Sample Date: August 22 2008
Sample Number: SPD 0152 Sample Time: 0841
Type & Depth of Surface Cover: _____ Sample Interval: 0.5-1.0
Sample Description:
Similar to Surface but w/ no worms

Sample ID: YC02c-0.5-0.9 Coordinates: _____ Sample Date: August 22 2008
Sample Number: SPD 0153 Sample Time: SF 8-25 ~~8:55~~ 0900
Type & Depth of Surface Cover: _____ Sample Interval: 0.5-0.9
Sample Description:
Refusal at 11" depth (rocks)
Similar to surface w/ increased sand (coarse) and gravel (50/50 fine/coarse)
dry no odor
Color same as surface interval

SKETCH / NOTES: See SURFACE SAMPLE SHEET

NORTH:

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PROJECT	T117 Adjacent Streets Dioxin Investigation
ADDRESS	8525 Dallas Ave S.
Composite Sample ID:	YC 03-0.0-0.5
Composite Sample No.:	SPD 0204 (SPSG-5-08)
SAMPLERS	IS BS SF KMC LT
DATE/TIME	August 25 2008 1300

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 03a-0.1-0.5 Coordinates: _____ Sample Date August 25 2008
Sample Number: SPD 0205 (SPSG-5-08) Sample Time 12:00
Type & Depth of Surface Cover: 1/2" plant cover Sample Interval: 0.1 - 0.5
Sample Description:
20/60/20 gravel 50:50 coarse & fine
sand mostly fine
moist, no odor
2.5 Y 3/2

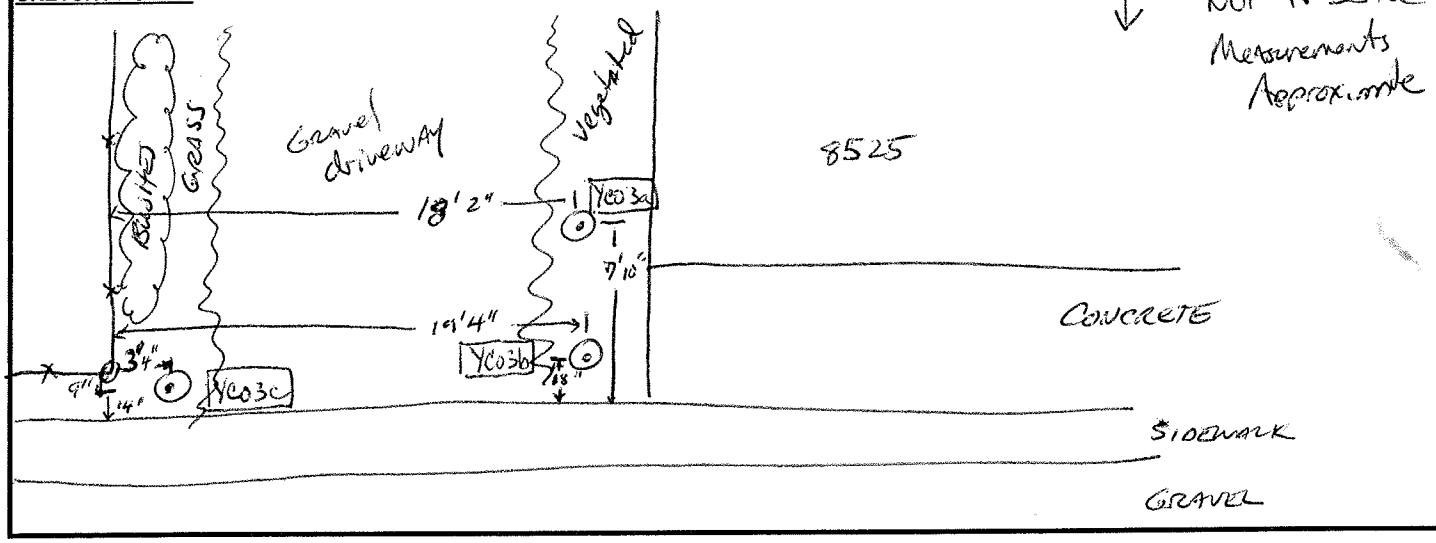
tr rootlets, small piece pottery, 1 worm

Sample ID: YC 03b-0.0-0.5 Coordinates: _____ Sample Date August 25 2008
Sample Number: SPD 0206 (SPSG-5-08) Sample Time 11:30 11:28 (BS)
Type & Depth of Surface Cover: no sod Sample Interval: 0.0 - 0.5
Sample Description:
60/30/10 gravel is 20% coarse, 80% fine
sand is 30% med, 70% fine
no odor, moist, 7.5 YR 4/2
1 coarse gravel sized fragment concrete

tr rootlets, tr broken glass, tr coal fragments, tr wood fragments

Sample ID: YC 03c-0.0-0.5 Coordinates: _____ Sample Date August 25 2008
Sample Number: SPD 0207 (SPSG-5-08) Sample Time 11:50
Type & Depth of Surface Cover: NO SOD Sample Interval: 0.0 - 0.5
Sample Description:
10/70/20 Gravel mostly fine, tr coarse
sand mostly fine, tr med. sand
dry, no odor
tr rootlets
10 YR 6/4

SKETCH / NOTES:



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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 8525 DALLAS Ave S.
Composite Sample ID: YC 03-0.5-1.0
Composite Sample No.: SPD 0208 (SPD-0208)
SAMPLERS: IS, BS, JMF, KMC, LT
DATE/TIME: August 25 2008 1326

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 03a-0.5-1.0 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0208 (SPD-0208) Sample Time 12:15
Type & Depth of Surface Cover: Sample Interval: 0.5-1.0
Sample Description:
MOST SIMILAR TO SURFACE W/ MORE COARSE Gravel
OF moist, no odor, similar color to surface
SAMPLE
Additional clayey material present in sample (~10-15% by weight)
Mostly fine grained (no gravel or sand), med plasticity
color is 2.5Y6/2 w/ orange flecks & woody roots & rootlets

Sample ID: YC 03b-0.5-1.0 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0208 Sample Time 11:30
Type & Depth of Surface Cover: Sample Interval: 0.5-1.0
Sample Description:
Similar to surface but w/ less coarse gravel
and more sand, fewer rootlets, no wood or glass

Sample ID: YC 03c-0.5-1.0 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0211 (SPD-0211) Sample Time 11:56
Type & Depth of Surface Cover: Sample Interval: 0.5-1.0
Sample Description:
30/60/10 Gravel is 50:50 coarse/fine max diameter 45mm
sand mostly fine, ~10% med sand
10YR 6/3
dry, no odor
fr rootlets

SKETCH / NOTES: NORTH:

SEE SURFACE SHEET.

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 5529 DALLAS AVE S.
Composite Sample ID: YC04-0.0-0.5
Composite Sample No.: SPD 0143
SAMPLERS: BS IS SF KMC
DATE/TIME: August 21 2008 1904

Any Field Duplicate? (Y)/N
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC04a-0.2-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0096 Sample Time 1707
Type & Depth of Surface Cover: 2.5" SOD Sample Interval: 0.2-0.5'
Sample Description:
Silty Sand (0/70/30) Dry, 10YR5/3. Tr. rootlets + plant debris.
No odor. Sand is v.fine-fine
YC04a-0.2-0.5DUP
Location rationale - see subsfc sheet
21 Aug08
1708 SPD 0097

Sample ID: YC04b-0.1-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0099 Sample Time 1712
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.1-0.5'
Sample Description:
15/65/30
Silty SAND (~~0~~/~~70~~/30) Dry, tr. rootlets, no odor. Sand is v.fine predominantly, tr. med + coarse. Gravel is predom fine, MAX GRAIN ~2cm long. 10YR 7/2. Cigarette butt & litter observed upon sampling
Location rationale - see subsfc sheet

Sample ID: YC04c-0.1-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0140 Sample Time 1640
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.1-0.5
Sample Description:
Sandy Silt (0/40/60) Sand is v.fine. Dry. tr. rootlets. No odor
10 YR 7/2.
Location rationale - see subsfc sheet

SKETCH / NOTES:

See subsfc sheet.

NORTH:

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 8529 DALLAS AVE S.
Composite Sample ID: YC04- 0.5-1.0
Composite Sample No.: SPD0143 SPD0144
SAMPLERS: BS IS SNF KMC
DATE/TIME: August 21 2008 1924

Any Field Duplicate? SNF (Y) (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

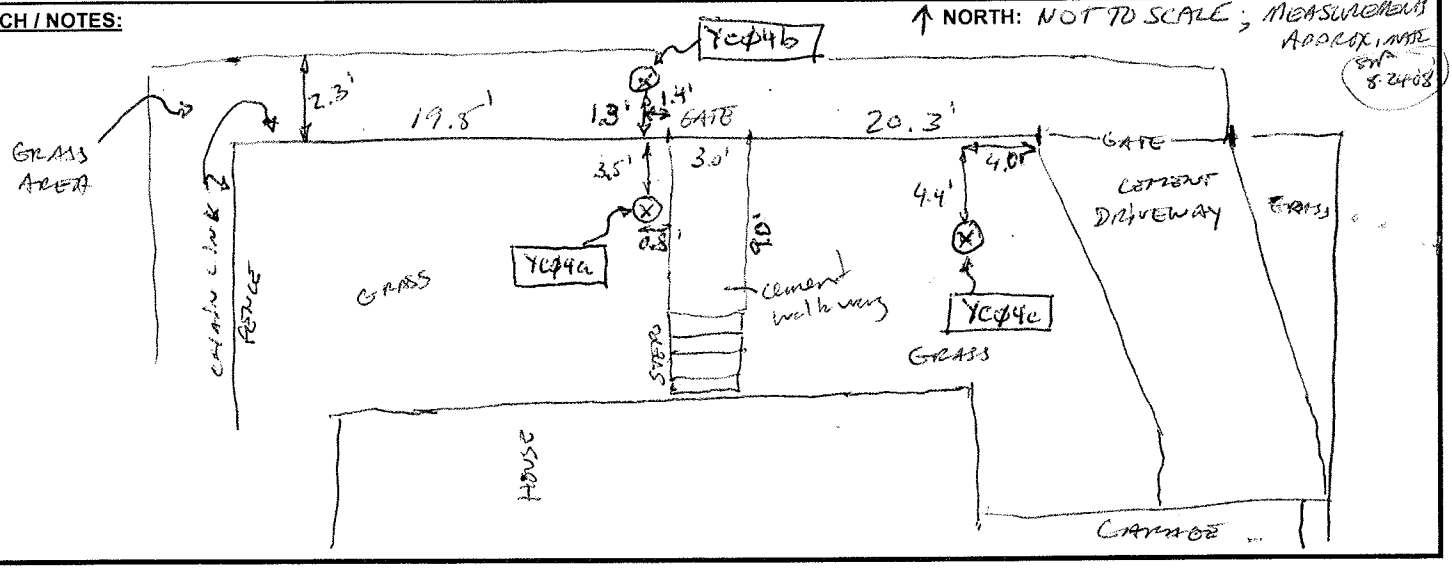
Sample ID: YC04a-0.5-1.0 Coordinates: Sample Date August 21 2008
Sample Number: SPD0098 Sample Time 1715
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
Description: Similar to surface, slight increase in fines (0/60/40), no plant debris, & rootlets.
Location Rationale: Site near cement walkway towards house. Central area of access from house to front yard. (left side)
Description: Similar to sfc. one worm observed, slightly more moisture, no plant debris

Sample ID: YC04b-0.5-1.0 Coordinates: Sample Date August 21 2008
Sample Number: SPD0141 Sample Time 1720
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
Location Rationale: Grass section located near entrance gate. Common access area into house
Description: Similar to sfc. Gravel (fine) included apparent brick debris and coarse sand
~~cigarette butt filter observed during sampling.~~ SNF

Sample ID: YC04c-0.5-1.0 Coordinates: Sample Date August 21 2008
Sample Number: SPD0142 Sample Time 1644
Type & Depth of Surface Cover: NA Sample Interval: 0.5-1.0
Sample Description:
Location Rationale: Grass section from garage driveway to house entrance. Common access area into house from car.
Description- Similar to surface interval. Glass shard observed upon sampling.

SKETCH / NOTES:

↑ NORTH: NOT TO SCALE; MEASUREMENTS APPROXIMATE SNF 8.24.08



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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1440 S Cloverdale
Composite Sample ID: YC05-0.0-0.5
Composite Sample No.: SPD 0077
SAMPLERS: K. Mayuder, I Stupakoff, B. Starr, S. FitzGerald
DATE/TIME: August 21 2008 1338

Any Field Duplicate? (Y)/N
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC05a-0.2-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0070 Sample Time 1300
Type & Depth of Surface Cover: 3" sod Sample Interval: 0.2-0.5
Sample Description:
~~50/Tr/50. 10YR 5/2. Gravel predom fine (pea gravel) ~1cm long. SnF~~
~~Sand is fine. trace rootlets Organic (humic) odor. moist. SnF~~
Silt trace fine gravel. 10YR 4/2. Humic odor. Abundant rootlets (removed from sample. dry-moist. moisture

SAMPLED W/ SPOON

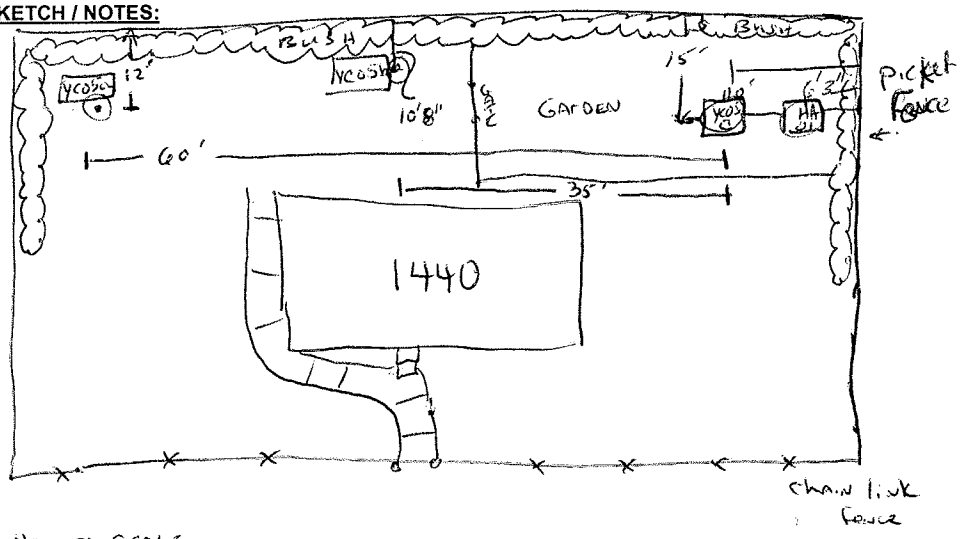
Sample ID: YC05b-0.2-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0072 Sample Time 1240
Type & Depth of Surface Cover: 3" sod Sample Interval: 0.2-0.5
Sample Description:
Similar to YC05a-0.2-0.5

SAMPLED W/ SPOON

Sample ID: YC 05c-0.0-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0074 Sample Time 1210
Type & Depth of Surface Cover: Ø Sample Interval: 0.0-0.5
Sample Description:
50/Tr/50. 10YR 5/2. Gravel is predom. fine (pea gravel) ~1cm Long.
Sand is fine. Trace rootlets, Organic (humic) odor. Moist. Med toughness
Med Plasticity.

SAMPLED W/ SPOON

SKETCH / NOTES:



NOT TO SCALE

NORTH: ↑

- NOT TO SCALE
- MEASUREMENTS APPROXIMATE SPF 8/24/08

YC05-0.0-0.5 DUPLICATE SF
8/21/08, 1339
SPD0078

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1440 S. Cloverdale
Composite Sample ID: YC05-0.5-1.0
Composite Sample No.: SPD0076
SAMPLERS: ES, BS, SF, KMC
DATE/TIME: August 21 2008 1340

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC05a-0.5-1.0 Coordinates: Sample Date August 21 2008
Sample Number: SPD0071 Sample Time 1302
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
Similar to sfc, but clay.

SAMPLED BY HAND AUGER

Sample ID: YC05b-0.5-1.0 Coordinates: Sample Date August 21 2008
Sample Number: SPD0073 Sample Time 1250
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
Similar to YC05a-0.5-1.0.

SAMPLED BY HAND AUGER

Sample ID: YC05c-0.5-1.0 Coordinates: Sample Date August 21 2008
Sample Number: SPD0076 ~~SPD 9-5-08~~ Sample Time 1220
Type & Depth of Surface Cover: N/A (subsfc) Sample Interval: 0.5-1.0
Sample Description:
Similar to sfc, but ~~gravel~~ trace gravel, + less rootlets. Gravel ≤ 1.5cm.

SAMPLED BY HAND AUGER

SKETCH / NOTES: See surface log for 052403

NORTH:

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PROJECT	T117 Adjacent Streets Dioxin Investigation
ADDRESS	1440 S. Cloverdale
Composite Sample ID:	YC06-0.0-0.5
Composite Sample No.:	SPD 0086
SAMPLERS	I.S., B.S., SMF, KMC
DATE/TIME	August 21 2008 1425

Any Field Duplicate? (Y) N
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

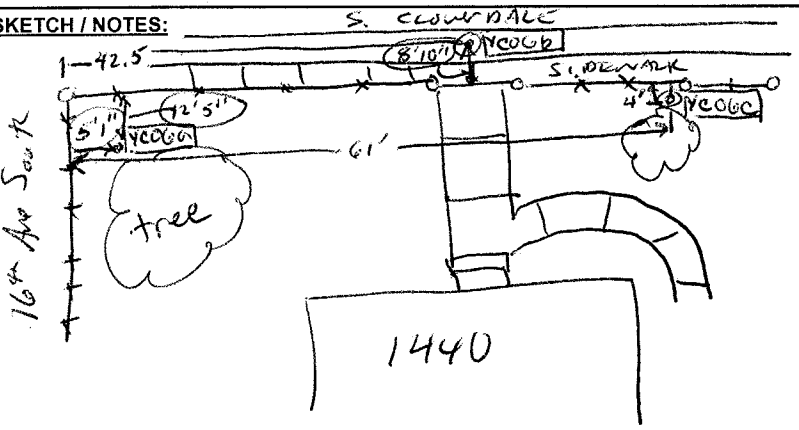
Sample ID: YC06a-0.2-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0079 Sample Time 1335
Type & Depth of Surface Cover: 0.2' Sod (3") Sample Interval: 0.2-0.5
Sample Description:
Silt, w fine sand (0/0/100). Dry, no odor, trace rootlets.
2.5Y 6/2.

~~SP YC06a-0.2-0.5 DUP~~ YC06a-0.2-0.5 DUP
1330
SPD0080

Sample ID: YC06b-0.2-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0082 Sample Time 1420
Type & Depth of Surface Cover: 3" sod Sample Interval: 0.2-0.5'
Sample Description:
(5/20/75) Silt w/ sand Sand is fine - med. Gravel is fine (max 0.5 cm).
Dry. Trace rootlets. 2.5Y 5/2.

Sample ID: YC06c-0.1-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0084 Sample Time 1435
Type & Depth of Surface Cover: 2" sod Sample Interval: ~~SP~~ 0.1-0.5
Sample Description:
(0/0/100) SILT. DRY. TRACE ROOTLETS. (7.5YR 6/3)

SKETCH / NOTES:



NORTH: ↓

- NOT TO SCALE
- MEASUREMENTS APPROXIMATE SMF 8.24.08

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1440 S. Cloverdale
Composite Sample ID: YC06-0.5-1.0
Composite Sample No.: SPD0087
SAMPLERS: IS, BS, SMF, KMC
DATE/TIME: August 21 2008 1430

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC06a-0.5-1.0 Coordinates: Sample Date: August 21 2008
Sample Number: SPD 0081 Sample Time: 1340
Type & Depth of Surface Cover: N/A. Sample Interval: 0.5-1.0
Sample Description:
(0/10/90) Silt, similar to sfc, but increased sand content.

Sample ID: YC06b-0.5-1.0 Coordinates: Sample Date: August 21 2008
Sample Number: SPD 0083 Sample Time: 1425
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
(10/20/70) Silt w/ sand. Similar to sfc but w/ increased gravel fraction. Gravels include coarse grains, MAX ~2.5cm long. Dry, trace rootlets 2.5Y5/2

Sample ID: YC06c-0.5-1.0 Coordinates: Sample Date: August 21 2008
Sample Number: SPD 0085 Sample Time: 1443
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
Similar to sfc but w/ trace fine gravel (MAX ~1cm long).

SKETCH / NOTES: **NORTH:**

See surface log

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PROJECT	T117 Adjacent Streets Dioxin Investigation
ADDRESS	8529 DALLAS AVE SOUTH
Composite Sample ID:	YC07-0.0-0.5
Composite Sample No.:	SPD 00094
SAMPLERS	IS, BS, SF, KMC
DATE/TIME	August 21 2008 1620

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC07a-0.1-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0088 Sample Time 1530
Type & Depth of Surface Cover: 1" sod Sample Interval: 0.1-0.5
Sample Description:
(0/tr/100) Silt, tr SAND. SAND is Fine, coarse. Rootlets, Dry. ↓
10YR 4/2. No odor

~~walker~~
~~Likely walkway from street parking to gate~~

Sample ID: YC07b-0.1-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0093 Sample Time 1550
Type & Depth of Surface Cover: 1" sod Sample Interval: 0.1-0.5
Sample Description:
~~Silty Sand~~ Sandy Silt (0/40/60) Sand is Fine - v. fine.
Dry. Tr. rootlets. 10YR 4/2. 1 Nail (rusted). No odor.

Near plum tree

Sample ID: YC07c-0.1-0.5 Coordinates: Sample Date August 21 2008
Sample Number: SPD 0090 Sample Time 1615
Type & Depth of Surface Cover: 1.5" sod Sample Interval: 0.1-0.5
Sample Description:
Silty sand (~~0~~tr/60/40) Sand is v fine - fine (95%, 5% coarse) trace fine gravel (max ~ 1.5cm long) dry, rootlets, no odor.

Likely walkway from street parking to gate.

SKETCH / NOTES:

NORTH: ↑

- NOT TO SCALE
- MEASUREMENTS APPROXIMATE SWF 8/24/08

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 8529 DALLAS AVE S.
Composite Sample ID: YC017-0.5-1.0
Composite Sample No.: SPD0095
SAMPLERS: IC BS SMF KMC
DATE/TIME: August 21 2008 1635

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC017a-0.5-1.0 Coordinates: Sample Date August 21 2008
Sample Number: SPD0089 Sample Time 1535
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
Similar to surface, trace fine gravel.

Sample ID: YC017b-0.5-1.0 Coordinates: Sample Date August 21 2008
Sample Number: SPD0092 Sample Time 1555
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
Similar to surface, w/ several worms. No debris

Sample ID: YC017c-0.5-1.0 Coordinates: Sample Date August 21 2008
Sample Number: SPD0091 Sample Time 1620
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
(tr/70/30) Gravel is fine (max 1cm long). SAND is v fine-fine, trcoarse
Dry, rootlets. No odor. 10YR5/3.

SKETCH / NOTES:

SEE SFC SHEET.

NORTH:

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1424 S. Cloverdale
Composite Sample ID: YC 08-0.0-0.5
Composite Sample No.: SPD 0220
SAMPLERS: TS, BJS
DATE/TIME: August 26 2008 0930

Any Field Duplicate? (Y) N
If yes, provide sample ID, sample number, date, and time under "Notes"

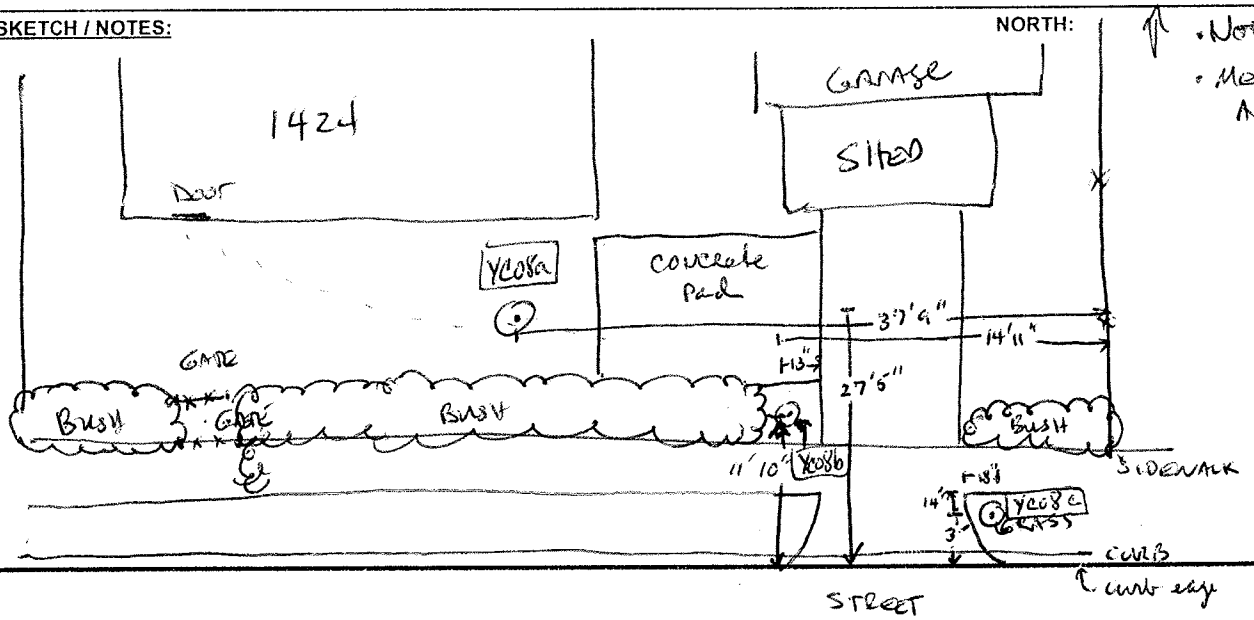
DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 08a-0.2-0.5 Coordinates: Sample Date August 26 2008
Sample Number: SPD 0221 Sample Time 8:10
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.2-0.5
Sample Description:
TR/50/50 TR fine gravel
Sand is mostly fine
7.5 YR 2.5/3
No odor
TR rootlets, TR woody root fragments, TR grass
YC08a-0.2-0.5 DUP
0820 8-26-08
SPD 0222

Sample ID: YC 08b-0.2-0.5 Coordinates: Sample Date August 26 2008
Sample Number: SPD 0223 Sample Time 8:13
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.2-0.5
Sample Description:
TR/50/50 TR fine gravel
Sand is mostly fine
7.5YR 2.5/3
TR rootlets, TR wood fragments, TR Broken glass, TR woody root

Sample ID: YC 08c-0.1-0.5 Coordinates: Sample Date August 26 2008
Sample Number: SPD 0224 Sample Time 8:20
Type & Depth of Surface Cover: 1" SOD Sample Interval: 0.1-0.5
Sample Description:
TR/60/40 TR fine gravel
SAND IS MOSTLY FINE
DRY, NO ODOR
7.5 YR 4/2
TR ROOTLETS

SKETCH / NOTES:



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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1424 S. Cloverdale
Composite Sample ID: YC 08
Composite Sample No.: SPD 0225
SAMPLERS: SLS, ZS
DATE/TIME: August 26 2008 0935

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 08a | Coordinates: | Sample Date: August 26 2008
Sample Number: SPD 0226 | Sample Time: 8:15
Type & Depth of Surface Cover: | Sample Interval: 0.5 - 1.0
Sample Description:
Similar to Surface w/ increasing sand w/ depth

Sample ID: YC 08b | Coordinates: | Sample Date: August 26 2008
Sample Number: SPD 0227 | Sample Time: 8:20
Type & Depth of Surface Cover: | Sample Interval: 0.5-1.0
Sample Description:
Soil is similar with approx. 10% charcoal and ash
Similar color w/ grey flecks from ash

Sample ID: YC 08c | Coordinates: | Sample Date: August 26 2008
Sample Number: SPD 0228 | Sample Time: 8:25
Type & Depth of Surface Cover: | Sample Interval: 0.5 - 1.0
Sample Description:
40/40/20 Much more gravel than surface interval
gravel 20% course 80% fine
Sand mostly fine
Dry, no odor
TR rootlets 7.5YR 4/2

SKETCH / NOTES: **NORTH:**

SEE SITE SHEET

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1420 S. Cloverdale
Composite Sample ID: YC 09a-0.1-0.5
Composite Sample No.: SPD 0156
SAMPLERS: JS SMF BS KMC
DATE/TIME: August 22 2008 1310

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 09a-0.1-0.5 Coordinates: Sample Date August 22 2008
Sample Number: SPD 0157 Sample Time 10:50
Type & Depth of Surface Cover: 1" SOD Sample Interval: 0.1-0.5
Sample Description:
TR ROOTLETS, SMALL PIECE PLASTIC
0/60/40 SAND IS FINE trace fine gravel observed on sampling
7.5YR 6/3
no odor
dry

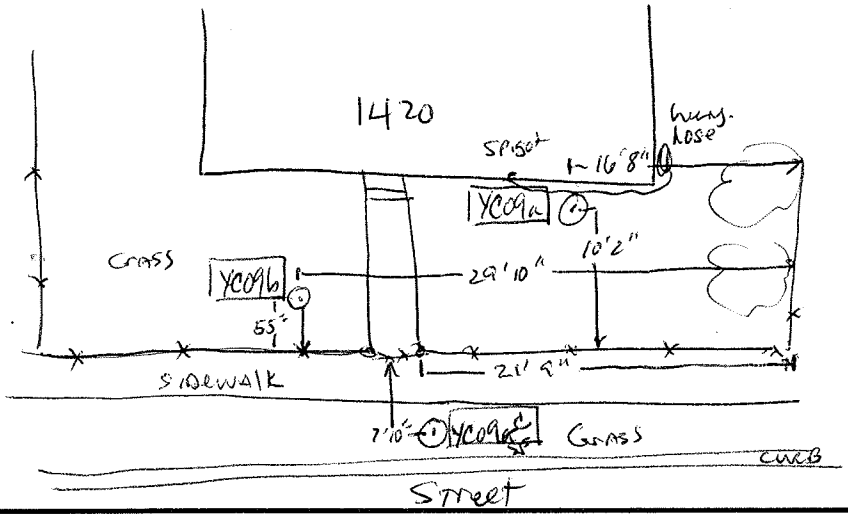
Sample ID: YC 09b-0.1-0.5 Coordinates: Sample Date August 22 2008
Sample Number: SPD 0158 Sample Time 11:10
Type & Depth of Surface Cover: 1" SOD Sample Interval: 0.1-0.5
Sample Description:
TR ROOTLETS, TR FINE GRAVEL
0/50/50
SAND IS MOSTLY FINE, DRY, NO ODOR
7.5YR 4/2

Sample ID: YC 09c-0.1-0.5 Coordinates: Sample Date August 22 2008
Sample Number: SPD 0159 Sample Time 11:30
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.1-0.5
Sample Description:
TR COARSE GRAVEL (MAX 22mm) TR FINE GRAVEL (~10mm)
SMALL PIECE CANDY WRAPPER, TR ROOTLETS
0/70/30 SAND IS MOSTLY FINE
7.5YR 5/2
DRY, NO ODOR

SKETCH / NOTES:

NORTH:

- NOT TO SCALE SMF 8-24-08
- MEASUREMENTS APPROXIMATE



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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1420 S. Cloverdale
Composite Sample ID: YC 09a-0.5-1.0
Composite Sample No.: SPD 0160
SAMPLERS: IS BS KMC
DATE/TIME: August 22 2008 1305F 1315

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 09a-0.5-1.0 Coordinates: _____ Sample Date: August 22 2008
Sample Number: SPD 0161 Sample Time: 11:20
Type & Depth of Surface Cover: _____ Sample Interval: 0.5-1.0
Sample Description:
SAME AS SURFACE INTERVAL & 1 RUSTY NAIL

Sample ID: YC 09b-0.5-1.0 Coordinates: _____ Sample Date: August 2008
Sample Number: SPD 0162 Sample Time: 11:18
Type & Depth of Surface Cover: _____ Sample Interval: 0.5-1.0
Sample Description:
SAME AS SURFACE W/ TR FINE GRAVEL
MAX. DIAMETER 12mm

Sample ID: YC 09c-0.5-1.0 Coordinates: _____ Sample Date: August 22 2008
Sample Number: SPD 0163 Sample Time: 11:36
Type & Depth of Surface Cover: _____ Sample Interval: 0.5-1.0
Sample Description:
SIMILAR TO SURFACE W/ MORE GRAVEL fine
SAME COLOR AS SURFACE
DRY, NO ODOR

SKETCH / NOTES: SEE SURFACE SKETCH 8-28-2008

NORTH:

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1412 S. Cloverdale
Composite Sample ID: YC 10-0.0-0.5
Composite Sample No.: SPD 0194
SAMPLERS: TS, SF
DATE/TIME: August 25 2008 1125

Any Field Duplicate? * (Y) N
If yes, provide sample ID, sample number, date, and time under "Notes"

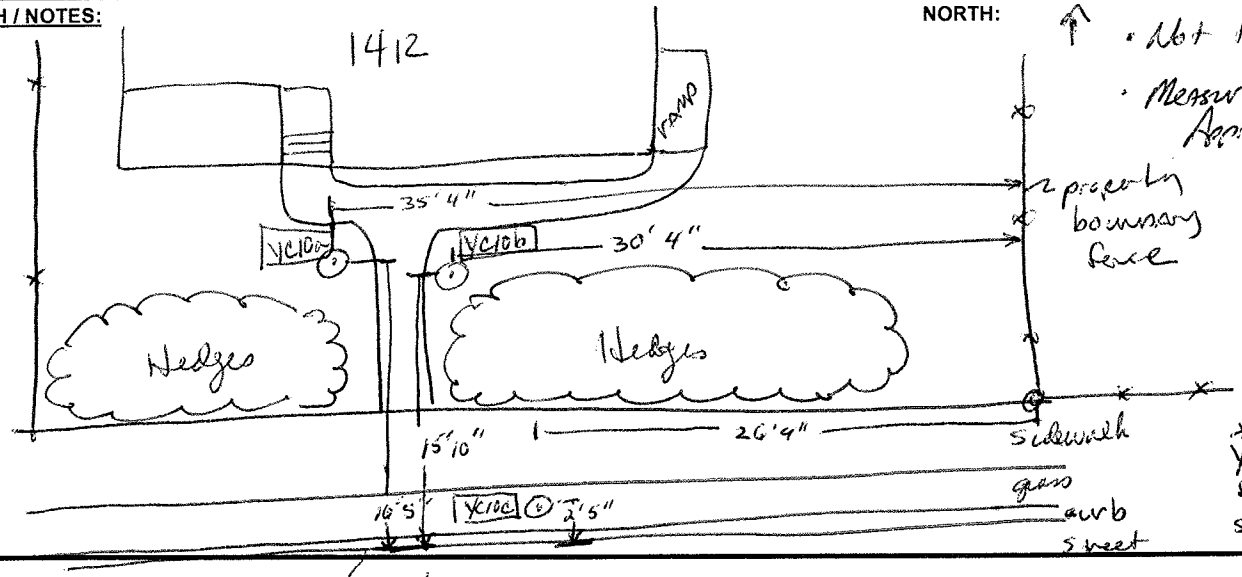
DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 10a-0.2-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0196 Sample Time 10:17
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.1-0.5 0.2 (B.S.)
Sample Description:
YR / 40/60 trace fine gravel
Sand is mostly fine
dry to slightly moist, no odor
7.5 YR 4/2
TR rootlets, small pieces of glass
*YC10a-0.2-0.5Dup 8-25-08 1030 SPD 0197

Sample ID: YC 10b-0.2-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0198 Sample Time 10:27
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.1-0.5 0.2
Sample Description:
TR / 60/40 trace fine gravel
sand mostly fine
slightly moist, no odor
7.5 YR 4/2
TR rootlets, 1 small piece plastic

Sample ID: YC 10c-0.2-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0199 Sample Time 10:37
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.2-0.5
Sample Description:
30/40/30 Gravel mostly fine (max diameter ~16mm)
Sand mostly fine, +r med sand
+r rootlets
7.5 YR 5/2
Dry

SKETCH / NOTES:



NORTH: ↑
• Not to Scale
• Measurements Approximate

*YC10-0.0-0.5Dup 8/25/08 1130 SPD 0195

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1412 S. Cloverdale
Composite Sample ID: YC 10 - 0.5 - 1.0
Composite Sample No.: SPD 0200
SAMPLERS: JS, SF
DATE/TIME: August 25 2008 1132

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 10a -0.5-1.0 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0201 Sample Time 10:23
Type & Depth of Surface Cover: Sample Interval: 0.5-1.0
Sample Description:
01/60/40 Sand is mostly fine
slightly moist, no odor
7.5YR 4/2
Similar to surface, with more sand, no gravel
TR rootlets

Sample ID: YC 10b -0.5-1.0 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0202 Sample Time 10:30
Type & Depth of Surface Cover: Sample Interval: 0.5-1.0
Sample Description:
SAME as surface w/ a few
coarse gravel (fr. 66)
Similar color, slightly moist

Sample ID: YC 10c -0.5-0.9 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0203 Sample Time 10:42
Type & Depth of Surface Cover: Sample Interval: 0.5-0.9
Sample Description:
Similar to surface but with more coarse
gravel (max diameter ~ 30mm)
Same color as above interval
dry
tr rootlets

SKETCH / NOTES: See surface sheet.

NORTH:

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1410 S. Cloverdale St.
Composite Sample ID: YC 11-0.0-0.5
Composite Sample No.: SPD 0212
SAMPLERS: JS, SF
DATE/TIME: August 25 2008 1515

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

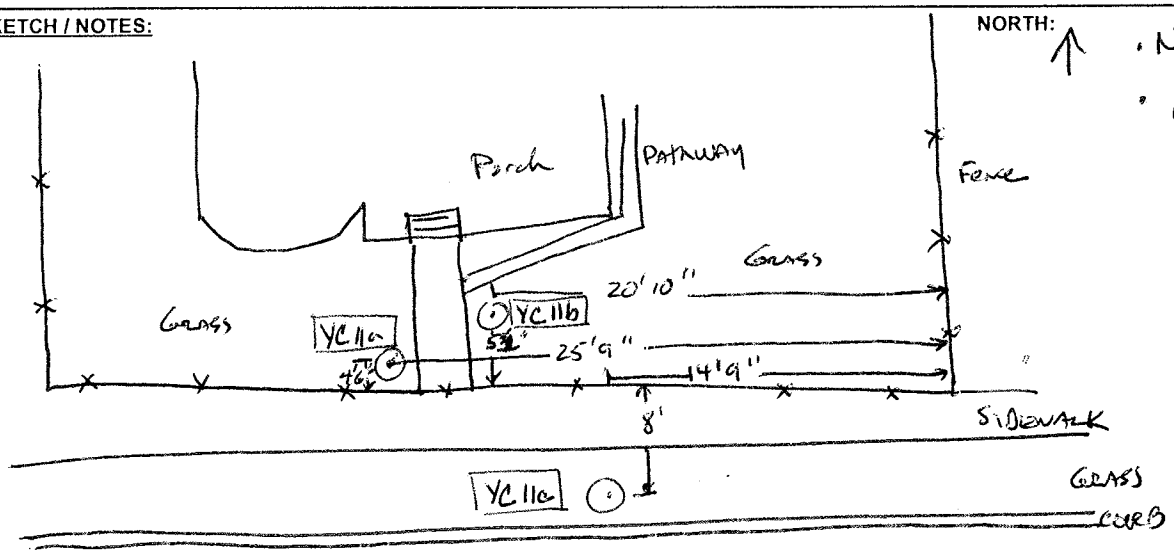
DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 11a-0.2-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0213 Sample Time 14:00
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.2-0.5
Sample Description:
30/50/20 Gravel mostly fine, TR coarse gravel
Sand 70% fine, 30% medium
Slightly moist, no odor
small piece plastic observed 10 YR 3/4
on sampling TR rootlets 1 1979 penny

Sample ID: YC 11b-0.2-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0214 Sample Time 14:18
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.2-0.5
Sample Description:
50/30/20 Gravel is 50:50 coarse & fine
Sand is mostly fine some med-coarse
moist
no odor
10 YR 3/4
TR rootlets

Sample ID: YC 11c-0.2-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0215 Sample Time 14:30
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.2-0.5
Sample Description:
40/40/20 Gravel is 50:50 coarse : fine
Sand mostly fine
moist, no odor
TR rootlets
10 YR 3/3

SKETCH / NOTES:



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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1410 S. Cloverdale
Composite Sample ID: YC 11 - 0.5-1.0
Composite Sample No.: SPD 0216 (SWF 9-8-08)
SAMPLERS: JS, SF
DATE/TIME: August 25 2008 1510

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 11a-0.2-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0217 (SWF 9-8-08) Sample Time 14:06
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
similar to surface interval w/ more coarse gravel

Sample ID: YC 11b-0.2-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0218 (SWF 9-8-08) Sample Time 14:27
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
Similar to surface interval
slightly less fine grained

Sample ID: YC 11c-0.2-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0219 (SWF 9-8-08) Sample Time 14:34
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0
Sample Description:
20/60/40 Gravel mostly fine
Sand mostly fine, TR med sand
moist, no odor
10YR 3/3

SKETCH / NOTES: **NORTH:**

Size SFC sheet (SWF 9-8-08)

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1417 / 1415 S. Clover-dale
Composite Sample ID: YC 12-0.0-0.5 SAF 8-8-08
Composite Sample No.: SPD 0229 SAF 8-8-08
SAMPLERS: IS, BS, SAF, KMC, LT SAF 8-8-08
DATE/TIME: August 26 2008 1055 SAF 8-8-08

Any Field Duplicate? (Y)/N
If yes, provide sample ID, sample number, date, and time under "Notes"

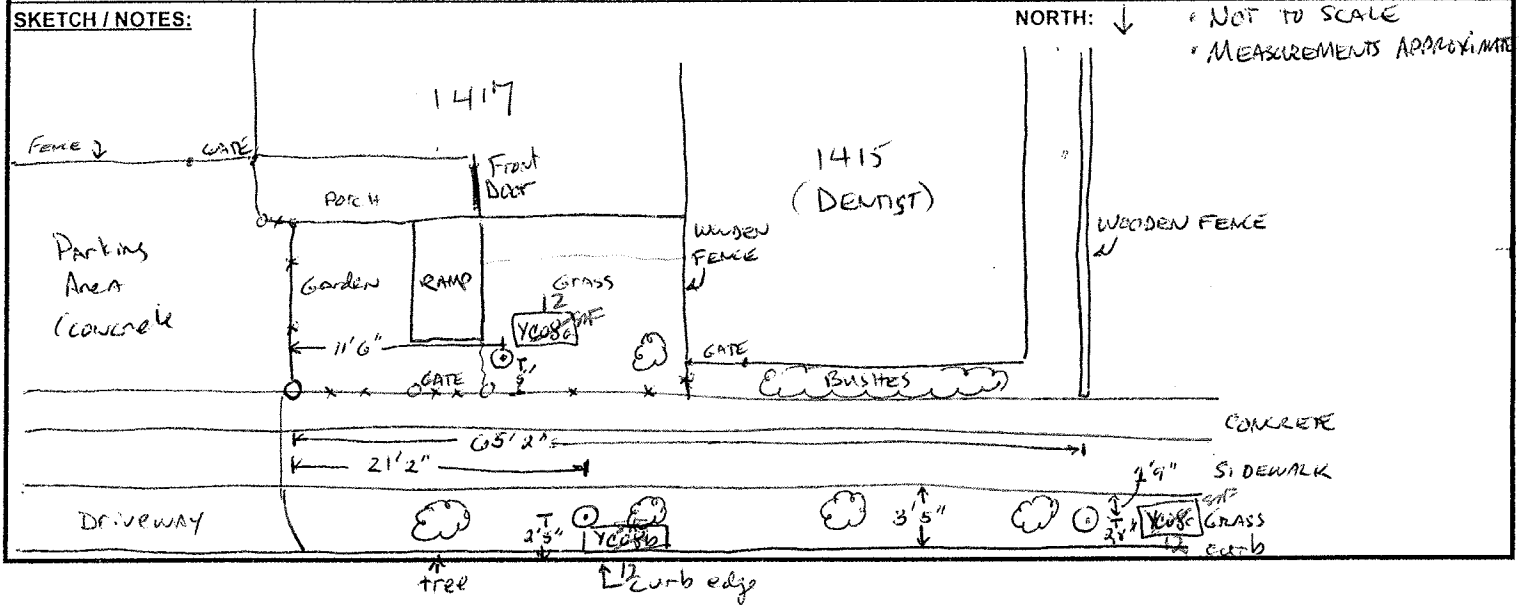
DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 12a-0.1-0.5 Coordinates: Sample Date August 26 2008
Sample Number: SPD 0230 SAF 8-8-08 1.5" Sample Time ~~10:01~~ 8:5 10:20
Type & Depth of Surface Cover: 2" SOD Sample Interval: ~~0.1~~ - 0.5 0.1
Sample Description:
TR/50/50 TR fine gravel
SAND IS FINE
SLIGHTLY MOIST, NO ODOR
TR ROOTLETS
7.5 YR 4/2
YC12a-0.1-0.5 DUP
SAF 8-8-08 8/26/08 1030
SPD0231

Sample ID: YC 12b-0.2-0.5 Coordinates: Sample Date August 26 2008
Sample Number: SPD 0232 SAF 8-8-08 Sample Time 10:01
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.2 - 0.5
Sample Description:
TR/60/40 5 BJ TR FINE GRAVEL
SAND IS MOSTLY FINE
DRY, NO ODOR
TR ROOTLETS
7.5 YR 5/2

Sample ID: YC 12c-0.2-0.5 Coordinates: Sample Date August 26 2008
Sample Number: SPD 0233 SAF 8-8-08 Sample Time 09:50
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.2 - 0.5
Sample Description:
TR/60/40 TR FINE Gravel
SAND MOSTLY FINE
Dry, no oder
TR ROOTLETS
7.5 YR 5/2 Very Similar to 12b Surface

SKETCH / NOTES:



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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1417 1415 S. Cloverdale
Composite Sample ID: YC 12-0.5-1.0
Composite Sample No.: SPD 0234
SAMPLERS: IS, BS, SWF, LT (SWF 9.8.08)
DATE/TIME: August 26 2008 1100

Any Field Duplicate? Y / N
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 12a-0.5-1.0 Coordinates: Sample Date August 26 2008
Sample Number: SPD 0235 (SWF 9.8.08) Sample Time 10:25
Type & Depth of Surface Cover: Sample Interval: 0.5-1.0
Sample Description:
SIMILAR TO SURFACE BUT VERY DRY
SLIGHTLY LIGHTER COLOR 7.5 YR 5/3

Sample ID: YC 12b-0.5-1.0 Coordinates: Sample Date August 26 2008
Sample Number: SPD 0236 (SWF 9.8.08) Sample Time 10:07
Type & Depth of Surface Cover: Sample Interval: 0.5-1.0
Sample Description:
50/30/20 Gravel is 50/50 coarse/fine max diam ~50mm
SAND MOSTLY FINE GRAINED
DRY, NO ODOR
7.5 YR 5/2
TR ROOTLETS
1 FINE gravel size brick fragment & 1 coal fragment

Sample ID: YC 12c-0.5-1.0 Coordinates: Sample Date August 26 2008
Sample Number: SPD 0237 (SWF 9.8.08) Sample Time 09:54
Type & Depth of Surface Cover: Sample Interval: 0.5-1.0
Sample Description:
10/50/40 Gravel is fine
SAND IS MOSTLY FINE
Dry, no odor
7.5 YR 5/2
TR ROOTLETS

SKETCH / NOTES: **NORTH:**

SEE SFC SHEET (SWF 9.8.08)

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1421 S. Cloverdale St.
Composite Sample ID: YC 13-00-0.5
Composite Sample No.: SPD ~~0184~~ 0187 SF 9-8-08
SAMPLERS: ~~TS, SF~~, BIS
DATE/TIME: August 25 2008 ~~1035~~ 1015 SF 9-8-08

Any Field Duplicate? (Y) N
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 13a-0.0-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0187 (SF 9-8-08) Sample Time 09:26
Type & Depth of Surface Cover: NO SOD Sample Interval: 0.0 - 0.5
Sample Description:
0/40/60 Sand is mostly fine
moist, no odor
color is 7.5 YR 2.5/3

TR wood/woody grass stem debris, tr broken glass

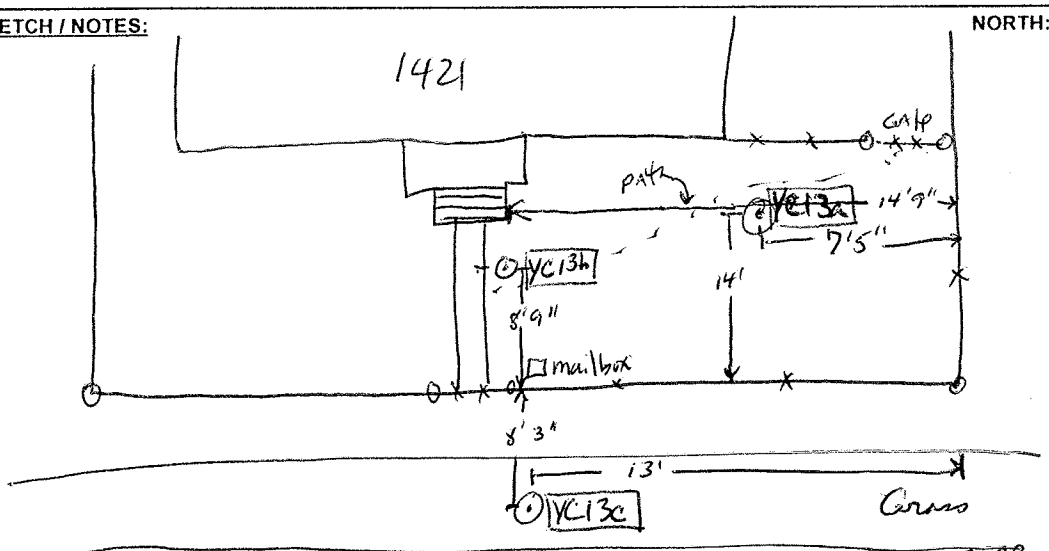
Sample ID: YC 13b-0.0-0.5 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0188 (SF 9-8-08) Sample Time 09:30
Type & Depth of Surface Cover: NO SOD Sample Interval: 0-0.5
Sample Description:
0/40/60 TR coarse gravel
TR (BIS) Sand mostly fine grained
moist, no odor
7.5 YR 2.5/3

TR rootlets, small piece plastic, tr woody root

Sample ID: YC 13c-0.2-0.5 SF Coordinates: Sample Date August 25 2008
Sample Number: SPD 0189 (9-8-08) Sample Time 09:15
Type & Depth of Surface Cover: 2" SOD Sample Interval: ~~0.0~~ - 0.5 0.2 (BIS)
Sample Description:
0/40/60 Sand mostly fine, tr med. sand
moist, no odor
7.5 YR 4/3
~~tr rootlets~~ BIS

TR rootlets & 1-2 small woody root fragments, small worm, tr wood debris

SKETCH / NOTES:



NORTH: ↓

- NOT TO SCALE
- MEASUREMENTS APPROXIMATE

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1421 S. Cloverdale St.
Composite Sample ID: YC 13-0.5-1.0
Composite Sample No.: SPD 0190 (SF 9-8-08)
SAMPLERS: ES, SF, BS, EMC, LT (SF 9-8-08)
DATE/TIME: August 25 2008 1015 (SF 9-4-08)

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 13a-0.5-1.0 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0191 (SF 9-4-08) Sample Time 09:32
Type & Depth of Surface Cover: N/A (SF 9-4-08) Sample Interval: 0.5-1.0
Sample Description:
similar to surface
near bottom material has more sand (~5-10% more) 7.5YR 6/3
1 small piece coal-like fragment observed - somewhat friable (moderate toughness)
Color 7.5 YR 2.5/3, moist, no odor
fr rootlets

Sample ID: YC 13b-0.5-1.0 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0192 (SF 9-8-08) Sample Time 09:40
Type & Depth of Surface Cover: N/A (SF 9-8-08) Sample Interval: 0.5-1.0
Sample Description:
similar to surface
near bottom of test hole material contains ~10% more fine sand
moist, no odor
color 7.5 YR 2.5/3 transitioning to 7.5 YR 6/3
med. dilatency

Sample ID: YC 13c-0.5-1.0 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0193 (SF 9-4-08) Sample Time 09:22
Type & Depth of Surface Cover: N/A (SF 9-4-08) Sample Interval: 0.5-1.0
Sample Description:
30/40/30 Gravel mostly fine - a couple gravel pieces ~40mm in coarse diameter
sand mostly fine - fr med sand
no odor
moist 7.5 YR 4/3
fr rootlets

SKETCH / NOTES: See surface sheet

NORTH:

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1425 S. Cloverdale
Composite Sample ID: YC 14-0.0-0.5
Composite Sample No.: SPD 0164
SAMPLERS: ES, BS, ICMC, SF
DATE/TIME: August 22 2008 1405

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

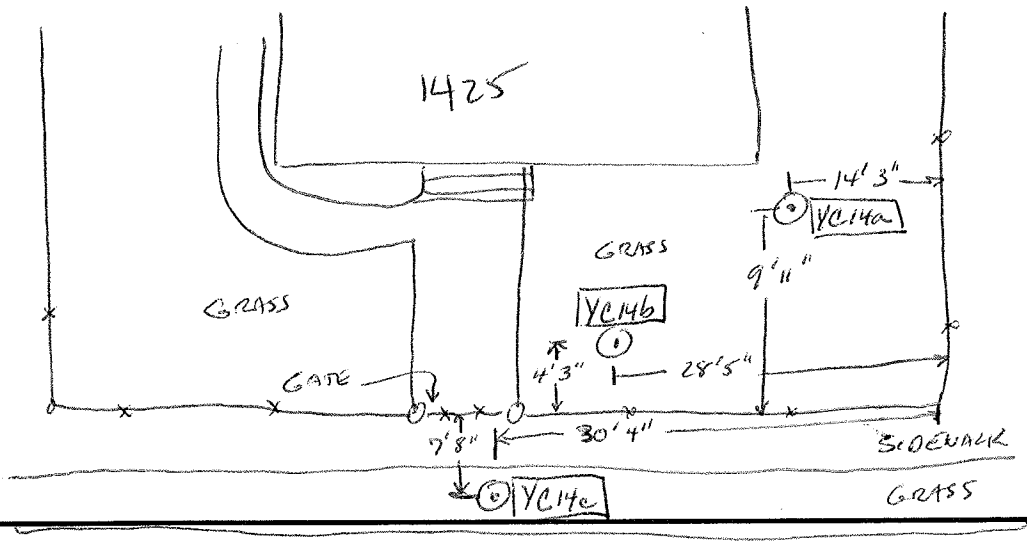
DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 14a-0.1-0.5 Coordinates: Sample Date August 22 2008
Sample Number: SPD 0165 Sample Time 12:50
Type & Depth of Surface Cover: 2.5" SOD Sample Interval: 0.1-0.5
Sample Description:
0/50/50, Sand is mostly fine
moist, no odor ; 1 piece plastic ; TR rootlets
7.5YR 2/2

Sample ID: YC 14b-0.1-0.5 Coordinates: Sample Date August 22 2008
Sample Number: SPD 0166 Sample Time 12:40
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.1-0.5
Sample Description:
TR/40/60, Sand is fine, TR gravel is 50/50 coarse/fine
dry, no odor, tr rootlets 1 piece coarse gravel is 20mm diameter
7.5 YR 5/2

Sample ID: YC 14c-0.1-0.5 Coordinates: Sample Date August 22 2008
Sample Number: SPD 0167 Sample Time 13:05
Type & Depth of Surface Cover: 1.5" SOD Sample Interval: 0.1-0.5
Sample Description:
10/50/40 Gravels are fine, SAND IS MOSTLY FINE (TR MED SAND)
no odor, dry
7.5 YR 6/2
TR ROOTLETS
SMALL PIECE OF COKE OR COAL OBSERVED - Appeared to be fired

SKETCH / NOTES:



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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1425 S. Cloverdale
Composite Sample ID: YC 14-0.5-1.0
Composite Sample No.: SPD 0168
SAMPLERS: IS, BS, SF, KAK
DATE/TIME: August 22 2008 1415

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 14a-0.5-1.0 (SF 8-8-08) Coordinates: _____ Sample Date August 22 2008
Sample Number: SPD 0169 Sample Time 12:52
Type & Depth of Surface Cover: NA Sample Interval: 0.5-1.0
Sample Description:
0/60/40 SAND IS FINE
Moist, no odor, TR ROOTLETS
7.5 YR 4/2

Sample ID: YC 14b-0.5-1.0 (SF 8-8-08) Coordinates: _____ Sample Date August 22 2008
Sample Number: SPD 0170 Sample Time 12:43
Type & Depth of Surface Cover: NA Sample Interval: 0.5-1.0
Sample Description:
10/50/40 Gravel is all fine, sand is fine
dry, no odor 7.5 YR 6/2 TR ROOTLETS & dry grass stems

Sample ID: YC 14c-0.5-1.0 (SF 8-8-08) Coordinates: _____ Sample Date August 22 2008
Sample Number: SPD 0171 Sample Time 13:11
Type & Depth of Surface Cover: NA Sample Interval: 0.5-1.0
Sample Description:
~~15~~ 15 BS 20/40/40
Gravel is mostly fine, TR coarse gravel 7.5 YR 6/2
Sand is mostly fine, TR med sand
dry, no odor
TR ROOTLETS

SKETCH / NOTES: **NORTH:**

SEE SURFACE SHEET

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1429 S. Cloverdale
Composite Sample ID: YC15 - 0.0-0.5 (SF 9-8-08)
Composite Sample No.: SPD 0184
SAMPLERS: IS, SF, KMC, LT (SF 9-8-08)
DATE/TIME: August 25 2008 0920

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 15a - 0.0-0.5 (SF 9-8-08) Coordinates: ____ Sample Date August 25 2008
Sample Number: SPD 0180 (SF 9-8-08) Sample Time 8:27
Type & Depth of Surface Cover: No cover Sample Interval: 0.0-0.5
Sample Description:
TR / 40 / 60 trace fine gravel
Sand mostly fine
moist, no odor

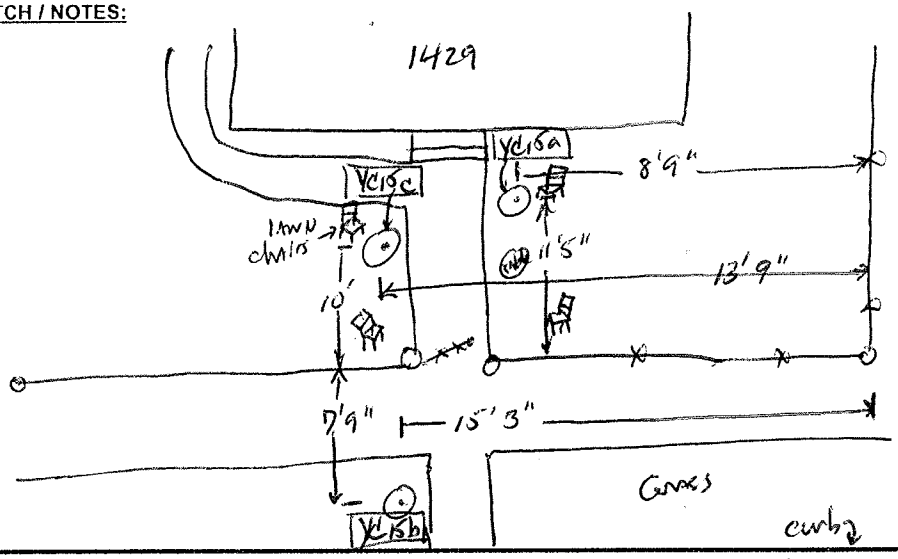
1 worm, small piece broken glass, tr rootlets, color 7.5 YR 2.5/1

Sample ID: YC 15b - 0.1-0.5 (SF 9-8-08) Coordinates: ____ Sample Date August 25 2008
Sample Number: SPD 0178 (SF 9-8-08) Sample Time 8:20
Type & Depth of Surface Cover: 2" SOD Sample Interval: 0.1-0.5
Sample Description:
40 / 40 / 20 Gravel is 50/50 fine & coarse max coarse diameter is ~ 25mm
Sand mostly fine
color is 7.5 YR 4/2
TR rootlets, moist, no odor, a few small worms

Sample ID: YC 15c - 0.0-0.5 (SF 9-8-08) Coordinates: ____ Sample Date August 25 2008
Sample Number: SPD 0176 (SF 9-8-08) Sample Time 8:25
Type & Depth of Surface Cover: no sod Sample Interval: 0.0-0.5
Sample Description:
TR / 40 / 60 TR Fine gravel
Sand is mostly fine, tr med. sand
color 7.5 YR 2.5/2
no oder, moist

rusty nail, tr grass

SKETCH / NOTES:



NORTH: ↓
- Not to Scale
- Measurements Approximate

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1429 S. Cloverdale
Composite Sample ID: YC 15-0.5-1.0
Composite Sample No.: SPD 0185
SAMPLERS: TS, SF, KMC, LT
DATE/TIME: August 25 2008 0925

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 15a-0.5-1.0 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0182 Sample Time 8:38
Type & Depth of Surface Cover: NA Sample Interval: 0.5-1.0
Sample Description:
TR/50/50 Similar to top w/ ~10% more sand
moist, no odor
color similar to ~~surf~~ surface interval
small worm & broken glass observed

Sample ID: YC 15b-0.5-0.8 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0181 Sample Time 8:25
Type & Depth of Surface Cover: NA Sample Interval: 0.5-0.8
Sample Description:
Auger hit refusal at 10"
50/40/10 Gravel fine to coarse (majority is coarse)
max gravel diameter is 40mm
Sand is 40% med 60% fine
moist, no odor, 7.5 YR 5/2

Sample ID: YC 15c-0.5-1.0 Coordinates: Sample Date August 25 2008
Sample Number: SPD 0183 Sample Time 8:40
Type & Depth of Surface Cover: NA Sample Interval: 0.5-1.0
Sample Description:
Similar to surface but with more fine sand
and no gravel 0/50/50 - TR coarse gravel
moist, no odor observed on homogenization
7.5 YR 4/2

SKETCH / NOTES: see sketch sheet

NORTH:

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1445 S. Cloverdale
Composite Sample ID: YC 16 - 0.0 - 0.5
Composite Sample No.: SPD 0136
SAMPLERS: JS BS SMF KME
DATE/TIME: August 20 2008 1815

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC16a-0.0-0.5 Coordinates: Sample Date August 20 2008
Sample Number: SPD 0128 Sample Time 1645
Type & Depth of Surface Cover: NONE Sample Interval: 0.0-0.5
Sample Description:
(tr/60/40)
Gravel is coarse & fine. Sand is fine. 10YR 3/3. Trace rootlets & wood frags. moist.

Note - Adj to new sidewalk - may have been disturbed for new sd. SF HAND AUGER SPOON

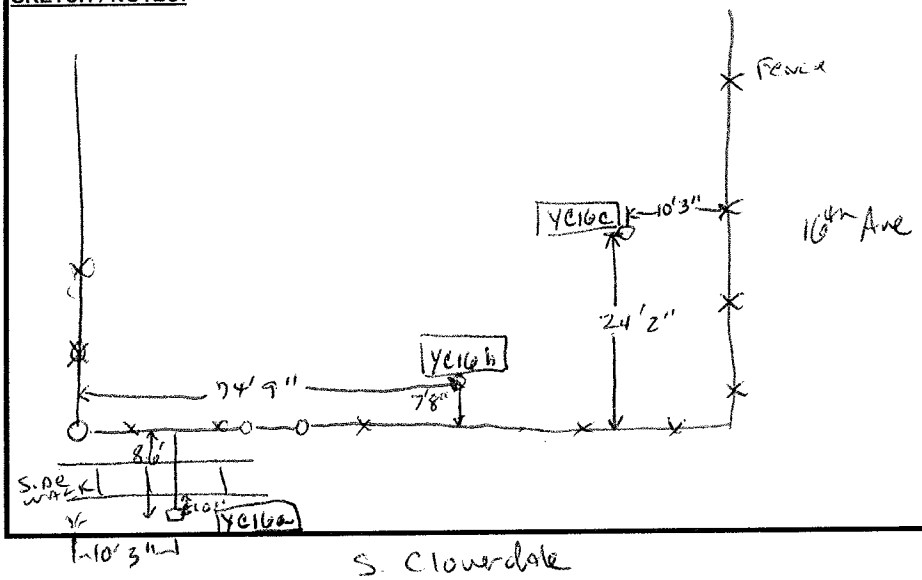
Sample ID: YC16b-0.1-0.5 Coordinates: Sample Date August 20 2008
Sample Number: SPD 0130 Sample Time ~~1700~~ 1700
Type & Depth of Surface Cover: 0.1', grass (sod) Sample Interval: 0.1-0.5
Sample Description:
(tr/70/30) Sand is fine-med.
Few Rootlets. organic odor
Tr fine & coarse gravel appears as ~~orange~~ reddish-orange friable particles
10YR 3/4 moist

SPOON

Sample ID: YC 16c-0.0-0.5 Coordinates: Sample Date August 20 2008
Sample Number: SPD 0134 Sample Time 1715
Type & Depth of Surface Cover: trace thickness moss. Sample Interval: 0.0-0.5
Sample Description:
(0/tr/100) 10YR 3/3 Rootlets moist

SPOON

SKETCH / NOTES:



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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 1445 S. Cloverdale
Composite Sample ID: YC 16-0.5-1.0
Composite Sample No.: SPD0137
SAMPLERS: IS, SF, BS, KME
DATE/TIME: August 20 2008 1810

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 16a-0.5-1.0 Coordinates: Sample Date: August 20 2008
Sample Number: SPD 0129 Sample Time: SE 1645 1650
Type & Depth of Surface Cover: Sample Interval: .05-1.0
Sample Description:
Similar to sfc.
SE-SPOON HAND AUGER

Sample ID: YC 16b-0.5-1.0 Coordinates: Sample Date: August 20 2008
Sample Number: SPD 0131 Sample Time: SE-1700/1705
Type & Depth of Surface Cover: Sample Interval: 0.5-1.0
Sample Description:
Similar to sfc, but NO gravel, trace rootlets.
SE-SPOON HAND AUGER

Sample ID: YC 16c-0.5-1.0 Coordinates: Sample Date: August 20 2008
Sample Number: SPD 0135 Sample Time: 1720
Type & Depth of Surface Cover: Sample Interval: 0.5-1.0
Sample Description:
Similar to sfc, slight increase in fine sand content, dry
SE-SPOON HAND AUGER

SKETCH / NOTES: SEE SURFACE SHEET

NORTH:

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 8603 Dallas Ave S
Composite Sample ID: YC 17-0.0-0.5
Composite Sample No.: SPD 0138
SAMPLERS: JS, BS, SNF KMC SP (9-8-08)
DATE/TIME: August 20 2008 1630

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 17a 0.0-0.5 Coordinates: _____ Sample Date August 20 2008
Sample Number: SPD 0116 Sample Time 3:10
Type & Depth of Surface Cover: 0.5" grass cover Sample Interval: 0.5"-6.5"
Sample Description:
20/70/10 Gravel 50/50 Coarse and Fine
Sand is fine 10 YR 4/2
trace rootlets
dry
no odor

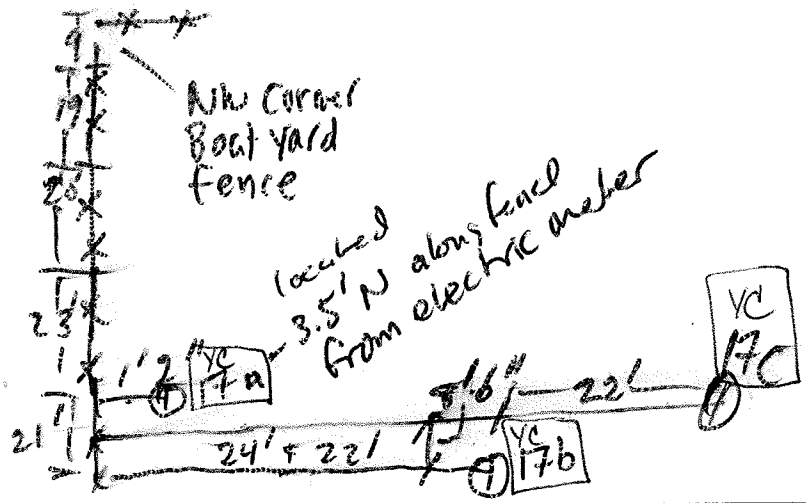
Sample ID: YC 17b 0.0-0.5 Coordinates: _____ Sample Date August 20 2008
Sample Number: SPD 0117 Sample Time ~~2:45 PM~~ 1455-1450
Type & Depth of Surface Cover: sand & gravel - incl. in sample Sample Interval: 0.0-0.5 FT
Sample Description:
50% fine gravel 50% med to fine sand 10YR 2/2 dry no sheen
Trace coarse gravel
trace fines
NO odor

Sample ID: YC 17c 0.0-0.5 Coordinates: _____ Sample Date August 20 2008
Sample Number: SPD 0118 Sample Time ~~3:30 PM~~ 1500 PM
Type & Depth of Surface Cover: Sand & gravel - incl. in sample Sample Interval: 0.0-6.0"
Sample Description:
~~20/70/10 BS - 60/25/15 gravel 60% coarse 40% fine~~
~~Gravel 50/50 coarse and fine Sand 60% med 40% fine~~
~~Sand is fine 10 YR 4/2~~ 10 YR 5/2
Very wet - water intruded hole during excavation
quickly grabbed and obtained sample w/ spoon
no odor

SKETCH / NOTES:

NORTH: N

- NOT TO SCALE
- MEASUREMENTS APPROXIMATE SNF 8-24-08



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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 8003 Dallas Ave S.
Composite Sample ID: YC 17-0.5-1.0
Composite Sample No.: SPD 0139
SAMPLERS: IS BS
DATE/TIME: August 20 2008 1645

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 17a 0.5-1.0 Coordinates: ____ Sample Date: August 20 2008
Sample Number: SPD 0119 Sample Time: 3:15
Type & Depth of Surface Cover: 0.5" grass cover NA (subsfc) Sample Interval: 6.5"-9.5"
Sample Description:
20/70/10 Gravel is 50/50 coarse and fine
Sand is fine 10 YR 4/2
trace rootlets
dry
no odor

Sample ID: YC 17b 0.5-1.0 Coordinates: ____ Sample Date: August 20 2008
Sample Number: SPD 0120 Sample Time: 2:55 PM
Type & Depth of Surface Cover: ~~sand & gravel~~ NA Sample Interval: 0.5-1.0 FT
Sample Description:
10% fine gravel 90% fine sand, dry moist 10 YR 2/2
wood fragments trace roots
trace fines
no odor

Sample ID: YC 17c 0.5-10 Coordinates: ____ Sample Date: August 20 2008
Sample Number: SPD 0121 Sample Time: ~~3:45 PM~~ 4:05 PM
Type & Depth of Surface Cover: NA Sample Interval: 6.0"-10.0"
Sample Description: 50, 30
20/70/10
~~some~~ trace coarse gravel, gravel mostly fine
Sand is mostly fine
no odor
2.5Y 5/2

SKETCH / NOTES: NORTH:

17a 0.5 to 1.0 - struck stone at 9.5"; refusal
17c 0.5-10 - struck hard stone at 10"; refusal

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 16th Ave S, vacant lot
Composite Sample ID: YC 18-0.0-0.5
Composite Sample No.: SPD 0132
SAMPLERS: JS, SF, KMC (for S-SW)
DATE/TIME: August 20 2008 1700

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 18a-0.1-0.5 Coordinates: Sample Date August 20 2008
Sample Number: SPD 0122 ~~0.1-0.5~~ SW Sample Time ~~SW~~ 1530
Type & Depth of Surface Cover: grass, weeds, ~0.0" Sample Interval: 0.1-0.5'
Sample Description: ~~Silt, w/ tr fine sand abundant rootlets @ Sfc. SW~~
Abundant gravel (fine-coarse) throughout SW
~~color: 10YR 5/3 SW~~
20/20/60. Gravel is 80% fine 20% coarse, 2.5Y 6/4. Dry. trace rootlets
Max gravel is ~1.25". Sand is predom fine, tr med+coarse. No odor.
Tr. GLASS shards
collected w/ bowl + spoon

Sample ID: YC 18b-0.1-0.5 Coordinates: Sample Date August 20 2008
Sample Number: SPD 0123 Sample Time 1558
Type & Depth of Surface Cover: GRASS: 1" Sample Interval: 0.1-0.5'
Sample Description:
Silt tr SAND ~~(fine) tr fine gravel~~ SW Sand is fine + coarse. Abundant rootlets. 10YR 4/6. No odor. (0/tr/100)
collected w/ bowl + spoon

Sample ID: YC 18c-0.1-0.5 Coordinates: Sample Date August 20 2008
Sample Number: SPD 0124 Sample Time 1615
Type & Depth of Surface Cover: GRASS: 1" Sample Interval: 0.1-0.5'
Sample Description:
Silt trace fine SAND (0/tr/100). Abundant rootlets. No odor
10YR 3/3.

SKETCH / NOTES: NORTH:

Auger on 1st attempt (~~color~~ at location that was off the property line) was not performing properly due to gravels. We changed approach on second attempt (and new location — the sample collected as before but we will dig down after collecting the sample to 6" w/ shovel and a wider hole, then Auger, to eliminate Sloughing. The soil at 6" was too hard + gravelly for the hand Auger. Reid dug to 1' bgs w/ shovel + sample sidewall.

See sketch on Subsfc Form

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 16th Ave South, vacant lot
Composite Sample ID: YC 18 - 0.5-1.0 ~~SF-9-08~~
Composite Sample No.: ~~SPD 0118~~ SPS0133
SAMPLERS: JS, SF, KMC ~~SF 9.8.08~~
DATE/TIME: August 20 2008 1705

Any Field Duplicate? Y / (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

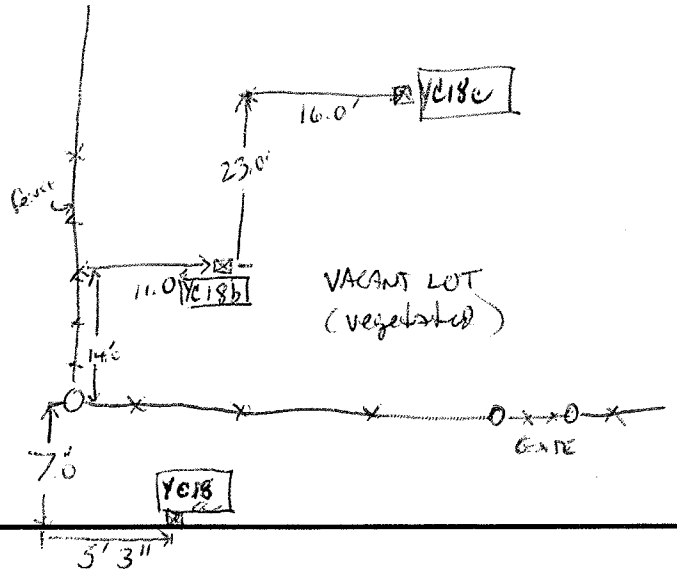
DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 18a-0.5-1.0 Coordinates: Sample Date: August 20 2008
Sample Number: SPD 0125 Sample Time: ~~SF 9.8.08~~ 1543
Type & Depth of Surface Cover: N/A (subsfc) Sample Interval: ~~0-1 SF 05-1.0~~ 0.5-1.0'
Sample Description:
Similar to surface, no glass shards.
collected from sidewall

Sample ID: YC 18 b 0.5-1.0 Coordinates: Sample Date: August 20 2008
Sample Number: SPD 0126 Sample Time: 1602
Type & Depth of Surface Cover: NA ~~SF 9.8.08~~ Sample Interval: 0.5-1.0'
Sample Description:
Similar to surface, less rootlets. Tr wood frag, roots + poss pottery shard.
collected from sidewall

Sample ID: YC 18c-0.5-1.0 Coordinates: Sample Date: August 20 2008
Sample Number: SPD 0127 Sample Time: 1620
Type & Depth of Surface Cover: NA ~~SF 9.8.08~~ Sample Interval: 0.5-1.0'
Sample Description:
Similar to sfc less rootlets. Tr wood. debris - looks like pottery but Friable

SKETCH / NOTES:



- NOT TO SCALE
- MEASUREMENTS APPROXIMATE SF 8.21.08

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 8609 DALLAS AVE S.
Composite Sample ID: YC 19 -0.0-0.5' SURFACE
Composite Sample No.: SPD 0114
SAMPLERS: KJ, JS, KMC (SURFACE)
DATE/TIME: August 18, 2008, 1705

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

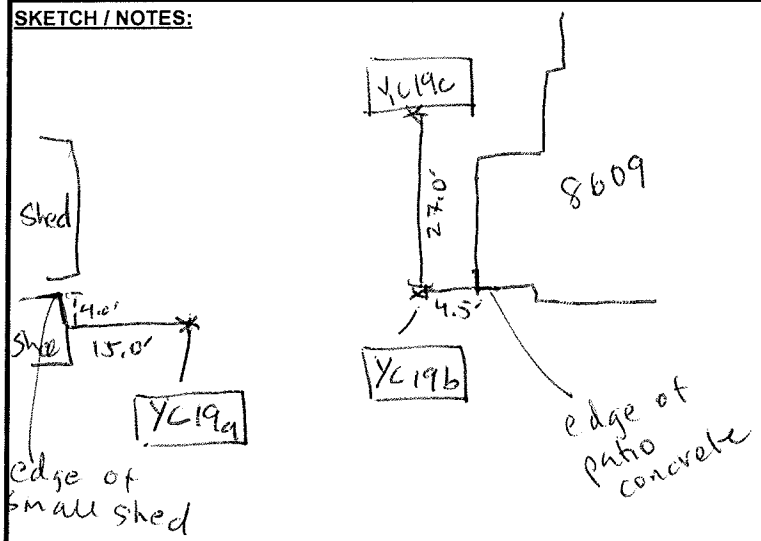
DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 19a 0.1-0.5' Coordinates: Sample Date August 18 2008
Sample Number: SPD 0108 Sample Time 1425
Type & Depth of Surface Cover: Grass, 0.0 - 0.1' (1.5") Sample Interval: 0.1-0.5'
Sample Description:
Silt, tr. fine sand, 7.5 YR 5/3, tr - 5% rootlets, dry, weak
Isolated fine gravel

Sample ID: YC 19b 0.1-0.5' Coordinates: Sample Date August 18 2008
Sample Number: SPD 0110 Sample Time 1530
Type & Depth of Surface Cover: Grass, 0.0-0.1 (1") Sample Interval: 0.1-0.5
Sample Description:
Silt, tr fine sand, 7.5 YR 5/3, tr rootlets, dry, weak
Soil more compact when digging
Isolated 3cm brick fragment

Sample ID: YC 19c-0.2-0.5' Coordinates: Sample Date August 18 2008
Sample Number: SPD 0112 Sample Time 1645
Type & Depth of Surface Cover: Grass, 0.0 - 0.2 (~~0.25~~)(2.0") Sample Interval: 0.1-0.5'
Sample Description:
~~Silt, w/ mulch + fine gravel, tr-10% rootlet, no odor.~~
~~Spongy upon collecting, dry~~ 10%
Silt, tr fine sand, isolated gravel, dry, 5% rootlets, weak
7.5 YR 5/2.

SKETCH / NOTES:



NORTH: N

- NOT TO SCALE
- MEASUREMENTS APPROXIMATE

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PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 8609 DAKOTA AVE S.
Composite Sample ID: YC 19-0.5-1.0' SURFACE
Composite Sample No.: SPD 0115
SAMPLERS: IS, JS KMC (SURFACE)
DATE/TIME: August 18 2008, 1710

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 19a-0.5-1.0' Coordinates: Sample Date August 18 2008
Sample Number: SPD 0109 Sample Time 1450
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0'
Sample Description:
Silt, tr fine sand, 7.5 YR 5/3, tr. rootlets, dry, weak, no odor
isolated angular gravel

Sample ID: YC 19b-0.5-1.0 Coordinates: Sample Date August 18 2008
Sample Number: SPD 0111 Sample Time 1540
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0'
Sample Description:
Silt, tr fine sand, 7.5 YR 5/3, isolated rootlets, tr. gravel (fine)
+ charcoal, dry, weak, no odor

Sample ID: YC 19c 0.5-1.0' Coordinates: Sample Date August 18 2008
Sample Number: SPD 0113 Sample Time 1655
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0'
Sample Description:
Silt, tr fine sand, 5% rootlets, 7.5 YR 5/2, dry, weak

SKETCH / NOTES: **NORTH:**

SEE SAC SHEET (SURFACE)

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PROJECT	T117 Adjacent Streets Dioxin Investigation
ADDRESS	8609 Dallas Ave S
Composite Sample ID:	YC 20-0.0-0.5'
Composite Sample No.:	SPD 0106
SAMPLERS	SF, IS, BS, JS, KC
DATE/TIME	August 18 2008 1145

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

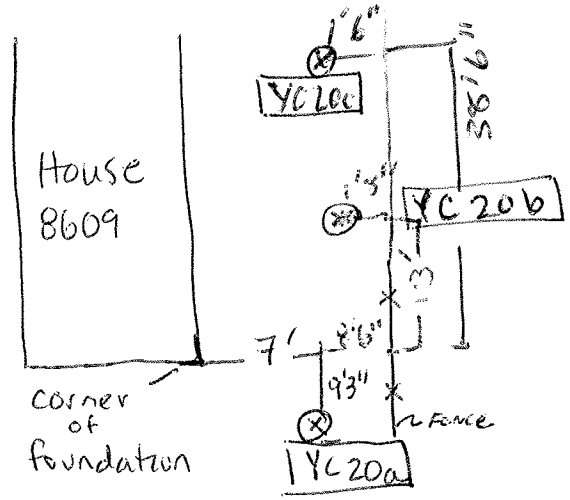
DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 20a 0.2-0.5 Coordinates: _____ Sample Date August 18 2008
Sample Number: SPD 0100 _____ Sample Time 0935
Type & Depth of Surface Cover: Grass, 0-0.2' (2") Sample Interval: 0.2-0.5'
Sample Description:
Silt, tr fine sand 7.5 YR 5/3 intact sample had 5-10% grass roots, removed to trace rootlets, dry. no odor weak (toughness)

Sample ID: YC 20b ~~0.08~~ 0.1-0.5 Coordinates: _____ Sample Date August 18 2008
Sample Number: SPD 0102 _____ Sample Time 1025
Type & Depth of Surface Cover: Grass, ~~0-0.08~~ 0-0.1 (1") Sample Interval: 0.1-0.5
Sample Description:
Silt, tr fine sand, gravel layer @ 5.5" below 0.0 (grass surface), gravel is fine to coarse, weak (toughness)

Sample ID: YC 20c-0.1-0.5 Coordinates: _____ Sample Date August 18 2008
Sample Number: SPD 0104 _____ Sample Time 1105
Type & Depth of Surface Cover: Grass, 0-0.1' (1") Sample Interval: 0.1-0.5'
Sample Description:
Silt, tr fine sand, fine-coarse gravel, tr rootlets, dry weak (toughness)

SKETCH / NOTES:



NORTH: ← N

- NOT TO SCALE
- MEASUREMENTS APPROXIMATE SF 8-2403

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(206) 230-9600 FAX (206) 230-9601

PROJECT: T117 Adjacent Streets Dioxin Investigation
ADDRESS: 8609 Dallas Ave S
Composite Sample ID: YC 20 - 0.5 - 1.0'
Composite Sample No.: SPD 0107
SAMPLERS: SF JS JD KMC BS
DATE/TIME: August 18 2008 1200

Any Field Duplicate? Y (N)
If yes, provide sample ID, sample number, date, and time under "Notes"

DISCRETE SAMPLES IN COMPOSITE:

Sample ID: YC 20a 0.5-1.0' Coordinates: _____ Sample Date: August 18 2008
Sample Number: SPD 0101 Sample Time: 0945
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0'
Sample Description:
Silt, tr fine sand 7.5 YR 5/3, no rootlets, dry, no odor

Sample ID: YC 20b-0.5-1.0' Coordinates: _____ Sample Date: August 18 2008
Sample Number: SPD 0103 Sample Time: 1040
Type & Depth of Surface Cover: N/A Sample Interval: 0.5-1.0'
Sample Description:
Silt, tr fine sand, 7.5 YR 5/3, dry, tr rootlets, tr fine gravel, no odor, fine to coarse gravel,

Sample ID: YC 20c-0.5-1.0' Coordinates: _____ Sample Date: August 18 2008
Sample Number: SPD 0105 Sample Time: 1130
Type & Depth of Surface Cover: N/A Sample Interval: ~~0.1-0.5~~ 0.5-1.0'
Sample Description:
Silt, tr fine sand, few fine gravel, 7.5 YR 5/3, dry, tr rootlets, no odor, weak (to v. hard)

SKETCH / NOTES: SEE SURFACE STREETS DWG 8-24-08

NORTH:

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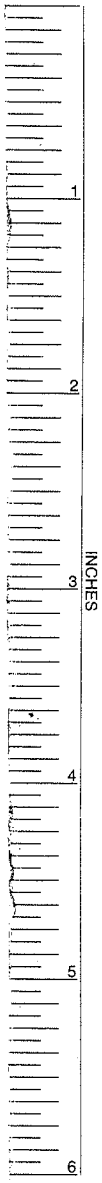
No. 311

T117
DIOXIN INVESTIGATION
VARS Sampling logbook
Aug 18-20 2008
A0006-15F



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CONTENTS

PAGE	REFERENCE	DATE

18 Aug 08 T. Sund

0925 At First Yard location
8609 ~~Ave~~ Douglas Ave S, YC 20
Beginning clearing grass
@ location YC 20a.
Use SS shovel to cut
circle area of grass to be
collected in middle of work
0935 YC20a Sample Time
YC20a 0.2-0.5
0945 YC 20a 0.5-1.0', use spoon
~~Backfill hole~~ to collect.
Pull soil from each
discrete to begin to
fill composite for each
interval.
Backfill hole w/ potting
soil, replace grass
1012 Collect GPS coordinates.
Weather: rainy, 60s
Crew: S. FitzGerald
J. Sund
I. Stupakoff } Integral
B. Starr
K. Carlton

18 Aug 08 J. Sund

1015 Begin collection @ YC20b
1025 YC20b 0.1-0.5
Collect subsurface 0.5-1.0'
using hand auger.
1040 YC20b 0.5-1.0'
1105 Collect GPS coordinates.
Clear grass @ YC20c
1105 YC20c 0.1-0.5'
1130 YC20c 0.5'-1.0'
1145 Collect composite of
surface (0.0-0.5')
YC20-0.0-0.5
1200 Collect composite 0.5-1.0'
YC20 - 0.5-1.0'
1205 Collect GPS coordinates
YC20c
1400 MARK locations for YC19
1425 Surface discrete
YC19a - 0.1-0.5'
1450 Subsurface discrete
YC19a - 0.5-1.0'
1530 Begin collection @ YC19b
YC19b 0.1-0.5
1540 Collect subsurface discrete

18Aug08 J. Sund

YC19 b 0.5-1.0'

1600 Move to YC19c

1605 Collect surface discrete YC19c-0.5-0.5'

1603 Collect GPS YC19a

YC19c station moved as GPS puts location in remediated area. Move locating N to grass strip b/t flower garden + 860' sidewalk

1645 Collect surface discrete YC19c 0.2-0.5'

1655 Collect Subsurface discrete YC19c 0.5-1.0'

1705 Collect Surface composite YC19 0.0-0.5

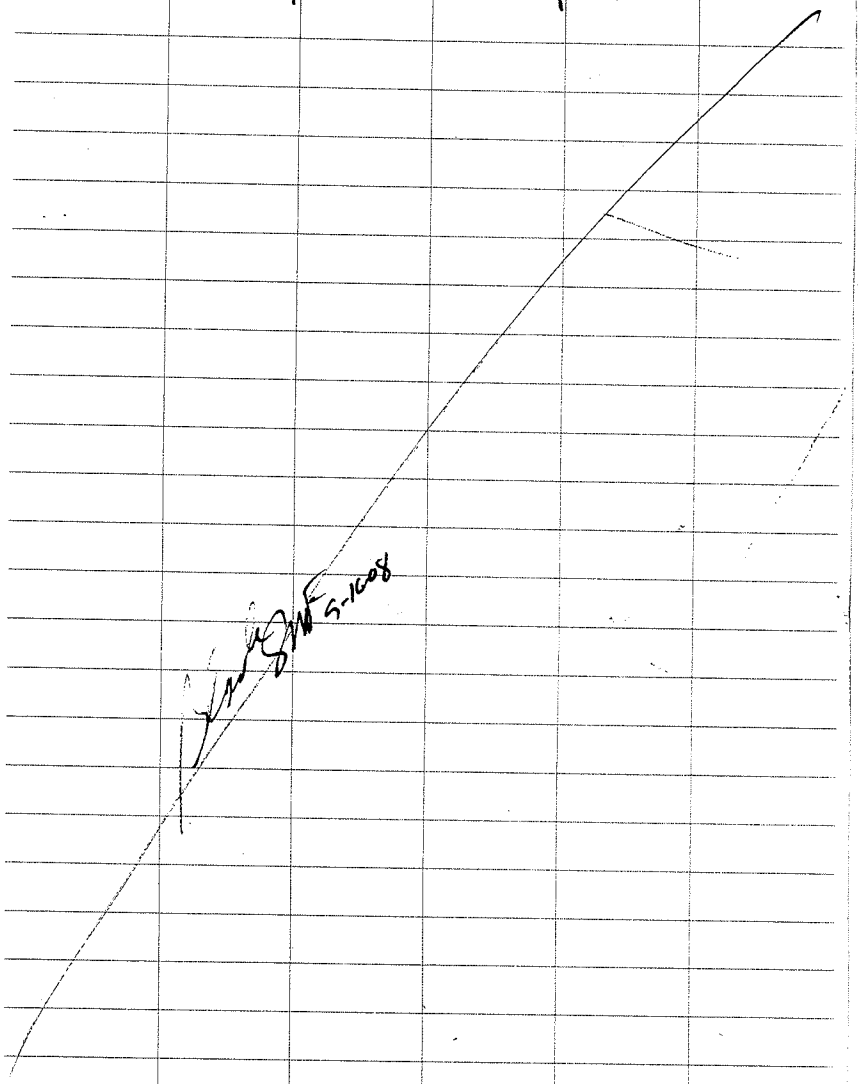
1710 Collect subsfc composite YC19 0.0-0.5

1715 Collect GPS @ 19c + 196.

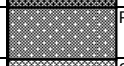
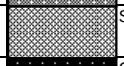
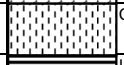
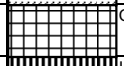
End

20 Aug 08 J. Sund

~~1440 Mob to YC18, vacant + 35 lot yard sample~~



SOIL BORING LOG KEY

Major Divisions		Symbols		Typical Names
Coarse Grained Soils (More than 1/2 of soil >No. 200 sieve size)	**Gravels** (More than 50% coarse fraction > no. 4 sieve	GW		Well-graded gravels or gravel-sand mixtures, little to no fines
		GP		Poorly-graded gravels or gravel-sand mixtures, little to no fines
		GM		Silty gravels, gravel-sand-silt mixtures
		GC		Clayey gravels or gravel-sand-clay mixtures
	Sands (Less than 50% coars fraction > no. 4 sieve)	SW		Well-graded sands or gravel-sand mixtures, little to no fines
		SP		poorly-graded sands or gravelly sands, little to no fines
		SM		Silty sands, sand-silt mixtures
		SC		Clayey sands, sand-clay mixtures
Fine Grained Soils (More than 1/2 of soil <No. 200 sieve size)	**Silts & Clays** Liquid limit* less than 50%	ML		Inorganic silts and very fine sands, silty or clayey fine sands or clayey silts with slight plasticity
		CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy or silty clays, lean clays
		OL		Organic silts and organic silty clays of low plasticity
		MH		Inorganic silts, micaceous or ditomaceous fine sand or silty soils, elastic silts
	Silts & Clays Liquid limit* greater than 50%	CH		Inorganic clays of high plasticity, fat clays
		OH		Organic clays of medium to high plasticity, organic silty clay, organic silts
Highly Organic Soils		Pt		Peat or other highly organic soils
Asphalt				Asphalt pavement surface

*Liquid limit represents the moisture contnet (in percent) of a soil at which point the soil no longer behaves like a plastic and starts to behave like a liquid.

Sample Plasticity (Fine-Grained Soils)

Non-Plastic - Cannot be rolled at any moisture content

Low - Barely rolled, lump cannot be formed when drier than plastic limit

Medium - Easily rolled, lump crumbles when drier than plastic limit

High - Easily rolled yet takes considerable time to reach the plastic limit, lump can be formed without crumbling when drier than the plastic limit

Partical Size Range (Course-Grained Soils)

Gravel - Fine, Course

Sand - Fine, Medium, Coarse

Sample Moisture

Dry	No Moisture, dry to touch
Moist	Damp but no visible moisture
Wet	Visible free water

Based on Unified Soil Classification System and ASTM Standard D2487 and D2488

integral consulting inc.

integral consulting inc.
7900 SE 28th Street, Ste 410
Mercer Island, WA 98040
(206) 230-9600 FAX (206) 230-9601

TEST HOLE ID: P88
PROJECT: T117 Adjacent Streets Dioxin Investigation
LOCATION: Seattle, WA
PROJECT NUMBER: A0006-15F
LOGGED BY: Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-2" Asphalt		Drove core:
P88-0.2-1.0	SPD0030	75%			**2-17"** SM (30/40/30). Silty SAND with gravel.	P88-0.2-1.0	a) 0-4 ft; 36 in. recovery
Represented interval: 0.2-1.0 ft					Layers of sand, silt and gravel mixtures 1-6"		b)0-4 ft; 34 in. recovery
Sampled interval in core: 0.2-0.8 ft*					thick. Gravels are 30% coarse, 70% fine. Sands are predominantly		12 in. compaction in core "a"
			1'--		fine but range from fine to coarse.		over 4 ft is 3 in. per ft
P88-1.0-2.0	SPD0031				Color 2.5Y 3/1 to 14" then 2.5Y 5/4 from14 - 17" with orange mottling	P88-1.0-2.0	
Represented interval: 1.0-2.0 ft					Black layer (2.5Y 2.5/1) from 7.5-8.5". No odor. Dry to moist.		Core 'b' intervals visually
Sampled interval in core: 0.8-1.5 ft*					**17-25.5"** ML (0/0/100). SILT. Rapid dilatency.No odor. Medium		estimated by comparing to
					toughness. Medium plasticity. Trace rootlets. Color 2.5Y 4/2 with		core 'a' strata.
			2'--		2.5Y 6/3 mottling and trace oxidized lenses.		
P88-2.0-4.0	SPD0032				**25.5 - 36"** CL (0/10/90). CLAY with sand.		Backfilled with bentonite
Represented interval: 2.0-4.0 ft					Similar to 31.5 -45" interval in P89.		chips and cold asphalt
Sampled interval in core: 1.5-3.0 ft*						P88-2.0-4.0	patch
			3'--				
			4'--		**Bottom of hole at 4 ft bgs.**		
			--				
			--				
			--				Samplers:
							Ben Starr,
					NOTE: Gap depicted between the bottom of hole depth and recovered		Kim Magruder-Carlton
					length is attributed to compaction of recovered strata.		Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. 2.25 in. Macrocore w/liners
DRILLING STARTED	August 19, 2008 1327
DRILLING FINISHED	August 19, 2008 1333

COORDINATES:

NORTHING	195669.884
EASTING	1274896.51
SURFACE ELEVATION	20.253
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.
7900 SE 28th Street, Ste 410
Mercer Island, WA 98040
(206) 230-9600 FAX (206) 230-9601

TEST HOLE ID: P89
PROJECT: T117 Adjacent Streets Dioxin Investigation
LOCATION: Seattle, WA
PROJECT NUMBER: A0006-15F
LOGGED BY: Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-3" Asphalt		Drove core:
P89-0.3-1.0	SPD0024	94%			**3"-11"** GW-GM (60/30/10). GRAVEL with silt and sand.	P89-0.3-1.0	a)0-4 ft 45" recovery
Represented interval: 0.3-1.0 ft					Gravel is 60% fine and 40% coarse. Sand is		b)0-4 ft 42" recovery
Sampled interval in core: 0.3-0.9 ft*					fine to coarse. Moderate petroleum odor. Color 5Y 3/2		
			1'--		**11-14"** Similar to above, black layer at 14", no apparent odor.		
P89-1.0-2.0	SPD0025				This layer only appears in one of the two cores as black. Appears	P89-1.0-2.0	
Represented interval: 1.0-2.0 ft					brown, silty in second core with black layer at 14" with wood debris		
Sampled interval in core: 0.9-1.8 ft*					at base.		
					14"-21" ML (5/20/75). SILT with sand. Sand is fine to medium.		Core 'b' intervals visually
			2'--		Trace grave is coarse, isolated, angular. Stiff. gradual basal contact.		estimated by comparing to
P89-2.0-4.0	SPD0026				Color is 2.5Y 3/2. No odor.		core 'a' strata.
Represented interval: 2.0-4.0 ft							
Sampled interval in core: 1.8-3.8 ft*					**21"-31.5"** ML SILT. Stiff. Dark brown with orange mottles,		Removed asphalt chunks
					2.5Y 3/2 and 2.5Y 6/2. Gradual basal contact		during sampling
			3'--				
					31.5"-45" CL (0/10/90). Lean CLAYwith sand.		Hole backfilled with
					Medium toughness, medium plasticity and stiff.	P89-2.0-4.0	bentonite chips and
					Color 2.5Y 5/2 with orange mottling. Fine sand occurs primarily		a cold asphalt patch.
					in beds 1-2 cm thick.		
			4'--		**Bottom of hole at 4 ft bgs.**		
			--				
			--				
							Samplers:
							Ben Starr,
					NOTE: Gap depicted between the bottom of hole depth and recovered		Kim Magruder-Carlton
					length is attributed to compaction of recovered strata.		Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 19,2008 1130
DRILLING FINISHED	August 19,2008 1132

COORDINATES:

NORTHING	195664.027
EASTING	1274917.793
SURFACE ELEVATION	20.326
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.
7900 SE 28th Street, Ste 410
Mercer Island, WA 98040
(206) 230-9600 FAX (206) 230-9601

TEST HOLE ID P90
PROJECT T117 Adjacent Streets Dioxin Investigation
LOCATION Seattle, WA
PROJECT NUMBER A0006-15F
LOGGED BY Jane Sund and Ben Starr

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-5" Asphalt		Drove core:
P90-0.4-1.0	SPD0046	90%				P90-0.4-1.0	a) 0-4 ft, 43 in. recovery
Represented interval: 0.4-1.0 ft					**5-22"** GW-GC (50/30/20). GRAVEL with sand and silt		b)0-4 ft, 39 in. recovery
Sampled interval in core: 0.4-0.9 ft*					Layers of gravel, sand and silt. Gravels are 40%		
			1'--		coarse, 60% fine. Sands are mostly fine.		
P90-1.0-2.0	SPD0047				Color is 10YR 4/2 up to 17", then 10YR 3/3 from 17-22"	P90-1.0-2.0	
Represented interval: 1.0-2.0 ft					No odor, dry.		
Sampled interval in core: 0.9-1.8 ft*							Core 'b' intervals visually
					22-36" ML (TR/10/90). SILT with sand.		estimated by comparing to
			2'--		Gravel is fine. Sand is fine. Color is 10YR 5/3.		core 'a' strata.
P90-2.0-4.0	SPD0048				Dry, no odor.		
Represented interval: 2.0-4.0 ft							Hole backfilled with
Sampled interval in core: 1.8-3.6 ft*					**36-43"** ML (0/TR/100). SILT with trace fine sand.		bentonite chips and
					Organic debris (rootlets and wood fragments).		a cold asphalt patch.
			3'--		Color 10YR 2/2. Dry, soft, med plasticity.	P90-2.0-4.0	
			4'--		**Bottom of hole at 4 ft bgs.**		
			--				
			--				
			--				Samplers:
							Ben Starr,
					NOTE: Gap depicted between the bottom of hole depth and recovered length is attributed to compaction of recovered strata.		Kim Magruder-Carlton
							Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 19,2008 0815
DRILLING FINISHED	August 19,2008 0818

COORDINATES:

NORTHING	195696.473
EASTING	1274897.669
SURFACE ELEVATION	20.39
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.
7900 SE 28th Street, Ste 410
Mercer Island, WA 98040
(206) 230-9600 FAX (206) 230-9601

TEST HOLE ID: P91
PROJECT: T117 Adjacent Streets Dioxin Investigation
LOCATION: Seattle, WA
PROJECT NUMBER: A0006-15F
LOGGED BY: Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-2.5" Asphalt		Drove core:
P91-0.2-1.0	SPD0027	91%			**2.5-7"** GW-GM (70/20/10). GRAVEL with silt and sand	P91-0.2-1.0	a) 0-4 ft, 43.5 in. recovery
Represented interval: 0.2-1.0 ft					Gravel is 30% fine and 70% coarse. Sand is fine to coarse.		b)0-4 ft, 42 in. recovery
Sampled interval in core: 0.2-0.9 ft*					Color 2.5Y 5/2. No odor.		
			1'--		**7-10"** ML (30/30/40). Sandy SILT with gravel Gravel is 70% fine and	P91-1.0-2.0	Core 'b' intervals visually
P91-1.0-2.0	SPD0028				30% coarse. Ash layer present at 9". Color is 2.5Y 3/1.		estimated by comparing to
Represented interval: 1.0-2.0 ft					No odor. Abrupt basal contact.		core 'a' strata.
Sampled interval in core: 0.9-1.8 ft*					**10-16"** SW-SM (40/50/10). Well graded SAND with silt and gravel		
					Gravel is fine to coarse. Sand is predominantly		
			2'--		fine to medium. Color 2.5Y 7/1. Wood debris		
P91-2.0-4.0	SPD0029				with black stain (no odor), at base. Abrupt basal contact.		
Represented interval: 2.0-4.0 ft							
Sampled interval in core: 1.8-3.6 ft*					**16-27"** ML/CL (5/25/70). SILT/CLAY with sand.		
					Interbedded fines with sand. Sand is fine. Gravels		
			3'--		are in bed at 20" and are coarse, angular, up to 2 cm long.		
					Clay content increases below 23". Mottled. 2.5Y 4/2 (sands) and	P91-2.0-4.0	
					2.5Y 6/2 (silt/clay).		
					27" - 43.5" ML/CL SILT/CLAY. Similar to 31.5 - 45" interval in P89.		
			4'--		**Bottom of hole at 4 ft bgs.**		Hole backfilled with
							bentonite chips and
							a cold asphalt patch.
			--				
			--				
			--				Samplers:
							Ben Starr,
					NOTE: Gap depicted between the bottom of hole depth and recovered		Kim Magruder-Carlton
					length is attributed to compaction of recovered strata.		Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 19,2008 1233
DRILLING FINISHED	August 19,2008 1235

COORDINATES:

NORTHING	195643.524
EASTING	1274895.588
SURFACE ELEVATION	20.307
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.
7900 SE 28th Street, Ste 410
Mercer Island, WA 98040
(206) 230-9600 FAX (206) 230-9601

TEST HOLE ID P92
PROJECT T117 Adjacent Streets Dioxin Investigation
LOCATION Seattle, WA
PROJECT NUMBER A0006-15F
LOGGED BY Ben Starr

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-3" Asphalt		Drove core:
P92-0.2-1.0	SPD0059	100%			**3"-12"** GW (70/30/TR). Poorly graded GRAVEL with sand.	P92-0.2-1.0	a) 0-31"
Represented interval: 0.2-1.0 ft					Gravel is mostly fine. Sand is equal fractions medium		b) 0-28"
Sampled interval in core: 0.2-1.0 ft*					and fine. Dry, weak. Color 10YR 2/2. Slight odor.		c) 31-79"
			1'--				
P92-1.0-2.0	SPD0060				**12-24"** SP-SM (20/70/10). Poorly graded SAND with silt and gravel.	P92-1.0-2.0	No adjustment for
Represented interval: 1.0-2.0 ft					Gravel is coarse. Sand predominantly fine.		compaction,
Sampled interval in core: 1.0-2.0 ft*					Dry, no odor, weak. Color is 2.5Y 3/2.		100% recovery
							Hole backfilled with
			2'--				
P92-2.0-4.0	SPD0061	100%			**24" - 31"** SP (30/70/TR). Poorly graded SAND with gravel.	P92-2.0-4.0	bentonite chips and
Represented interval: 2.0-4.0 ft					Fine sand with fine gravel. Red oxidation. Color is 2.5Y 3/2.		a cold asphalt patch.
Sampled interval in core: 2.0-4.0 ft*					**31-34"** ML.SILT (TR/0/100). Low plasticity, firm. Color 2.5Y 3/2. Moist.		
					34-36" SW (40/60/TR). Medium to fine SAND with fine gravel.		
			3'--		Color 10YR 6/1. Dry and weak.		
					36-46" CL 0/10/90. Sandy CLAY. Medium plasticity. Sand is very fine.		
					Medium dilatency, firm and moist.		
					Color is 10YR 2/2.		
					46-54" MH (0/TR/100). SILT. Medium plasticity, medium dilatency,		
			4'--				
P92-4.0-6.0	SPD0062				moist,weak. Color is 10YR 4/2 to 10YR 5/2, few orange mottles	P92-4.0-6.0	
Represented interval: 4.0-6.0 ft					and bands.		
Sampled interval in core: 4.0-6.0 ft*							
					54-79" SP-SM (0/90/10). Predominantly fine SAND with some silt.		
					Color is 10YR 5/2 with orange mottles/banding.		
			5'--				
			6'--				
					Bottom of hole at 79" bgs.		
			--				Samplers:
							Ben Starr,
							Kim Magruder-Carlton
							Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 20,2008 1145
DRILLING FINISHED	August 20,2008 1149

COORDINATES:

NORTHING	195786.661
EASTING	1274667.494
SURFACE ELEVATION	20.075
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.
7900 SE 28th Street, Ste 410
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TEST HOLE ID P93
PROJECT T117 Adjacent Streets Dioxin Investigation
LOCATION Seattle, WA
PROJECT NUMBER A0006-15F
LOGGED BY Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-2" Asphalt		Drove core:
P93-0.2-1.0	SPD0033	98%			**2-11"** SW-SM (25/65/10). Well graded SAND with silt and gravel	P93-0.2-1.0	a) 0-4'; 47" recovery
Represented interval: 0.2-1.0 ft					Gravels are 10% coarse, 90% fine. Sands are 20% fine,		b) 0-4'; 40" recovery
Sampled interval in core: 0.2-1.0 ft*					70% medium, 10% coarse. Color grades from 2.5Y 3/1 at top		Sample division at:
			1'--		to 2.5Y 4/3 at 10". No odor, dry. Possible stained layer from 10-11".		1' and 2'
P93-1.0-2.0	SPD0034				No odor to stained layer; color is 2.5Y 2.5/1	P93-1.0-2.0	
Represented interval: 1.0-2.0 ft					**11-33.5"** SM (0/60/40). Silty SAND		No adjustment for
Sampled interval in core: 1.0-2.0 ft*					Sand is fine. Color is 2.5Y 3/3 with occaisonal dark		compaction in core 'a'.
					and orange mottles. Dry, dense, no odor observed.		
			2'--				Core 'b' intervals visually
P93-2.0-4.0	SPD0035					P93-2.0-4.0	estimated by comparing to
Represented interval: 2.0-4.0 ft							core 'a' strata.
Sampled interval in core: 2.0-4.0 ft*							
			3'--		**33.5-47"** CL (0/TR/100). Lean Clay. No odor, dry, stiff.		
					Medium toughness and medium plasticity. Color is 10YR 4/4.		
							Hole backfilled with
			4'--		**Bottom of hole at 4 ft bgs.**		bentonite chips and
							a cold asphalt patch.
			--				
			--				
			--				Samplers:
							Ben Starr,
							Kim Magruder-Carlton
							Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 19,2008 start time not recorded
DRILLING FINISHED	August 19,2008 1430

COORDINATES:

NORTHING	195574.547
EASTING	1274902.864
SURFACE ELEVATION	20.497
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

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TEST HOLE ID	P94
PROJECT	T117 Adjacent Streets Dioxin Investigation
LOCATION	Seattle, WA
PROJECT NUMBER	A0006-15F
LOGGED BY	Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-3" GM (40/30/30). Silty GRAVEL with Sand.		Drove core:
P94-0.1-1.0	SPD0020	100%			Similar to P95. Abrupt basal contact. Dry.	P94-0.1-1.0	a) 0-2 ft; 100% recovery
Represented interval: 0.1-1.0 ft					Color is 2.5Y 7/1		b) 2-6 ft; 43" recovery
Sampled interval in core: 0.1-1.0 ft*					**3-9"** ML. SILT. Soil is moist, color is 2.5Y 3/2 and grades to -		c) 0-30" 100% recovery
			1'--		**9-10"** SP (30/70/TR). Poorly graded SAND with gravel		
P94-1.0-2.0	SPD0021				Gravelly sand. Ash/asphalt like, no odor. Color	P94-1.0-2.0	
Represented interval:1.0-2.0 ft					is black (2.5Y 2.5/1). Abrupt basal contact.		
Sampled interval in core: 1.0-2.0 ft*							
					10-23" ML SILT. Rapid dilatency. Medium toughness and medium		Hole backfilled with
			2'--		plasticity. Color is 2.5Y 3/2. No odor. Trace fine sand. Dry.		bentonite chips and
P94-2.0-4.0	SPD0022	90%			**23-27"** ML SILT. Similar to above. Dry. 2.5Y 4/4.	P94-2.0-4.0	a cold asphalt patch.
Represented interval: 2.0-4.0 ft							
Sampled interval in core: 2.0-4.0 ft*							*No adjustment for
					27-44" Interbedded SILT/CLAY (ML/CL) and fine sand (SP)		compaction in core 'a'.
			3'--		(0/50/50). Color is 2.5Y 6/2		Core 'c' intervals visually
					Beds are 1cm thick. Medium to high plasticity. No odor.		estimated by comparing to
							core 'a' strata.
			4'--		**44-68"** SP (0/75/25). Fine to medium SAND with silt interbeds		
P94-4.0-6.0	SPD0023				Poorly graded 2.5Y 2.5/1. No odor. Silt beds have oxidation bands	P94-4.0-6.0	
Represented interval: 4.0-6.0 ft							
Sampled interval in core: 4.0-5.6 ft*							
			5'--				
			6'--		**Bottom of hole at 6 ft bgs.**		
			--				Samplers:
							Ben Starr,
					NOTE: Gap depicted between the bottom of hole depth and recovered		Kim Magruder-Carlton
					length is attributed to compaction of recovered strata.		Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 19,2008 0955
DRILLING FINISHED	August 19,2008 1000

COORDINATES:

NORTHING	195652.287
EASTING	1274954.101
SURFACE ELEVATION	20.131
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.
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(206) 230-9600 FAX (206) 230-9601

TEST HOLE ID P95
PROJECT T117 Adjacent Streets Dioxin Investigation
LOCATION Seattle, WA
PROJECT NUMBER A0006-15F
LOGGED BY Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-1" Surface vegetation	P95-0.1-1.0	Drove core:
P95-0.1-1.0	SPD0015	85%			**1-10.25"** GP-GM (40/30/30). Poorly graded GRAVEL with silt and sand		a) 0-4 ft, 41" recovery
Represented interval: 0.1-1.0 ft					Gravel is 10% coarse and 90% fine. Sand is		b) 4-8 ft, 34" recovery
Sampled interval in core: 0.1-0.9 ft*					80% fine and 10% coarse. Angular grains. Color change from		below approximately
			1'--		2.5Y 7/1 to 2.5Y 5/3 at 5". Dry, no odor, trace organics. Possibly fill?	P95-1.0-2.0	7" slough material
P95-1.0-2.0	SPD0016						c) 0-4 ft, 41"recovery.
Represented interval: 1.0-2.0 ft					**10.25-23"** ML SILT. with trace fine to coarse sand.		
Sampled interval in core: 0.9-1.7 ft*					Low toughness, low plasticity and rapid dilatency.		
					Dry. Orange mottling. 2.5Y 4/3		
			2'--			P95-2.0-4.0	
P95-2.0-4.0	SPD0017				**23-33"** similar to above but with increased clay apparent (0/TR/100).		
Represented interval: 2.0-4.0 ft							Divided 4-8 ft core
Sampled interval in core: 1.7-3.4 ft*							recovered length (34") in
					33-41" SM (0/80/20).		half for 4-6' and 6-8'
			3'--		Silty, fine SAND. Silt occurs in matrix and thin (2mm)		samples
					lenses with oxidized perimeters. Dry, poorly graded. No odor.		
					No organics. Gradual basal contact.		Hole backfilled with
					41-53.5" SILT/CLAY (ML/CL) (0/90/10).		bentonite chips
					Fine sand occurs in lenses and layers		
					in upper 3" of unit. Rapid dilatency. Medium toughness, medium		
			4'--			P95-4.0-6.0	
P95-4.0-6.0	SPD0018	71%			plasticityand no odor. Color 2.5Y 5/2. Abrupt basal contact.		
Represented interval: 4.0-6.0 ft							
Sampled interval in core: 3.4-4.8 ft*							
					53.5-69" SM (0/75/25).		
					Silty fine SAND. Silt occurs primarily in laminar		
			5'--		lenses and beds. Sand is poorly graded. Color is 2.5Y 3/1. Trace		
					orange oxidation banding. No odor. Abrupt basal contact.		
			6'--		**69-75"** SW Fine to medium SAND. Color is 2.5Y 2.5/1. No odor.	P95-4.0-6.0	
P95-6.0-8.0	SPD0019				(Duwamish sand).		
Represented interval: 6.0-8.0 ft							
Sampled interval in core: 4.8-6.3 ft*							
							Samplers:
							Ben Starr,
			7'--				Kim Magruder-Carlton
					NOTE: Gap depicted between the bottom of hole depth and recovered length is attributed to compaction of recovered strata.		Ian Stupakoff, Jane Sund
					Bottom of hole at 8 ft bgs.		

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 19,2008 0820
DRILLING FINISHED	August 19,2008 0825

COORDINATES:

NORTHING	195585.572
EASTING	1275116.119
SURFACE ELEVATION	20.815
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

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TEST HOLE ID P96
PROJECT T117 Adjacent Streets Dioxin Investigation
LOCATION Seattle, WA
PROJECT NUMBER A0006-15F
LOGGED BY Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-5" Asphalt		Drove core:
P96-0.4-1.0	SPD0036	100%			**5-10"** GW (70/30/tr). GRAVEL with sand		a) 0-32" 100%
Represented interval: 0.4-1.0 ft					Color 5Y 7/1. Gravel is 70% coarse	P96-0.4-1.0	recovery
Sampled interval in core: 0.4-1.0 ft*					and 30% fine. Sand is 30% fine, 40% medium and 30% coarse.		b) 32"-6 ft with 34" recovery
			1'--		Dry, no odor.		c) 0-2 ft with 100%
P96-1.0-2.0	SPD0037				**10-15"** (10/90/TR) SW.	P96-1.0-2.0	recovery
Represented interval: 1.0-2.0 ft					Fine to medium SAND with fine to coarse gravel.		
Sampled interval in core: 1.0-2.0 ft*					Color 5Y 3/1 at top grading to black. Appears as ash or degraded		
					asphalt. Abrupt basal contact. Loose. No odor.		
			2'--		**15-43"** (0/TR/100) ML. SILT		
P96-2.0-4.0	SPD0038	71%			2.5Y 4/2. Low plasticity, no odor. Dark and orange		
Represented interval: 2.0-4.0 ft					mottling.		
Sampled interval in core: 2.0-4.1 ft*							Core 'c' intervals visually
							estimated by comparing to
			3'--				core 'a' strata.
							Core 'b' intervals broke at
							half-way length for 2-4' and
						P96-2.0-4.0	4-6' samples
					43-66" (0/40/60 overall).		
			4'--		Interbedded fine sands (SP) and SILT (ML). Fines show rapid		Hole backfilled with
P96-4.0-6.0	SPD0039				dilatency, medium toughness, low plasticity. Color 10YR 5/2.		bentonite chips and
Represented interval: 4.0-6.0 ft					Sands are fine, poorly graded. Color 2.5Y 5/1. Wet at 46", dry above.		a cold asphalt patch.
Sampled interval in core: 4.1-5.5 ft*					Sands in beds up to 4" thick.		
			5'--			P96-4.0-6.0	
							This is a log
							for re-sampling of
			6'--		**Bottom of hole at 6 ft bgs.**		P96. Earlier sampling on
							August 18, 2008.
			--				Samplers:
					NOTE: Gap depicted between the bottom of hole depth and recovered		Ben Starr,
					length is attributed to compaction of recovered strata.		Kim Magruder-Carlton
							Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 19, 2008 1520
DRILLING FINISHED	August 19, 2008 1522

COORDINATES:

NORTHING	195540.768
EASTING	1275139.772
SURFACE ELEVATION	20.667
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

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TEST HOLE ID P96
PROJECT T117 Adjacent Streets Dioxin Investigation
LOCATION Seattle, WA
PROJECT NUMBER A0006-15F
LOGGED BY Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-4" Asphalt and gravel. Gravel is fine and angular.		
P96-0.3-1.0	SPD0003	100			**4-10"** 70/30/TR GW. Color is 5Y 5/2	P96-0.3-1.0	Drove core:
Represented interval: 0.3-1.0 ft					Gravel 70% coarse and 30% fine. Sand is 30% fine, 40% medium		a) 0-2 ft
Sampled interval in core: 0.3-1.0 ft*					and 30% coarse. Dry, no odor		b) 2-6 ft
			1'--		**10-11"** Color change to very dark brown (10YR 2/2) at 10". Silty		c) 0-2 ft
P96-1.0-2.0	SPD0004				SAND with gravel. SM (20/50/30). Sand is fine to coarse. Gravel up	P96-1.0-2.0	
Represented interval: 1.0-2.0 ft					to 1cm. Moist. No odor.		3 ft recovery on drive
Sampled interval in core: 1.0-2.0 ft*					**11-12.5"** SW. Fine to medium SAND		from 2-6 ft;
					with fine to coarse gravel. Sand is		Sample division at (see Note):
			2'--		40% fine, 30% medium and 30% coarse. Black color (5Y 2.5/1).		42" for 2-4' and 4-6'
P96-2.0-4.0	SPD0005	75			No odor. Appears as ash or degraded asphalt. Abrupt basal	P96-2.0-4.0	samples.
Represented interval: 2.0-4.0 ft					contact.		
Sampled interval in core: 2.0-3.5 ft*					**12.5-17.5"** ML. SILT with trace fine sand.		
					Color 10YR 2/2. Low plasticity		
					No odor. Trace orange mottling. Grades to moist with trace		
			3'--		wood fragments and trace coarse gravel.		
					17.5-33" Similar to above, color is 10YR 3/6. Trace mottling. Dry.		
							First sampling
							Location was re-sampled
					33-60" Interbedded SAND (SP) and fines (ML/CL) (0/40/100).		**19-Aug-08**
P96-4.0-6.0	SPD0006		4'--		Fines show rapid dilatency,	P96-4.0-6.0	
Represented interval: 4.0-6.0 ft					medium toughness, low plasticity. Color is 10YR 5/2. Sands are		Hole backfilled with
Sampled interval in core: 3.5-5.0 ft*					fine, poorly graded with color 10YR 5/3. Trace orange mottling.		bentonite chips and
					Dry to moist. No odor. Sand beds are up to 4" thick.		a cold asphalt patch.
			5'--				
			6'--		**Bottom of hole at 6 ft bgs.**		
			--				Samplers:
							Ben Starr,
							Kim Magruder-Carlton
					NOTE: Gap depicted between the bottom of hole depth and recovered length is attributed to compaction of recovered strata.		Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 18, 2008 1230
DRILLING FINISHED	August 18, 2008 1300

COORDINATES:

NORTHING	195540.768
EASTING	1275139.772
SURFACE ELEVATION	20.667
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.

7900 SE 28th Street, Ste 410
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TEST HOLE ID: P97
PROJECT: T117 Adjacent Streets Dioxin Investigation
LOCATION: Seattle, WA
PROJECT NUMBER: A0006-15F
LOGGED BY: Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-1" Grass and rootlets		Drove core:
P97-0.1-1.0	SPD0007	100			**1.0-8.0"** GW (70/30/trace). GRAVEL	P97-0.1-1.0	a) 0-4' 100% recovery
Represented interval: 0.1-1.0 ft					Gravel is fine to coarse, max 2.5cm. Approximately 25% coarse		b) 4-8' 73% recovery
Sampled interval in core: 0.1-1.0 ft*					gravel, angular. Color 5Y 6/3. Organic odor.		c) 0-4' 100% recovery
			1'--				
P97-1.0-2.0	SPD0008				**8.0-14.0"** CH (10/10/80).CLAY with fine sand and gravel Gravels	P97-1.0-2.0	Raining - covered portions
Represented interval:1.0-2.0 ft					up to 1.5 cm. 20% fine gravel, 80% coarse. Color 2.5Y 4/2.		of core with foil, except
Sampled interval in core: 1.0-2.0 ft*					Some orange mottling. Very stiff, dry, no odor. High plasticity,		for portions being
					medium toughness.		described.
			2'--				
P97-2.0-4.0	SPD0009	73			**14.0-68"** CH (TR/TR/100).CLAY with trace fine sand.Similar to above.	P97-2.0-4.0	
Represented interval: 2.0-4.0 ft					Fine sand occurs in lenses and in a bed from 53-55". Color 2.5Y 6/2.		
Sampled interval in core: 2.0-4.0 ft*					The sand interbed is fine to coarse, well graded, with black and		
					white grains. Dry, no odor, trace coarse gravel observed during		
			3'--		sampling.		
			4'--				
P97-4.0-6.0	SPD0018					P97-4.0-6.0	
Represented interval: 4.0-6.0 ft							
Sampled interval in core: 4.0-5.7 ft*							
							This location was
			5'--				**resampled Aug. 19**
							Hole backfilled with
							bentonite chips.
			6'--				
P97-6.0-8.0	SPD0011				**68-83"** CH (0/40/60).Sandy CLAY. Clay is similar to above with	P97-6.0-8.0	
Represented interval: 6.0-8.0 ft					increased fine sand. Some faint laminations of fine sand apparent.		
Sampled interval in core: 5.7-6.9 ft*					1" thick bed of fine-coarse sand at 77". Dry.		
							Samplers:
			7'--		**NOTE: Gap depicted between the bottom of hole depth and recovered**		Ben Starr,
					length is attributed to compaction of recovered strata.		Kim Magruder-Carlton
							Ian Stupakoff, Jane Sund
					Bottom of hole at 8 ft bgs.		

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 18, 2008 1530
DRILLING FINISHED	August 18, 2008 1345

COORDINATES:

NORTHING	195201.16
EASTING	1275132.809
SURFACE ELEVATION	30.528
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

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TEST HOLE ID: P97
PROJECT: T117 Adjacent Streets Dioxin Investigation
LOCATION: Seattle, WA
PROJECT NUMBER: A0006-15F
LOGGED BY: Ben Starr

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-1" Grass with rootlets		Drove core:
P97-0.1-1.0	SPD0043	96			**1.0-11.0"** GP (40/60/TR). GRAVEL with sand.	P97-0.1-1.0	a) 0-4 ft
Represented interval: 0.1-1.0 ft					Gravel is fine, maximum diameter is 15 cm. Sand is fine to medium.		recovered 46"
Sampled interval in core: 0.1-1.0 ft*					Color is 2.5Y 4/3, organic odor.		
			1'--				
P97-1.0-2.0	SPD0044				**11-46"** CH. CLAY with trace fine sand and some orange mottling.	P97-1.0-2.0	
Represented interval: 1.0-2.0 ft					Color is 2.5Y 4/2		
Sampled interval in core: 1.0-2.0 ft*					Very stiff, high plasticity. No odor.		
			2'--				
P97-2.0-4.0	SPD0045					P97-2.0-4.0	
Represented interval: 2.0-4.0 ft							
Sampled interval in core: 2.0-3.8 ft*							
			3'--				
			4'--				
					Bottom of hole at 4 ft bgs.		
							This is log of second
							sampling
			--				First sampling occurred
							Aug. 18, 2008
							Hole backfilled with
							bentonite chips.
			--				
			--				Samplers:
							Ben Starr,
					NOTE: Gap depicted between the bottom of hole depth and recovered		Kim Magruder-Carlton
					length is attributed to compaction of recovered strata.		Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 19, 2008 time not recorded
DRILLING FINISHED	August 19, 2008 time not recorded

COORDINATES:

NORTHING	195201.16
EASTING	1275132.809
SURFACE ELEVATION	30.528
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.
7900 SE 28th Street, Ste 410
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TEST HOLE ID P98
PROJECT T117 Adjacent Streets Dioxin Investigation
LOCATION Seattle, WA
PROJECT NUMBER A0006-15F
LOGGED BY Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-4" Asphalt		Drove core:
P98-0.3-1.0	SPD0043	98					a) 0-4 ft
Represented interval: 0.3-1.0 ft					**4.0-15.0"** GW-GM (50/40/10). GRAVEL is 40% coarse, 60% fine.	P98-0.3-1.0	recovered 47"
Sampled interval in core: 0.3-1.0 ft*					Max gravel size is 1" long.		b) 0-4 ft recovered 44"
			1'--		Sand is 30% coarse, 60% medium, 10% fine.		
P98-1.0-2.0	SPD0044				Color is 10YR 7/1. No odor, dry.	P98-1.0-2.0	
Represented interval: 1.0-2.0 ft					Top of unit shows black, fine to medium grained sand		
Sampled interval in core: 1.0-2.0 ft*					(possibly asphalt). Too small to remove entirely.		
					15.0-22.0" CH. CLAY with trace fine sand. Sand is fine and coarse.		
			2'--		Clay has medium toughness,medium to high plasticity and is very stiff.		
P98-2.0-4.0	SPD0045				Color is 10YR 3/2. Possible piece of charcoal observed on	P98-2.0-4.0	
Represented interval: 2.0-4.0 ft					sampling.		Core b intervals visually
Sampled interval in core: 2.0-3.9 ft*					**22-47"** CH. Very stiff CLAY. Similar to unit in P97. Trace rootlets.		estimated by comparing to
					Orange and brown mottling. Trace ash in lenses.		core 'a' strata.
					Color is 2.5Y 6/2. No odor.		
			3'--				
							This is log of second
							sampling of P98
							on Aug. 19, 2008
							First sampling occurred
			4'--		**Bottom of hole at 4 ft bgs.**		on Aug. 18, 2008
							Hole backfilled with
							bentonite chips and
			--				a cold asphalt patch.
			--				
			--				Samplers:
							Ben Starr,
					NOTE: Gap depicted between the bottom of hole depth and recovered		Kim Magruder-Carlton
					length is attributed to compaction of recovered strata.		Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 19, 2008 1600
DRILLING FINISHED	August 19, 2008 1605

COORDINATES:

NORTHING	195201.16
EASTING	1275132.809
SURFACE ELEVATION	30.528
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.
7900 SE 28th Street, Ste 410
Mercer Island, WA 98040
(206) 230-9600 FAX (206) 230-9601

TEST HOLE ID P98
PROJECT T117 Adjacent Streets Dioxin Investigation
LOCATION Seattle, WA
PROJECT NUMBER A0006-15F
LOGGED BY Susan FitzGerald

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-4" Asphalt		Drove core:
P98-0.3-1.0	SPD0002	100					a) 0-4 ft 100% recovery
Represented interval: 0.3-1.0 ft					**4-15"** GW-GM (50/40/10). GRAVEL is 40% coarse, 60% fine	P98-0.3-	b) 0-4 ft recovered 36"
Sampled interval in core: 0.3-1.0 ft*					maximum particle diameter is 2 cm. Sand is 60% medium,		
			1'--		30% coarse and 10% fine. Color is 10YR 7/1		
P98-1.0-2.0	SPD0013				No odor, dry. Trace gold colored medium sand sized grains.		
Represented interval: 1.0-2.0 ft					Topof unit also shows black, fine to medium sand sized grains	P98-1.0-2.0	
Sampled interval in core: 1.0-2.0 ft*					(possible asphalt) too small to entirely remove.		
					15-21" CH. CLAY with trace fine sand and trace gravel. Gravel		
			2'--		occurs in a lens 0.5" thick at 18.5". Gravel is fine and angular.		
P98-2.0-4.0	SPD0014				Clay has medium toughness, medium to high plasticity.		
Represented interval: 2.0-4.0 ft					Color is 10 YR 3/2. Stiff.		
Sampled interval in core: 2.0-4.0 ft*							
					21-46" CH. Very stiff CLAY, similar to 14-68" interval in P97.Trace		
					ash and wood fibers at 26". Color is 2.5Y 6/2. Orange-brown mottling.		
			3'--		No odor.		Core b intervals visually
							estimated by comparing to
						P98-2.0-4.0	core 'a' strata.
					Bottom of hole at 4 ft bgs.		This location was
			4'--				re-sampled
							on Aug. 19, 2008
							Hole backfilled with
			5'--				bentonite chips and
							a cold asphalt patch.
			6'--				
			7'--				Samplers:
							Ben Starr,
							Kim Magruder-Carlton
							Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 18, 2008 1550
DRILLING FINISHED	August 18, 2008 1600

COORDINATES:

NORTHING	195197.561
EASTING	1275155.247
SURFACE ELEVATION	31.535
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.
7900 SE 28th Street, Ste 410
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TEST HOLE ID	P99
PROJECT	T117 Adjacent Streets Dioxin Investigation
LOCATION	Seattle, WA
PROJECT NUMBER	A0006-15F
LOGGED BY	Ben Starr

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-4" Asphalt pavement		Drove:
P99-0.3-1.0	SPD0049	79					Core a) 0-4 ft
Represented interval: 0.3-1.0 ft					**4"-12"** GW-GM (70/20/10). Fine to coarse GRAVEL with sand and	P99-0.3-1.0	recovered 38"
Sampled interval in core 'a': 0.3-0.8 ft*					fines. Gravel is 50% coarse and 50% fine.		
Sampled interval in core 'c': 0.3-1 ft			1'--		Color 10.5YR 7/1 from 4-9"; Color is 7.5YR 4/1 from 9-12".		
P99-1.0-2.0	SPD0050				No odor.	P99-1.0-2.0	
Represented interval: 1.0-2.0 ft					**12-22"** SM (20/60/20). Mostly fine SAND with coarse gravel.		
Sampled interval in core 'a': 0.8-1.6 ft*					No odor. Color 7.5YR 4/1.		
Sampled interval in core 'c': 1-2 ft					Wood fragment with greenish color in surrounding soil		Drove:
			2'--		observed in this interval.		Core b) 4-8 ft
P99-2.0-4.0	SPD0051				**22-32"** SM (TR/80/20). SAND. 60% coarse sand, 40% fine sand.		Recovered 40"
Represented interval: 2.0-4.0 ft					Color is 7.5YR 5/6 from 22-28". Color is 10YR 7/6 from 28-32"		
Sampled interval (from core 'a'): 1.6-3.2 ft*					Gravels are friable.		
					32-38" ML (0/0/100). SILT with low dilatency and medium plasticity	P99-2.0-4.0	
					Grey color (7.5YR 5/1). No odor.		Drove Core c) 0-2.5 ft
			3'--		**38-48"** GM (40/30/30).GRAVEL is mostly fine. Sand is 50% coarse,		100% recovery
					and 50% fine. No odor. Medium plasticity and very soft.		
					Has orange mottling. Color not recorded.		
							Hole backfilled with
P99-4.0-6.0	SPD0052	83	4'--		**48-78"** CL/ML (30/20/50).CLAY/SILT with fine gravel and fine sand.		bentonite chips and
Represented interval: 4.0-6.0 ft					Has medium plasticity. Color 10YR 5/4	P99-4.0-6.0	a cold asphalt patch.
Sampled interval (core 'b'): 3.2-4.8 ft*					Wet and very soft.		
					Interbedded fine sand layers 0.5-1" thick. Few orange mottles.		
			5'--				
P99-6.0-8.0	SPD0052						
Represented interval: 6.0-8.0 ft							
Sampled interval (core 'b'): 4.8-6.5 ft*							
			6'--			P99-6.0-8.0	
			7'--				Samplers:
							Ben Starr,
					NOTE: Gap depicted between the bottom of hole depth and recovered		Kim Magruder-Carlton
					length is attributed to compaction of recovered strata.		Ian Stupakoff, Jane Sund
					Bottom of hole at 8 ft bgs.		

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 20, 2008 0915
DRILLING FINISHED	August 20, 2008 0925

COORDINATES:

NORTHING	195197.686
EASTING	1275333.779
SURFACE ELEVATION	20.216
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

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7900 SE 28th Street, Ste 410
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TEST HOLE ID P100
PROJECT T117 Adjacent Streets Dioxin Investigation
LOCATION Seattle, WA
PROJECT NUMBER A0006-15F
LOGGED BY Ben Starr

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-5" asphalt pavement.		Drove core:
P100-0.4-1.0	SPD0054	100					a) 0-27"
Represented interval: 0.4-1.0 ft					**5-10"** GW-GM (70/20/10). GRAVEL. 70% coarse gravel (friable),	P100-0.4-1.0	b) 0-26"
Sampled interval in core: 0.4-1.0 ft*					30% fine gravel. Sands are 60% coarse, 40% fine grained.		c) 0-30"
			1'--		Color is 10YR 7/1. Dry. Weak to moderate toughness.		d) 0-30"
P100-1.0-2.0	SPD0055				Coarse gravel sized pieces of basalt observed on sampling.		
P100-1.0-2.0 DUP	SPD0056				**10-16"** SP. Mostly fine SAND and crumbled asphalt. Strong odor.	P100-1.0-2.0	
Represented interval: 1.0-2.0 ft					Weak toughness. Dry.		
Sampled interval in core: 1.0-2.0 ft*					**16-21"** GW (70/30/TR).Slight asphalt odor.		
			2'--		Gravel is 70% coarse, 30% fine.		
P100-2.0-4.0	SPD 0057	79			Sand is medium to coarse. Color 7.5YR 2.5/1. Dry.		Drove core:
Represented interval: 2.0-4.0 ft					**21-24"** GP (80/20/0).Abrupt color change to tan color (10YR 6/6).		e) 2-6ft
Sampled interval in core: 2.2-3.8 ft*					Mostly coarse gravel with fine sand.		recovered 38" for 2-4'
					Weak toughness, dry.		and 4-6' sampling interval
			3'--		**24-30"** CL (0/0/100).CLAY. Medium plasticity, no dilatency and	P100-2.0-4.0	
					are dry. Color is 10YR 4/1.		
					30-36" GP-GM (70/30/10). Mostly fine GRAVEL with fine to medium		
			4'--		sand. Soil is wet, soft and color is 10YR 4/1.		
P100-4.0-6.0	SPD0058						
Represented interval: 4.0-6.0 ft					**36-40"** CH (0/0/100). CLAY. High plasticity, no dilatency and is firm		
Sampled interval in core: 3.8-5.6 ft*					and moist. Color 10YR 4/1.		
			5'--		**40-68"** CH (0/TR/100). CLAY.	P100-4.0-6.0	Hole backfilled with
					Soil has medium plasticity, is firm and moist. Color is 10YR 4/1 with		bentonite chips and
					organge mottles. No dilatency. Very similar to above interval		a cold asphalt patch.
					with trace fine sand and medium plasticity.		
			6'--		**Bottom of hole at 6 ft bgs.**		
			--				Samplers:
							Ben Starr,
					NOTE: Gap depicted between the bottom of hole depth and recovered		Kim Magruder-Carlton
					length is attributed to compaction of recovered strata.		Ian Stupakoff, Jane Sund

DRILLING CONTRACTOR	Cascade Drilling, Inc.
DRILLING METHOD	GeoProbe
SAMPLING EQUIPMENT	2.25 in. Macrocore w/liners
DRILLING STARTED	August 20, 2008 Time Not Recorded
DRILLING FINISHED	August 20, 2008 0955

COORDINATES:

NORTHING	195221.533
EASTING	1275315.578
SURFACE ELEVATION	20.176
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

integral consulting inc.

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TEST HOLE ID: HA01
PROJECT: T117 Adjacent Streets Dioxin Investigation
LOCATION: Seattle, WA
PROJECT NUMBER: A0006-15F
LOGGED BY: Susan FitzGerald (and B. Starr)

SAMPLE INFORMATION				STRATA	DESCRIPTION	Samples	Notes
Sample ID	Sample No. (SPD####)	% Recov.	Recovered Feet		USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weather		
					0-1" GM (50/TR/50). GRAVEL is predominantly fine (pea gravel)		Cleared surface of
HA1-0.0-1.0	SPD0066	100			Color is 10YR2/2	HA1-0.0-1.0	vegetation. Bare soil
HA1-0.0-1.0 DUP	SPD0067	100			with trace fine sand. Trace rootlets, moist and organic odor.		at ground surface.
Represented interval: 0.0-1.0 ft		100					
Sampled interval: 0.0-1.0 ft*			1'--		**1-2'** ML (0/30/70). SILT with trace fine sand. Color 10YR 3/2.		Will collect:
HA-1.0-2.0	SPD0068	100			Sandy material at 19" , no odor. 10YR 4/3.	HA1-1.0-2.0	0-1' with 10" hand auger
Represented interval: 1.0-2.0 ft					Trace rootlets.		1-2' with 14" #1 hand auger
Sampled interval: 1.0-2.0 ft*							and cap
							2-4' with 14" #2 hand auger
			2'--				and cap
HA1-2.0-3.2	SPD0069	100					
Represented interval: 2.0-3.2 ft					**2-3.2'** CL. CLAY, similar to 25.5-36" interval in P88: 0/10/90	HA1-2.0-3.2	Ian used 0-1' spoon to
Sampled interval: 2.0-3.2 ft*					Stiff. Color is 2.5Y 5/2 with orange mottling.		remove slough gravel
							after 0-6" was collected
			3'--				Sample time for 0-1'
					Bottom of hole at 3.2 ft bgs.		was 1027
							Sample time for 1-2'
							was 1031
			4'--				Ian carefully lowered
							sampler to collect
							subsurface intervals
							Time=1054, very stiff
							clay is essentially
			5'--				offering refusal at
							3'2" bgs. See Photos.
							Sample time for 2-3.2'
							interval is 1054.
			6'--				
					Summary:		
					Pea gravel with silt in top few inches. Soft below a couple inches		Samplers:
			--		(~2.75" bgs).		Ben Starr,
					Silt and clay below. Moist. Soil turns sandy at 18" bgs		Kim Magruder-Carlton
							Ian Stupakoff

DRILLING CONTRACTOR	Integral
DRILLING METHOD	NA
SAMPLING EQUIPMENT	Hand Augers
DRILLING STARTED	August 21, 2008 1012
DRILLING FINISHED	August 21, 2008 1101

COORDINATES:

NORTHING	195664.872
EASTING	1274874.935
SURFACE ELEVATION	19.36
CASING ELEVATION	Not applicable
DATUM:	NAD 1983
	State Plane_Washington_North

APPENDIX D

Data Validation Reports

D-1 Sediment

EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

Terminal 117 Sediment Boundary

Prepared for:

Windward Environmental, LLC
200 West Mercer Street, Suite 401
Seattle, Washington 98119

Prepared by:

EcoChem, Inc.
710 Second Avenue, Suite 660
Seattle, Washington 98104

EcoChem Project: C22005-3

November 6, 2008

Approved for Release:

Christine Ransom
Project Manager
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of the validation performed on sediment samples and associated field and laboratory quality control samples. A **SAMPLE INDEX** is provided, followed by the validation report.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington and Analytical Perspectives, Wilmington, North Carolina. The analytical methods and EcoChem project chemists are listed in the table below.

ANALYSIS METHODS AND ECOCHEM CHEMISTS

Analysis	Method	Primary Review	Secondary Review
PCB – Aroclors	SW8082	Mark Brindle	Chris Ransom
Pesticides	SW8081		
Dioxins	E1613B	Mark Brindle/Eric Strout	Eric Strout/Melissa Swanson
Mercury	SW7471A	Linda Holz	Chris Ransom
Total Organic Carbon	Plumb 1981		
Total Solids	E160.3		

The data were reviewed using guidance and quality control criteria documented in the analytical methods, the project quality assurance project plan (QAPP) *T-117 Quality Assurance Project Plan Addendum, Sediment Sampling for Sediment Removal Boundary Delineation in the Revised EE/CA* (August 1, 2008), *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA 2005), *National Functional Guidelines for Inorganic Data Review* (USEPA 1994 & 2002), *and National Functional Guidelines for Organic Data Review* (USEPA 1999).

Data qualifier definitions, reason codes, and validation criteria are included as **APPENDIX A**. **APPENDIX B** contains the Qualified Data Summary Table**.** Data validation worksheets will be kept on file at EcoChem.

Sample Index
Windward
Terminal 117 Sediment Boundary

SDG	Sample ID	Laboratory ID	Pesticide	PCB	Dioxin	Mercury	TOC	Total Solid
NM89	T117-100-SG	08-22116-NM89A		✓			✓	✓
NM89	T117-101-SG	08-22117-NM89B		✓			✓	✓
NM89	T117-103-SG	08-22119-NM89D		✓			✓	✓
NM89	T117-98-SG	08-22122-NM89G	✓	✓		✓	✓	✓
NM89	T117-99-SG	08-22123-NM89H	✓	✓		✓	✓	✓
NM89	T117-105-SG	08-22124-NM89I		✓			✓	✓
NM89	T117-106-SG	08-22125-NM89J		✓			✓	✓
NM89	T117-107-SG	08-22126-NM89K		✓			✓	✓
NM89	T117-108-SG	08-22127-NM89L		✓			✓	✓
NM89	T117-109-SG	08-22128-NM89M		✓			✓	✓
NM89	T117-110-SG	08-22129-NM89N		✓			✓	✓
NM89	T117-111-SG	08-22130-NM89O		✓			✓	✓
NM89	T117-120-SG	08-22132-NM89Q		✓			✓	✓
NM89	T117-113-SG	08-22133-NM89R		✓			✓	✓
NM89	T117-114-SG	08-22134-NM89S		✓			✓	✓
NM89	T117-115-SG	08-22135-NM89T		✓			✓	✓
NM89	T117-117-SG	08-22137-NM89V		✓			✓	✓
NM89	T117-119-RB	08-22140-NM89Y		✓				
P9732	T117-107-SG	P9732_6205_001RJ			✓			
P9732	T117-109-SG	P9732_6205_002RJ			✓			
P9732	T117-110-SG	P9732_6205_003RJ			✓			
P9732	T117-111-SG	P9732_6205_004RJ			✓			
P9732	T117-113-SG	P9732_6205_005RJ			✓			
P9732	T117-115-SG	P9732_6205_006RJ			✓			

DATA VALIDATION REPORT
Terminal 117 Sediment Boundary
Dieldrin by Method SW846 8081A

This report documents the review of analytical data from the analyses of sediment samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. See the **Sample Index** for a complete list of samples for which data were reviewed.

SDG	Number of Samples	Validation Level
NM89	2 Sediment	Summary

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results. No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

Holding Times and Sample Preservation	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
Initial Calibration (ICAL)		Laboratory Control Samples (LCS/LCSD)
Continuing Calibration (CCAL)		Internal Standards
Laboratory Blanks		Compound Identification
Surrogate Compounds	1	Reporting Limits

[1] ***Quality control results are discussed below, but no data were qualified***

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

The laboratory prepared and analyzed a MS/MSD sample using Sample T117-99-SG. The percent recovery values for dieldrin were greater than the 123% upper control limit (at 169% and 159%). Dieldrin was not detected in the parent sample. The outliers were indicative of a potential high bias; no qualifiers were required.

Reporting Limits

The method reporting limits for dieldrin were greater than the limits specified in the QAPP. Chromatograms indicated non-target background interference. The reporting limits for dieldrin were flagged "Y" by the laboratory. These results were qualified as not-detected (U-22) at the elevated reporting limits.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicate (LCS/LCSD), and MS/MSD percent recovery values, with the exceptions noted above. Precision was also acceptable as demonstrated by the relative percent difference values for the MS/MSD and LCS/LCSD analyses.

Data were qualified as not-detected at elevated reporting limits due to matrix interference.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 Sediment Boundary
PCB Aroclors by SW846 Method 8082

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. Refer to the **Sample Index** for a list of samples reviewed.

SDG	Number of Samples	Validation Level
NM89	17 Sediment & 1 Rinsate Blank	Summary

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results. No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

	Holding Times and Sample Preservation		Laboratory Control Samples (LCS/LCSD)
	Initial Calibration (ICAL)		Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
	Continuing Calibration (CCAL)	1	Field Duplicates
	Laboratory Blanks		Internal Standards
1	Field Blanks		Compound Identification
	Surrogate Compounds	2	Reporting Limits

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below***

Field Blanks

One field blank, T117-119-RB was submitted. There were no Aroclors detected in this sample.

Field Duplicates

The following acceptance criteria were applied: the relative percent difference (RPD) control limit is 50% for results greater than five times the reporting limit (RL). For results less than five times the RL, the difference between the sample and duplicate must be less than two times the RL.

The data for one set of field duplicates, T117-109-SG and T117-120-SG, were submitted. The RPD values were less than the control limit. Field precision was acceptable.

Reporting Limits

The method reporting limits for several compounds were greater than the limits specified in the QAPP. Chromatograms indicated non-target background interference. The reporting limits for these Aroclors were flagged "Y" by the laboratory. These results were qualified as not-detected (U-22) at the elevated reporting limits.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), and matrix spike/matrix spike duplicate (MS/MSD) recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

Data were qualified as not-detected at elevated reporting limits due to matrix interference.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 Sediment Boundary
Dioxin/Furan Compounds by EPA 1613B

This report documents the review of analytical data from the analyses of sediment samples and the associated laboratory quality control (QC) samples. Analytical Perspectives, Wilmington, North Carolina, analyzed the samples. Refer to the **Sample Index** for a list of samples reviewed.

SDG	Number of Samples	Validation Level
P9732	6 Sediment	Full

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results. No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table.

1	Holding Times and Sample Preservation		Ongoing Precision and Recovery (OPR)
1	Instrument Performance	1	Laboratory Duplicates
	Initial Calibration (ICAL)	1	Field Duplicates
	Continuing Calibration (CCAL)	2	Compound Identification
	Laboratory Blanks		Reporting Limits
	Labeled Compounds	1	Calculation Verification (full validation only)
1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below***

Holding Times and Sample Receipt

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2° to 6°C. The laboratory received the sample cooler with a temperature below the advisory control limits. This temperature outlier did not impact data quality and no qualifiers were required.

Instrument Performance

The method requires the analysis of an isomer-specificity test solution. The analysis of this solution (performed near the beginning of an analytical sequence) demonstrates that the GC column can successfully separate 2,3,7,8-TCDD (on the DB5 column) and 2,3,7,8-TCDF (on the DB225 or equivalent column) from closely eluting non-target isomers.

The isomer-specificity analysis was acceptable for 2,3,7,8-TCDD. However, the laboratory does not perform second column analysis. Instead, the laboratory includes the known co-eluting isomers in the ongoing precision and recovery (OPR) spike solution. This QC sample goes through the entire extraction process prior to analysis. Isomer specificity is verified using the results of the OPR analysis.

The method criteria for evaluating the isomer-specificity test is that the peak-to-valley ratio between the 2,3,7,8-isomer and the closest eluting non-target isomer must be less than or equal to 25%. The laboratory uses a 10% criterion for 2,3,7,8-TCDD, and a 40% criterion for 2,3,7,8-TCDF.

For 2,3,7,8-TCDF, the method criterion of 25% is for analyses performed using a DB225 (or equivalent) column. The laboratory uses a DB5MS column (see **Compound Identification** section for further discussion). Although the laboratory criterion for 2,3,7,8-TCDF is greater than 25%, the laboratory also requires that despite the presence of a potentially interfering peak, the 2,3,7,8-TCDF recovery and retention time must still meet the OPR control limits, proving that 2,3,7,8-TCDF was adequately resolved.

Since the 2,3,7,8-TCDF peak-to-valley ratio was less than 40% and since all other OPR control limits were met, the 2,3,7,8-TCDF peak was judged to be adequately resolved, and no further action was necessary.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were not performed. Accuracy was assessed using labeled compound recoveries and ongoing precision and recovery (OPR) samples.

Laboratory Duplicates

No laboratory duplicate analyses were performed. Precision could not be assessed.

Field Duplicates

No samples were identified as field duplicates. Precision could not be assessed.

Compound Identification

Method 1613B requires the confirmation of 2,3,7,8-TCDF detects using an alternate GC column. The DB5 column that is typically used cannot fully separate 2,3,7,8-TCDF from closely eluting non-target TCDF isomers. The laboratory did not perform a second column confirmation, however the laboratory uses a DB5MS column. This modified column has been proven to adequately resolve the TCDF isomers. As discussed in the "Instrument Performance" section above, the laboratory also includes the interfering TCDF isomer as a spiked compound in the OPR solution to demonstrate acceptable resolution. Since the 2,3,7,8-TCDF resolution was acceptable, no further action was necessary.

For several samples, the laboratory reported EMPC or "estimated maximum possible concentrations" values for one or more of the target analytes. As required by the method, an EMPC value is reported when a peak was detected but did not meet quantitation criteria, therefore the result cannot be considered as positive identification for the analyte. To indicate that the reported result is essentially an elevated detection limit, the EMPC values were qualified as not detected (U-22) at the reported values.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed an acceptable modification of the specified analytical method. Accuracy was acceptable, as demonstrated by the labeled compound and OPR recoveries. Precision could not be assessed.

Data were qualified as not detected to indicate that EMPC values represent an elevated detection limit.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 Sediment Boundary
Mercury Analysis by SW846 Method 7471A

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. Analytical Resources, Inc., Tukwila, Washington, analyzed the samples. Refer to the **SAMPLE INDEX** for a list of the individual samples.

SDG	Number of Samples	Level of Validation
NM89	2 Sediment	Summary

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results. No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements for review are listed below.

Holding Times and Sample Preservation	Laboratory Control Samples
Initial Calibration	Matrix Spike Samples
Calibration Verification	Laboratory Duplicates
CRDL Standards	Reporting Limits (MDL and MRL)
Laboratory Blanks	Reported Results

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

IV. OVERALL ASSESSMENT OF THE DATA

As was determined by this evaluation, the laboratory followed the specified analytical methods. Precision was acceptable, as demonstrated by the laboratory duplicate relative percent difference values. Accuracy was also acceptable, as demonstrated by the laboratory control sample and matrix spike recoveries.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 Sediment Boundary
Conventional Parameter Analyses

This report documents the review of the data from the analysis of sediment samples and the associated field and laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. Refer to the **Sample Index** for a list of samples reviewed.

SDG	Number of Samples	Level of Validation
NM89	17 Sediment	Summary

The analytical tests that were performed are summarized below:

Parameter	Method
Total Solids	160.3
Total Organic Carbon (TOC)	Plumb, 1981

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results. No errors were found.

III. TECHNICAL DATA VALIDATION

The quality control (QC) requirements for review are listed below.

Holding Times and Sample Preservation		Matrix Spikes
Initial Calibration		Laboratory Triplicates
Calibration Verification	1	Field Duplicates
Laboratory Blanks		Reporting Limits
Laboratory Control Samples		Reported Results

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Field Duplicates

The following acceptance criteria were applied: the relative percent difference (RPD) control limit is 30% for results greater than five times the reporting limit (RL). For results less than five times the RL, the difference between the sample and duplicate must be less than two times the RL.

The data for one set of field duplicates, T117-109-SG and T117-120-SG, were submitted. The RPD values were less than the control limit. Field precision was acceptable.

IV. OVERALL ASSESSMENT OF THE DATA

As determined by this evaluation, the laboratory followed the specified analytical methods. The laboratory triplicate percent relative standard deviation (%RSD) and field duplicate RPD values indicated acceptable precision. Accuracy was also acceptable, as demonstrated by the matrix spike, laboratory control sample, and standard reference material recoveries.

No data were qualified for any reason. All data, as reported, are acceptable for use.

EcoChem, INC.
Environmental Data Quality

APPENDIX A
DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
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.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

	1	Holding Time/Sample Preservation
	2	Chromatographic pattern in sample does not match pattern of calibration standard.
3		Compound Confirmation
4		Tentatively Identified Compound (TIC) (associated with NJ only)
5A		Calibration (initial)
5B		Calibration (continuing)
	6	Field Blank Contamination
	7	Lab Blank Contamination (e.g., method blank, instrument, etc.)
	8	Matrix Spike(MS & MSD) Recoveries
	9	Precision (all replicates)
	10	Laboratory Control Sample Recoveries
	11	A more appropriate result is reported (associated with "R" and "DNR" only)
12		Reference Material
	13	Surrogate Spike Recoveries (a.k.a., labeled compounds & recovery standards)
	14	Other (define in validation report)
	15	GFAA Post Digestion Spike Recoveries
	16	ICP Serial Dilution % Difference
	17	ICP Interference Check Standard Recovery
	18	Trip Blank Contamination
	19	Internal Standard Performance (e.g., area, retention time, recovery)
	20	Linear Range Exceeded
	21	Potential False Positives
	22	Elevated Detection Limit Due to Interference (i.e., laboratory, chemical and/or matrix)

EcoChem Validation Guidelines for Pesticides/PCBs by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Method 8081/8082)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C ±2°	J(+)/UJ(-) if greater than 6 deg. C (EcoChem PJ)	1
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext/analyzed > HT J(+)/R(-) if ext/analyzed > 3X HT (EcoChem PJ)	1
Resolution Check	Beginning of ICAL Sequence Within RTW Resolution >90%	Narrate (Use Professional Judgement to qualify)	14
Instrument Performance (Breakdown)	DDT Breakdown: < 20% Endrin Breakdown: <20% Combined Breakdown: <30% Compounds within RTW	J(+) DDT NJ(+) DDD and/or DDE R(-) DDT - If (+) for either DDE or DDD J(+) Endrin NJ(+) EK and/or EA R(-) Endrin - If (+) for either EK or EA	5A
Retention Times	Surrogates: TCX (+/- 0.05); DCB (+/- 0.10) Target compounds: elute before heptachlor epoxide (+/- 0.05) elute after heptachlor epoxide (+/- 0.07)	NJ(+)/R(-) results for analytes with RT shifts For full DV, use PJ based on examination of raw data	5B
Initial Calibration	Pesticides: Low=CRQL, Mid=4X, High=16X Multiresponse - one point Calibration %RSD<20% %RSD<30% for surr; two comp. may exceed if <30% Resolution in Mix A and Mix B >90%	J(+)/UJ(-)	5A
Continuing Calibration	Alternating PEM standard and INDA/INDB standards every 12 hours (each preceeded by an inst. Blank) %D < 25% Resolution >90% in IND mixes; 100% for PEM	J(+)/UJ(-) J(+)R(-) if %D > 90% PJ for resolution	5B
Method Blank	One per matrix per batch No results > CRQL	U(+) if sample result is < CRQL and < 5X rule (raise sample value to CRQL) U(+) if sample result is > or equal to CRQL and < 5X rule (at reported sample value)	7
Instrument Blanks	Analyzed at the beginning of every 12 hour sequence No analyte > 1/2 CRQL	Same as Method Blank	7
Field Blanks	Not addressed by NFG No results > CRQL	Apply 5X rule; U(+) < action level	6

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EcoChem Validation Guidelines for Pesticides/PCBs by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Method 8081/8082)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS/MSD (recovery)	One set per matrix per batch Method Acceptance Criteria	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	One set per matrix per batch Method Acceptance Criteria	J(+) in parent sample if RPD > CL	9
LCS	One per SDG Method Acceptance Criteria	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J(+)/UJ(-) assoc. cmpd. in all samples	9
Surrogates	TCX and DCB added to every sample %R = 30-150%	J(+)/UJ(-) if both %R = 10 - 60% J(+) if both >150% J(+)/R(-) if any %R <10%	13
Quantitation/ Identification	Quantitated using ICAL calibration factor (CF) RPD between columns <40%	J(+) if RPD = 40 - 60% NJ(+) if RPD >60% EcoChem PJ - See TM-08	3
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	11
Sample Clean-up	GPC required for soil samples Florisil required for all samples Sulfur is optional Clean-up standard check %R within CLP limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL	14
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate (Qualifiy if required by project QAPP)	9

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids < 4°C Tissues <-10°C	EcoChem PJ, see TM-05	1
Holding Time	Extraction - Water: 30 days from collection *Note:* Under CWA, SDWA, and RCRA the HT for H2O is 7 days* Extraction - Soil: 30 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext > 30 days J(+)/UJ(-) if analysis > 40 Days EcoChem PJ, see TM-05	1
Mass Resolution	>=10,000 resolving power at m/z 304.9824 Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift	R(+/-) if not met	14
Window Defining Mix and Column Performance Mix	Window defining mixture/Isomer specificity std run before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) x = ht. of TCDD y = baseline to bottom of valley For all isomers eluting near 2378-TCDD/TCDF isomers (TCDD only for 8290)	J(+) if valley > 25%	5A (ICAL) 5B (CCAL
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD <35% for labeled compounds under 1613b)	J(+) natives if %RSD > 20%	5A
	Abs. RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 >15 min on DB-225	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Continuing Calibration	Analyzed at the start and end of each 12 hour shift. %D+/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in Table 6, Method 1613B) (If %Ds in the closing CCAL are w/in 25%/35% the avg RF from the two CCAL may be used to calculate samples per Method 8290, Section 8.3.2.4)	Do not qualify labeled compounds. Narrate in report for labeled compound %D outliers. For native compound %D outliers: 8290: J(+)/UJ(-) if %D = 20% - 75% J(+)/R(-) if %D > 75% 1613: J(+)/UJ(-) if %D is outside Table 6 limits J(+)/R(-) if %D is +/- 75% of Table 6 limit	5B
	Abs. RT of $^{13}C_{12}$-1234-TCDD and $^{13}C12$-123789-HxCDD +/- 15 sec of ICAL.	EcoChem PJ, see ICAL section of TM-05	
	RRT of all other compounds must meet Table 2 of 1613B.	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7
Field Blanks (Not Required)	No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	Concentrations must meet limits in Table 6, Method 1613B or lab limits.	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (recovery)	May not analyze MS/MSD %R should meet lab limits.	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	May not analyze MS/MSD RPD < 20%	J(+) in parent sample if RPD > CL	9

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Lab Duplicate	RPD <25% if present.	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	*Method 8290:* %R = 40% - 135% in all samples *Method 1613B:* %R must meet limits specified in Table 7, Method 1613	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 IA ratios meet limits in Table 9 of 1613B or Table 8 of 8290 RRTs w/in limits in Table 2 of 1613B	If RT criteria not met, use PJ (see TM-05) If S/N criteria not met, J(+). if unlabelled ion abundance not met, change to EMPC If labelled ion abundance not met, J(+).	21
EMPC (estimated maximum possible concentration)	If quantitation idenfication criteria are not met, laboratory should report an EMPC value.	If laboratory correctly reported an EMPC value, qualify with U to indicate that the value is a detection limit.	14
Interferences	PCDF interferences from PCDPE	If both detected, change PCDF result to EMPC	14
Second Column Confirmation	All 2378-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC specs in this table must be met for the confirmation analysis.	Report lower of the two values. If not performed use PJ (see TM-05).	3
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used	11

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EcoChem Validation Guidelines for Mercury Analysis by CVAA (Based on Inorganic NFG 1994 & 2004)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature and Preservation	Cooler temperature: 4°C ±2° Waters: Nitric Acid to pH < 2 For Dissolved Metals: 0.45um filter & preserve after filtration	EcoChem Professional Judgment - no qualification based on cooler temperature outliers J(+)/UJ(-) if pH preservation requirements are not met	1
Holding Time	28 days from date sampled Frozen tissues: HT extended to 6 months	J(+)/UJ(-) if holding time exceeded	1
Initial Calibration	Blank + 4 standards, one at RL r > 0.995	J(+)/UJ(-) if r<0.995	5A
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ±20% of true value	J(+)/UJ(-) if %R = 65%-79% J(+) if %R = 121-135% R(+/-) if %R < 65% R(+) if %R > 135%	5A
Continuing Calibration Verification (CCV)	Every ten samples, immediately following ICV/ICB and at end of run %R within ±20% of true value	J(+)/UJ(-) if %R = 65%-79% J(+) if %R = 121-135% R(+/-) if %R < 65% R(+) if %R > 135%	5B

Initial and Continuing Calibration Blanks (ICB/CCB)	after each ICV and CCV
	every ten samples and end of run
	| blank | < IDL (MDL)
		Action level is 5x absolute value of blank conc.
		For (+) blanks, U(+) results < action level
		For (-) blanks, J(+)/UJ(-) results < action level
		refer to TM-02 for additional details
			7

Reporting Limit Standard (CRA)	conc at RL - analyzed beginning of run %R = 70-130%	R(-),(+)<2xRL if %R <50% J(+)<2x RL, UJ(-) if %R 50-69% J(+) <2x RL if %R 130-180% R(+)<2x RL if %R>180%	14
Method Blank	One per matrix per batch (batch not to exceed 20 samples) blank < MDL	Action level is 5x blank concentration U(+) results < action level	7
Laboratory Control Sample (LCS)	One per matrix per batch		10
	Blank Spike: %R within 80-120%	R(+/-) if %R < 50% J(+)/UJ(-) if %R = 50-79% J(+) if %R >120%	
	CRM: Result within manufacturer's certified acceptance range or project guidelines	J(+)/UJ(-) if < LCL, J(+) if > UCL	
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One per matrix per batch 5% frequency 75-125% for samples less than 4x spike level	J(+) if %R>125% J(+)/UJ(-) if %R <75% J(+)/R(-) if %R<30% all samples in batch	8
Laboratory Duplicate (or MS/MSD)	One per matrix per batch RPD < 20% for samples > 5x RL Diff < RL for samples > RL and < 5x RL (Diff < 2x RL for solids)	J(+)/UJ(-) if RPD > 20% or diff > RL all samples in batch	9

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EcoChem Validation Guidelines for Mercury Analysis by CVAA (Based on Inorganic NFG 1994 & 2004)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Field Blank	Blank < MDL	Action level is 5x blank conc. U(+) sample values < action level in associated field samples only	6
Field Duplicate	For results > 5x RL: Water: RPD < 35% Solid: RPD < 50% For results < 5x RL: Water: Diff<RL Solid: Diff < 2x RL	J(+)/UJ(-) in parent samples only	9

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EcoChem Validation Guidelines for Conventional Chemistry Analysis (Based on EPA Standard Methods)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature and Preservation	Cooler Temperature 4°C ±2°C Preservation: Method Specific	Use Professional Judgment to qualify based to qualify for coole temp outliers J(+)/UJ(-) if preservation requirements not met	1
Holding Time	Method Specific	Professional Judgment J(+)/UJ(-) if holding time exceeded J(+)/R(-) if HT exceeded by > 3X	1
Initial Calibration	Method specific r>0.995	Use professional judgment J(+)/UJ(-) for r < 0.995	5A
Initial Calibration Verification (ICV)	Where applicable to method Independent source analyzed immediately after calibration %R method specific, usually 90% - 110%	R(+/-) if %R significantly < LCL J(+)/UJ(-) if %R < LCL J(+) if %R > UCL R(+) if %R significantly > UCL	5A
Continuing Cal Verification (CCV)	Where applicable to method Every ten samples, immed. following ICV/ICB and end of run %R method specific, usually 90% - 110%	R(+/-) if %R significantly < LCL J(+)/UJ(-) if %R < LCL J(+) if %R > UCL R(+) if %R significantly > UCL	5B

Initial and Continuing Cal Blanks (ICB/CCB)	Where applicable to method
	After each ICV and CCV every ten samples and end of run
	| blank| < MDL
		Action level is 5x absolute value of blank conc.
		For (+) blanks, U(+) results < action level
		For (-) blanks, J(+)/UJ(-) results < action level
		refer to TM-02 for additional details
			7

Method Blank	One per matrix per batch
	(not to exceed 20 samples)
	blank < MDL
		Action level is 5x absolute value of blank conc.
		For (+) blk value, U(+) results < action level
		For (-) blk value, J(+)/UJ(-) results < action level
			7

Laboratory Control Sample	Waters: One per matrix per batch %R (80-120%)	R(+/-) if %R < 50% J(+)/UJ(-) if %R = 50-79% J(+) if %R >120%	10
	Soils: One per matrix per batch Result within manufacturer's certified acceptance range	J(+)/UJ(-) if < LCL, J(+) if > UCL	10
Matrix Spike	One per matrix per batch; 5% frequency 75-125% for samples less than 4 x spike level	J(+) if %R > 125% or < 75% UJ(-) if %R = 30-74% R(+/-) results < IDL if %R < 30%	8
Laboratory Duplicate	One per matrix per batch RPD <20% for samples > 5x RL Diff <RL for samples >RL and <5 x RL (may use RPD < 35%, Diff < 2X RL for solids)	J(+)/UJ(-) if RPD > 20% or diff > RL all samples in batch	9

EcoChem Validation Guidelines for Conventional Chemistry Analysis (Based on EPA Standard Methods)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Field Blank	blank < MDL	Action level is 5x blank conc. U(+) sample values < action level in associated field samples only	6
Field Duplicate	For results > 5X RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff<RL Solid: Diff < 2X RL	J(+)/UJ(-) in parent samples only	9

EcoChem, INC.
Environmental Data Quality

APPENDIX B
QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
WIndward
Terminal 117 Sediment Boundary

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifiers	Validator Qualifiers	Validator Reason
NM89	T117-98-SG	08-22122-NM89G	EPA 8081A	Dieldrin		ug/kg	Y	U	22
NM89	T117-99-SG	08-22123-NM89H	EPA 8081A	Dieldrin		ug/kg	Y	U	22
NM89	T117-101-SG	08-22117-NM89B	EPA 8082	Aroclor 1254		ug/kg	Y	U	22
NM89	T117-106-SG	08-22125-NM89J	EPA 8082	Aroclor 1232		ug/kg	Y	U	22
NM89	T117-107-SG	08-22126-NM89K	EPA 8082	Aroclor 1254		ug/kg	Y	U	22
NM89	T117-115-SG	08-22135-NM89T	EPA 8082	Aroclor 1254		ug/kg	Y	U	22
P9732	T117-107-SG	P9732_6205_001RJ	EPA 1613	1,2,3,6,7,8-HxCDD	1.58	ng/kg	EMPC J	U	22
P9732	T117-107-SG	P9732_6205_001RJ	EPA 1613	1,2,3,7,8-PeCDF	0.341	ng/kg	EMPC J	U	22
P9732	T117-107-SG	P9732_6205_001RJ	EPA 1613	HpCDFs	23	ng/kg	EMPC	U	22
P9732	T117-107-SG	P9732_6205_001RJ	EPA 1613	HxCDDs	14	ng/kg	EMPC	U	22
P9732	T117-107-SG	P9732_6205_001RJ	EPA 1613	HxCDFs	10.8	ng/kg	EMPC	U	22
P9732	T117-107-SG	P9732_6205_001RJ	EPA 1613	PeCDDs	3.78	ng/kg	EMPC	U	22
P9732	T117-107-SG	P9732_6205_001RJ	EPA 1613	PeCDFs	4.81	ng/kg	EMPC	U	22
P9732	T117-107-SG	P9732_6205_001RJ	EPA 1613	TCDDs	0.959	ng/kg	EMPC	U	22
P9732	T117-107-SG	P9732_6205_001RJ	EPA 1613	TCDFs	3.41	ng/kg	EMPC	U	22
P9732	T117-109-SG	P9732_6205_002RJ	EPA 1613	1,2,3,7,8,9-HxCDD	1.81	ng/kg	EMPC J	U	22
P9732	T117-109-SG	P9732_6205_002RJ	EPA 1613	1,2,3,7,8,9-HxCDF	0.36	ng/kg	EMPC J	U	22
P9732	T117-109-SG	P9732_6205_002RJ	EPA 1613	1,2,3,7,8-PeCDF	0.46	ng/kg	EMPC J	U	22
P9732	T117-109-SG	P9732_6205_002RJ	EPA 1613	2,3,4,7,8-PeCDF	1.15	ng/kg	EMPC J	U	22
P9732	T117-109-SG	P9732_6205_002RJ	EPA 1613	2,3,7,8-TCDF	1.53	ng/kg	EMPC	U	22
P9732	T117-109-SG	P9732_6205_002RJ	EPA 1613	HxCDDs	30.1	ng/kg	EMPC	U	22
P9732	T117-109-SG	P9732_6205_002RJ	EPA 1613	HxCDFs	25.4	ng/kg	EMPC	U	22
P9732	T117-109-SG	P9732_6205_002RJ	EPA 1613	PeCDDs	5.05	ng/kg	EMPC	U	22
P9732	T117-109-SG	P9732_6205_002RJ	EPA 1613	PeCDFs	11.2	ng/kg	EMPC	U	22
P9732	T117-109-SG	P9732_6205_002RJ	EPA 1613	TCDFs	5.25	ng/kg	EMPC	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	1,2,3,4,7,8-HxCDD	0.941	ng/kg	EMPC J	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	1,2,3,7,8,9-HxCDF	0.468	ng/kg	EMPC J	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	1,2,3,7,8-PeCDF	0.397	ng/kg	EMPC J	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	2,3,7,8-TCDD	0.339	ng/kg	EMPC J	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	2,3,7,8-TCDF	0.512	ng/kg	EMPC J	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	HxCDDs	27.5	ng/kg	EMPC	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	HxCDFs	25.2	ng/kg	EMPC	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	PeCDDs	6.14	ng/kg	EMPC	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	PeCDFs	11.7	ng/kg	EMPC	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	TCDDs	3.47	ng/kg	EMPC	U	22
P9732	T117-110-SG	P9732_6205_003RJ	EPA 1613	TCDFs	12.7	ng/kg	EMPC	U	22
P9732	T117-111-SG	P9732_6205_004RJ	EPA 1613	1,2,3,6,7,8-HxCDF	0.768	ng/kg	EMPC J	U	22
P9732	T117-111-SG	P9732_6205_004RJ	EPA 1613	1,2,3,7,8-PeCDF	0.466	ng/kg	EMPC J	U	22
P9732	T117-111-SG	P9732_6205_004RJ	EPA 1613	2,3,4,6,7,8-HxCDF	1.05	ng/kg	EMPC J	U	22
P9732	T117-111-SG	P9732_6205_004RJ	EPA 1613	2,3,7,8-TCDF	0.564	ng/kg	EMPC	U	22
P9732	T117-111-SG	P9732_6205_004RJ	EPA 1613	HxCDFs	21.1	ng/kg	EMPC	U	22
P9732	T117-111-SG	P9732_6205_004RJ	EPA 1613	PeCDDs	5.76	ng/kg	EMPC	U	22
P9732	T117-111-SG	P9732_6205_004RJ	EPA 1613	PeCDFs	10.6	ng/kg	EMPC	U	22
P9732	T117-111-SG	P9732_6205_004RJ	EPA 1613	TCDDs	2.73	ng/kg	EMPC	U	22
P9732	T117-111-SG	P9732_6205_004RJ	EPA 1613	TCDFs	13	ng/kg	EMPC	U	22
P9732	T117-113-SG	P9732_6205_005RJ	EPA 1613	2,3,4,7,8-PeCDF	1.16	ng/kg	EMPC J	U	22
P9732	T117-113-SG	P9732_6205_005RJ	EPA 1613	HxCDDs	26.9	ng/kg	EMPC	U	22
P9732	T117-113-SG	P9732_6205_005RJ	EPA 1613	PeCDDs	5.63	ng/kg	EMPC	U	22
P9732	T117-113-SG	P9732_6205_005RJ	EPA 1613	PeCDFs	11	ng/kg	EMPC	U	22

Qualified Data Summary Table
WIndward
Terminal 117 Sediment Boundary

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifiers	Validator Qualifiers	Validator Reason
P9732	T117-113-SG	P9732_6205_005RJ	EPA 1613	TCDDs	0.745	ng/kg	EMPC	U	22
P9732	T117-113-SG	P9732_6205_005RJ	EPA 1613	TCDFs	12	ng/kg	EMPC	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	1,2,3,7,8,9-HxCDD	1.84	ng/kg	EMPC J	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	1,2,3,7,8-PeCDD	0.764	ng/kg	EMPC J	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	1,2,3,7,8-PeCDF	0.315	ng/kg	EMPC J	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	2,3,4,6,7,8-HxCDF	1.24	ng/kg	EMPC J	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	HpCDFs	45.3	ng/kg	EMPC	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	HxCDDs	27.5	ng/kg	EMPC	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	HxCDFs	24.3	ng/kg	EMPC	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	PeCDDs	5.82	ng/kg	EMPC	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	PeCDFs	14.2	ng/kg	EMPC	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	TCDDs	1.52	ng/kg	EMPC	U	22
P9732	T117-115-SG	P9732_6205_006RJ	EPA 1613	TCDFs	13.9	ng/kg	EMPC	U	22
P9734	T117-100-SG	P9734_6260_001	EPA 1613	HxCDFs	67.3	ng/kg	EMPC	U	22
P9734	T117-100-SG	P9734_6260_001	EPA 1613	PeCDDs	14.3	ng/kg	EMPC	U	22
P9734	T117-100-SG	P9734_6260_001	EPA 1613	TCDDs	7.76	ng/kg	EMPC	U	22
P9734	T117-100-SG	P9734_6260_001	EPA 1613	TCDFs	20.3	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	1,2,3,7,8-PeCDD	1.32	ng/kg	EMPC J	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	HxCDDs	49.4	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	HxCDFs	47.1	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	PeCDDs	11.7	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	PeCDFs	19.7	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	TCDDs	5.68	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	TCDFs	18.2	ng/kg	EMPC	U	22

EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

Terminal 117 Sediment Boundary

Prepared for:

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November 10, 2008

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PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of the validation performed on sediment samples and associated laboratory quality control samples. A **SAMPLE INDEX** is provided, followed by the validation report.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington and Analytical Perspectives, Wilmington, North Carolina. The analytical methods and EcoChem project chemists are listed in the table below.

ANALYSIS METHODS AND ECOCHEM CHEMISTS

Analysis	Method	Primary Review	Secondary Review
PCB – Aroclors	SW8082	Melissa Swanson	Eric Strout
Dioxin Furans	E1613B	Eric Strout	Melissa Swanson
Total Organic Carbon	Plumb 1981	Melissa Swanson	Eric Strout
Total Solids	E160.3		

The data were reviewed using guidance and quality control criteria documented in the analytical methods, the project quality assurance project plan (QAPP) *T-117 Quality Assurance Project Plan Addendum, Sediment Sampling for Sediment Removal Boundary Delineation in the Revised EE/CA* (August 1, 2008), *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA 2005), *National Functional Guidelines for Inorganic Data Review* (USEPA 1994 & 2002), *and National Functional Guidelines for Organic Data Review* (USEPA 1999).

Data qualifier definitions, reason codes, and validation criteria are included as **APPENDIX A**. **APPENDIX B** contains the Qualified Data Summary Table**.** Data validation worksheets will be kept on file at EcoChem.

Sample Index
Windward
Terminal 117 - Sediment Boundary

SDG	Sample ID	Laboratory ID	PCB	Dioxin	TOC	Total Solid
NT13	T17-102-SG	08-26665-NT13A	✓		✓	✓
P9734	T117-100-SG	P9734_6260_001		✓		
P9734	T117-102-SG	P9734_6260_003		✓		

DATA VALIDATION REPORT
Terminal 117 Sediment Boundary
Dioxin/Furan Compounds by EPA 1613B

This report documents the review of analytical data from the analyses of sediment samples and the associated laboratory quality control (QC) samples. Analytical Perspectives, Wilmington, North Carolina, analyzed the samples. Refer to the **Sample Index** for a list of samples reviewed.

SDG	Number of Samples	Validation Level
P9734	2 Soil	Full

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results. No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table.

1	Holding Times and Sample Preservation		Ongoing Precision and Recovery (OPR)
1	Instrument Performance	1	Laboratory Duplicates
	Initial Calibration (ICAL)	1	Field Duplicates
	Continuing Calibration (CCAL)	2	Compound Identification
	Laboratory Blanks		Reporting Limits
	Labeled Compounds	1	Calculation Verification (full validation only)
1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below***

Holding Times and Sample Receipt

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2° to 6°C. The laboratory received the sample cooler with a temperature below the advisory control limits. This temperature outlier did not impact data quality and no qualifiers were required.

Instrument Performance

The method requires the analysis of an isomer-specificity test solution. The analysis of this solution (performed near the beginning of an analytical sequence) demonstrates that the GC column can successfully separate 2378-TCDD (on the DB5 column) and 2378-TCDF (on the DB225 or equivalent column) from closely eluting non-target isomers. The method criteria for evaluating the isomer-specificity test is that the peak-to-valley ratio between the 2378-isomer and the closest eluting non-target isomer must be less than or equal to 25%.

However, the laboratory does not perform second column analysis. Instead, the laboratory includes the known co-eluting isomers in the ongoing precision and recovery (OPR) spike solution. This QC sample goes through the entire extraction process prior to analysis, therefore, isomer specificity is verified using the results of the OPR analysis. The laboratory uses a 10% criterion for 2378-TCDD, and a 40% criterion for 2378-TCDF.

The isomer-specificity analysis was acceptable for 2378-TCDD. For 2378-TCDF, the method criterion of 25% is for analyses performed using a DB225 (or equivalent) column. The laboratory uses a DB5MS column (see the **Compound Identification** section for further discussion). Although the laboratory criterion for 2378-TCDF is greater than 25%, the laboratory also requires that, despite the presence of a potentially interfering peak, the 2378-TCDF recovery and retention time must still meet the OPR control limits, proving that 2378-TCDF was adequately resolved.

Since the 2378-TCDF peak-to-valley ratio was less than 40% and since all other OPR control limits were met, the 2378-TCDF peak was judged to be adequately resolved, and no further action was necessary.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were not performed. Accuracy was assessed using labeled compound recoveries and ongoing precision and recovery (OPR) samples.

Laboratory Duplicates

No laboratory duplicate analyses were performed. Precision could not be assessed.

Field Duplicates

No samples were identified as field duplicates. Precision could not be assessed.

Compound Identification

Method 1613B requires the confirmation of 2,3,7,8-TCDF detects using an alternate GC column. The DB5 column that is typically used cannot fully separate 2,3,7,8-TCDF from closely eluting non-target TCDF isomers. The laboratory did not perform a second column confirmation, however the laboratory uses a DB5MS column. This modified column has been proven to adequately resolve the TCDF isomers. As discussed in the **Instrument Performance** section above, the laboratory also includes the interfering TCDF isomer as a spiked compound in the OPR solution to demonstrate acceptable resolution. Since the 2,3,7,8-TCDF resolution was acceptable, no further action was necessary.

For several samples, the laboratory reported EMPC or "estimated maximum possible concentrations" values for one or more of the target analytes. As required by the method, an EMPC value is reported when a peak was detected but did not meet quantitation criteria, therefore the result cannot be considered as positive identification for the analyte. To indicate that the reported result is essentially an elevated detection limit, the EMPC values were qualified as not detected (U-22) at the reported values.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed an acceptable modification of the specified analytical method. Accuracy was acceptable, as demonstrated by the labeled compound and OPR recoveries. Precision could not be assessed.

Data were qualified as not detected to indicate that EMPC values represent an elevated detection limit.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 Sediment Boundary
PCB Aroclors by SW846 Method 8082

This report documents the review of analytical data from the analysis of one sediment sample and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. Refer to the **Sample Index** for the laboratory and field IDs.

SDG	Number of Samples	Validation Level
NT13	1 Sediment	Summary

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results. No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

Holding Times and Sample Preservation	Laboratory Control Samples (LCS)
Initial Calibration (ICAL)	1 Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
Continuing Calibration (CCAL)	Internal Standards
Laboratory Blanks	Compound Identification
Surrogate Compounds	Reporting Limits

[1] ***Quality control results are discussed below, but no data were qualified.***

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

No matrix spike/matrix spike duplicate sets were performed. Accuracy was assessed using laboratory control sample/laboratory control sample duplicates (LCS/LCSD) instead.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the surrogate and LCS/LCSD recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD relative percent difference values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 Sediment Boundary
Total Organic Carbon by the Plumb Method and Total Solids by 160.3

This report documents the review of analytical data from the analysis of one sediment sample and the associated laboratory quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. Refer to the **Sample Index** for the laboratory and field IDs.

SDG	Number of Samples	Validation Level
NT13	1 Sediment	Summary

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results. No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

Holding Times and Sample Preservation
Initial Calibration (ICAL)
Continuing Calibration (CCAL)
Laboratory Blanks
Laboratory Control Samples (LCS)
Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
Reporting Limits

---

[1] ***Quality control results are discussed below, but no data were qualified.***

IV. OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. The laboratory duplicate relative percent difference values indicated acceptable precision. Accuracy was also acceptable, as demonstrated by the laboratory control sample percent recovery values.

All data, as reported, are acceptable for use.

EcoChem, INC.
Environmental Data Quality

APPENDIX A
DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
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.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

1	Holding Time/Sample Preservation
2	Chromatographic pattern in sample does not match pattern of calibration standard.
3	Compound Confirmation
4	Tentatively Identified Compound (TIC) (associated with NJ only)
5A	Calibration (initial)
5B	Calibration (continuing)
6	Field Blank Contamination
7	Lab Blank Contamination (e.g., method blank, instrument, etc.)
8	Matrix Spike(MS & MSD) Recoveries
9	Precision (all replicates)
10	Laboratory Control Sample Recoveries
11	A more appropriate result is reported (associated with “R” and “DNR” only)
12	Reference Material
13	Surrogate Spike Recoveries (a.k.a., labeled compounds & recovery standards)
14	Other (define in validation report)
15	GFAA Post Digestion Spike Recoveries
16	ICP Serial Dilution % Difference
17	ICP Interference Check Standard Recovery
18	Trip Blank Contamination
19	Internal Standard Performance (e.g., area, retention time, recovery)
20	Linear Range Exceeded
21	Potential False Positives
22	Elevated Detection Limit Due to Interference (i.e., laboratory, chemical and/or matrix)

EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids < 4°C Tissues <-10°C	EcoChem PJ, see TM-05	1
Holding Time	Extraction - Water: 30 days from collection *Note:* Under CWA, SDWA, and RCRA the HT for H2O is 7 days* Extraction - Soil: 30 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext > 30 days J(+)/UJ(-) if analysis > 40 Days EcoChem PJ, see TM-05	1
Mass Resolution	>=10,000 resolving power at m/z 304.9824 Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift	R(+/-) if not met	14
Window Defining Mix and Column Performance Mix	Window defining mixture/Isomer specificity std run before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) x = ht. of TCDD y = baseline to bottom of valley For all isomers eluting near 2378-TCDD/TCDF isomers (TCDD only for 8290)	J(+) if valley > 25%	5A (ICAL) 5B (CCAL
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD <35% for labeled compounds under 1613b)	J(+) natives if %RSD > 20%	5A
	Abs. RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 >15 min on DB-225	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Continuing Calibration	Analyzed at the start and end of each 12 hour shift. %D+/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in Table 6, Method 1613B) (If %Ds in the closing CCAL are w/in 25%/35% the avg RF from the two CCAL may be used to calculate samples per Method 8290, Section 8.3.2.4)	Do not qualify labeled compounds. Narrate in report for labeled compound %D outliers. For native compound %D outliers: 8290: J(+)/UJ(-) if %D = 20% - 75% J(+)/R(-) if %D > 75% 1613: J(+)/UJ(-) if %D is outside Table 6 limits J(+)/R(-) if %D is +/- 75% of Table 6 limit	5B
	Abs. RT of $^{13}C_{12}$-1234-TCDD and $^{13}C12$-123789-HxCDD +/- 15 sec of ICAL.	EcoChem PJ, see ICAL section of TM-05	
	RRT of all other compounds must meet Table 2 of 1613B.	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7
Field Blanks (Not Required)	No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	Concentrations must meet limits in Table 6, Method 1613B or lab limits.	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (recovery)	May not analyze MS/MSD %R should meet lab limits.	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	May not analyze MS/MSD RPD < 20%	J(+) in parent sample if RPD > CL	9

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Lab Duplicate	RPD <25% if present.	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	*Method 8290:* %R = 40% - 135% in all samples *Method 1613B:* %R must meet limits specified in Table 7, Method 1613	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 IA ratios meet limits in Table 9 of 1613B or Table 8 of 8290 RRTs w/in limits in Table 2 of 1613B	If RT criteria not met, use PJ (see TM-05) If S/N criteria not met, J(+). if unlabelled ion abundance not met, change to EMPC If labelled ion abundance not met, J(+).	21
EMPC (estimated maximum possible concentration)	If quantitation idenfication criteria are not met, laboratory should report an EMPC value.	If laboratory correctly reported an EMPC value, qualify with U to indicate that the value is a detection limit.	14
Interferences	PCDF interferences from PCDPE	If both detected, change PCDF result to EMPC	14
Second Column Confirmation	All 2378-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC specs in this table must be met for the confirmation analysis.	Report lower of the two values. If not performed use PJ (see TM-05).	3
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used	11

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EcoChem Validation Guidelines for Pesticides/PCBs by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Method 8081/8082)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C ±2°	J(+)/UJ(-) if greater than 6 deg. C (EcoChem PJ)	1
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext/analyzed > HT J(+)/R(-) if ext/analyzed > 3X HT (EcoChem PJ)	1
Resolution Check	Beginning of ICAL Sequence Within RTW Resolution >90%	Narrate (Use Professional Judgement to qualify)	14
Instrument Performance (Breakdown)	DDT Breakdown: < 20% Endrin Breakdown: <20% Combined Breakdown: <30% Compounds within RTW	J(+) DDT NJ(+) DDD and/or DDE R(-) DDT - If (+) for either DDE or DDD J(+) Endrin NJ(+) EK and/or EA R(-) Endrin - If (+) for either EK or EA	5A
Retention Times	Surrogates: TCX (+/- 0.05); DCB (+/- 0.10) Target compounds: elute before heptachlor epoxide (+/- 0.05) elute after heptachlor epoxide (+/- 0.07)	NJ(+)/R(-) results for analytes with RT shifts For full DV, use PJ based on examination of raw data	5B
Initial Calibration	Pesticides: Low=CRQL, Mid=4X, High=16X Multiresponse - one point Calibration %RSD<20% %RSD<30% for surr; two comp. may exceed if <30% Resolution in Mix A and Mix B >90%	J(+)/UJ(-)	5A
Continuing Calibration	Alternating PEM standard and INDA/INDB standards every 12 hours (each preceeded by an inst. Blank) %D < 25% Resolution >90% in IND mixes; 100% for PEM	J(+)/UJ(-) J(+)R(-) if %D > 90% PJ for resolution	5B
Method Blank	One per matrix per batch No results > CRQL	U(+) if sample result is < CRQL and < 5X rule (raise sample value to CRQL) U(+) if sample result is > or equal to CRQL and < 5X rule (at reported sample value)	7
Instrument Blanks	Analyzed at the beginning of every 12 hour sequence No analyte > 1/2 CRQL	Same as Method Blank	7
Field Blanks	Not addressed by NFG No results > CRQL	Apply 5X rule; U(+) < action level	6

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EcoChem Validation Guidelines for Pesticides/PCBs by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Method 8081/8082)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS/MSD (recovery)	One set per matrix per batch Method Acceptance Criteria	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	One set per matrix per batch Method Acceptance Criteria	J(+) in parent sample if RPD > CL	9
LCS	One per SDG Method Acceptance Criteria	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J(+)/UJ(-) assoc. cmpd. in all samples	9
Surrogates	TCX and DCB added to every sample %R = 30-150%	J(+)/UJ(-) if both %R = 10 - 60% J(+) if both >150% J(+)/R(-) if any %R <10%	13
Quantitation/ Identification	Quantitated using ICAL calibration factor (CF) RPD between columns <40%	J(+) if RPD = 40 - 60% NJ(+) if RPD >60% EcoChem PJ - See TM-08	3
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	11
Sample Clean-up	GPC required for soil samples Florisil required for all samples Sulfur is optional Clean-up standard check %R within CLP limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL	14
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate (Qualifiy if required by project QAPP)	9

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EcoChem Validation Guidelines for Conventional Chemistry Analysis (Based on EPA Standard Methods)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature and Preservation	Cooler Temperature 4°C ±2°C Preservation: Method Specific	Use Professional Judgment to qualify based to qualify for coole temp outliers J(+)/UJ(-) if preservation requirements not met	1
Holding Time	Method Specific	Professional Judgment J(+)/UJ(-) if holding time exceeded J(+)/R(-) if HT exceeded by > 3X	1
Initial Calibration	Method specific r>0.995	Use professional judgment J(+)/UJ(-) for r < 0.995	5A
Initial Calibration Verification (ICV)	Where applicable to method Independent source analyzed immediately after calibration %R method specific, usually 90% - 110%	R(+/-) if %R significantly < LCL J(+)/UJ(-) if %R < LCL J(+) if %R > UCL R(+) if %R significantly > UCL	5A
Continuing Cal Verification (CCV)	Where applicable to method Every ten samples, immed. following ICV/ICB and end of run %R method specific, usually 90% - 110%	R(+/-) if %R significantly < LCL J(+)/UJ(-) if %R < LCL J(+) if %R > UCL R(+) if %R significantly > UCL	5B

Initial and Continuing Cal Blanks (ICB/CCB)	Where applicable to method
	After each ICV and CCV every ten samples and end of run
	| blank| < MDL
		Action level is 5x absolute value of blank conc.
		For (+) blanks, U(+) results < action level
		For (-) blanks, J(+)/UJ(-) results < action level
		refer to TM-02 for additional details
			7

Method Blank	One per matrix per batch
	(not to exceed 20 samples)
	blank < MDL
		Action level is 5x absolute value of blank conc.
		For (+) blk value, U(+) results < action level
		For (-) blk value, J(+)/UJ(-) results < action level
			7

Laboratory Control Sample	Waters: One per matrix per batch %R (80-120%)	R(+/-) if %R < 50% J(+)/UJ(-) if %R = 50-79% J(+) if %R >120%	10
	Soils: One per matrix per batch Result within manufacturer's certified acceptance range	J(+)/UJ(-) if < LCL, J(+) if > UCL	10
Matrix Spike	One per matrix per batch; 5% frequency 75-125% for samples less than 4 x spike level	J(+) if %R > 125% or < 75% UJ(-) if %R = 30-74% R(+/-) results < IDL if %R < 30%	8
Laboratory Duplicate	One per matrix per batch RPD <20% for samples > 5x RL Diff <RL for samples >RL and <5 x RL (may use RPD < 35%, Diff < 2X RL for solids)	J(+)/UJ(-) if RPD > 20% or diff > RL all samples in batch	9

EcoChem Validation Guidelines for Conventional Chemistry Analysis (Based on EPA Standard Methods)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Field Blank	blank < MDL	Action level is 5x blank conc. U(+) sample values < action level in associated field samples only	6
Field Duplicate	For results > 5X RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff<RL Solid: Diff < 2X RL	J(+)/UJ(-) in parent samples only	9

EcoChem, INC.
Environmental Data Quality

APPENDIX B
QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Windward
Terminal 117 - Sediment Boundary

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifiers	Validator Qualifiers	Validator Reason
P9734	T117-100-SG	P9734_6260_001	EPA 1613	HxCDFs	67.3	ng/kg	EMPC	U	22
P9734	T117-100-SG	P9734_6260_001	EPA 1613	TCDFs	20.3	ng/kg	EMPC	U	22
P9734	T117-100-SG	P9734_6260_001	EPA 1613	PeCDDs	14.3	ng/kg	EMPC	U	22
P9734	T117-100-SG	P9734_6260_001	EPA 1613	TCDDs	7.76	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	HxCDFs	47.1	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	PeCDFs	19.7	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	TCDFs	18.2	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	HxCDDs	49.4	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	PeCDDs	11.7	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	TCDDs	5.68	ng/kg	EMPC	U	22
P9734	T117-102-SG	P9734_6260_003	EPA 1613	1,2,3,7,8-PeCDD	1.32	ng/kg	EMPC J	U	22

D-2 T-117 Upland

EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

Terminal 117 Upland Area Soil Sampling

Prepared for:

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Prepared by:

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EcoChem Project: C22005-2

November 7, 2008

Approved for Release:

Christine Ransom
Project Manager
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of the validation performed on soil samples and associated field and laboratory quality control samples. A **SAMPLE INDEX** is provided, followed by the validation report.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington and Analytical Perspectives, Wilmington, North Carolina. The analytical methods and EcoChem project chemists are listed in the table below.

ANALYSIS METHODS AND ECOCHEM CHEMISTS

Analysis	Method	Primary Review	Secondary Review
Dioxin/Furans	E1613B	Mark Brindle	Eric Strout
PCB Aroclors	SW8082	Melissa Swanson	Eric Strout
Polynuclear Aromatic Hydrocarbons (PAH)	SW8270	Jennifer Newkirk	Eric Strout
Diesel Range Hydrocarbons	NWTPH-Dx	Jennifer Newkirk	Eric Strout
Total Solids	E160.3	Melissa Swanson	Eric Strout

The data were reviewed using guidance and quality control criteria documented in the analytical methods, the project quality assurance project plans (QAPPs) *T-117 Early Action Area Quality Assurance Project Plan* and *T-117 Quality Assurance Project Plan Addendum, Upland Area Soil Sampling for Dioxins and Furans* (August 28, 2008), also *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA 2005), *National Functional Guidelines for Inorganic Data Review* (USEPA 1994 & 2002), *and National Functional Guidelines for Organic Data Review* (USEPA 1999).

Data qualifier definitions, reason codes, and validation criteria are included as **APPENDIX A**. **APPENDIX B** contains the Qualified Data Summary Table**.** Data validation worksheets will be kept on file at EcoChem.

Sample Index
Windward
Terminal 117 Upland Area Soil Sampling

SDG	Sample ID	Laboratory ID	SVOC	PCB	Fuels	Dioxins	Total Solids
NN04	T117-SB60-0.5-2.0	08-22274-NN04A	✓	✓	✓		✓
NN04	T117-SB60-2.0-3.5	08-22275-NN04B	✓	✓	✓		✓
NN04	T117-SB60-3.5-5.0	08-22276-NN04C	✓	✓	✓		✓
NN04	T117-SB60-12.5-14.0	08-22277-NN04D		✓			✓
NN04	T117-SB60-15.0-16.5	08-22278-NN04E		✓			✓
NN04	T117-SB57b-2.0-3.5	08-22279-NN04F	✓	✓	✓		✓
NN04	T117-SB57b-3.5-5.0	08-22280-NN04G	✓	✓	✓		✓
NN04	T117-SB57b-10.0-11.5-RB	08-22281-NN04H	✓	✓	✓		
NN19	T117-SB55-2.0-3.5	08-22352-NN19A	✓	✓	✓		✓
NN19	T117-SB55-3.5-5.0	08-22353-NN19B	✓	✓	✓		✓
NN19	T117-SB54-2.0-3.5	08-22354-NN19C	✓	✓	✓		✓
NN19	T117-SB54-3.5-5.0	08-22355-NN19D	✓	✓	✓		✓
NN19	T117-SB53-0.5-2.0	08-22356-NN19E	✓	✓	✓		✓
NN19	T117-SB56-1.0-2.5	08-22357-NN19F	✓	✓	✓		✓
NN19	T117-SB56-2.5-4.0	08-22358-NN19G	✓	✓	✓		✓
NN19	T117-SB56-4.0-5.5	08-22359-NN19H	✓	✓	✓		✓
NN19	T117-SB56-5.5-7.0	08-22360-NN19I		✓			✓
NN19	T117-SB62-2.5-4.0	08-22361-NN19J	✓	✓	✓		✓
NN19	T117-SB58-0.5-2.0	08-22362-NN19K	✓	✓	✓		✓
NN19	T117-SB58-2.0-3.5	08-22363-NN19L	✓	✓	✓		✓
NN19	T117-SB63-2.0-3.5	08-22364-NN19M		✓			✓
NN19	T117-SB58-0.5-3.5-RB	08-22365-NN19N		✓			
NN19	T117-SB59-1.5-3.0	08-22366-NN19O	✓	✓	✓		✓
NN19	T117-SB59-3.0-4.5	08-22367-NN19P	✓	✓	✓		✓
NN19	T117-SB59-15.0-16.5	08-22368-NN19Q		✓			✓
NN19	T117-SB59-17.5-19.0	08-22369-NN19R		✓			✓
P9676	T117-SB55-2.0-3.5	P9676_6178_001				✓	
P9676	T117-SB55-3.5-5.0	P9676_6178_002				✓	
P9676	T117-SB54-2.0-3.5	P9676_6178_004				✓	
P9676	T117-SB54-3.5-5.0	P9676_6178_005				✓	
P9676	T117-SB53-0.5-2.0	P9676_6178_007				✓	
P9676	T117-SB61-0.5-2.0	P9676_6178_008				✓	
P9676	T117-SB56-1.0-2.5	P9676_6178_009				✓	
P9676	T117-SB58-0.5-2.0	P9676_6178_013				✓	
P9676	T117-SB58-2.0-3.5	P9676_6178_014				✓	
P9676	T117-SB59-1.5-3.0	P9676_6178_016				✓	
P9676	T117-SB59-3.0-4.5	P9676_6178_017				✓	
P9678	T117-SB60-0.5-2.0	P9678_6179_001				✓	
P9678	T117-SB60-2.0-3.5	P9678_6179_002				✓	
P9678	T117-SB60-3.5-5.0	P9678_6179_003				✓	
P9678	T117-SB57b-2.0-3.5	P9678_6179_006				✓	
P9678	T117-SB57b-3.5-5.0	P9678_6179_007				✓	

DATA VALIDATION REPORT
Terminal 117 – Upland Area Soil Sampling
Polynuclear Aromatic Hydrocarbons by Method 8270D

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. Refer to the **Sample Index** for a list of samples reviewed.

SDG	Number of Samples	Validation Level
NN04	5 Soils & 1 Rinsate Blank	Summary
NN19	13 Soils	Summary

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results and ten percent of the QC results were verified.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1 Holding Times and Sample Preservation
GC/MS Tuning
Initial Calibration (ICAL)
2 Continuing Calibration (CCAL)
Laboratory Blanks
1 Field Blanks
1 Surrogate Compounds
2 Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
2 Laboratory Control Samples (LCS)
1 Field Duplicates
2 Internal Standards
2 Compound Identification and Reported Results
Reporting Limits

---

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below***

Holding Times and Sample Preservation

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2° to 6°C. The temperatures of the coolers upon receipt at the laboratory were outside these control limits, ranging form 0.2°C to 8.2°C. These temperature outliers did not impact data quality and no qualifiers were assigned.

Continuing Calibration

All relative response factor (RRF) values were greater than the 0.05 minimum control limit. All percent difference (%D) values were within the ±25% control limit for all continuing calibrations (CCAL), with the exceptions noted below. Positive results in samples associated with percent difference (%D) outliers were estimated (J-5B).

SDGs NN04 & NN19: CCAL 10/3/07: fluoranthene (high bias)

Field Blanks

SDG NN04: Sample T117-SB57b-10.0-11.5-RB was submitted as a field blank. There were no positive results for the target analytes.

Surrogate Compounds

SDG NN04: The surrogate recovery for 2-fluorobiphenyl in Sample T117-SB57b-10.0-11.5-RB was less than the lower control limit. One outlier per fraction is allowed and no qualifiers were required.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the proper frequency. Recoveries were within the laboratory control limits, with the exceptions noted below. For recoveries less than the lower control limit, positive results and reporting limits were estimated (J/UJ-8) in the parent sample only to indicate a potential low bias.

For MS/MSD relative percent difference (RPD) values greater than the control limit, positive results in the parent sample were estimated (J-9).

SDG NN04: For QC Samples T117-SB57b-3.5-5.0 MS/MSD, the indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene %R values were less than the lower control limits. These analytes were estimated (J/UJ-8) in the parent sample. The RPD value was greater than the control limit for fluoranthene. This analyte was estimated (J-9) in the parent sample.

Laboratory Control Samples (LCS)

SDG NN04: The laboratory control sample (LCS) recovery for naphthalene was less than the lower control limit. The naphthalene result in the associated sample, T117-SB57b-10.0-11.5-RB, was estimated (UJ-10) to indicate a potential low bias.

Field Duplicates

SDG NN19: Field duplicates T117-SB56-2.5-4.0 and T117-SB62-2.5-4.0 were submitted with this SDG. No target analytes were detected; field precision was acceptable.

Internal Standards

SDG NN19: The recoveries for the internal standard perylene-d12 were less than the 50% control limit in the analysis of the re-extractions of Samples T117-SB54-2.0-3.5, T117-SB54-3.5-5.0, T117-SB53-0.5-2.0, T117-SB56-1.0-2.5, T117-SB62-2.5-4.0, T117-SB58-0.5-2.0, and T117-SB58-2.0-3.5. These samples were re-analyzed at dilution with acceptable internal standard results. However, due to the dilution factors, many of the detected compounds in the original analysis were not detected in the dilutions.

Both sets of data were reported by the laboratory for each sample. Since the dilutions have limited usability due to the elevated detection limits, all of the results form the dilutions were rejected (R-11) and should not be used. The results for the original analysis of the re-extractions should be used. The results for the compounds associated with the perylene-d12 outliers in these analyses were estimated (J/UJ-19).

Compound Identification and Reported Results

SDGs NN04 & NN19: As initial screening levels indicated potential matrix interference, the samples were initially analyzed using a 5.0 ml final extract volume, resulting in higher detection limits. Since no significant matrix interference was noted, the samples were re-extracted and re-analyzed using a 0.5 ml final extract volume resulting in much lower detection limits. All results should be reported from the re-extraction. The original analyses (with the elevated detection limits) were rejected (R-11) and should not be used.

SDG NN19: As noted in the **Internal Standards** section above, seven samples were reanalyzed at dilutions due to internal standard outliers. The dilution results were rejected (R-11) and should not be used. All results should be reported from the original analysis of the re-extractions

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed an appropriate analytical method. Accuracy was acceptable as demonstrated by the surrogate, MS/MSD, and LCS percent recovery values, except as previously noted. Precision was also acceptable as demonstrated by the RPD values for the MS/MSD and field duplicate analyses, with the exception noted above.

Data were estimated based on LCS % R, MS/MSD %R, MS/MSD RPD, and CCAL %D outliers.

Data were rejected to indicate which result should be used from multiple dilutions and analyses. A usable result remains for all analytes and all samples, therefore completion is unaffected.

Rejected data should not be used for any purpose. All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 – Upland Area Soil Sampling
PCB Aroclors by SW846 Method 8082

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. Refer to the **Sample Index** for a list of samples reviewed.

SDG	Number of Samples	Validation Level
NN04	7 Soils & 1 Rinsate Blank	Summary
NN19	17 Soils & 1 Rinsate Blank	Summary

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

2	Holding Times and Sample Preservation	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
	Initial Calibration (ICAL)		Laboratory Control Samples (LCS)
	Continuing Calibration (CCAL)	1	Field Duplicates
	Laboratory Blanks		Internal Standards
1	Field Blanks		Compound Identification
	Surrogate Compounds	1	Reporting Limits

[1] ***Quality control results are discussed below, but no data were qualified.***

Holding Times and Sample Preservation

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2° to 6°C. The temperatures of the coolers upon receipt at the laboratory were outside these control limits, ranging form 0.2°C to 8.2°C. These temperature outliers did not impact data quality and no qualifiers were assigned.

SDG NN19: Sample T117-SB56-5.5-7.0 was extracted 26 after collection, which was past the 14 day holding time. Positive results and reporting limits were estimated (J/UJ-1).

Field Blanks

SDG NN04: Sample T117-SB57b-10.0-11.5-RB was submitted as a field blank. No target analytes were detected.

SDG NN19: Sample T117-SB58-0.5-3.5-RB was submitted as a field blank. No target analytes were detected.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

SDG NN19: The laboratory analyzed matrix spike/matrix spike duplicate (MS/MSD) samples using Samples T117-SB58-0.5-2.0 and T117-SB59-3.0-4.5. For QC Sample T117-SB59-3.0-4.5, the MS percent recovery (%R) value for Aroclor 1260 was less than the lower control limit. No qualifiers were required for this single outlier.

Field Duplicates

The following acceptance criteria were applied: the relative percent difference (RPD) control limit is 50% for results greater than five times the reporting limit (RL). For results less than five times the RL, the difference between the sample and duplicate must be less than two times the RL.

Field duplicate pairs and outliers are listed below. No data were qualified based on RPD outliers, however data users should take field precision into account when interpreting sample data.

SDG NN19: Two sets of field duplicates were submitted: T117-SB56-2.5-4.0 & T117-SB62-2.5-4.0 and T117-SB58-2.0-3.5 & T117-SB63-2.0-3.5.

The RPD value for Aroclor 1260 for Samples T117-SB56-2.5-4.0 & T117-SB62-2.5-4.0 was greater than the control limit.

Reporting Limits

Reporting limits for most samples were elevated due to necessary dilutions for high levels of Aroclor 1260.

For SampleT117-SB55-3.5-5.0, the reporting limit for Aroclor 1254 was elevated due to non-target background interference. This result was flagged with a "Y" by the laboratory and was qualified as not-detected (U-22) at the elevated reporting limit.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed an appropriate analytical method. Accuracy was acceptable as demonstrated by the surrogate, MS/MSD, and laboratory control sample percent recovery values, with the noted exception. Precision was also acceptable as demonstrated by the RPD values for the MS/MSD and field duplicate analyses, with the exception previously noted.

Data were estimated due to an exceeded holding time. One result for Aroclor 1254 was qualified as not-detected at an elevated reporting limit based on matrix interference.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 – Upland Area Soil Sampling
Dioxin/Furan Compounds by EPA 1613B

This report documents the review of analytical data from the analyses of soil samples and the associated laboratory and field quality control (QC) samples. Analytical Perspectives, Wilmington, North Carolina, analyzed the samples. Refer to the **Sample Index** for a list of samples reviewed.

SDG	Number of Samples	Validation Level
P9676	11 Soils	Full
P9678	5 Soils	Full

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table.

	Holding Times and Sample Preservation		Ongoing Precision and Recovery (OPR)
1	Instrument Performance	1	Laboratory Duplicates
	Initial Calibration (ICAL)	1	Field Duplicates
	Continuing Calibration (CCAL)	2	Compound Identification
	Laboratory Blanks		Reporting Limits
	Labeled Compounds	1	Calculation Verification (full validation only)
1	Matrix Spikes/Matrix Spike Duplicate (MS/MSD)		

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below***

Instrument Performance

The method requires the analysis of an isomer-specificity test solution. The analysis of this solution (performed near the beginning of an analytical sequence) demonstrates that the GC column can successfully separate 2378-TCDD (on the DB5 column) and 2378-TCDF (on the DB225 or equivalent column) from closely eluting non-target isomers. The method criteria for evaluating the isomer-specificity test is that the peak-to-valley ratio between the 2378-isomer and

the closest eluting non-target isomer must be less than or equal to 25%.

However, the laboratory does not perform second column analysis. Instead, the laboratory includes the known co-eluting isomers in the ongoing precision and recovery (OPR) spike solution. This QC sample goes through the entire extraction process prior to analysis, therefore, isomer specificity is verified using the results of the OPR analysis. The laboratory uses a 10% criterion for 2378-TCDD, and a 40% criterion for 2378-TCDF.

The isomer-specificity analysis was acceptable for 2378-TCDD. For 2378-TCDF, the method criterion of 25% is for analyses performed using a DB225 (or equivalent) column. The laboratory uses a DB5MS column (see the **Compound Identification** section for further discussion). Although the laboratory criterion for 2378-TCDF is greater than 25%, the laboratory also requires that, despite the presence of a potentially interfering peak, the 2378-TCDF recovery and retention time must still meet the OPR control limits, proving that 2378-TCDF was adequately resolved.

Since the 2378-TCDF peak-to-valley ratio was less than 40% and since all other OPR control limits were met, the 2378-TCDF peak was judged to be adequately resolved, and no further action was necessary.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were not performed. Accuracy was assessed using labeled compound recoveries and ongoing precision and recovery (OPR) samples.

Laboratory Duplicates

No laboratory duplicate analyses were performed. Precision was assessed using the field duplicate samples.

Field Duplicates

The following acceptance criteria were applied: the relative percent difference (RPD) control limit is 50% for results greater than five times the reporting limit (RL). For results less than five times the RL, the difference between the sample and duplicate must be less than two times the RL.

Field duplicate pairs and outliers are listed below. No data were qualified based on RPD outliers, however data users should take field precision into account when interpreting sample data.

SDG P9676: The data for one set of field duplicates were submitted: T117-SB53-0.5-2.0 and T117-SB61-0.5-2.0. The RPD value for 1,2,3,4,7,8-HxCDF (54.5%) was greater than the control limit. In addition, 1,2,3,7,8-PeCDF was detected in the parent sample, but not the duplicate. The difference between the results was greater than 2X the RL.

Compound Identification

Method 1613B requires the confirmation of 2,3,7,8-TCDF detects using an alternate GC column. The DB5 column that is typically used cannot fully separate 2,3,7,8-TCDF from closely eluting non-target TCDF isomers. The laboratory did not perform a second column confirmation, however, the laboratory uses a DB5MS column. This modified column has been proven to adequately resolve the TCDF isomers. As discussed in the **Instrument Performance** section above, the laboratory also includes the interfering TCDF isomer as a spiked compound in the OPR solution to demonstrate acceptable resolution. Since the 2378-TCDF resolution was acceptable, no further action was necessary.

Both SDGs: For several samples, the laboratory reported EMPC or "estimated maximum possible concentrations" values for one or more of the target analytes. As required by the method, an EMPC value is reported when a peak was detected but did not meet quantitation criteria, therefore the result cannot be considered as positive identification for the analyte. To indicate that the reported result is essentially an elevated detection limit, the EMPC values were qualified as not detected (U-22) at the reported values.

SDG P9676: For Sample T117-SB55-3.5-5.0, the concentrations of 1234678-HpCDF and OCDD were greater than the upper calibration range of the instrument. At the client's request, the laboratory diluted and reanalyzed the sample; however, the results from the reanalysis were not comparable to the original results. Because of this, the dilution results were not reported, and the OCDD and 1234678-HpCDF results in the original analysis were estimated (J-20).

For Sample T117-SB61-0.5-2.0, the laboratory re-evaluated the 2378-TCDF peak and determined that the result (originally reported as a non-detect by the instrument due to poor peak shape) met the identification criteria. Because of this, the laboratory resubmitted all data for the sample, with 2378-TCDF reported as a positive result. The validator corrected the electronic data deliverable with the revised result. No further action was necessary.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed an acceptable modification of the specified analytical method. Accuracy was acceptable, as demonstrated by the labeled compound, and OPR recoveries. Precision was also acceptable as indicated by the field duplicate RPD values, with the exceptions noted above.

Data were estimated due to concentrations that were greater than the calibration range of the instrument. Data were qualified as not detected to indicate that EMPC values represent an elevated detection limit.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 – Upland Area Soil Sampling
Diesel Range Organic Compounds by Method NWTPH-Dx

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. Refer to the **Sample Index** for a list of samples reviewed.

SDG	Number of Samples	Validation Level
NN04	5 Soils & 1 Rinsate Blank	Summary
NN19	13 Soils	Summary

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

- 1 Holding Times and Sample Preservation
- Initial Calibration (ICAL)
- Continuing Calibration (CCAL)
- Laboratory Blanks
- 1 Field Blanks
- 1 Surrogate Compounds
- Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
- Laboratory Control Samples (LCS)
- 1 Field Duplicates
- Compound Identification
- Reporting Limits

[1] ***Quality control results are discussed below, but no data were qualified.***

Holding Times and Sample Preservation

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2° to 6°C. The temperatures of the coolers upon receipt at the laboratory were outside these control limits, ranging form 0.2°C to 8.2°C. These temperature outliers did not impact data quality and no qualifiers were assigned.

Field Blanks

SDG NN04: Sample T117-SB57b-10.0-11.5-RB was submitted as a field blank. Diesel range organic compounds were not detected.

Surrogate Compounds

SDGs NN04 & NN19: Surrogate recoveries for several samples were not calculated due to dilutions greater than 10x, no action was required.

Field Duplicates

SDG NN19: Field duplicates T117-SB56-2.5-4.0 and T117-SB62-2.5-4.0 were submitted with this SDG. the relative percent difference (RPD) values were less than the control limit of 50%.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed an appropriate analytical method. Accuracy was acceptable, as demonstrated by the surrogate, matrix spike/matrix spike duplicate (MS/MSD), and laboratory control sample percent recovery values. Precision was also acceptable as demonstrated by the RPD values for the MS/MSD and field duplicate analyses.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

Qualified Data Summary Table
Windward
Terminal 117 Upland Area Soil Sampling

SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	1-Methylnaphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Acenaphthylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Acenaphthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Dibenzofuran		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Fluorene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Phenanthrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Benzo(a)pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Naphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	2-Methylnaphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Benzo(k)fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Benzo(a)anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Chrysene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04A	Benzo(b)fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-0.5-2.0	08-22274-NN04ARE	Fluoranthene	200	ug/kg		J	5B
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Benzo(b)fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Benzo(a)pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Benzo(k)fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Acenaphthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Naphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	2-Methylnaphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Acenaphthylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Chrysene	840	ug/kg		R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Dibenzofuran		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Fluorene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Phenanthrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	Benzo(a)anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04B	1-Methylnaphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-2.0-3.5	08-22275-NN04BRE	Fluoranthene	190	ug/kg		J	5B
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Fluorene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Benzo(b)fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Benzo(a)pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Benzo(k)fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Acenaphthylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Chrysene		ug/kg	U	R	11

Qualified Data Summary Table
Windward
Terminal 117 Upland Area Soil Sampling

SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Acenaphthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	1-Methylnaphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	2-Methylnaphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Phenanthrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Naphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Benzo(a)anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB60-3.5-5.0	08-22276-NN04C	Dibenzofuran		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Benzo(a)pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Naphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	2-Methylnaphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	1-Methylnaphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Acenaphthylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Acenaphthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Dibenzofuran		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Benzo(k)fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Benzo(b)fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Chrysene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Benzo(a)anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Fluorene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04F	Phenanthrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-2.0-3.5	08-22279-NN04FRE	Fluoranthene	100	ug/kg		J	5B
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Benzo(a)pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Dibenzofuran		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Naphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	2-Methylnaphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	1-Methylnaphthalene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Acenaphthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Fluorene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Phenanthrene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Benzo(b)fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Acenaphthylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Benzo(k)fluoranthene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Chrysene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Benzo(a)anthracene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-22280-NN04G	Pyrene		ug/kg	U	R	11

Qualified Data Summary Table
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SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN04	EPA 8270D	T117-SB57b-10.0-11.5-RB	08-22281-NN04H	Naphthalene		ug/l	U	UJ	10
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-2.0-3.5	08-22352-NN19A	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Naphthalene		ug/kg	U	R	11
NN19	EPA 8082	T117-SB55-3.5-5.0	08-22353-NN19B	Aroclor 1254		ug/kg	Y	U	22
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19B	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB55-3.5-5.0	08-22353-NN19BRE	Fluoranthene	98	ug/kg		J	5B
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Pyrene		ug/kg	U	R	11

Qualified Data Summary Table
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SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19C	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CRE	Benzo(a)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CRE	Indeno(1,2,3-cd)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CRE	Benzo(k)fluoranthene	77	ug/kg		J	19
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CRE	Fluoranthene	82	ug/kg		J	5B
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CRE	Benzo(b)fluoranthene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CRE	Dibenz(a,h)anthracene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CRE	Benzo(g,h,i)perylene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-2.0-3.5	08-22354-NN19CREDL	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	2-Methylnaphthalene		ug/kg	U	R	11

Qualified Data Summary Table
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SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19D	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DRE	Benzo(k)fluoranthene	71	ug/kg		J	19
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DRE	Benzo(b)fluoranthene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DRE	Indeno(1,2,3-cd)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DRE	Benzo(g,h,i)perylene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DRE	Dibenz(a,h)anthracene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DRE	Benzo(a)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB54-3.5-5.0	08-22355-NN19DREDL	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Anthracene		ug/kg	U	R	11

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SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19E	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19ERE	Indeno(1,2,3-cd)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19ERE	Dibenz(a,h)anthracene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19ERE	Benzo(a)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19ERE	Benzo(g,h,i)perylene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19ERE	Benzo(b)fluoranthene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19ERE	Benzo(k)fluoranthene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB53-0.5-2.0	08-22356-NN19EREDL	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19F	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FRE	Benzo(b)fluoranthene	130	ug/kg		J	19
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FRE	Dibenz(a,h)anthracene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FRE	Benzo(a)pyrene		ug/kg	U	UJ	19

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SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FRE	Benzo(k)fluoranthene	96	ug/kg		J	19
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FRE	Indeno(1,2,3-cd)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FRE	Benzo(g,h,i)perylene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB56-1.0-2.5	08-22357-NN19FREDL	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8082	T117-SB56-5.5-7.0	08-22360-NN19I	Aroclor 1221		ug/kg	U	UJ	1
NN19	EPA 8082	T117-SB56-5.5-7.0	08-22360-NN19I	Aroclor 1232		ug/kg	U	UJ	1
NN19	EPA 8082	T117-SB56-5.5-7.0	08-22360-NN19I	Aroclor 1260	930	ug/kg		J	1
NN19	EPA 8082	T117-SB56-5.5-7.0	08-22360-NN19I	Aroclor 1248		ug/kg	U	UJ	1
NN19	EPA 8082	T117-SB56-5.5-7.0	08-22360-NN19I	Aroclor 1242		ug/kg	U	UJ	1
NN19	EPA 8082	T117-SB56-5.5-7.0	08-22360-NN19I	Aroclor 1016		ug/kg	U	UJ	1
NN19	EPA 8082	T117-SB56-5.5-7.0	08-22360-NN19I	Aroclor 1254		ug/kg	U	UJ	1
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Benzo(k)fluoranthene	64	ug/kg		R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19J	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JRE	Indeno(1,2,3-cd)pyrene		ug/kg	U	UJ	19

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SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JRE	Benzo(g,h,i)perylene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JRE	Dibenz(a,h)anthracene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JRE	Benzo(a)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JRE	Benzo(b)fluoranthene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JRE	Benzo(k)fluoranthene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB62-2.5-4.0	08-22361-NN19JREDL	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Chrysene	870	ug/kg		R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Pyrene	1600	ug/kg		R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Phenanthrene	900	ug/kg		R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	1-Methylnaphthalene	1700	ug/kg		R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19K	2-Methylnaphthalene	1600	ug/kg		R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KRE	Benzo(k)fluoranthene	130	ug/kg		J	19
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KRE	Indeno(1,2,3-cd)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KRE	Dibenz(a,h)anthracene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KRE	Benzo(a)pyrene	300	ug/kg		J	19
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KRE	Benzo(b)fluoranthene	310	ug/kg		J	19
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KRE	Benzo(g,h,i)perylene	180	ug/kg		J	19

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SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KRE	Fluoranthene	190	ug/kg		J	5B
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	1-Methylnaphthalene	830	ug/kg		R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Pyrene	1000	ug/kg		R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Phenanthrene	920	ug/kg		R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Chrysene	770	ug/kg		R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-0.5-2.0	08-22362-NN19KREDL	2-Methylnaphthalene	700	ug/kg		R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19L	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LRE	Benzo(k)fluoranthene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LRE	Benzo(a)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LRE	Benzo(b)fluoranthene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LRE	Dibenz(a,h)anthracene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LRE	Benzo(g,h,i)perylene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LRE	Indeno(1,2,3-cd)pyrene		ug/kg	U	UJ	19
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	1-Methylnaphthalene		ug/kg	U	R	11

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SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB58-2.0-3.5	08-22363-NN19LREDL	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Acenaphthylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	1-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-1.5-3.0	08-22366-NN19O	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Dibenz(a,h)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Benzo(b)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Benzo(k)fluoranthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Benzo(a)anthracene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Phenanthrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	2-Methylnaphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Chrysene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Indeno(1,2,3-cd)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Benzo(a)pyrene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Dibenzofuran		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Acenaphthene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	1-Methylnaphthalene		ug/kg	U	R	11

Qualified Data Summary Table
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SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Naphthalene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Fluorene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Benzo(g,h,i)perylene		ug/kg	U	R	11
NN19	EPA 8270D	T117-SB59-3.0-4.5	08-22367-NN19P	Acenaphthylene		ug/kg	U	R	11
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-26267-NN04GRE	Fluoranthene	640	ug/kg		J	5B,9
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-26267-NN04GRE	Indeno(1,2,3-cd)pyrene	87	ug/kg		J	8
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-26267-NN04GRE	Dibenz(a,h)anthracene		ug/kg	U	UJ	8
NN04	EPA 8270D	T117-SB57b-3.5-5.0	08-26267-NN04GRE	Benzo(g,h,i)perylene	97	ug/kg		J	8
P9676	EPA 1613	T117-SB55-2.0-3.5	P9676_6178_001	TCDDs	7.24	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB55-2.0-3.5	P9676_6178_001	PeCDDs	1.18	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB55-2.0-3.5	P9676_6178_001	TCDFs	160	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB55-3.5-5.0	P9676_6178_002	PeCDDs	210	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB55-3.5-5.0	P9676_6178_002	HxCDDs	1530	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB55-3.5-5.0	P9676_6178_002	TCDDs	30.9	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB55-3.5-5.0	P9676_6178_002	1,2,3,4,6,7,8-HpCDF	10200	pg/g	*	J	20
P9676	EPA 1613	T117-SB55-3.5-5.0	P9676_6178_002	OCDD	19000	pg/g	*	J	20
P9676	EPA 1613	T117-SB55-3.5-5.0	P9676_6178_002	2,3,7,8-TCDD	2.06	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB55-3.5-5.0	P9676_6178_002	TCDFs	478	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB54-2.0-3.5	P9676_6178_004	HxCDDs	387	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB54-2.0-3.5	P9676_6178_004	PeCDDs	58.6	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB54-2.0-3.5	P9676_6178_004	TCDDs	21.8	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB54-3.5-5.0	P9676_6178_005	TCDFs	196	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB54-3.5-5.0	P9676_6178_005	TCDDs	12.4	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB54-3.5-5.0	P9676_6178_005	PeCDDs	19.6	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB53-0.5-2.0	P9676_6178_007	HxCDDs	27.6	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB53-0.5-2.0	P9676_6178_007	TCDFs	80.6	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB53-0.5-2.0	P9676_6178_007	1,2,3,7,8,9-HxCDD	2.27	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB53-0.5-2.0	P9676_6178_007	1,2,3,4,7,8-HxCDD	1.09	pg/g	EMPC J	U	22
P9676	EPA 1613	T117-SB53-0.5-2.0	P9676_6178_007	PeCDDs	3.11	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB61-0.5-2.0	P9676_6178_008	TCDDs	7.43	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB61-0.5-2.0	P9676_6178_008	HxCDDs	27.9	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB61-0.5-2.0	P9676_6178_008	TCDFs	129	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB61-0.5-2.0	P9676_6178_008	PeCDFs	994	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB61-0.5-2.0	P9676_6178_008	HxCDFs	475	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB56-1.0-2.5	P9676_6178_009	1,2,3,7,8-PeCDD	4.03	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB56-1.0-2.5	P9676_6178_009	HxCDDs	124	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB56-1.0-2.5	P9676_6178_009	TCDDs	39.7	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB56-1.0-2.5	P9676_6178_009	PeCDDs	81.4	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-0.5-2.0	P9676_6178_013	PeCDFs	309	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-0.5-2.0	P9676_6178_013	PeCDDs	36.1	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-0.5-2.0	P9676_6178_013	TCDDs	17.1	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-0.5-2.0	P9676_6178_013	HxCDDs	120	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-0.5-2.0	P9676_6178_013	TCDFs	144	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-0.5-2.0	P9676_6178_013	HxCDFs	355	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-0.5-2.0	P9676_6178_013	1,2,3,7,8-PeCDD	3.47	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-0.5-2.0	P9676_6178_013	1,2,3,7,8-PeCDF	3.95	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-0.5-2.0	P9676_6178_013	2,3,7,8-TCDF	5.38	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-2.0-3.5	P9676_6178_014	TCDDs	42.8	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB58-2.0-3.5	P9676_6178_014	PeCDDs	239	pg/g	EMPC	U	22

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SDG	Method	Sample ID	Laboratory ID	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
P9676	EPA 1613	T117-SB59-1.5-3.0	P9676_6178_016	TCDDs	17.9	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB59-1.5-3.0	P9676_6178_016	PeCDDs	4.68	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB59-1.5-3.0	P9676_6178_016	TCDFs	364	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB59-1.5-3.0	P9676_6178_016	1,2,3,7,8-PeCDD	2.85	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB59-1.5-3.0	P9676_6178_016	2,3,7,8-TCDD	0.774	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB59-3.0-4.5	P9676_6178_017	HpCDFs	1.46	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB59-3.0-4.5	P9676_6178_017	1,2,3,4,6,7,8-HpCDD	2.14	pg/g	EMPC J	U	22
P9676	EPA 1613	T117-SB59-3.0-4.5	P9676_6178_017	2,3,4,7,8-PeCDF	0.733	pg/g	EMPC J	U	22
P9676	EPA 1613	T117-SB59-3.0-4.5	P9676_6178_017	HxCDDs	4.11	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB59-3.0-4.5	P9676_6178_017	HpCDDs	5.2	pg/g	EMPC	U	22
P9676	EPA 1613	T117-SB59-3.0-4.5	P9676_6178_017	PeCDFs	5.71	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-0.5-2.0	P9678_6179_001	TCDFs	109	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-0.5-2.0	P9678_6179_001	HxCDDs	44	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-0.5-2.0	P9678_6179_001	PeCDDs	19	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-0.5-2.0	P9678_6179_001	TCDDs	10.5	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-0.5-2.0	P9678_6179_001	2,3,7,8-TCDD	0.366	pg/g	EMPC J	U	22
P9678	EPA 1613	T117-SB60-0.5-2.0	P9678_6179_001	1,2,3,7,8-PeCDD	1.36	pg/g	EMPC J	U	22
P9678	EPA 1613	T117-SB60-2.0-3.5	P9678_6179_002	2,3,7,8-TCDD	0.72	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-2.0-3.5	P9678_6179_002	HxCDDs	87.9	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-2.0-3.5	P9678_6179_002	PeCDDs	40.4	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-2.0-3.5	P9678_6179_002	1,2,3,7,8-PeCDD	2.6	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-2.0-3.5	P9678_6179_002	TCDDs	21.5	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-3.5-5.0	P9678_6179_003	1,2,3,7,8-PeCDF	0.447	pg/g	EMPC J	U	22
P9678	EPA 1613	T117-SB60-3.5-5.0	P9678_6179_003	TCDDs	0.396	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-3.5-5.0	P9678_6179_003	TCDFs	13.8	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-3.5-5.0	P9678_6179_003	PeCDFs	26	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB60-3.5-5.0	P9678_6179_003	HpCDFs	20.8	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB57b-2.0-3.5	P9678_6179_006	1,2,3,7,8-PeCDD	0.851	pg/g	EMPC J	U	22
P9678	EPA 1613	T117-SB57b-2.0-3.5	P9678_6179_006	PeCDDs	6.39	pg/g	EMPC	U	22
P9678	EPA 1613	T117-SB57b-3.5-5.0	P9678_6179_007	1,2,3,7,8-PeCDD	1.5	pg/g	EMPC J	U	22
P9678	EPA 1613	T117-SB57b-3.5-5.0	P9678_6179_007	TCDDs	11.2	pg/g	EMPC	U	22

EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

Terminal 117 Upland Area Soil Sampling

Prepared for:

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EcoChem Project: C22005-4

February 12, 2009

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PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of the validation performed on one archived sediment sample and associated field and laboratory quality control samples. A **SAMPLE INDEX** is provided, followed by the validation report.

Samples were analyzed for PCB Aroclors by Analytical Resources, Inc. (ARI), Tukwila, Washington and dioxins were analyzed by Analytical Perspectives, Wilmington, North Carolina. The analytical methods and EcoChem project chemists are listed in the table below.

ANALYSIS METHODS AND ECOCHEM CHEMISTS

Analysis	Method	Primary Review	Secondary Review
PCB Aroclors	SW8082	Mark Lybeer	Chris Ransom
Dioxins	E1613B	Melissa Swanson	

The data were reviewed using guidance and quality control criteria documented in the analytical methods, the project quality assurance project plans (QAPPs) *T-117 Early Action Area Quality Assurance Project Plan* and *T-117 Quality Assurance Project Plan Addendum, Upland Area Soil Sampling for Dioxins and Furans* (August 28, 2008), also *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA 2005), *and National Functional Guidelines for Organic Data Review* (USEPA 1999).

Data qualifier definitions, reason codes, and validation criteria are included as **APPENDIX A**. **APPENDIX B** contains the Qualified Data Summary Table**.** Data validation worksheets will be kept on file at EcoChem.

Sample Index
Windward
Terminal 117 - Upland Area Soil Sampling

SDG	Sample ID	Laboratory ID	PCB	Dioxin
OJ07	T117-SB58-3.5-5.0	09-2241-OJ07A	✓	
P9676	T117-SB58-3.5-5.0	P9676_6424_015		✓

DATA VALIDATION REPORT
Terminal 117 – Upland Area Soil Sampling
PCB Aroclors by EPA Method 8082

This report documents the review of analytical data from the analyses of one archived sediment sample and the associated laboratory quality control (QC) samples. The sample was analyzed by Analytical Resources, Inc., Tukwila, Washington.

SDG	Number of Samples	Validation Level
OJ07	1 Soil	Summary

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data package. Laboratory QC results were also verified (10%).

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

Holding Times and Sample Receipt	1 Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
Initial Calibration (ICAL)	Target Analyte List
Continuing Calibration (CCAL)	2 Reporting Limits
Laboratory Blanks	Compound Identification
Surrogate Compounds	Calculation Verification (full validation only)
Laboratory Control Samples (LCS)	

[1] Quality control results are discussed below, but no data were qualified.
[2] Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Matrix Spike/matrix spike duplicate (MS/MSD) analyses were not performed. Accuracy was assessed using surrogate and laboratory control sample (LCS) percent recovery (%R) values. Precision could not be assessed.

Reporting Limits

The sample chromatogram for Sample T117-SB58-3.5-5.0 indicated a non-target background interference. The reporting limit for Aroclor 1254 was elevated and flagged "Y" by the laboratory. This result was qualified as not-detected (U-22). This sample was analyzed at a 15X dilution; reporting limits were elevated accordingly.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed an appropriate analytical method. Accuracy was acceptable, as demonstrated by the surrogate and the LCS recoveries. Precision could not assessed.

The result for Aroclor 1254 was qualified as not-detected at an elevated reporting limit due to matrix interference.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 Upland Area Soil Sampling
Dioxin/Furan Compounds by EPA 1613B

This report documents the review of analytical data from the analyses of one archived sediment sample and the associated laboratory quality control (QC) sample. Analytical Perspectives, Wilmington, North Carolina, analyzed the samples.

SDG	Number of Samples	Validation Level
P9676	1 Soil	Full

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results. No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table.

	Holding Times and Sample Preservation		Ongoing Precision and Recovery (OPR)
1	Instrument Performance	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
	Initial Calibration (ICAL)	1	Laboratory Duplicates
	Continuing Calibration (CCAL)	2	Compound Identification
	Laboratory Blanks		Reporting Limits
	Labeled Compounds	1	Calculation Verification (full validation only)

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below***

Instrument Performance

The method requires the analysis of an isomer-specificity test solution. The analysis of this solution (performed near the beginning of an analytical sequence) demonstrates that the GC column can successfully separate 2,3,7,8-TCDD (on the DB5 column) and 2,3,7,8-TCDF (on the DB225 or equivalent column) from closely eluting non-target isomers.

The isomer-specificity analysis was acceptable for 2,3,7,8-TCDD. However, the laboratory does not perform second column analysis. Instead, the laboratory includes the known co-eluting isomers in the ongoing precision and recovery (OPR) spike solution. This QC sample goes

through the entire extraction process prior to analysis. Isomer specificity is verified using the results of the OPR analysis.

The method criteria for evaluating the isomer-specificity test is that the peak-to-valley ratio between the 2,3,7,8-isomer and the closest eluting non-target isomer must be less than or equal to 25%. The laboratory uses a 10% criterion for 2,3,7,8-TCDD, and a 40% criterion for 2,3,7,8-TCDF.

For 2,3,7,8-TCDF, the method criterion of 25% is for analyses performed using a DB225 (or equivalent) column. The laboratory uses a DB5MS column (see **Compound Identification** section for further discussion). Although the laboratory criterion for 2,3,7,8-TCDF is greater than 25%, the laboratory also requires that despite the presence of a potentially interfering peak, the 2,3,7,8-TCDF recovery and retention time must still meet the OPR control limits, proving that 2,3,7,8-TCDF was adequately resolved.

Since the 2,3,7,8-TCDF peak-to-valley ratio was less than 40% and since all other OPR control limits were met, the 2,3,7,8-TCDF peak was judged to be adequately resolved, and no further action was necessary.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were not performed. Accuracy was assessed using labeled compound recoveries and ongoing precision and recovery (OPR) samples.

Laboratory Duplicates

No laboratory duplicate analyses were performed. Precision could not be assessed.

Compound Identification

Method 8290B requires the confirmation of 2,3,7,8-TCDF detects using an alternate GC column. The DB5 column that is typically used cannot fully separate 2,3,7,8-TCDF from closely eluting non-target TCDF isomers. The laboratory did not perform a second column confirmation, however the laboratory uses a DB5MS column. This modified column has been proven to adequately resolve the TCDF isomers. As discussed in the **Instrument Performance** section above, the laboratory also includes the interfering TCDF isomer as a spiked compound in the OPR solution to demonstrate acceptable resolution. Since the 2,3,7,8-TCDF resolution was acceptable, no further action was necessary.

For several samples, the laboratory reported EMPC or "estimated maximum possible concentrations" values for one or more of the target analytes. As required by the method, an EMPC value is reported when a peak was detected but did not meet quantitation criteria, therefore the result cannot be considered as positive identification for the analyte. To indicate that the reported result is essentially an elevated detection limit, the EMPC values were qualified as not detected (U-22) at the reported values.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed an acceptable modification of the specified analytical method. Accuracy was acceptable, as demonstrated by the labeled compound and OPR recoveries. Precision could not be assessed.

Data were qualified as not detected to indicate that EMPC values represent an elevated detection limit.

All data, as qualified, are acceptable for use.

EcoChem, INC.
Environmental Data Quality

APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
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.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

1	Holding Time/Sample Preservation
2	Chromatographic pattern in sample does not match pattern of calibration standard.
3	Compound Confirmation
4	Tentatively Identified Compound (TIC) (associated with NJ only)
5A	Calibration (initial)
5B	Calibration (continuing)
6	Field Blank Contamination
7	Lab Blank Contamination (e.g., method blank, instrument, etc.)
8	Matrix Spike(MS & MSD) Recoveries
9	Precision (all replicates)
10	Laboratory Control Sample Recoveries
11	A more appropriate result is reported (associated with “R” and “DNR” only)
12	Reference Material
13	Surrogate Spike Recoveries (a.k.a., labeled compounds & recovery standards)
14	Other (define in validation report)
15	GFAA Post Digestion Spike Recoveries
16	ICP Serial Dilution % Difference
17	ICP Interference Check Standard Recovery
18	Trip Blank Contamination
19	Internal Standard Performance (e.g., area, retention time, recovery)
20	Linear Range Exceeded
21	Potential False Positives
22	Elevated Detection Limit Due to Interference (i.e., laboratory, chemical and/or matrix)

EcoChem Validation Guidelines for PCB Congener Analysis by HRMS (Based on EPA Reg. 10 SOP, Rev. 1, 12/1995 & EPA SW-846, Method 1668)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids <4°C Tissues <-10°C	EcoChem PJ, see TM-05	1
Holding Time	Samples: Up to one year if stored in the dark & temp as above. Extracts: Up to 1 year if stored at <-10°C and in the dark	J(+)/UJ(-) if HT > 1 year EcoChem PJ, see TM-05	1
Mass Resolution	>=10,000 resolving power at m/z 330.9792 <5 ppm deviation from each m/z listed in Table 7 of method. Analyzed prior to ICAL and at the beginning and end of each 12 hr. shift	R(+/-) if not met	14
Column Resolution 209 Congener Solution	Mix of all 209 PCBs run prior to each ICAL and each 12 hour shift RT of PCB209 must be > 55 min PCB 156 & 157 must coelute w/in 2 sec PCB34 & 23 and PCB187 & 182 must be resolved where ((x/y)*100%) < 40% x = ht. of valley and y = ht of shortest peak	J(+) if valley >40%	5A (ICAL) 5B (CCAL)
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD < 35% for labeled compounds	J(+) natives if %RSD > 20%	5A
	Ion Abundance ratios within QC limits (Method 1668, Table 8) in CS1 std.	EcoChem PJ, see TM-05	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	
Continuing Calibration	Every 12 hours: Concentrations must meet criteria specified in Method 1668, Table 6	J(+)/(UJ(-) natives if %D = 30% - 50% J(+)/R(-) natives if %D > 75%	5B
	Absolute RT of all Labelled Compounds and Window Defining Congeners must be +/- 15 sec of RT in ICAL RRT of all compounds must meet Table 2 of method.	EcoChem PJ, see ICAL section of TM-05	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
	Ion Abundance ratios must meet criteria specified in Method 1668, Table 8	EcoChem PJ, see TM-05	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7

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EcoChem Validation Guidelines for PCB Congener Analysis by HRMS (Based on EPA Reg. 10 SOP, Rev. 1, 12/1995 & EPA SW-846, Method 1668)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Rinse/Field Blank (if required)	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	One per matrix per batch %R Values w/in limits specified in Method 1668, Table 6	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (if required)	Accuracy: %R values within laboratory limits	Qualify parent sample only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
	Precision: RPD < 20%	J(+) in parent sample if RPD > 20%	9
Duplicate (if required)	RPD <25%	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	%R must meet limits specified in Method 1668, Table 6.	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 Ion abundance (IA ratios) must meet limits stated in Table 8 of Method 1668 Relative retention times (RRT) must be w/in limits stated in Table 2 of Method 1668	If RT criteria not met, use PJ (see TM-05) J(+) if S/N criteria not met if unlabelled ion abundance not met, change to EMPC J(+) if labelled ion abundance not met.	21
Interferences	Lock masses must not deviate +/- 20%	Change result to EMPC	14
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	11

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids < 4°C Tissues <-10°C	EcoChem PJ, see TM-05	1
Holding Time	Extraction - Water: 30 days from collection *Note:* Under CWA, SDWA, and RCRA the HT for H2O is 7 days* Extraction - Soil: 30 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext > 30 days J(+)/UJ(-) if analysis > 40 Days EcoChem PJ, see TM-05	1
Mass Resolution	>=10,000 resolving power at m/z 304.9824 Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift	R(+/-) if not met	14
Window Defining Mix and Column Performance Mix	Window defining mixture/Isomer specificity std run before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) x = ht. of TCDD y = baseline to bottom of valley For all isomers eluting near 2378-TCDD/TCDF isomers (TCDD only for 8290)	J(+) if valley > 25%	5A (ICAL) 5B (CCAL
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD <35% for labeled compounds under 1613b)	J(+) natives if %RSD > 20%	5A
	Abs. RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 >15 min on DB-225	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Continuing Calibration	Analyzed at the start and end of each 12 hour shift. %D+/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in Table 6, Method 1613B) (If %Ds in the closing CCAL are w/in 25%/35% the avg RF from the two CCAL may be used to calculate samples per Method 8290, Section 8.3.2.4)	Do not qualify labeled compounds. Narrate in report for labeled compound %D outliers. For native compound %D outliers: 8290: J(+)/UJ(-) if %D = 20% - 75% J(+)/R(-) if %D > 75% 1613: J(+)/UJ(-) if %D is outside Table 6 limits J(+)/R(-) if %D is +/- 75% of Table 6 limit	5B
	Abs. RT of $^{13}C_{12}$-1234-TCDD and $^{13}C12$-123789-HxCDD +/- 15 sec of ICAL.	EcoChem PJ, see ICAL section of TM-05	
	RRT of all other compounds must meet Table 2 of 1613B.	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7
Field Blanks (Not Required)	No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	Concentrations must meet limits in Table 6, Method 1613B or lab limits.	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (recovery)	May not analyze MS/MSD %R should meet lab limits.	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	May not analyze MS/MSD RPD < 20%	J(+) in parent sample if RPD > CL	9

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Lab Duplicate	RPD <25% if present.	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	*Method 8290:* %R = 40% - 135% in all samples *Method 1613B:* %R must meet limits specified in Table 7, Method 1613	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 IA ratios meet limits in Table 9 of 1613B or Table 8 of 8290 RRTs w/in limits in Table 2 of 1613B	If RT criteria not met, use PJ (see TM-05) If S/N criteria not met, J(+). if unlabelled ion abundance not met, change to EMPC If labelled ion abundance not met, J(+).	21
EMPC (estimated maximum possible concentration)	If quantitation idenfication criteria are not met, laboratory should report an EMPC value.	If laboratory correctly reported an EMPC value, qualify with U to indicate that the value is a detection limit.	14
Interferences	PCDF interferences from PCDPE	If both detected, change PCDF result to EMPC	14
Second Column Confirmation	All 2378-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC specs in this table must be met for the confirmation analysis.	Report lower of the two values. If not performed use PJ (see TM-05).	3
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used	11

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APPENDIX B
QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Windward
Terminal 117 - Upland Area Soil Sampling

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifiers	Validator Qualifiers	Validator Reason
OJ07	T117-SB58-3.5-5.0	09-2241-OJ07A	EPA 8082	Aroclor 1254		ng/kg	Y	U	22
P9676	T117-SB58-3.5-5.0	P9676_6424_015	EPA 1613	1,2,3,7,8-PeCDD	0.352	ng/kg	EMPC J	U	22
P9676	T117-SB58-3.5-5.0	P9676_6424_015	EPA 1613	2,3,7,8-TCDD	0.082	ng/kg	EMPC J	U	22

EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

Terminal 117 Upland Area Soil Sampling

Prepared for:

Windward Environmental, LLC
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PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of the validation performed on soil samples and associated laboratory quality control samples. A **SAMPLE INDEX** is provided, followed by the validation report.

Samples were analyzed for PCB Aroclors by Analytical Resources, Inc. (ARI), Tukwila, Washington and for dioxin furans by Analytical Perspectives, Wilmington, North Carolina. The analytical methods and EcoChem project chemists are listed in the table below.

ANALYSIS METHODS AND ECOCHEM CHEMISTS

Analysis	Method	Primary Review	Secondary Review
PCB Aroclors	SW8082	Lucy Panteleeff	Chris Ransom
Dioxin Furans	E1613B	Melissa Swanson	

The data were reviewed using guidance and quality control criteria documented in the analytical methods, the project quality assurance project plans (QAPPs) *T-117 Early Action Area Quality Assurance Project Plan* and *T-117 Quality Assurance Project Plan Addendum, Upland Area Soil Sampling for Dioxins and Furans* (August 28, 2008), also *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA 2005), *and National Functional Guidelines for Organic Data Review* (USEPA 1999).

Data qualifier definitions, reason codes, and validation criteria are included as **APPENDIX A**. **APPENDIX B** contains the Qualified Data Summary Table**.** Data validation worksheets will be kept on file at EcoChem.

Sample Index
Windward
Terminal 117 - Upland Area Soil Sampling

SDG	Sample ID	Laboratory ID	PCB	Dioxin
ON06	T117-SB55-11.5-13.0	09-4759-ON06A	✓	
ON06	T117-SB54-8.5-10.0	09-4760-ON06B	✓	
ON65	T117-SB57b-10.0-11.5	09-5163-ON65A	✓	
P9676C	T117-SB55-11.5-13.0	P9676_6595_003		✓
P9676C	T117-SB54-8.5-10.0	P9676_6595_006		✓
P9678B	T117-SB60-12.5-14.0	P9678_6595_004		✓
P9678B	T117-SB57b-10.0-11.5	P9678_6595_008		✓

DATA VALIDATION REPORT
TERMINAL 117 Upland Area Soil Sampling
PCB Aroclors by SW846 Method 8082

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. Refer to the **Sample Index** for a list of samples reviewed.

SDG	Number of Samples	Validation Level
ON06	2 Soil	Summary
ON65	1 Soil	Summary

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data package. Laboratory QC results were also verified (10%). No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Holding Times and Sample Preservation		Laboratory Control Samples (LCS/LCSD)
	Initial Calibration (ICAL)	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
	Continuing Calibration (CCAL)		Field Duplicates
	Laboratory Blanks	2	Reporting Limits
	Surrogate Compounds		Compound Identification

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Holding Times and Sample Preservation

SDG ON06: The sample cooler was received at 8.2˚C, which was greater than the recommended temperature range of 4˚C +/- 2˚C. It was determined that the data were unaffected by the temperature outlier and no action was taken.

Surrogate Compounds

SDG ON65: The percent recovery (%R) values for decachlorobiphenyl and tetrachlorometaxylene were less than the lower control limits in sample T117-SB57b-10.0-11.5. The sample was diluted at 100x; therefore no qualification of data was necessary.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

SDG ON06: The matrix spike/matrix spike duplicate (MS/MSD) analyses were performed using Sample T117-SB55-11.5-13.0. Aroclor 1260 was not recovered in the MS/MSD samples due to the high concentration of Aroclor 1260 in the parent a sample. No action was taken.

Reporting Limits

Dilutions were required due to high levels of Aroclor 1260 in the samples. Reporting limits were elevated accordingly. Some chromatograms also indicated non-target background interference. The reporting limits were flagged "Y" by the laboratory in these cases. These "Y" flagged results were qualified as not-detected (U-22). The following results were qualified:

SDG ON06: Aroclor 1254 – Sample T117-SB55-11.5-13.0

SDG ON65: Aroclor 1254 – Sample T117-SB57b-10.0-11.5

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed an appropriate analytical method. Accuracy was acceptable, as demonstrated by the surrogate, MS/MSD, and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) percent recovery values. Precision was acceptable as demonstrated by the MS/MSD and LCS/LCSD relative percent difference values.

Data were qualified as not-detected based on matrix interference.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117 Upland Area Soil Sampling
Dioxin/Furan Compounds by EPA 1613B

This report documents the review of analytical data from the analyses of soil samples and the associated laboratory quality control (QC) samples. Analytical Perspectives, Wilmington, North Carolina, analyzed the samples. Refer to the **Sample Index** for a list of samples reviewed.

SDG	Number of Samples	Validation Level
P9676C	2 Soil	Full
P9678B	2 Soil	Full

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD VERIFICATION

A verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data packages. All sample results were verified along with ten percent of the QC results. No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table.

	Holding Times and Sample Preservation		Ongoing Precision and Recovery (OPR)
1	Instrument Performance	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
	Initial Calibration (ICAL)	1	Laboratory Duplicates
	Continuing Calibration (CCAL)	2	Compound Identification
	Laboratory Blanks		Reporting Limits
	Labeled Compounds	1	Calculation Verification (full validation only)

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below***

Instrument Performance

The method requires the analysis of an isomer-specificity test solution. The analysis of this solution (performed near the beginning of an analytical sequence) demonstrates that the GC column can successfully separate 2,3,7,8-TCDD (on the DB5 column) and 2,3,7,8-TCDF (on the DB225 or equivalent column) from closely eluting non-target isomers.

The isomer-specificity analysis was acceptable for 2,3,7,8-TCDD. However, the laboratory does not perform second column analysis. Instead, the laboratory includes the known co-eluting

isomers in the ongoing precision and recovery (OPR) spike solution. This QC sample goes through the entire extraction process prior to analysis. Isomer specificity is verified using the results of the OPR analysis.

The method criteria for evaluating the isomer-specificity test is that the peak-to-valley ratio between the 2,3,7,8-isomer and the closest eluting non-target isomer must be less than or equal to 25%. The laboratory uses a 10% criterion for 2,3,7,8-TCDD, and a 40% criterion for 2,3,7,8-TCDF.

For 2,3,7,8-TCDF, the method criterion of 25% is for analyses performed using a DB225 (or equivalent) column. The laboratory uses a DB5MS column (see **Compound Identification** section for further discussion). Although the laboratory criterion for 2,3,7,8-TCDF is greater than 25%, the laboratory also requires that despite the presence of a potentially interfering peak, the 2,3,7,8-TCDF recovery and retention time must still meet the OPR control limits, proving that 2,3,7,8-TCDF was adequately resolved.

Since the 2,3,7,8-TCDF peak-to-valley ratio was less than 40% and since all other OPR control limits were met, the 2,3,7,8-TCDF peak was judged to be adequately resolved, and no further action was necessary.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were not performed. Accuracy was assessed using labeled compound recoveries and ongoing precision and recovery (OPR) samples.

Laboratory Duplicates

No laboratory duplicate analyses were performed. Precision could not be assessed.

Compound Identification

Method 8290B requires the confirmation of 2,3,7,8-TCDF detects using an alternate GC column. The DB5 column that is typically used cannot fully separate 2,3,7,8-TCDF from closely eluting non-target TCDF isomers. The laboratory did not perform a second column confirmation; however the laboratory uses a DB5MS column. This modified column has been proven to adequately resolve the TCDF isomers. As discussed in the **Instrument Performance** section above, the laboratory also includes the interfering TCDF isomer as a spiked compound in the OPR solution to demonstrate acceptable resolution. Since the 2,3,7,8-TCDF resolution was acceptable, no further action was necessary.

For several samples, the laboratory reported EMPC or "estimated maximum possible concentrations" values for one or more of the target analytes. As required by the method, an EMPC value is reported when a peak was detected but did not meet quantitation criteria, therefore the result cannot be considered as positive identification for the analyte. To indicate that the reported result is essentially an elevated detection limit, the EMPC values were qualified as not detected (U-22) at the reported values.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed an acceptable modification of the specified analytical method. Accuracy was acceptable, as demonstrated by the labeled compound and OPR recoveries. Precision could not be assessed.

Data were qualified as not detected to indicate that EMPC values represent an elevated detection limit.

All data, as qualified, are acceptable for use.

EcoChem, INC.
Environmental Data Quality

APPENDIX A
DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
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.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

1	Holding Time/Sample Preservation
2	Chromatographic pattern in sample does not match pattern of calibration standard.
3	Compound Confirmation
4	Tentatively Identified Compound (TIC) (associated with NJ only)
5A	Calibration (initial)
5B	Calibration (continuing)
6	Field Blank Contamination
7	Lab Blank Contamination (e.g., method blank, instrument, etc.)
8	Matrix Spike(MS & MSD) Recoveries
9	Precision (all replicates)
10	Laboratory Control Sample Recoveries
11	A more appropriate result is reported (associated with “R” and “DNR” only)
12	Reference Material
13	Surrogate Spike Recoveries (a.k.a., labeled compounds & recovery standards)
14	Other (define in validation report)
15	GFAA Post Digestion Spike Recoveries
16	ICP Serial Dilution % Difference
17	ICP Interference Check Standard Recovery
18	Trip Blank Contamination
19	Internal Standard Performance (e.g., area, retention time, recovery)
20	Linear Range Exceeded
21	Potential False Positives
22	Elevated Detection Limit Due to Interference (i.e., laboratory, chemical and/or matrix)

EcoChem Validation Guidelines for Pesticides/PCBs by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Method 8081/8082)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C ±2°	J(+)/UJ(-) if greater than 6 deg. C (EcoChem PJ)	1
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext/analyzed > HT J(+)/R(-) if ext/analyzed > 3X HT (EcoChem PJ)	1
Resolution Check	Beginning of ICAL Sequence Within RTW Resolution >90%	Narrate (Use Professional Judgement to qualify)	14
Instrument Performance (Breakdown)	DDT Breakdown: < 20% Endrin Breakdown: <20% Combined Breakdown: <30% Compounds within RTW	J(+) DDT NJ(+) DDD and/or DDE R(-) DDT - If (+) for either DDE or DDD J(+) Endrin NJ(+) EK and/or EA R(-) Endrin - If (+) for either EK or EA	5A
Retention Times	Surrogates: TCX (+/- 0.05); DCB (+/- 0.10) Target compounds: elute before heptachlor epoxide (+/- 0.05) elute after heptachlor epoxide (+/- 0.07)	NJ(+)/R(-) results for analytes with RT shifts For full DV, use PJ based on examination of raw data	5B
Initial Calibration	Pesticides: Low=CRQL, Mid=4X, High=16X Multiresponse - one point Calibration %RSD<20% %RSD<30% for surr; two comp. may exceed if <30% Resolution in Mix A and Mix B >90%	J(+)/UJ(-)	5A
Continuing Calibration	Alternating PEM standard and INDA/INDB standards every 12 hours (each preceeded by an inst. Blank) %D < 25% Resolution >90% in IND mixes; 100% for PEM	J(+)/UJ(-) J(+)R(-) if %D > 90% PJ for resolution	5B
Method Blank	One per matrix per batch No results > CRQL	U(+) if sample result is < CRQL and < 5X rule (raise sample value to CRQL) U(+) if sample result is > or equal to CRQL and < 5X rule (at reported sample value)	7
Instrument Blanks	Analyzed at the beginning of every 12 hour sequence No analyte > 1/2 CRQL	Same as Method Blank	7
Field Blanks	Not addressed by NFG No results > CRQL	Apply 5X rule; U(+) < action level	6

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EcoChem Validation Guidelines for Pesticides/PCBs by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Method 8081/8082)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS/MSD (recovery)	One set per matrix per batch Method Acceptance Criteria	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	One set per matrix per batch Method Acceptance Criteria	J(+) in parent sample if RPD > CL	9
LCS	One per SDG Method Acceptance Criteria	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J(+)/UJ(-) assoc. cmpd. in all samples	9
Surrogates	TCX and DCB added to every sample %R = 30-150%	J(+)/UJ(-) if both %R = 10 - 60% J(+) if both >150% J(+)/R(-) if any %R <10%	13
Quantitation/ Identification	Quantitated using ICAL calibration factor (CF) RPD between columns <40%	J(+) if RPD = 40 - 60% NJ(+) if RPD >60% EcoChem PJ - See TM-08	3
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	11
Sample Clean-up	GPC required for soil samples Florisil required for all samples Sulfur is optional Clean-up standard check %R within CLP limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL	14
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate (Qualifiy if required by project QAPP)	9

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids < 4°C Tissues <-10°C	EcoChem PJ, see TM-05	1
Holding Time	Extraction - Water: 30 days from collection *Note:* Under CWA, SDWA, and RCRA the HT for H2O is 7 days* Extraction - Soil: 30 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext > 30 days J(+)/UJ(-) if analysis > 40 Days EcoChem PJ, see TM-05	1
Mass Resolution	>=10,000 resolving power at m/z 304.9824 Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift	R(+/-) if not met	14
Window Defining Mix and Column Performance Mix	Window defining mixture/Isomer specificity std run before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) x = ht. of TCDD y = baseline to bottom of valley For all isomers eluting near 2378-TCDD/TCDF isomers (TCDD only for 8290)	J(+) if valley > 25%	5A (ICAL) 5B (CCAL
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD <35% for labeled compounds under 1613b)	J(+) natives if %RSD > 20%	5A
	Abs. RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 >15 min on DB-225	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Continuing Calibration	Analyzed at the start and end of each 12 hour shift. %D+/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in Table 6, Method 1613B) (If %Ds in the closing CCAL are w/in 25%/35% the avg RF from the two CCAL may be used to calculate samples per Method 8290, Section 8.3.2.4)	Do not qualify labeled compounds. Narrate in report for labeled compound %D outliers. For native compound %D outliers: 8290: J(+)/UJ(-) if %D = 20% - 75% J(+)/R(-) if %D > 75% 1613: J(+)/UJ(-) if %D is outside Table 6 limits J(+)/R(-) if %D is +/- 75% of Table 6 limit	5B
	Abs. RT of $^{13}C_{12}$-1234-TCDD and $^{13}C12$-123789-HxCDD +/- 15 sec of ICAL.	EcoChem PJ, see ICAL section of TM-05	
	RRT of all other compounds must meet Table 2 of 1613B.	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7
Field Blanks (Not Required)	No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	Concentrations must meet limits in Table 6, Method 1613B or lab limits.	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (recovery)	May not analyze MS/MSD %R should meet lab limits.	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	May not analyze MS/MSD RPD < 20%	J(+) in parent sample if RPD > CL	9

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Lab Duplicate	RPD <25% if present.	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	*Method 8290:* %R = 40% - 135% in all samples *Method 1613B:* %R must meet limits specified in Table 7, Method 1613	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 IA ratios meet limits in Table 9 of 1613B or Table 8 of 8290 RRTs w/in limits in Table 2 of 1613B	If RT criteria not met, use PJ (see TM-05) If S/N criteria not met, J(+). if unlabelled ion abundance not met, change to EMPC If labelled ion abundance not met, J(+).	21
EMPC (estimated maximum possible concentration)	If quantitation idenfication criteria are not met, laboratory should report an EMPC value.	If laboratory correctly reported an EMPC value, qualify with U to indicate that the value is a detection limit.	14
Interferences	PCDF interferences from PCDPE	If both detected, change PCDF result to EMPC	14
Second Column Confirmation	All 2378-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC specs in this table must be met for the confirmation analysis.	Report lower of the two values. If not performed use PJ (see TM-05).	3
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used	11

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APPENDIX B
QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Windward
Terminal 117 - Upland Area Soil Sampling

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifiers	Validator Qualifiers	Validator Reason
ON06	T117-SB55-11.5-13.0	09-4759-ON06A	EPA 8082	Aroclor 1254		ug/kg	Y	U	22
ON65	T117-SB57b-10.0-11.5	09-5163-ON65A	EPA 8082	Aroclor 1254		ug/kg	Y	U	22
P9676C	T117-SB55-11.5-13.0	P9676_6595_003	EPA 1613	HxCDDs	204	pg/g	EMPC	U	22
P9676C	T117-SB55-11.5-13.0	P9676_6595_003	EPA 1613	HxCDFs	1470	pg/g	EMPC	U	22
P9676C	T117-SB55-11.5-13.0	P9676_6595_003	EPA 1613	PeCDDs	19.3	pg/g	EMPC	U	22
P9676C	T117-SB55-11.5-13.0	P9676_6595_003	EPA 1613	PeCDFs	669	pg/g	EMPC	U	22
P9676C	T117-SB55-11.5-13.0	P9676_6595_003	EPA 1613	TCDDs	8.87	pg/g	EMPC	U	22
P9676C	T117-SB55-11.5-13.0	P9676_6595_003	EPA 1613	TCDFs	276	pg/g	EMPC	U	22
P9676C	T117-SB54-8.5-10.0	P9676_6595_006	EPA 1613	1,2,3,7,8-PeCDF	3.69	pg/g	EMPC	U	22
P9676C	T117-SB54-8.5-10.0	P9676_6595_006	EPA 1613	HpCDFs	430	pg/g	EMPC	U	22
P9676C	T117-SB54-8.5-10.0	P9676_6595_006	EPA 1613	HxCDFs	250	pg/g	EMPC	U	22
P9676C	T117-SB54-8.5-10.0	P9676_6595_006	EPA 1613	PeCDDs	9.18	pg/g	EMPC	U	22
P9676C	T117-SB54-8.5-10.0	P9676_6595_006	EPA 1613	PeCDFs	363	pg/g	EMPC	U	22
P9676C	T117-SB54-8.5-10.0	P9676_6595_006	EPA 1613	TCDDs	9.05	pg/g	EMPC	U	22
P9676C	T117-SB54-8.5-10.0	P9676_6595_006	EPA 1613	TCDFs	183	pg/g	EMPC	U	22
P9678B	T117-SB60-12.5-14.0	P9678_6595_004	EPA 1613	HxCDDs	1.23	pg/g	EMPC	U	22
P9678B	T117-SB60-12.5-14.0	P9678_6595_004	EPA 1613	HxCDFs	0.476	pg/g	EMPC	U	22
P9678B	T117-SB60-12.5-14.0	P9678_6595_004	EPA 1613	PeCDDs	0.28	pg/g	EMPC	U	22
P9678B	T117-SB60-12.5-14.0	P9678_6595_004	EPA 1613	PeCDFs	0.434	pg/g	EMPC	U	22
P9678B	T117-SB60-12.5-14.0	P9678_6595_004	EPA 1613	TCDDs	0.851	pg/g	EMPC	U	22
P9678B	T117-SB60-12.5-14.0	P9678_6595_004	EPA 1613	TCDFs	0.423	pg/g	EMPC	U	22
P9678B	T117-SB57b-10.0-11.5	P9678_6595_008	EPA 1613	HpCDFs	205	pg/g	EMPC	U	22
P9678B	T117-SB57b-10.0-11.5	P9678_6595_008	EPA 1613	PeCDDs	11.8	pg/g	EMPC	U	22
P9678B	T117-SB57b-10.0-11.5	P9678_6595_008	EPA 1613	TCDDs	8.34	pg/g	EMPC	U	22
P9678B	T117-SB57b-10.0-11.5	P9678_6595_008	EPA 1613	TCDFs	178	pg/g	EMPC	U	22

D-3 Streets and Yards

ATTACHMENT 1

DATA VALIDATION REPORT, ECOCHEM 2008

EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

TERMINAL 117

Prepared for:

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EcoChem Project: C22127-3

December 15, 2008

Approved for Release:

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References

1. *Quality Assurance Project Plan (QAPP) Investigation of Potential PCDD/PCDF Contamination in Soil: City of Seattle Streets and Residential Yards T-117 Early Action Area, Seattle, Washington* (Aug. 14, 2008)

2. *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA Sept 2005)

3. *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review* (USEPA Aug 2002)

4. *National Functional Guidelines for Organic Data Review* (USEPA 1999)

5. *EPA Region 10 SOP for the Validation of Polychlorinated Dibenzodioxin (PCDD) and Polychlorinated Dibenzofuran (PCDF) Data* (Dec 2002)

6. *EPA Method 1613B Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS* (Oct 1994)

7. *EPA SW846 Method 8082 Polychlorinated Biphenyls (PCBs) by gas Chromatography*

BASIS OF DATA EVALUATION

The data were validated using guidance and quality control (QC) criteria documented in the analytical methods, the *Quality Assurance Project Plan (QAPP) Investigation of Potential PCDD/PCDF Contamination in Soil: City of Seattle Streets and Residential Yards T-117 Early Action Area, Seattle, Washington* (Aug. 14, 2008), *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA Sept 2005), *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review* (USEPA Aug 2002), and *National Functional Guidelines for Organic Data Review* (USEPA 1999).

Samples were analyzed for the following parameters and were reviewed by the listed chemists:

Test	Method	Primary	Secondary
Dioxins/Furans	EPA 1613B	Mark Lybeer	Chris Ransom

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and methods.

Data qualifier definitions, reason codes, and validation criteria are included as **Appendix A**. A summary table of all qualified data is provided in **Appendix B**. Data validation worksheets are included in **Appendix C**.

SAMPLE INDEX
Integral - Terminal 117

SDG	Sample ID	Laboratory ID	Dioxins
E0801082	SPD0221	E0801082-001	✓
E0801082	SPD0222	E0801082-002	✓
E0801082	SPD0223	E0801082-003	✓
E0801082	SPD0224	E0801082-004	✓

DATA VALIDATION REPORT
Terminal 117
Dioxin/Furan Compounds by EPA 1613B

This report documents the review of analytical data from the analyses of soil samples and the associated laboratory quality control (QC) samples. Columbia Analytical Services, Houston, Texas, analyzed the samples. Please see the Sample Index for a complete list of samples for which data were reviewed.

SDG	Number of Samples	Validation Level
E0801082	4 Soils	Full

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data package. Laboratory QC results were also verified (10%). No errors were noted.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

	Holding Times and Sample Receipt	2	Laboratory Spike Samples (LCS)
	Initial Calibration (ICAL)	1	Field Duplicates
	Continuing Calibration (CCAL)	1	Laboratory Duplicates
2	Laboratory Blanks	2	Compound Identification
	Field Blanks		Reporting Limits
2	Labeled Compounds	1	Calculation Verification (full validation only)
1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[1] *Quality control results are discussed below, but no data were qualified.*
[2] *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Laboratory Blanks

A laboratory (method) blank was analyzed at the appropriate frequency. Various target analytes were detected in the method blank. To assess the impact of each blank contaminant on the reported sample results, an action level is established at five times the concentration reported in the blank. All associated sample results were greater than the established action levels, with the

exception of 1,2,3,7,8,9-HxCDF. The result for this analyte in Sample SPD0221 was qualified as not-detected (U-7).

Labeled Compounds

The percent recovery (%R) value for $^{13}C_{12}$-1,2,3,6,7,8-HxCDD was less than the lower control limit in Sample SPD0224. The positive results for 1,2,3,6,7,8-HxCDD and 1,2,3,7,8,9-HxCDD in this sample were estimated (J-13).

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike duplicates (MS/MSD) were analyzed using a sample from a different client. The laboratory did not include a summary of these results. Accuracy was assessed using the labeled compound and laboratory control sample (LCS) recoveries. Precision was assessed from the field duplicate results.

Laboratory Control Samples

The LCS %R values for 1,2,3,7,8,9-HxCDF and 1,2,3,4,7,8,9-HpCDF were less than the lower control limit. The results for these congeners in the associated samples were estimated (J/UJ-10) to indicate a potential low bias.

Laboratory Duplicates

No laboratory duplicate analyses were performed. Precision was assessed using the field duplicate results.

Field Duplicates

Acceptance criteria for field duplicate precision are as follows: When results are greater than five times the reporting limit (>5x RL), the relative percent difference between the field duplicate sample results must be less than 50%. When results are less than five times the reporting limit (<5x RL), the difference between the field duplicate sample results must be less than two times the reporting limit (< 2x RL).

One set of field duplicates, SPD0221 and SPD0222, were submitted. All field precision criteria were met.

Compound Identification

The laboratory assigned K-flags to results when a peak was detected but did not meet ion ratio quantitation criteria. The reported values cannot be considered as positive identification for these analytes. These results were considered potential false positives or estimated maximum

possible concentrations (EMPC) and were qualified as not detected (U-22) at the reported values. Laboratory blank values with K flags were considered as non-detects.

All results for 2,3,7,8-TCDF were confirmed on a DB-225 column as required by the method. Although the 2,3,7,8-TCDF results from both columns were reported in the raw data, only the results from the DB-225 column were reported in the EDD.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were noted.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the labeled compound and LCS %R values, with the previously noted exceptions. Precision was acceptable as indicated by the field duplicate RPD values.

Data were estimated due to labeled compound and LCS recovery outliers. Data were qualified as not detected due to laboratory blank contamination and ion ratio criteria outliers.

All data, as qualified, are acceptable for use.

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APPENDIX A
DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
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.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

1	Holding Time/Sample Preservation
2	Chromatographic pattern in sample does not match pattern of calibration standard.
3	Compound Confirmation
4	Tentatively Identified Compound (TIC) (associated with NJ only)
5A	Calibration (initial)
5B	Calibration (continuing)
6	Field Blank Contamination
7	Lab Blank Contamination (e.g., method blank, instrument, etc.)
8	Matrix Spike(MS & MSD) Recoveries
9	Precision (all replicates)
10	Laboratory Control Sample Recoveries
11	A more appropriate result is reported (associated with "R" and "DNR" only)
12	Reference Material
13	Surrogate Spike Recoveries (a.k.a., labeled compounds & recovery standards)
14	Other (define in validation report)
15	GFAA Post Digestion Spike Recoveries
16	ICP Serial Dilution % Difference
17	ICP Interference Check Standard Recovery
18	Trip Blank Contamination
19	Internal Standard Performance (e.g., area, retention time, recovery)
20	Linear Range Exceeded
21	Potential False Positives
22	Elevated Detection Limit Due to Interference (i.e., laboratory, chemical and/or matrix)

EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS (Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids < 4°C Tissues <-10°C	**EcoChem PJ, see TM-05**	1
Holding Time	Extraction - Water: 30 days from collection *Note:* Under CWA, SDWA, and RCRA the HT for H2O is 7 days* Extraction - Soil: 30 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext > 30 days J(+)/UJ(-) if analysis > 40 Days **EcoChem PJ, see TM-05**	1
Mass Resolution	>=10,000 resolving power at m/z 304.9824 Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift	R(+/-) if not met	14
Window Defining Mix and Column Performance Mix	Window defining mixture/Isomer specificity std run before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) x = ht. of TCDD y = baseline to bottom of valley For all isomers eluting near 2378-TCDD/TCDF isomers (TCDD only for 8290)	J(+) if valley > 25%	5A (ICAL) 5B (CCAL
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD <35% for labeled compounds under 1613b)	J(+) natives if %RSD > 20%	5A
	Abs. RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 >15 min on DB-225	**EcoChem PJ, see TM-05**	
	Ion Abundance ratios within QC limits **(Table 8 of method 8290)** **(Table 9 of method 1613B)**	**EcoChem PJ, see TM-05**	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS (Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Continuing Calibration	Analyzed at the start and end of each 12 hour shift. %D+/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in **Table 6, Method 1613B**) (If %Ds in the closing CCAL are w/in 25%/35% the avg RF from the two CCAL may be used to calculate samples per **Method 8290, Section 8.3.2.4**)	Do not qualify labeled compounds. Narrate in report for labeled compound %D outliers. For native compound %D outliers: 8290: J(+)/UJ(-) if %D = 20% - 75% J(+)/R(-) if %D > 75% 1613: J(+)/UJ(-) if %D is outside Table 6 limits J(+)/R(-) if %D is +/- 75% of Table 6 limit	5B
	Abs. RT of $^{13}C_{12}$-1234-TCDD and $^{13}C12$-123789-HxCDD +/- 15 sec of ICAL.	**EcoChem PJ, see ICAL section of TM-05**	
	RRT of all other compounds must meet Table 2 of 1613B.	**EcoChem PJ, see TM-05**	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	**EcoChem PJ, see TM-05**	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7
Field Blanks (Not Required)	No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	Concentrations must meet limits in **Table 6, Method 1613B** or lab limits.	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (recovery)	May not analyze MS/MSD %R should meet lab limits.	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% **PJ if only one %R outlier**	8
MS/MSD (RPD)	May not analyze MS/MSD RPD < 20%	J(+) in parent sample if RPD > CL	9

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS (Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Lab Duplicate	RPD <25% if present.	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	*Method 8290:* %R = 40% - 135% in all samples --- *Method 1613B:* %R must meet limits specified in **Table 7, Method 1613**	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 IA ratios meet limits in **Table 9 of 1613B** or **Table 8 of 8290** RRTs w/in limits in **Table 2 of 1613B**	If RT criteria not met, use PJ (**see TM-05**) If S/N criteria not met, J(+). if unlabelled ion abundance not met, change to EMPC If labelled ion abundance not met, J(+).	21
EMPC (estimated maximum possible concentration)	If quantitation idenfication criteria are not met, laboratory should report an EMPC value.	If laboratory correctly reported an EMPC value, qualify with U to indicate that the value is a detection limit.	14
Interferences	PCDF interferences from PCDPE	If both detected, change PCDF result to EMPC	14
Second Column Confirmation	All 2378-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC specs in this table must be met for the confirmation analysis.	Report lower of the two values. If not performed use PJ (**see TM-05**).	3
Field Duplicates	**Use QAPP limits. If no QAPP:** Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project **(EcoChem PJ)**	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used	11

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APPENDIX B
QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Integral - T117

SDG	Sample ID	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validator Qualifier	Validator Reason
E0801082	SPD0221	E0801082-001	1613B	2,3,7,8-TCDD	0.799	ng/Kg	JK	U	22
E0801082	SPD0221	E0801082-001	1613B	1,2,3,4,7,8-HxCDD	0.350	ng/Kg	JK	U	22
E0801082	SPD0221	E0801082-001	1613B	1,2,3,6,7,8-HxCDD	1.30	ng/Kg	JK	U	22
E0801082	SPD0221	E0801082-001	1613B	1,2,3,7,8,9-HxCDD	0.695	ng/Kg	JK	U	22
E0801082	SPD0221	E0801082-001	1613B	1,2,3,7,8-PeCDF	0.503	ng/Kg	JK	U	22
E0801082	SPD0221	E0801082-001	1613B	2,3,4,7,8-PeCDF	0.723	ng/Kg	JK	U	22
E0801082	SPD0221	E0801082-001	1613B	1,2,3,7,8,9-HxCDF	0.0696	ng/Kg	BJ	UJ	7,10
E0801082	SPD0221	E0801082-001	1613B	1,2,3,4,6,7,8-HpCDF	4.14	ng/Kg	BJ	J	10
E0801082	SPD0221	E0801082-001	1613B	1,2,3,4,7,8,9-HpCDF	0.225	ng/Kg	JK	U	22
E0801082	SPD0222	E0801082-002	1613B	2,3,7,8-TCDD	0.899	ng/Kg	JK	U	22
E0801082	SPD0222	E0801082-002	1613B	1,2,3,7,8-PeCDD	0.354	ng/Kg	JK	U	22
E0801082	SPD0222	E0801082-002	1613B	1,2,3,4,7,8-HxCDD	0.357	ng/Kg	JK	U	22
E0801082	SPD0222	E0801082-002	1613B	1,2,3,6,7,8-HxCDF	0.524	ng/Kg	JK	U	22
E0801082	SPD0222	E0801082-002	1613B	1,2,3,7,8,9-HxCDF	ND	ng/Kg	ND	UJ	10
E0801082	SPD0222	E0801082-002	1613B	1,2,3,4,6,7,8-HpCDF	4.52	ng/Kg	BJ	J	10
E0801082	SPD0223	E0801082-003	1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6.38	ng/Kg	=,K	U	22
E0801082	SPD0223	E0801082-003	1613B	2,3,7,8-TCDD	0.780	ng/Kg	JK	U	22
E0801082	SPD0223	E0801082-003	1613B	1,2,3,7,8-PeCDF	3.64	ng/Kg	JK	U	22
E0801082	SPD0223	E0801082-003	1613B	1,2,3,7,8,9-HxCDF	0.238	ng/Kg	BJK	UJ	10,22
E0801082	SPD0223	E0801082-003	1613B	1,2,3,4,6,7,8-HpCDF	50.4	ng/Kg	=,B	J	10
E0801082	SPD0224	E0801082-004	1613B	2,3,7,8-TCDD	0.695	ng/Kg	JK	U	22
E0801082	SPD0224	E0801082-004	1613B	1,2,3,6,7,8-HxCDD	30.7	ng/Kg	=	J	13
E0801082	SPD0224	E0801082-004	1613B	1,2,3,7,8,9-HxCDD	14.8	ng/Kg	J	J	13
E0801082	SPD0224	E0801082-004	1613B	1,2,3,4,7,8-HxCDF	18.3	ng/Kg	=,K	U	22
E0801082	SPD0224	E0801082-004	1613B	1,2,3,7,8,9-HxCDF	0.255	ng/Kg	BJK	UJ	10,22
E0801082	SPD0224	E0801082-004	1613B	1,2,3,4,6,7,8-HpCDF	103	ng/Kg	=,B	J	10

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APPENDIX C
DATA VALIDATION WORKSHEETS

Project No.: 22127-3	Screener: MJL Date: 12-5-08
Project Name: Integral - Terminal 117	Reviewer: CR Date: 12/11/08
SDG/Package: EC08010B2	

MODULE A: COMPLETENESS AND HOLDING TIME CHECKLIST

1.0 Chain-of-Custody

	Y	N	N/A
1.1 Are all Chain-of-Custody (COC) forms included in data package?	✓		
1.2 Were COC forms properly signed and dated?	✓		
1.3 Was sample container temperature recorded on COC form (or other appropriate form) by laboratory?	✓		
1.4 Is the recorded temperature within control limits (4°C ±2°C) Temperature(s): 6°C ____ ____	✓		

Comments:

2.0 Completeness Check

2.1 Is a case narrative present and does it describe analytical problems, discrepancies and corrective actions?	✓		
2.2 Are all required summary forms present (see attached list)?	✓		
2.3 Are data present for all samples listed on COC form?	✓		
2.4 Are all required raw data sections present (see attached list)? (PRELIMINARY CHECK ONLY; detailed review of raw data will be documented on Module B Checklist).	✓		

Comments:

3.0 Holding Times/Preservation (Technical Criteria: ☐CFR40; ☑QAPP; ☐Other _____)

3.1 Were all samples properly preserved?	✓		
3.2 Complete the Holding Time Tables. (Documented in Comments or in worksheets attached to Module B; qualifiers assigned during Module B review)	✓		

Comments:

Completeness and Holding Time Check Complete?

Table	Parameters (✓)	Completed	Location (attached or filename)
Sample Index		Y	
Holding Time Tables (list):			
Volatiles		Y / NA	
Semivolatile		Y / NA	
Pest/PCBs		Y / NA	
Metals		Y / NA	
Dioxins/Furans	✓	(Y) / NA	See Attached
Conventionals		Y / NA	
PAH-8270SIM		Y / NA	
Herbicides		Y / NA	
TBT/Krone		Y / NA	
Phthalates-525.2		Y / NA	
Fuels		Y / NA	
Phenols			

☑ See attached.

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HOLDING TIME CHECKLIST

Client: Integral
Project Name: Terminal 117
Project No. 22127-3

Reviewer: MJL
Date: 12/05/08
SDG: E0801082

Dioxins by 1613B

Sample ID	Lab ID	Initial or Dilution	Sample Type*	Matrix**	Date Collected	Prep Date	Last Date Analyzed	Holding Time (days		Qualifier	
								prep	analyzed	Positive	ND
SPD0221	E0801082-001	Initial	N	SO	8/26/08	11/4/08	11/7/08	70	3		
SPD0222	E0801082-002	Initial	N	SO	8/26/08	11/4/08	11/7/08	70	3		
SPD0223	E0801082-003	Initial	N	SO	8/26/08	11/4/08	11/7/08	70	3		
SPD0224	E0801082-004	Initial	N	SO	8/26/08	11/4/08	11/7/08	70	3		

Hold Time Criteria:	Dioxins	
	Extraction	Analysis
Solid	1 Year (Frozen)	40 Days
Aqueous	7 Days	40 Days

* N = Sample; LR = Laboratory Replicate
** SO = Soil; SM = Filter; SE = Sediment

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PROJECT NO.: 22127-3 SDG: E0801082

SCREENED BY: — DATE: —

REVIEWED BY: MJL DATE: 12-5-08

DATA PACKAGE COMPLETENESS
HIGH RESOLUTION MASS SPECTROMETER DIOXIN/FURAN OR PCB CONGENER

1 = COMPLIANCE SCREENING (ECOCHEM DOCUMENTATION MODULES A + B-1) Summarized sample and QC results only; no instrument calibration or performance checks

2 = SUMMARY VALIDATION (EcoChem Documentation Modules A + B1 & B-2) Summarized sample, QC, calibration & instrument performance results; no raw data

3 = FULL VALIDATION (EcoChem Documentation Modules A + B1 & B-2 + C) Summarized sample, QC, calibration & instrument performance results; includes raw data transcription checks & result recalculation checks

Deliverable Requirement	Required	Present	Comments
Copies of Shipping Documents (Fed-Ex Airbills)	1, 2, 3	Yes	
Case Narrative	1, 2, 3		
Table of Contents	3		
Cross reference of Field Sample No., Lab Sample No., and Analytical Batch	1, 2, 3		
Chain-of-Custody Form (including Sample Receipt Checklist)	1, 2, 3		
Sample Calculation (usually just a page copied from SOW)	3	No	
Results Summary for Each Sample and Blank (includes ion abundance ratios)	1, 2, 3	Yes	
TEF/TEQ Summary (if requested by client)	1,2,3	No	
Blank Spike Results (OPR)	1, 2, 3	Yes	
Labeled Compound Recovery Summary	1, 2, 3		
Matrix Spike/Duplicate Matrix Spike Recovery Summaries	1, 2, 3	No	
Instrument Performance Check (Resolution)	2, 3	Yes	
Initial Calibration Data	2, 3		
Continuing Calibration Data	2, 3		
Windows Defining Mixture/Column Resolution Check	3		
Selected Ion Chromatograms for Each Sample, Blank, and Standard	3		
Quantitation List	3		
Copies of Sample Preparation Work Sheets	3		
Copies of Run Logs	3		

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Project No.: 22127-3	
Project Name: Integral-Terminal 117	**Reviewer:** MJL **Date:** 12-5-08
SDG/Package: E0801082	**Secondary:** CK **Date:** 12/12/08
Laboratory: CAS - Texas	

Parameter/Method: Dioxins/furans by HRMS 1613B **Data Validation Criteria Table:** Integral_Port Harbor_HRMS.xls

MODULE B: TECHNICAL EVALUATION CHECKLIST- ORGANICS

☒ **MODULE B-1 (Summaries of sample results; accuracy; precision; blanks)**

☒ **MODULE B-2 (Summaries of calibration, instrument performance & compound ID)**

☒ **B-2 Org** ☒ **B-2 HRMS** ☐ **B-2 Other** _____ **(name)**

Yes **Qualifiers Issued. See Sample Summary forms or other:** EDDs

1.0 Technical Holding Times and Sample Handling (B-1)

	Y	N	N/A
1.1 Is Module A Checklist (COC, package completeness, Holding Time Table) complete?	✓		
1.2 Are all holding times within the technical criteria from ☐ CFR40; ☑ QAPP; ☐ Other _____)? ✓ no outliers ____ see attached Holding Time worksheet or data package page ____ see below	✓		
1.3 Are all cooler temperatures within the control limits? (temperature outliers listed on HT table) ✓ no outliers ____ see attached Holding Time worksheet or data package page ____ see below	✓		

Comments: ____ Data judged as not significantly affected by outliers; no qualifiers assigned

- Stored frozen -

J-13

2.0 Surrogates/Labeled Compounds (B-1)

2.1 Are all recovery values within the control limits? ____ no outliers ____ see attached Surrogate Summary Form or data package page ✓ see below		✓	

Comments: ____ No positive results; no qualifiers as all outliers were > UCL (high bias)

____ No qualifiers assigned; one outlier per fraction/column acceptable (if > 10%)

- Sample SPD0224

C_{13} - 1,2,3,6,7,8-HxCDD %R = 22 (28-130)

↳ 123678-HxCDD qualified (J-13)
123789-HxCDD 1 I

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Project No.: 22127-3 SDG: E0801082

U-7

3.0 Method/Field Blank (B-1)

	Y	N	N/A
3.1 Are Method Blanks free from contamination? ____ no outliers ✓ see attached Blank Summary Form or data package page ____ see below		✓	
3.2 Are there any trip/equipment/field blanks included in the data package (list below)?		✓	
3.3 Are trip/equipment/field blanks free from contamination? ____ no outliers ____ see attached Blank Summary Form or data package page ____ see below			✓

Comments: ____ No positive results in associated samples; no action required for method / trip / equip. / other
____10X action level established for common lab cont.; 5X action level for others

JMS-10

4.0 Laboratory Control Sample (Blank Spike/OPR Sample) (B-1)

(JL)

4.1 Are all %R-values within the control limits? ____ no outliers ____ see attached Summary Form or data package page ✓ see below	✗	✓	
4.2 Are all RPD values within control limits (if duplicate analyzed)? ____ no outliers ____ see attached Summary Form or data package page ____ see below			✓

Comments for LCS: ____ No positive results in associated samples; no qualifiers as all outliers were > UCL (high bias)

- 123789-HxCDF %R = 75 (78-130) (JMS-10)
- 1234789-HpCDF %R = 70 (78-138) (JMS-10)

5.0 Performance Evaluation (PE)/Standard Reference Material (SRM) (B-1)

PE/SRM Sample ID(s):

5.1 Was PE/SRM sample(s) analyzed?			✓
5.2 Are all values within control limits? ____ no outliers ____ see below			✓

Comments: ____ No qualifiers assigned based on PE/SRM outliers

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Project No.: 32127-3 SDG: E0801082

6.0 Matrix Spike/Matrix Spike Duplicate or Sample and Lab Duplicate (B-1)

Parent Sample ID: None Used

	Y	N	N/A
6.1 Are all %R-values within the control limits? ____ no outliers ____ see attached MS/MSD Summary Form or data package page ____ see below			✓
6.2 Are all RPD values within control limits? ____ no outliers ____ see attached MS/MSD Summary Form or data package page ____ see below			✓

Comments: ____ No positive results in parent sample; no qualifiers as all outliers were > UCL (high bias)

BATCH QC - No SUMMARY FORMS

7.0 Field Duplicate (B-1) Field Duplicate Sample ID(s):

7.1 Were field duplicates collected and analyzed? SOIL	✓		
7.2 Are all RPD values within control limits? ____ no outliers ____ see attached Field Dup. Summary Form or data package page ____ see below	✓		✓

Comments: ____ No qualifiers assigned based on field duplicate outliers

SPD0221 / SPD0222

8.0 Sample Results (B-1)

8.1 Are there results for all analytes on the client required target compound list(s) **see QAPP for lists**?			✓
8.2a Were TIC requested for this project?		✓	
8.2b If "yes", were TIC reported as required?			✓
8.3 Are reporting limits and sample results adjusted for sample size, % moisture (solid samples), etc.?	✓		
8.4 Are concentrations reported on the appropriate basis? ____Dry weight ✓ Wet weight	✓		
8.5 Do detection limits meet project-specific or method-specific limits? MRLs do not match		✓	

Comments: ____Qualify TIC "NJ" unless already qualified "U" due to blank contamination

the QAPP

↓

See spreadsheet

General Notes and Information:

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Project No.: 22127-3 SDG: E0801082

U-21 U-22

MODULE: B-2-HRMS (calibration, instrument performance & compound identification)

9.0 HRMS/GC Compound Identification (B-2)

	Y	N	N/A
9.1 Were all retention time criteria met? ✓ no outliers ____ see below	✓		
9.2 Were the retention times of all the native compound ions within ±2 seconds of the labeled compound ions? ✓ no outliers ____ see below	✓		
9.3 Were the ion abundance ratios within the method QC limits? ____ no outliers ✓ see below		✓	
9.4 Were all S/N ratio criteria met? ✓ no outliers ____ see below	✓		
9.5 Was a DB-225 (or equivalent column) confirmation performed for 2378-TCDF hits? (Dioxins only)?	✓		
9.6 Were there any false positives or negatives?	✓		

Comments: 9.3.2 ⇒ See list of laboratory "K" flags that did NOT meet all of the quantitation criteria for the method.

* qualified U-22

10.0 HRMS Instrument Performance (B-2)

10.1 Are PFK static resolving power checks performed at the required frequency?	✓		
10.2 Was PFK resolving power at least 10,000 (10% valley definition) for an appropriate mass ?	✓		
10.3 Was the resolving power zeroed correctly (i.e. were the bases of peak displays within the lower grid intersections)?	✓		
10.4 Was the exact mass within 5 ppm of the theoretical mass? (see method for specific mass and criteria) ✓ no outliers ____ see below	✓		
10.5 Was the GC windows-defining mixture analyzed at the required frequency?	✓		
10.6 Are any/all chromatographic separation (valley/peak) criteria met? ✓ no outliers ____ see below	✓		
10.7 Are retention time windows established for all homologue groups?	✓		

Comments:

PFK = perfluorokerosene ⇒ The mixture of compounds used to calibrate the exact M/z scale on the HRMS.

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Project No.: 22127-3 SDG: E080108Z

11.0 Initial Calibration (B-2)

	Y	N	N/A
11.1 Are ICALs analyzed on all instruments on which samples are analyzed?	✓		
11.2 Are the correct number and concentration of standards used?	✓		
11.3 Are all ion abundance ratios for unlabeled and labeled compounds within method QC limits? ✓ no outliers ____ see attached ICAL Summary Form or data package page ____ see below	✓		
11.4 Is the method-specified signal to noise (S/N) criteria met? ✓ no outliers ____ see attached ICAL Summary Form or data package page ____ see below	✓		
11.5 Are the %RSD values for the native compounds within QC limits? (≤ 20 %RSD) ✓ no outliers ____ see attached ICAL Summary Form or data package page ____ see below	✓		
11.6 Are the %RSD values for the labeled compounds within QC limits? (≤ 30 %RSD) ✓ no outliers ____ see attached ICAL Summary Form or data package page ____ see below	✓		
11.7 Are any/all absolute retention time criteria met? ✓ no outliers ____ see attached ICAL Summary Form or data package page ____ see below	✓		

Comments: ____ No positive results assoc. w/ outliers; RL judged as not affected – no qualifiers assigned

- AutoSpec-Premier (8-20-08) DB-5 All Compounds
- 70s (5-30-08) DB-35 2,3,7,8-TCDF

12.0 Continuing Calibration / Calibration Verification (B-2)

	Y	N	N/A
12.1 Are continuing calibration/calibration verification standards analyzed at the proper frequency?	✓		
12.2 Are all ion abundance ratios for unlabeled and labeled compounds within method QC limits? ✓ no outliers ____ see attached CCAL Summary Form or data package page ____ see below	✓		
12.3 Is the method-specified signal to noise (S/N) criteria met? ✓ no outliers ____ see attached CCAL Summary Form or data package page ____ see below	✓		
12.4 Are any/all absolute retention time criteria met? ✓ no outliers ____ see attached CCAL Summary Form or data package page ____ see below	✓		
12.5 Are CCALs acceptable (20 %D ____ Concentration Values ____ other)? 30% for labeled Compounds ✓ no outliers ____ see attached CCAL Summary Form or data package page ____ see below	✓		

Comments: ____ No positive results assoc. w/ outliers; RL judged as not affected – no qualifiers assigned

All OK –

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Summary of Method Reporting Limit and Analytical Concentration Goals Not Met
Dioxin/Furans by HR/MS

Client: Integral
Project Name: Terminal 117
Project No. 22127-1

Reviewer: MCS
Date: 09/30/08
SDG: K0807836

Compound	QAPP			Laboratory	
	ACG (ng/kg)	EDL (ng/kg)	MRL (ng/kg)	EDL (ng/kg)	MRL (ng/kg)
2,3,7,8-Tetrachlorodibenzofuran	0.5	0.05	0.2	0.0147	**1**
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.5	0.05	0.2	0.0104	**1**
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.5	0.04	0.5	0.021	**5**
1,2,3,7,8-Pentachlorodibenzofuran	0.5	0.04	0.5	0.0116	**5**
2,3,4,7,8-Pentachlorodibenzofuran	0.5	0.03	0.5	0.0114	**5**
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.5	0.05	0.5	0.0511	**5**
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.5	0.05	0.5	0.025	**5**
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.5	0.05	0.5	0.0335	**5**
1,2,3,4,7,8-Hexachlorodibenzofuran	0.5	0.05	0.5	0.0164	**5**
1,2,3,6,7,8-Hexachlorodibenzofuran	0.5	0.06	0.5	0.0172	**5**
1,2,3,7,8,9-Hexachlorodibenzofuran	0.5	0.11	0.5	0.0208	**5**
2,3,4,6,7,8-Hexachlorodibenzofuran	0.5	0.06	0.5	0.0179	**5**
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.5	0.06	0.5	0.0395	**5**
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.5	0.05	0.5	0.0314	**5**
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.5	0.08	0.5	0.0341	**5**
Octachlorodibenzo-p-dioxin	1	0.12	1.0	0.107	**10**
Octachlorodibenzofuran	1	0.08	1.0	0.0625	**10**

Values in **bold** do not meet QAPP criteria

Method and Equipment Blank Summary
Dioxin/Furans by HR/MS

Client: Integral
Project Name: Terminal 117
Project No. 22127-3

Reviewer: MJL
Date: 12/5/08
SDG: E0801082

Blank ID & Date Analyzed	Analyte	~~ng/kg~~	Conc. pg/L	5X Action Level	Qualifier Assigned	Associated Samples by Laboratory ID
EQ0800481-01	1,2,3,4,6,7,8-HpCDD	J	0.201	1.005	None > AL	E0801082 **001**, 002, 003, 004
11/4/08	OCDD	J	1.480	7.400	None > AL	
	1,2,3,7,8,9-HxCDF	J	0.041	0.204	U-7	
	1,2,3,4,6,7,8-HpCDF	JK	0.031	0.157	No Action, K Flag	
	OCDF	J	0.191	0.955	None > AL	
	Total Hepta-Dioxins	J	0.201	1.005	None > AL	
	Total Hexa-Furans	J	0.0407	0.204	None > AL	

Samples to which qualifiers were ~~assinged~~ assigned are in **bold**.

Sample	Lab Code	Sample Type	Component	Result	Result Notes
SPD0221	E0801082-001	SMPL	2,3,7,8-TCDD	0.799	JK
SPD0221	E0801082-001	SMPL	1,2,3,4,7,8-HxCDD	0.350	JK
SPD0221	E0801082-001	SMPL	1,2,3,6,7,8-HxCDD	1.30	JK
SPD0221	E0801082-001	SMPL	1,2,3,7,8,9-HxCDD	0.695	JK
SPD0221	E0801082-001	SMPL	1,2,3,7,8-PeCDF	0.503	JK
SPD0221	E0801082-001	SMPL	2,3,4,7,8-PeCDF	0.723	JK
SPD0221	E0801082-001	SMPL	1,2,3,4,7,8,9-HpCDF	0.225	JK
SPD0222	E0801082-002	SMPL	2,3,7,8-TCDD	0.899	JK
SPD0222	E0801082-002	SMPL	1,2,3,7,8-PeCDD	0.354	JK
SPD0222	E0801082-002	SMPL	1,2,3,4,7,8-HxCDD	0.357	JK
SPD0222	E0801082-002	SMPL	1,2,3,6,7,8-HxCDF	0.524	JK
SPD0223	E0801082-003	RE	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6.38	=,K
SPD0223	E0801082-003	SMPL	2,3,7,8-TCDD	0.780	JK
SPD0223	E0801082-003	SMPL	1,2,3,7,8-PeCDF	3.64	JK
SPD0223	E0801082-003	SMPL	1,2,3,7,8,9-HxCDF	0.238	BJK
SPD0224	E0801082-004	SMPL	2,3,7,8-TCDD	0.695	JK
SPD0224	E0801082-004	SMPL	1,2,3,4,7,8-HxCDF	18.3	=,K
SPD0224	E0801082-004	SMPL	1,2,3,7,8,9-HxCDF	0.255	BJK

Project No.: 22127-3	Reviewer: MJC Date: 12-5-08
SDG/Package: E0801082	Secondary: CW Date: 12/12/08
Parameter/Method: Dioxins (1613B)	Equation List: ____ Attached
Laboratory: CAS - Houston	____ See Calculation Worksheets

MODULE C: CALCULATION AND TRANSCRIPTION CHECKLIST

(As per project specific requirements and/or ***Summary of Recalculation Requirements***)

	Chromatograms Checked (✓/ NA / *) * see comments	Calculations Attached (✓/ NA)	Transcriptions		
			OK (✓)	See Below (✓)	NA (✓)
Tunes	X	N/A			✓
Initial calibration	X	X	X		
Continuing Calibration	X	X	X		
Blanks (method & instrument)	X	N/A			✓
Samples	X	X	X		
Surrogates (labeled Compounds)	X	X	X		
LCS or OPR	X	X	X		
MS/MSD or Matrix Spike	—	—	—		
Laboratory Duplicate	—	—	—		
Internal Standards	—	—	—		
Serial Dilutions	—	—	—		
Other:					

Comments: (attach additional page if needed)

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Initial Calibration for native compounds
Method 1613B

Client: Integral
Project Name: Terminal 117
Project No. 22127-3
Reviewer: MJL
Date: 12/9/08
SDG: E0801082

$$RR = \frac{(An1 + An2)(Cl)}{(Al1 + Al2)(Cn)}$$

where:

An1 + An2 = Areas of 1 + 2 ions for non-labeled compounds
Al1 + Al2 = Areas of 1 +2 ions for labeled compounds
Cl = concentration of labeled compound (ng/mL)
Cn = concentration of unlabeled compound in standard (ng/mL)

For 1,2,3,4,6,7,8-HpCDD and 13C-1,2,3,4,6,7,8-HpCDD From DB-5

CS 1 Std Date = 8/20/2008 Instrument ID: AutoSpec-Premier

Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
423.7766	2.047E+03	1.00	40	11	40.18		4.09E+03	**2.5**	**0.887**	0.89
425.7737	2.041E+03		x	x		1.000				
435.8169	9.400E+04	1.04	40	10	40.17		1.84E+05	**100**		
437.8140	9.035E+04		x	x						

CS 2 Std Date = 8/20/2008

Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
423.7766	7.512E+03	1.02	40	12	40.20		1.49E+04	**10.0**	**0.904**	0.90
425.7737	7.393E+03		x	x		1.000				
435.8169	8.423E+04	1.05	40	11	40.18		1.65E+05	**100**		
437.8140	8.060E+04		x	x						

CS 3 Std Date = 8/20/2008

Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
423.7766	2.169E+04	1.07	40	12	40.20		4.20E+04	**50.0**	**0.947**	0.95
425.7737	2.029E+04		x	x		1.000				
435.8169	4.513E+04	1.04	40	11	40.18		8.86E+04	**100**		
437.8140	4.351E+04		x	x						

CS 4 Std Date = 8/20/2008

Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
423.7766	1.654E+05	1.04	40	12	40.20		3.24E+05	**200.0**	**0.920**	0.92
425.7737	1.587E+05		x	x		1.000				
435.8169	8.938E+04	1.03	40	11	40.18		1.76E+05	**100**		
437.8140	8.679E+04		x	x						

CS 5 Std Date = 8/20/2008

Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
423.7766	6.774E+05	1.03	40	11	40.18		1.33E+06	**1000.0**	**0.930**	0.93
425.7737	6.549E+05		x	x		1.000				
435.8169	7.253E+04	1.03	40	11	40.18		1.43E+05	**100**		
437.8140	7.072E+04		x	x						

Mean RR calculated =	0.918	Mean RR reported =	0.92
% RSD calculated =	2.526%	% RSD reported =	2.54%

For 2,3,7,8-TCDF and 13C - 2,3,7,8-TCDF from DB-225

CS 1 Std Date = 5/30/2008 Instrument ID: 70s

Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
303.9016	1.061E+06	0.76	18	54	18.90		2.45E+06	**0.5**	**1.371**	1.37
305.8987	1.391E+06		x	x		1.001				
315.9419	1.549E+08	0.76	18	53	18.88		3.58E+08	**100**		
317.9389	2.028E+08		x	x						

CS 2 Std Date = 5/30/2008

Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
303.9016	2.872E+06	0.74	18	49	18.82		6.75E+06	**2.0**	**1.014**	1.01
305.8987	3.882E+06		x	x		1.001				
315.9419	1.459E+08	0.78	18	48	18.80		3.33E+08	**100**		
317.9389	1.873E+08		x	x						

CS 3 Std Date = 5/30/2008

Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
303.9016	6.613E+06	0.76	18	49	18.82		1.53E+07	**10.0**	**0.987**	0.99
305.8987	8.713E+06		x	x		1.000				
315.9419	6.786E+07	0.78	18	49	18.82		1.55E+08	**100**		
317.9389	8.739E+07		x	x						

CS 4 Std Date = 5/30/2008

Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
303.9016	5.778E+07	0.77	18	48	18.80		1.33E+08	**40.0**	**1.045**	1.05
305.8987	7.527E+07		x	x		1.001				
315.9419	1.391E+08	0.78	18	47	18.78		3.18E+08	**100**		
317.9389	1.791E+08		x	x						

CS 5 Std Date = 5/30/2008

Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
303.9016	2.771E+08	0.77	18	48	18.80		6.38E+08	**200.0**	**1.062**	1.06
305.8987	3.611E+08		x	x		1.001				
315.9419	1.315E+08	0.78	18	47	18.78		3.01E+08	**100**		
317.9389	1.690E+08		x	x						

Mean RR calculated =	1.096	Mean RR reported =	1.10
% RSD calculated =	14.284%	% RSD reported =	14.27%

Initial Calibration for native compounds
Method 1613B

Client: Integral
Project Name: Terminal 117
Project No. 22127-1
Reviewer: MJL
Date: 12/9/08
SDG: E0801082

$$RR = \frac{(An1 + An2)(Cl)}{(Al1 + Al2)(Cn)}$$

where:

An1 + An2 = Areas of 1 + 2 ions for non-labeled compounds
Al1 + Al2 = Areas of 1 +2 ions for labeled compounds
Cl = concentration of labeled compound (ng/mL)
Cn = concentration of unlabeled compound in standard (ng/mL)

For 2,3,4,7,8-PeCDF and 13C-2,3,4,7,8-PeCL From DB-5

CS 1 Std	Date = 8/20/2008		Instrument ID: AutoSpec-Premier							
Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
339.8597	3.742E+03	1.55	33	44	33.73		6.16E+03	**2.5**	**0.913**	0.91
341.8567	2.420E+03		x	x		1.000				
351.9000	1.650E+05	1.57	33	43	33.72		2.70E+05	**100**		
353.8970	1.049E+05		x	x						
CS 2 Std	Date = 8/20/2008									
Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
339.8597	1.383E+04	1.55	33	45	33.75		2.27E+04	**10.0**	**0.921**	0.92
341.8567	8.908E+03		x	x		1.000				
351.9000	1.505E+05	1.56	33	44	33.73		2.47E+05	**100**		
353.8970	9.637E+04		x	x						
CS 3 Std	Date = 8/20/2008									
Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
339.8597	3.786E+04	1.54	33	45	33.75		6.25E+04	**50.0**	**0.941**	0.94
341.8567	2.465E+04		x	x		1.000				
351.9000	8.073E+04	1.55	33	44	33.73		1.33E+05	**100**		
353.8970	5.215E+04		x	x						
CS 4 Std	Date = 8/20/2008									
Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
339.8597	2.941E+05	1.54	33	45	33.75		4.85E+05	**200.0**	**0.955**	0.96
341.8567	1.908E+05		x	x		1.000				
351.9000	1.546E+05	1.56	33	44	33.73		2.54E+05	**100**		
353.8970	9.921E+04		x	x						
CS 5 Std	Date = 8/20/2008									
Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
339.8597	1.227E+06	1.54	33	44	33.73		2.02E+06	**1000.0**	**0.976**	0.98
341.8567	7.963E+05		x	x		1.000				
351.9000	1.268E+05	1.58	33	43	33.72		2.07E+05	**100**		
353.8970	8.046E+04		x	x						

Mean RR calculated =	0.941	Mean RR reported =	0.94
% RSD calculated =	2.714%	% RSD reported =	2.73%

For 13C-2,3,7,8-TCDD and 13C - 1,2,3,4-TCl From DB-5

CS 1 Std	Date = 8/20/2008		Instrument ID: AutoSpec-Premier							
Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
331.9368	9.055E+04	0.78	29	27	29.45		2.07E+05	**100.0**	**0.995**	1.00
333.9339	1.164E+05		x	x		1.007				
331.9368	9.140E+04	0.78	29	14	29.23		2.08E+05	**100**		
333.9339	1.165E+05		x	x						
CS 2 Std	Date = 8/20/2008									
Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
331.9368	8.187E+04	0.78	29	28	29.47		1.87E+05	**100.0**	**1.019**	1.02
333.9339	1.054E+05		x	x		1.007				
331.9368	8.108E+04	0.79	29	16	29.27		1.84E+05	**100**		
333.9339	1.027E+05		x	x						
CS 3 Std	Date = 8/20/2008									
Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
331.9368	4.382E+04	0.78	29	28	29.47		1.00E+05	**100.0**	**0.979**	0.98
333.9339	5.631E+04		x	x		1.007				
331.9368	4.526E+04	0.79	29	15	29.25		1.02E+05	**100**		
333.9339	5.707E+04		x	x						
CS 4 Std	Date = 8/20/2008									
Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
331.9368	8.484E+04	0.78	29	28	29.47		1.93E+05	**100.0**	**1.009**	1.01
333.9339	1.082E+05		x	x		1.007				
331.9368	8.450E+04	0.79	29	16	29.27		1.91E+05	**100**		
333.9339	1.069E+05		x	x						
CS 5 Std	Date = 8/20/2008									
Ion	Area	ion ratio	RT min	sec	calc's RT	RRT	A1 + A2	Cn / Cl conc.	calc'd RR	reported RR
331.9368	6.730E+04	0.78	29	27	29.45		1.53E+05	**100.0**	**1.028**	1.03
333.9339	8.588E+04		x	x		1.007				
331.9368	6.550E+04	0.78	29	15	29.25		1.49E+05	**100**		
333.9339	8.357E+04		x	x						

Mean RR calculated =	1.006	Mean RR reported =	1.01
% RSD calculated =	1.931%	% RSD reported =	1.93%

Calibration Verification Worksheet

Method 1613B

Client: Integral
roject Name: Terminal 117
Project No. 22127-1

Reviewer: MJL
Date: 12/9/08
SDG: E0801082

Cex (ng/ml) = $\frac{An1 + An2)\ (Cl)}{(Al1 + Al2)\ RR}$ where: An1 + An2 = Areas of 1 + 2 ions of unlabeled compounds
Al1 + Al2 = Areas of 1 +2 ions of labeled compounds
Cl = concentration of labeled compound in standard (100 and 200)

ICAL Date: 5/30/08 **Instrument:** 70s DB-225

CCAL Date & Time: 11/7/08 @ *09:34*

2,3,7,8-TCDF and 13C - 2,3,7,8-TCDF

Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	ICAL RRF	ng/mL Cl	calc'd RRF	reported RRF	reported %D	calc'd %D
303.9016	6.144E+05	0.778	18	34	18.57		1.10	10.00	0.9719	**0.97**	*-11.31*	**11.6%**
305.8987	7.899E+05					1						
315.9419	6.265E+06	0.766	18	33	18.55			100.00				
317.9389	8.184E+06											
	Ion abundance limits=0.65 - 0.89											

CCAL Date & Time: 11/7/08 @ 18:42

2,3,7,8-TCDF and 13C - 2,3,7,8-TCDF

Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	ICAL RRF	ng/mL Cl	calc'd RRF	reported RRF	reported %D	calc'd %D
303.9016	1.905E+06	0.782	18	32	18.53		1.10	10.00	1.2591	**0.90**	*14.91*	**-14.5%**
305.8987	2.435E+06					1						
315.9419	1.536E+07	0.804	18	31	18.52			100.00				
317.9389	1.911E+07											
	Ion abundance limits=0.65 - 0.89											

ICAL Date: 8/20/2008 **Instrument:** AutoSpec-Premier DB-5

CCAL Date & Time: 11/7/2008 @ 8:49:00 AM

	1,2,3,4,6,7,8-HpCDD vs 13C- 1,2,3,4,6,7,8-HpCDD									ng/mL	ng/mL
Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	ICAL RRF	ng/mL Cl	calc'd Conc	reported Conc
423.7767	4.89E+04	1.040	40	2	40.03		9.60E+04	0.92		**52.18**	**52**
425.7737	4.71E+04					1					
435.8169	1.02E+05	1.043	40	1	40.02		2.00E+05		100		
437.8140	9.79E+04										
	Ion abundance limits= 0.88 - 1.20										
	2,3,4,7,8-PeCDF vs 13C-2,3,4,7,8-PeCDF									ng/mL	ng/mL
Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	ICAL RRF	ng/mL Cl	calc'd Conc	reported Conc
339.8597	1.13E+05	1.536	33	35	33.58		1.87E+05	0.94		**51.57**	**51**
341.8567	7.38E+04					1					
351.9000	2.36E+05	1.566	33	34	33.57		3.86E+05		100		
353.8970	1.51E+05										
	Ion abundance limits= 1.32 - 1.78										
	13C2,3,7,8-TCDD vs 13C- 1,2,3,4-TCDD									ng/mL	ng/mL
Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	ICAL RRF	ng/mL Cl	calc'd Conc	reported Conc
331.9368	1.50E+05	0.790	29	15	29.25		3.41E+05	1.01		**101.51**	**102**
333.9339	1.90E+05					1					
331.9368	1.47E+05	0.790	29	0	29.00		3.32E+05		100		
333.9339	1.86E+05										
	Ion abundance limits=0.65 - 0.89										

ICAL Date: 5/2/2008 **Instrument:** AutoSpec2 DB5

CCAL Date & Time: 11/7/2008 @ 17:04

	1,2,3,4,6,7,8-HpCDD vs 13C- 1,2,3,4,6,7,8-HpCDD									ng/mL	ng/mL
Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	ICAL RRF	ng/mL Cl	calc'd Conc	reported Conc
423.7767	5.09E+04	1.038	40	2	40.03		9.99E+04	0.92		**50.40**	**51**
425.7737	4.90E+04					1					
435.8169	1.10E+05	1.038	40	2	40.03		2.15E+05		100		
437.8140	1.06E+05										
	Ion abundance limits= 0.88 - 1.20										
	2,3,4,7,8-PeCDF vs 13C-2,3,4,7,8-PeCDF									ng/mL	ng/mL
Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	ICAL RRF	ng/mL Cl	calc'd Conc	reported Conc
339.8597	8.94E+04	1.532	33	35	33.58		1.48E+05	0.94		**48.94**	**49**
341.8567	5.84E+04					1					
351.9000	1.95E+05	1.536	33	34	33.57		3.21E+05		100		
353.8970	1.27E+05										
	Ion abundance limits= 1.32 - 1.78										
	13C2,3,7,8-TCDD vs 13C- 1,2,3,4-TCDD									ng/mL	ng/mL
Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	A1 + A2	ICAL RRF	ng/mL Cl	calc'd Conc	reported Conc
331.9368	1.20E+05	0.774	29	15	29.25		2.74E+05	1.01		**104.16**	**105**
333.9339	1.55E+05					1					
331.9368	1.15E+05	0.784	29	0	29.00		2.61E+05		100		
333.9339	1.46E+05										
	Ion abundance limits=0.65 - 0.89										

Compound Concentration Verification
Dioxins/Furans by 1613B

Client: Integral
Project Name: Terminal 117
Project No. 22127-1
Reviewer: MJL
Date: 12/9/08
SDG: E0801082

$$Conc. = \frac{(An1+An2)\,(Amt(is))(Dilution\ Factor)}{(Al1+Al2)(RRF)(Amount\ Extracted/(Pct.\ Solids))}$$

where:

An1+An2 = Area of 1 + 2 ion unlabeled compounds
Al1 +Al2 = Area of 1 + 2 ions labeled compound
Amt(is) = amount of labeled compound
RRF = Mean relative response factor from ICAL

Sample: SPD0221 Amount Extracted (g): 3.151 Dilution Factor: 1
E0801082-001 Pct. Solids: 75.2%

1,2,3,4,7,8-HxCDD ICAL 8/20/08
13C-1,2,3,4,7,8-HxCDD

Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	Quant Ion Area	ICAL RRF	ng/kg calc'd conc.	ng/kg reported conc.
389.8156	7.076E+01		37	7	37.12			1.05	0.408	0.350
391.8127	7.831E+01	0.90	x	x		1.000	1.49E+02			
401.8559	1.627E+05		37	6	37.10			Amt(is)= 2000		
403.8530	1.313E+05	1.24	x	x			2.94E+05			

OCDD
13C-OCDD

Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	Quant Ion Area	ICAL RRF	ng/kg calc'd conc.	ng/kg reported conc.
457.7377	1.216E+04		43	2	43.03			0.98	150.32	151
459.7348	1.368E+04	0.89	x	x		1.000	2.58E+04			
469.7780	1.415E+05		43	1	43.02			Amt(is)= 4000		
471.7750	1.546E+05	0.92	x	x			2.96E+05			

1,2,3,6,7,8-HxCDF
13C-1,2,3,6,7,8-HxCDF

Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	Quant Ion Area	ICAL RRF	ng/kg calc'd conc.	ng/kg reported conc.
373.8207	1.254E+02		36	30	36.50			1.11	0.542	0.541
378.8178	8.978E+01	1.40	x	x		1.000	2.15E+02			
383.8639	1.050E+05		36	30	36.50			Amt(is)= 2000		
385.6100	1.969E+05	0.53	x	x			3.02E+05			

OCDF
13C-OCDD

Ion	Area	ion ratio	RT min	sec	calc'd RT	RRT	Quant Ion Area	ICAL RRF	ng/kg calc'd conc.	ng/kg reported conc.
441.7428	4.682E+02		43	13	43.22			1.06	5.655	5.660
443.7398	5.833E+02	0.80	x	x		1.005	1.05E+03			
469.7780	1.415E+05		43	1	43.02			Amt(is)= 4000		
471.7750	1.546E+05	0.92	x	x			2.96E+05			

~~2,3,7,8-TCDF concentration from the DB-225 analysis.~~ MJL 12-4-08

Ongoing Precision Recovery (OPR)
Dioxins and Furans by EPA Method 1613B

Client: Integral
Project Name: Terminal 117
Project No. 22127-1

Reviewer: MJL
Date: 12/9/08
SDG: E0801082

Percent Recovery = ((LCS Conc. X Amt. Ext) / (Spike Added / 1000)) X 100

EQ0800481-02

Compound	Spike Added (ng/kg)	LCS Conc (ng/kg)	LCS Reported % Recovery	LCS Calculated % Recovery
2,3,7,8-TCDD	20	21.6	*108%*	**108%**
1,2,3,7,8-PeCDD	100	86.7	*87%*	**87%**
1,2,3,4,7,8-HxCDD	100	77.7	*78%*	**78%**
1,2,3,6,7,8-HxCDD	100	105.0	*105%*	**105%**
1,2,3,7,8,9-HxCDD	100	100.0	*100%*	**100%**
1,2,3,4,6,7,8-HpCDD	100	85.7	*86%*	**86%**
OCDD	200	173	*86%*	**87%**
2,3,7,8-TCDF	20	16.9	*85%*	**85%**
1,2,3,7,8-PeCDF	100	84.6	*85%*	**85%**
2,3,4,7,8-PeCDF	100	92.1	*92%*	**92%**
1,2,3,4,7,8-HxCDF	100	90.4	*90%*	**90%**
1,2,3,6,7,8-HxCDF	100	95.7	*96%*	**96%**
2,3,4,6,7,8-HxCDF	100	85.3	*85%*	**85%**
1,2,3,7,8,9-HxCDF	100	75.0	*75%*	**75%**
1,2,3,4,6,7,8-HpCDF	100	84.3	*84%*	**84%**
1,2,3,4,7,8,9-HpCDF	100	70.2	*70%*	**70%**
OCDF	200	173	*86%*	**87%**

Client: Integral
Project Name: Terminal 117
Project No. 22127-3

Reviewer: MJL
Date: 12/12/08
SDG: E0801082

FIELD DUPLICATE RECALCULATION CHECK

RPD Control Limit: 50% (sediments)

Compound	Sample Result ng/kg SPD0221 E0801082-001			Duplicate Result ng/kg SPD0222 E0801082-002			Calculated RPD	Calculated Difference	Suggested Qualifier
	Result	RL	Flag	Result	RL	Flag			
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	ND	4.22	ND	ND	3.74	ND	NC	NC	
2,3,7,8-TCDD	0.799	4.22	JK	0.899	3.74	JK	11.8%	0.1	
1,2,3,7,8-PeCDD	0.442	21.1	J	0.354	18.7	JK	22.1%	20.746	
1,2,3,4,7,8-HxCDD	0.35	21.1	JK	0.357	18.7	JK	2.0%	0.007	
1,2,3,6,7,8-HxCDD	1.3	21.1	JK	1.86	18.7	J	35.4%	0.56	
1,2,3,7,8,9-HxCDD	0.695	21.1	JK	1.66	18.7	J	82.0%	0.965	
1,2,3,4,6,7,8-HpCDD	20.8	21.1	BJ	23.3	18.7	=,B	11.3%	2.5	
Octachlorodibenzo-p-dioxin (OCDD)	151	42.2	=,B	177	37.4	=,B	15.9%	134.8	
1,2,3,7,8-PeCDF	0.503	21.1	JK	0.604	18.7	J	18.2%	0.101	
2,3,4,7,8-PeCDF	0.723	21.1	JK	0.948	18.7	J	26.9%	0.225	
1,2,3,4,7,8-HxCDF	0.939	21.1	J	1.17	18.7	J	21.9%	0.231	
1,2,3,6,7,8-HxCDF	0.541	21.1	J	0.524	18.7	JK	3.2%	0.017	
1,2,3,7,8,9-HxCDF	0.0696	21.1	BJ	ND	18.7	ND	NC	NC	
2,3,4,6,7,8-HxCDF	0.744	21.1	J	0.863	18.7	J	14.8%	20.237	
1,2,3,4,6,7,8-HpCDF	4.14	21.1	BJ	4.52	18.7	BJ	8.8%	16.58	
1,2,3,4,7,8,9-HpCDF	0.225	21.1	JK	0.246	18.7	J	8.9%	0.021	
Octachlorodibenzofuran (OCDF)	5.66	42.2	BJ	6.62	37.4	BJ	15.6%	0.96	
Total Tetra-Dioxins	2.35	4.22	J	1.86	3.74	J	23.3%	0.49	
Total Penta-Dioxins	4.59	21.1	J	3.75	18.7	J	20.1%	0.84	
Total Hexa-Dioxins	8.68	21.1	J	14.1	18.7	J	47.6%	5.42	
Total Hepta-Dioxins	39.6	21.1	=	45.1	18.7	=	13.0%	5.5	
Total Tetra-Furans	5.5	4.22	=	3.79	3.74	=	36.8%	1.71	
Total Penta-Furans	10	21.1	J	13.7	18.7	J	31.2%	3.7	
Total Hexa-Furans	6.87	21.1	J	9.69	18.7	J	34.1%	11.41	
Total Hepta-Furans	8.63	21.1	J	9.86	18.7	J	13.3%	11.24	

J = Estimated concentration less than the reporting limit.
U = Not detected at the stated concentration.
E = Concentration exceeded calibration range of instrument.
K = Potential false positive result.
The calculated difference control limit is equal to twice the reporting limit of the compound.

Attachment 1. Data Validation Report for Tier 2 Data, EcoChem 2008

EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

TERMINAL 117

Prepared for:

Integral Consulting
1201 Cornwall Avenue, Suite 208
Bellingham, Washington 98225

Prepared by:

EcoChem, Inc.
710 Second Avenue, Suite 660
Seattle, Washington 98104

EcoChem Project: C22127-2

October 27, 2008

Approved for Release:

Christine L. Ransom
Senior Project Chemist
EcoChem, INC.

References

1. *Quality Assurance Project Plan (QAPP) Investigation of Potential PCDD/PCDF Contamination in Soil: City of Seattle Streets and Residential Yards T-117 Early Action Area, Seattle, Washington* (Aug. 14, 2008)

2. *National Functional Guidelines for Organic Data Review* (USEPA 1999)

3. *EPA SW846 Method 8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography*

SAMPLE INDEX
Integral - Terminal 117

SDG	Sample ID	Laboratory ID	PCB Aroclors	Total Solids
K0808015	SPD0128	K0808015-002	✓	✓
	SPD0130	K0808015-005	✓	✓
	SPD0134	K0808015-006	✓	✓
	SPD0118	K0808015-009	✓	✓
	SPD0117	K0808015-011	✓	✓
	SPD0116	K0808015-013	✓	✓
	SPD0123	K0808015-015	✓	✓
	SPD0124	K0808015-016	✓	✓
	SPD0122	K0808015-019	✓	✓
K0808028	SPD0080	K0808028-010	✓	✓
	SPD0079	K0808028-012	✓	✓
	SPD0082	K0808028-013	✓	✓
	SPD0084	K0808028-015	✓	✓
K0808040	SPD0166	K0808040-008	✓	✓
	SPD0165	K0808040-009	✓	✓
	SPD0167	K0808040-011	✓	✓
K0808041	SPD0154	K0808041-010	✓	✓
	SPD0155	K0808041-011	✓	✓
	SPD0157	K0808041-012	✓	✓
	SPD0158	K0808041-015	✓	✓
	SPD0159	K0808041-016	✓	✓
K0808043	SPD0088	K0808043-001	✓	✓
	SPD0090	K0808043-003	✓	✓
	SPD0093	K0808043-006	✓	✓
K0808092	SPD0180	K0808092-005	✓	✓
	SPD0178	K0808092-007	✓	✓
	SPD0179	K0808092-009	✓	✓
	SPD0189	K0808092-012	✓	✓
	SPD0187	K0808092-014	✓	✓
	SPD0188	K0808092-015	✓	✓
K0808096	SPD0213	K0808096-004	✓	✓
	SPD0214	K0808096-005	✓	✓
	SPD0215	K0808096-007	✓	✓
K0808098	SPD0196	K0808098-002	✓	✓
	SPD0197	K0808098-003	✓	✓
	SPD0198	K0808098-004	✓	✓
	SPD0199	K0808098-006	✓	✓
K0808138	SPD0221	K0808138-001	✓	✓
	SPD0222	K0808138-002	✓	✓
	SPD0226	K0808138-003	✓	✓
	SPD0223	K0808138-004	✓	✓
	SPD0227	K0808138-005	✓	✓
	SPD0224	K0808138-006	✓	✓
	SPD0228	K0808138-007	✓	✓
	SPD0232	K0808138-009	✓	✓
	SPD0233	K0808138-010	✓	✓
	SPD0230	K0808138-012	✓	✓
	SPD0231	K0808138-013	✓	✓

DATA VALIDATION REPORT
Terminal 117
PCB Aroclors by Method SW8082
Total Solids by Method 160.3

This report documents the review of analytical data from the analyses of soil and sediment samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Columbia Analytical Services, Inc., Kelso, Washington. Please see the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
K0808015	9 Soil	Full
K0808028	4 Soil	Full
K0808040	3 Soil	Full
K0808041	3 Soil & 2 Sediment	Full
K0808043	3 Soil	Full
K0808092	6 Soil	Full
K0808096	3 Soil	Full
K0808098	4 Soil	Full
K0808138	11 Soil	Full

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data package. Laboratory QC results were also verified (10%). No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Holding Times and Sample Preservation	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
	Instrument Performance Check		Laboratory Control Samples (LCS)
	Initial Calibration (ICAL)	1	Field Duplicates
	Continuing Calibration (CCAL)	1	Reporting Limits
	Laboratory Blanks		Compound Identification
	Surrogate Compounds	1	Calculation Verification (Full validation only)

[1] *Quality control results are discussed below, but no data were qualified.*
[2] *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Holding Times and Sample Preservation

The laboratory received many of the sample coolers with temperatures outside the advisory control limits of 2° to 6°C. The temperature outliers ranged from -1.0° to 9.5°C. These temperature outliers did not impact data quality and no qualifiers were assigned.

Samples were stored in frozen archive (-20°C). The PCB extraction holding time was extended to one year and the total solids holding time to six months. All analyses were completed within the extended holding times.

Matrix Spike/Matrix Spike Duplicates

Sample SPD0116 was submitted for matrix spike/matrix spike duplicate (MS/MSD) analyses, however, there was insufficient sample for the MSD. The laboratory analyzed laboratory control sample/laboratory control sample duplicates (LCS/LCSD) in lieu of the MSD.

Field Duplicates

The following acceptance criteria were applied for field duplicates: the relative percent difference (RPD) control limit is 50% for results greater than five times the reporting limit (RL). For results less than five times the RL, the difference between the sample and duplicate must be less than two times the RL.

SDG K0808028: One set of field duplicates were submitted, SPD0079 & SPD0080. All field precision criteria were met.

SDG K0808041: One set of field duplicates were submitted, SPD0154 & SPD0155. All field precision criteria were met.

SDG K0808098: One set of field duplicates were submitted, SPD0196 & SPD0197. All field precision criteria were met.

SDG K0808138: Two sets of field duplicates were submitted, SPD0221 & SPD0222 and SPD0230 & SPD0231. All field precision criteria were met.

Reporting Limits

The laboratory elevated several RLs due to matrix interferences. In several cases the elevated RL was greater than the QAPP specified method reporting limit (MRL).

Seventeen samples were analyzed at dilution due to high concentrations of Aroclor 1254 or 1260. Reporting limits were elevated accordingly.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the surrogate, LCS/LCSD, and MS/MSD %R values. Precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

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Environmental Data Quality

APPENDIX A
DATA QUALIFIER DEFINITIONS AND VALIDATION CRITERIA

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
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.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

1	Holding Time/Sample Preservation
2	Chromatographic pattern in sample does not match pattern of calibration standard.
3	Compound Confirmation
4	Tentatively Identified Compound (TIC) (associated with NJ only)
5A	Calibration (initial)
5B	Calibration (continuing)
6	Field Blank Contamination
7	Lab Blank Contamination (e.g., method blank, instrument, etc.)
8	Matrix Spike(MS & MSD) Recoveries
9	Precision (all replicates)
10	Laboratory Control Sample Recoveries
11	A more appropriate result is reported (associated with "R" and "DNR" only)
12	Reference Material
13	Surrogate Spike Recoveries (a.k.a., labeled compounds & recovery standards)
14	Other (define in validation report)
15	GFAA Post Digestion Spike Recoveries
16	ICP Serial Dilution % Difference
17	ICP Interference Check Standard Recovery
18	Trip Blank Contamination
19	Internal Standard Performance (e.g., area, retention time, recovery)
20	Linear Range Exceeded
21	Potential False Positives
22	Elevated Detection Limit Due to Interference (i.e., laboratory, chemical and/or matrix)

EcoChem Validation Guidelines for Pesticides/PCBs by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Method 8081/8082)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C ±2°	J(+)/UJ(-) if greater than 6 deg. C **(EcoChem PJ)**	1
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext/analyzed > HT J(+)/R(-) if ext/analyzed > 3X HT **(EcoChem PJ)**	1
Resolution Check	Beginning of ICAL Sequence Within RTW Resolution >90%	Narrate (Use Professional Judgement to qualify)	14
Instrument Performance (Breakdown)	DDT Breakdown: < 20% Endrin Breakdown: <20% Combined Breakdown: <30% Compounds within RTW	J(+) DDT NJ(+) DDD and/or DDE R(-) DDT - If (+) for either DDE or DDD J(+) Endrin NJ(+) EK and/or EA R(-) Endrin - If (+) for either EK or EA	5A
Retention Times	Surrogates: TCX (+/- 0.05); DCB (+/- 0.10) Target compounds: elute before heptachlor epoxide (+/- 0.05) elute after heptachlor epoxide (+/- 0.07)	NJ(+)/R(-) results for analytes with RT shifts **For full DV, use PJ based on examination of raw data**	5B
Initial Calibration	Pesticides: Low=CRQL, Mid=4X, High=16X Multiresponse - one point Calibration %RSD<20% %RSD<30% for surr; two comp. may exceed if <30% Resolution in Mix A and Mix B >90%	J(+)/UJ(-)	5A
Continuing Calibration	Alternating PEM standard and INDA/INDB standards every 12 hours (each preceeded by an inst. Blank) %D < 25% Resolution >90% in IND mixes; 100% for PEM	J(+)/UJ(-) J(+)R(-) if %D > 90% **PJ for resolution**	5B
Method Blank	One per matrix per batch No results > CRQL	U(+) if sample result is < CRQL and < 5X rule (raise sample value to CRQL) U(+) if sample result is > or equal to CRQL and < 5X rule (at reported sample value)	7
Instrument Blanks	Analyzed at the beginning of every 12 hour sequence No analyte > 1/2 CRQL	Same as Method Blank	7
Field Blanks	Not addressed by NFG No results > CRQL	Apply 5X rule; U(+) < action level	6

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EcoChem Validation Guidelines for Pesticides/PCBs by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Method 8081/8082)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS/MSD (recovery)	One set per matrix per batch Method Acceptance Criteria	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% **PJ if only one %R outlier**	8
MS/MSD (RPD)	One set per matrix per batch Method Acceptance Criteria	J(+) in parent sample if RPD > CL	9
LCS	One per SDG Method Acceptance Criteria	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J(+)/UJ(-) assoc. cmpd. in all samples	9
Surrogates	TCX and DCB added to every sample %R = 30-150%	J(+)/UJ(-) if both %R = 10 - 60% J(+) if both >150% J(+)/R(-) if any %R <10%	13
Quantitation/ Identification	Quantitated using ICAL calibration factor (CF) RPD between columns <40%	J(+) if RPD = 40 - 60% NJ(+) if RPD >60% **EcoChem PJ - See TM-08**	3
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	11
Sample Clean-up	GPC required for soil samples Florisil required for all samples Sulfur is optional Clean-up standard check %R within CLP limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL	14
Field Duplicates	**Use QAPP limits. If no QAPP:** Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate **(Qualifiy if required by project QAPP)**	9

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APPENDIX B
DATA VALIDATION WORKSHEETS

Project No.: 22127-A-2 (JLS 10/22/08)	Screener: MCS Date: 10/22/08
Project Name: Integral – Terminal 117	Reviewer: MCS Date: 10/22/08
SDG/Package: K08080* *=15, 28, 40, 41, 43, 92, 96, 98 (K0808138)	

MODULE A: COMPLETENESS AND HOLDING TIME CHECKLIST

1.0 Chain-of-Custody

	Y	N	N/A
1.1 Are all Chain-of-Custody (COC) forms included in data package?	X		
1.2 Were COC forms properly signed and dated?	X		
1.3 Was sample container temperature recorded on COC form (or other appropriate form) by laboratory?	X		
1.4 Is the recorded temperature within control limits (4°C ±2°C) Temperature(s): _____ _____ _____		X	

Comments: K0808015 °C: 0.8, K0808028 °C: 5.8, K0808040, K0808041, K0808043 °C: 9.5, 7.7, 8.7
K0808098, K0808092 °C: 0.1, 5.8, -1.0
K0808096
K0808138 °C: 0.3

2.0 Completeness Check

2.1 Is a case narrative present and does it describe analytical problems, discrepancies and corrective actions?	X		
2.2 Are all required summary forms present (see attached list)?	X		
2.3 Are data present for all samples listed on COC form?	X		
2.4 Are all required raw data sections present (see attached list)? (PRELIMINARY CHECK ONLY; detailed review of raw data will be documented on Module B Checklist).	X		

Comments:

3.0 Holding Times/Preservation (Technical Criteria: ☐CFR40; ☐QAPP; ☐Other _____)

3.1 Were all samples properly preserved?	X		
3.2 Complete the Holding Time Tables. (Documented in Comments or in worksheets attached to Module B; qualifiers assigned during Module B review)	X		

Comments:

Completeness and Holding Time Check Complete?

Table	Parameters (✓)	Completed	Location (attached or filename)
Sample Index	X	(Y)	
Holding Time Tables (list):			
Volatiles		Y / NA	
Semivolatile		Y / NA	
Pest/PCBs	X	(Y) / NA	See Attached
Metals		Y / NA	
Dioxins/Furans		Y / NA	
Conventionals		Y / NA	
PAH-8270SIM		Y / NA	
Herbicides		Y / NA	
TBT/Krone		Y / NA	
Phthalates-525.2		Y / NA	
Fuels		Y / NA	
Phenols			
Total solids	X	(Y)	See Attached

☐ See attached.

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Client: Integral
Project Name: Terminal 117
Project No. 22127-2

Reviewer: MCS
Date: 10/22/08
SDG: K08080* *=15, 28, 40, 41, 43, 92, 96, 98
K0808138

HOLDING TIME CHECKLIST

PCB Aroclors by 8082

SDG	Sample ID	Lab ID	Sample Type*	Matrix**	Date Collected	Prep Date	Last Date Analyzed	Holding Time (days) prep	Holding Time (days) analyzed	Qualifier Positive	Qualifier ND	Dilution Factor
K0808015	SPD0128	K0808015-002	N	SO	8/20/2008	9/30/2008	10/2/2008	41	2			
K0808015	SPD0130	K0808015-005	N	SO	8/20/2008	9/30/2008	10/3/2008	41	3			10x
K0808015	SPD0134	K0808015-006	N	SO	8/20/2008	9/30/2008	10/3/2008	41	3			10x
K0808015	SPD0118	K0808015-009	N	SO	8/20/2008	9/30/2008	10/2/2008	41	2			
K0808015	SPD0117	K0808015-011	N	SO	8/20/2008	9/30/2008	10/2/2008	41	2			
K0808015	SPD0116	K0808015-013	N	SO	8/20/2008	9/30/2008	10/2/2008	41	2			
K0808015	SPD0123	K0808015-015	N	SO	8/20/2008	9/30/2008	10/2/2008	41	2			
K0808015	SPD0124	K0808015-016	N	SO	8/20/2008	9/30/2008	10/2/2008	41	2			
K0808015	SPD0122	K0808015-019 9	N	SO	8/20/2008	9/30/2008	10/2/2008	41	2			
K0808028	SPD0080	K0808028-010	N	SO	8/21/2008	9/30/2008	10/3/2008	40	3			10x
K0808028	SPD0079	K0808028-012	FD	SO	8/21/2008	9/30/2008	10/3/2008	40	3			10x
K0808028	SPD0082	K0808028-013	N	SO	8/21/2008	9/30/2008	10/3/2008	40	3			10x
K0808028	SPD0084	K0808028-015 4	N	SO	8/21/2008	9/30/2008	10/3/2008	40	3			10x
K0808040	SPD0166	K0808040-008	N	SO	8/22/2008	9/30/2008	10/3/2008	39	3			
K0808040	SPD0165	K0808040-009	N	SO	8/22/2008	10/3/2008	10/7/2008	42	4			
K0808040	SPD0167	K0808040-011 3	N	SO	8/22/2008	10/3/2008	10/7/2008	42	4			10x
K0808041	SPD0154	K0808041-010 25E	N	SE	8/22/2008	10/3/2008	10/8/2008	42	5			10x
K0808041	SPD0155	K0808041-011	N	SE	8/22/2008	10/3/2008	10/8/2008	42	5			10x
K0808041	SPD0157	K0808041-012	N	SO	8/22/2008	9/30/2008	10/3/2008	39	3			
K0808041	SPD0158	K0808041-015 3SD	N	SO	8/22/2008	9/30/2008	10/3/2008	39	3			
K0808041	SPD0159	K0808041-016	N	SO	8/22/2008	10/3/2008	10/8/2008	42	5			10x
K0808043	SPD0088	K0808043-001	N	SO	8/21/2008	10/2/2008	10/3/2008	42	1			
K0808043	SPD0090	K0808043-003	N	SO	8/21/2008	10/2/2008	10/4/2008	42	2			10x
K0808043	SPD0093	K0808043-006 3	N	SO	8/21/2008	10/2/2008	10/4/2008	42	2			
K0808092	SPD0180	K0808092-005	N	SO	8/25/2008	10/3/2008	10/8/2008	39	5			
K0808092	SPD0178	K0808092-007	N	SO	8/25/2008	10/2/2008	10/3/2008	38	1			
K0808092	SPD0179	K0808092-009	N	SO	8/25/2008	10/2/2008	10/3/2008	38	1			
K0808092	SPD0189	K0808092-012	N	SO	8/25/2008	10/2/2008	10/3/2008	38	1			
K0808092	SPD0187	K0808092-014	N	SO	8/25/2008	10/2/2008	10/3/2008	38	1			
K0808092	SPD0188	K0808092-015 6	N	SO	8/25/2008	10/2/2008	10/3/2008	38	1			
K0808096	SPD0213	K0808096-004	N	SO	8/25/2008	10/3/2008	10/8/2008	39	5			10x
K0808096	SPD0214	K0808096-005	N	SO	8/25/2008	10/2/2008	10/3/2008	38	1			
K0808096	SPD0215	K0808096-007 3	N	SO	8/25/2008	10/2/2008	10/4/2008	38	2			
K0808098	SPD0196	K0808098-002	N	SO	8/25/2008	10/2/2008	10/4/2008	38	2			
K0808098	SPD0197	K0808098-003	FD	SO	8/25/2008	10/2/2008	10/4/2008	38	2			
K0808098	SPD0198	K0808098-004 4	N	SO	8/25/2008	10/2/2008	10/4/2008	38	2			
K0808098	SPD0199	K0808098-006	N	SO	8/25/2008	10/2/2008	10/4/2008	38	2			10x
K0808138	SPD0221	K0808138-001	N	SO	8/26/2008	9/15/2008	9/20/2008	20	5			
K0808138	SPD0222	K0808138-002	FD	SO	8/26/2008	9/15/2008	9/20/2008	20	5			
K0808138	SPD0226	K0808138-003	N	SO	8/26/2008	9/15/2008	9/20/2008	20	5			
K0808138	SPD0223	K0808138-004	N	SO	8/26/2008	9/15/2008	9/20/2008	20	5			10x
K0808138	SPD0227	K0808138-005	N	SO	8/26/2008	9/15/2008	9/20/2008	20	5			10x
K0808138	SPD0224	K0808138-006	N	SO	8/26/2008	9/15/2008	9/20/2008	20	5			10x
K0808138	SPD0228	K0808138-007	N	SO	8/26/2008	9/15/2008	9/20/2008	20	5			10x
K0808138	SPD0232	K0808138-009	N	SO	8/26/2008	10/2/2008	10/4/2008	37	2			
K0808138	SPD0233	K0808138-010	N	SO	8/26/2008	10/3/2008	10/8/2008	38	5			5x
K0808138	SPD0230	K0808138-012	N	SO	8/26/2008	10/2/2008	10/4/2008	37	2			
K0808138	SPD0231	K0808138-013 11	FD	SO	8/26/2008	10/2/2008	10/4/2008	37	2			

Hold Time Criteria by Test:	PCB	
	Extraction	Analysis
~~Soil~~ Sediment	14 Days	40 Days

* N = Sample; WQ = Water Quality; FD = Field Replicate
** SO = Soil; SM = Filter

Frozen archive Extraction HT extended to year

Client: Integral
Project Name: Terminal 117
Project No. 22127-2

Reviewer: MCS
Date: 10/22/08
SDG: K08080* *=15, 28, 40, 41, 43, 92, 96, 98
K0808138

HOLDING TIME CHECKLIST

Total Solids by 160.3M

SDG	Sample ID	Lab ID	Sample Type*	Matrix**	Date Collected	Last Date Analyzed	Holding Time Analyzed (days)	Qualifier Positive	Qualifier ND
K0808015	SPD0128	K0808015-002	N	SO	8/20/2008	9/30/2008	41		
K0808015	SPD0128D	K0808015-002DUP	LR	SO	8/20/2008	9/30/2008	41		
K0808015	SPD0130	K0808015-005	N	SO	8/20/2008	9/30/2008	41		
K0808015	SPD0134	K0808015-006	N	SO	8/20/2008	9/30/2008	41		
K0808015	SPD0118	K0808015-009	N	SO	8/20/2008	9/30/2008	41		
K0808015	SPD0117	K0808015-011	N	SO	8/20/2008	9/30/2008	41		
K0808015	SPD0116	K0808015-013	N	SO	8/20/2008	9/30/2008	41		
K0808015	SPD0123	K0808015-015	N	SO	8/20/2008	9/30/2008	41		
K0808015	SPD0124	K0808015-016	N	SO	8/20/2008	9/30/2008	41		
K0808015	SPD0122	K0808015-019	N	SO	8/20/2008	9/30/2008	41		
K0808028	SPD0080	K0808028-010	N	SO	8/21/2008	9/30/2008	40		
K0808028	SPD0079	K0808028-012	FD	SO	8/21/2008	9/30/2008	40		
K0808028	SPD0082	K0808028-013	N	SO	8/21/2008	9/30/2008	40		
K0808028	SPD0084	K0808028-015	N	SO	8/21/2008	9/30/2008	40		
K0808028	SPD0084D	K0808028-015DUP	LR	SO	8/21/2008	9/30/2008	40		
K0808040	SPD0166	K0808040-008	N	SO	8/22/2008	9/30/2008	39		
K0808040	SPD0165	K0808040-009	N	SO	8/22/2008	9/30/2008	39		
K0808040	SPD0167	K0808040-011	N	SO	8/22/2008	9/30/2008	39		
K0808040	SPD0167D	K0808040-011DUP	LR	SO	8/22/2008	9/30/2008	39		
K0808041	SPD0154	K0808041-010	N	SE	8/22/2008	9/25/2008	34		
K0808041	SPD0155	K0808041-011	N	SE	8/22/2008	9/25/2008	34		
K0808041	SPD0155D	K0808041-011DUP	LR	SO	8/22/2008	9/25/2008	34		
K0808041	SPD0157	K0808041-012	N	SO	8/22/2008	9/30/2008	39		
K0808041	SPD0158	K0808041-015	N	SO	8/22/2008	9/30/2008	39		
K0808041	SPD0159	K0808041-016	N	SO	8/22/2008	9/30/2008	39		
K0808043	SPD0088	K0808043-001	N	SO	8/21/2008	9/30/2008	40		
K0808043	SPD0090	K0808043-003	N	SO	8/21/2008	9/30/2008	40		
K0808043	SPD0093	K0808043-006	N	SO	8/21/2008	9/30/2008	40		
K0808092	SPD0180	K0808092-005	N	SO	8/25/2008	9/30/2008	36		
K0808092	SPD0180D	K0808092-005DUP	LR	SO	8/25/2008	9/30/2008	36		
K0808092	SPD0178	K0808092-007	N	SO	8/25/2008	9/30/2008	36		
K0808092	SPD0179	K0808092-009	N	SO	8/25/2008	9/30/2008	36		
K0808092	SPD0189	K0808092-012	N	SO	8/25/2008	9/30/2008	36		
K0808092	SPD0187	K0808092-014	N	SO	8/25/2008	9/30/2008	36		
K0808092	SPD0188	K0808092-015	N	SO	8/25/2008	9/30/2008	36		
K0808096	SPD0213	K0808096-004	N	SO	8/25/2008	9/30/2008	36		
K0808096	SPD0214	K0808096-005	N	SO	8/25/2008	9/30/2008	36		
K0808096	SPD0215	K0808096-007	N	SO	8/25/2008	9/30/2008	36		
K0808098	SPD0196	K0808098-002	N	SO	8/25/2008	9/30/2008	36		
K0808098	SPD0197	K0808098-003	FD	SO	8/25/2008	9/30/2008	36		
K0808098	SPD0198	K0808098-004	N	SO	8/25/2008	9/30/2008	36		
K0808098	SPD0199	K0808098-006	N	SO	8/25/2008	9/30/2008	36		
K0808098	SPD0199D	K0808098-006DUP	LR	SO	8/25/2008	9/30/2008	36		
K0808138	SPD0221	K0808138-001	N	SO	8/26/2008	9/16/2008	21		
K0808138	SPD0222	K0808138-002	FD	SO	8/26/2008	9/16/2008	21		
K0808138	SPD0226	K0808138-003	N	SO	8/26/2008	9/16/2008	21		
K0808138	SPD0223	K0808138-004	N	SO	8/26/2008	9/16/2008	21		
K0808138	SPD0227	K0808138-005	N	SO	8/26/2008	9/16/2008	21		
K0808138	SPD0224	K0808138-006	N	SO	8/26/2008	9/16/2008	21		
K0808138	SPD0228	K0808138-007	N	SO	8/26/2008	9/16/2008	21		
K0808138	SPD0228D	K0808138-007DUP	LR	SO	8/26/2008	9/16/2008	21		

Hold Time	Total Solids Analysis
Solids (Frozen)	1 year

6 months

* N = Sample; LR = Laboratory Replicate; FD = Field Replicate
** SO = Soil; SE = Sediment

EcoChem, Inc.

Environmental Science and Chemistry

MS 10/22/08

PROJECT NO.: 22127-1-2 SDG: K08080* *=15, 28, 40, 41, 43, 92, 96, 98 + K0808138

SCREENED BY: MCS DATE: 10/22/08

REVIEWED BY: CM DATE: 10/27/08

DATA PACKAGE COMPLETENESS ORGANOCHLORINE PESTICIDES & PCBs ANALYSIS * Total Solids

1 = MODULE A + B-1 (No calibration; summary forms only) (screening or data verification)

2 = MODULE A + B1 & B-2 (Sample, QC and calibration results; no raw data) (Level III, Level C)

3 = MODULE A + B1 & B-2 + C (Sample and QC results; raw data; trans/calc. Checks) (Level IV or V, Level D or E)

Deliverable Requirement	Equivalent EPA Form	Required	Present	Comments
Copies of Shipping Documents (Fed-Ex Airbills)		1, 2, 3	NO	
Case Narrative		1, 2, 3	✓	
Table of Contents		3	NO	
Cross reference of Field Sample No., Lab Sample No., and Analytical Batch	IV	1, 2, 3	✓	
Chain-of-Custody Form (including Sample Receipt Checklist)		1, 2, 3	✓	
Sample Calculation (usually just a page copied from SOW)		3	✓	
Results Summary for Each Sample and Blank	I	1, 2, 3	✓	
Blank Spike Results		1, 2, 3	✓	
Surrogates Recovery	II	1, 2, 3	✓	
Matrix Spike/Duplicate Matrix Spike Recoveries	III	1, 2, 3	✓	
Initial Calib. for Single Component Analytes, Retention Time Windows, On Each Col.	VI, Pest-1	2, 3	✓	
Initial Calib. for Single Component Analytes, Response Factors, On Each Col.	VI, Pest-2	2, 3	✓	
Initial Calib. for Multicomponent Analytes, One Standard at Reporting Limit, On Each Col.	VI, Pest-3	2, 3	NA	
Initial Calib. for Multicomponent Analytes, Three-Point, for Detected Analytes, On Each Col.	VI, Pest-3	2, 3	NA	
Analyte Resolution, On Each Column	VI, Pest-4	2, 3	✓	
PEM Calib. Verification, On Each Column, Including End-of-Run Verification	VII, Pest-1	2, 3	NA	
Mixes A & B Calib. Verfication, On Each Column, Including End-of-Run Verif.	VII, Pest-2	2, 3	NA	
Florisil Cartridge Check	IX, Pest-1	3	NA	
GPC Check	IX, Pest-2	3	NA	
Chromatrograms for Each Sample, Blank, and Standard, On Each Column		3	✓	
Quantitation Report, for Each Column		3	✓	
Copies of Sample Preparation Work Sheets		3	✓	
Copies of Run Logs	VII	3	✓	

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Project No.: 22127-~~11~~ MS 10/22/08 **Project Name:** Integral – T117 **SDG/Package:** K08080* *=15, 28, 40, 41, 43, 92, 96, 98 K0808138 **Laboratory:** CAS - Kelso	**Reviewer:** MCS **Date:** 10/22/08 **Secondary:** CW **Date:** 10/27/08

Parameter/Method: PCB Aroclors by 8082 & Total Solids by 160.3M **Data Validation Criteria Table:** Integral Project Specific

MODULE B: TECHNICAL EVALUATION CHECKLIST- ORGANICS

☒ **MODULE B-1 (Summaries of sample results; accuracy; precision; blanks)**

☒ **MODULE B-2 (Summaries of calibration, instrument performance & compound ID)**

☒ **B-2 Org** ☐ **B-2 HRMS** ☐ **B-2 Other** _____ **(name)**

Yes **Qualifiers Issued. See Sample Summary forms or other:** _____

1.0 Technical Holding Times and Sample Handling (B-1)

	Y	N	N/A
1.1 Is Module A Checklist (COC, package completeness, Holding Time Table) complete?	X		
1.2 Are all holding times within the technical criteria from ☐ CFR40; ☒ QAPP; Other Region 10 (EPA)? X no outliers ____ see attached Holding Time worksheet or data package page ____ see below	X		
1.3 Are all cooler temperatures within the control limits? (temperature outliers listed on HT table) ____ no outliers ____ see attached Holding Time worksheet or data package page X see below		X	

Comments: X Data judged as not significantly affected by outliers; no qualifiers assigned

1.3 See Module A

2.0 Surrogates/Labeled Compounds (B-1)

2.1 Are all recovery values within the control limits? X no outliers ____ see attached Surrogate Summary Form or data package page ____ see below	X		

Comments: ____ No positive results; no qualifiers as all outliers were > UCL (high bias)

____ No qualifiers assigned; one outlier per fraction/column acceptable (if > 10%)

All ok

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Project No.: 22127-1 SDG: K08080* *=15, 28, 40, 41, 43, 92, 96, 98 K0808138

3.0 Method/Field Blank (B-1)

	Y	N	N/A
3.1 Are Method Blanks free from contamination? X no outliers ____ see attached Blank Summary Form or data package page ____ see below	X		
3.2 Are there any trip/equipment/field blanks included in the data package (list below)?		X	
3.3 Are trip/equipment/field blanks free from contamination? ____ no outliers ____ see attached Blank Summary Form or data package page ____ see below			X

Comments: ____ No positive results in associated samples; no action required for method / trip / equip. / other

____10X action level established for common lab cont.; 5X action level for others

4.0 Laboratory Control Sample (Blank Spike/OPR Sample) (B-1)

	Y	N	N/A
4.1 Are all %R-values within the control limits? X no outliers ____ see attached Summary Form or data package page ____ see below	X		
4.2 Are all RPD values within control limits (if duplicate analyzed)? X no outliers ____ see attached Summary Form or data package page ____ see below	X		

Comments for LCS: ____ No positive results in associated samples; no qualifiers as all outliers were > UCL (high bias)

KWG0810203 - LCS/LCSD K0808015, K0808028, K0808040, K0808041
KWG0810354 - LCS K0808043, K0808092, K0808096, K0808098, K0808138
KWG0810402 - LCS K0808040, K0808041, K0808092, K0808138

5.0 Performance Evaluation (PE)/Standard Reference Material (SRM) (B-1)

PE/SRM Sample ID(s):

5.1 Was PE/SRM sample(s) analyzed?		X	
5.2 Are all values within control limits? ____ no outliers ____ see below			X

Comments: ____ No qualifiers assigned based on PE/SRM outliers

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MS 10/22/08

Project No.: 22127-1 **SDG: K08080*** *=15, 28, 40, 41, 43, 92, 96, 98 K0808138

K0808138 – SPD0233 & See K0808043
K0808098 – SPD0199 See K0808043
K0808096 – See K0808043 and Batch QC MS/MSD

6.0 Matrix Spike/Matrix Spike Duplicate or Sample and Lab Duplicate (B-1)

Parent Sample ID: K0808092 Batch QC MS/MSD

	Y	N	N/A
6.1 Are all %R-values within the control limits? ___ no outliers ___ see attached MS/MSD Summary Form or data package page ___ see below	X		
6.2 Are all RPD values within control limits? ___ no outliers ___ see attached MS/MSD Summary Form or data package page ___ see below	X		

Comments: ___ No positive results in parent sample; no qualifiers as all outliers were > UCL (high bias)

*15 10/2/08 SPD0116 – MS only ok → K0808015 – insufficient material for MSD.
98 10/4/08 SPD0199 MS/MSD → Aroclor 1260 parent > 4x spike conc → K0808028 & Batch QC
K0808138 10/8/08 SPD0233 → K0808040 Batch QC MS & MS/MSD
Total solids K0808015 SPD0128 ok, K0808028 SPD0084 ok, K0808040 SPD0167 ok, K0808041 SPD0155 ok, K0808092 SPD0180 ok, K0808098 SPD0199 ok
K0808096 Batch QC MS only + MS/MSD
K0808041 Batch QC MS & MSD
K0808043 Batch QC MS/MSD Aroclor 1260 spike conc < 4x parent conc, no action.

7.0 Field Duplicate (B-1) Field Duplicate Sample ID(s):

	Y	N	N/A
7.1 Were field duplicates collected and analyzed?	X		
7.2 Are all RPD values within control limits? ___ no outliers ___ see attached Field Dup. Summary Form or data package page ___ see below			

Comments: ___ No qualifiers assigned based on field duplicate outliers

K0808028 SPD0080 / SPD0079
K0808098 SPD0196 / SPD0197
K0808138 SPD0230 / SPD0231
K0808138 SPD0221 / SPD0222

8.0 Sample Results (B-1)

	Y	N	N/A
8.1 Are there results for all analytes on the client required target compound list(s) **see QAPP for lists**?	X		
8.2a Were TIC requested for this project?		X	
8.2b If "yes", were TIC reported as required?			X
8.3 Are reporting limits and sample results adjusted for sample size, % moisture (solid samples), etc.?	X		
8.4 Are concentrations reported on the appropriate basis? ___X___ Dry weight _____ Wet weight	X		
8.5 Do detection limits meet project-specific or method-specific limits?		X	

Comments: _____ Qualify TIC "NJ" unless already qualified "U" due to blank contamination

MS 10/22/08 Also Column conf: 25-60% J·3 ; >60% NJ·3 (40) 10/27/08
K0808015 SPD0118 (009) Aroclor 1254 34.1% J·3
K0808028 all ok
K0808040 ↓
K0808041 ↓

K0808040 – Lab noted when Aroclors 1254 & 1260 are present there is potential for high bias, Sample SPD0166 Also K0808096 Sample SPD0214

8.5 RL elevated for multiple analytes due to non-target background analytes and/or samples analyzed at dilution due to elevated target analytes. Dilution factors listed on the hold time table.

General Notes and Information:
K0808043 ↓
K0808092 ↓
K0808096 ↓
K0808098 ↓
K0808138A ↓
K0808138B ↓

K0808* - 15, 28, 40, 41, 42, 92
K0808* - 96, 98
K0808138

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MS 10/22/08

Project No.: 22127-~~1~~ 2 SDG: K08080* *=15, 28, 40, 41, 43, 92, 96, 98 K0808138

MODULE: B-2-Org (calibration, instrument performance & compound identification)

9.0 Internal Standards (B-2)

	Y	N	N/A
9.1 Are all internal standard values within the control limits? ____ no outliers ____ see attached Int. Std. Summary Form or data package page ____ see below			X

Comments:

10.0 Initial Calibration (B-2)

10.1 Are ICALs analyzed on all instruments on which samples are analyzed?	X		
10.2 Are response factors / calibration factors stable (_20_ %RSD ____ correlation coefficients ____ other)? __X__ no outliers ____ see attached ICAL Summary Form or data package page ____ see below	X		
10.3 Are response factors greater than the required minimum control limit?			X

Comments: ____ No positive results assoc. w/ outliers; RL judged as not affected – no qualifiers assigned

____ RF historically low; no qualifiers assigned since response is stable

K0808* K0808138

9/22/08 GC09.i CAL 7795 → 15, 28, 40, 41, 43, 92, 96, 98 + K0808138

9/19/08 GC32.i CAL 7790 40, 41, 92, 96 + K0808138

CCAL CAL ID 7790

10/8/08 11:32 * ** 40, 41, 92, 96, K0808138

10/8/08 17:46 * ** 40, 41, 92, 96, K0808138

10/8/08 19:41 * ** 96

~~9/19/08~~

9/20/08 10:44 ok K0808138

9/20/08 16:59 ok

9/20/08 22:44 ok

11.0 Continuing Calibration (B-2)

11.1 Are CCALs analyzed at the proper frequency? __X__ no outliers ____ see attached CCAL Summary Form or data package page ____ see below	X		
11.2 Are CCALs acceptable (_25_ %D ____ %R ____ other)? __X__ no outliers ____ see attached CCAL Summary Form or data package page ____ see below	X		
11.3 Are response factors greater than the required minimum control limit? ____ no outliers ____ see attached CCAL Summary Form or data package page ____ see below			X

Comments: ____ No positive results assoc. w/ outliers; RL judged as not affected – no qualifiers assigned

____ RF historically low; no qualifiers assigned since response is stable

* = 1 or more analytes flagged as outlier, within NFG limits, No Action.

** = K0808O-

CAL 7795

10/2/08 16:43 * K0808015, 28, 40, 41

10/2/08 22:14 * ~~**~~ 15, 28, 40, 41

10/3/08 04:37 * ** 15, 28, 40, 41

10/3/08 12:02 ok ** 15, 28

10/3/08 17:59 ok ** 15, 28, 43, 92, 96, 98, K0808138

10/7/08 16:42 * ** 40, 41, 92, 96, K0808138

10/7/08 22:38 * ** 40, 41, 92, 96, K0808138

10/04/08 00:24 ok ** 43, 92, 96, 98, K0808138

10/4/08 11:45 ok ** 43, 96, 98, K0808138

10/4/08 17:43 ok ** 43, 96, 98, K0808138

10/4/08 06:21 ok ** 96, 98, K0808138

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MS 10/22/08

Project No.: 22127-~~1~~ 2 SDG: K08080* *=15, 28, 40, 41, 43, 92, 96, 98 K08 08138

12.0 Instrument Tune (B-2)

	Y	N	N/A
12.1 Were instruments tuned at the required frequency?			X
12.2 Are all instrument tune criteria within the required control limits? ____ no outliers ____ see attached data package page ____ see below			X

Comments:

13.0 Breakdown (Pesticides only) (B-2)

13.1 Are breakdown products less than the required control limit (if applicable)? ____ no outliers ____ see attached Breakdown Summary Form or data package page ____ see below			X
13.2 Are breakdown check standards analyzed at the proper frequency?			X

Comments: ____ No positive results assoc. w/ outliers; RL judged as not affected – no qualifiers assigned

See Summary Forms (attached) for other outliers and qualifiers.

General Notes and Information:

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MS 10/22/08

Project No.: 22127.4.2	Reviewer: MCS Date: 10/22/08
SDG/Package: K08080* *=15, 28, 40, 41, 43, 92, 96, 98 K080813 8	Secondary: CR Date: 10/22/08
Parameter/Method: PCB Aroclors/8082, Solids/160.3	Equation List: _____ Attached
Laboratory: CAS - Kelso	_____ See Calculation Worksheets

MODULE C: CALCULATION AND TRANSCRIPTION CHECKLIST

(As per project specific requirements and/or ***Summary of Recalculation Requirements***)

	Chromatograms Checked (✓/ NA / *) * see comments	Calculations Attached (✓/ NA)	Transcriptions		
			OK (✓)	See Below (✓)	NA (✓)
Tunes	**NA**	**NA**			**NA**
Initial calibration	✓	✓	✓		
Continuing Calibration	✓	✓	✓		
Blanks (method & instrument)	✓	**NA**			**NA**
Samples	✓	✓	✓		
Surrogates	✓	✓	✓		
LCS or OPR	✓	✓	✓		
MS/MSD or Matrix Spike	✓	✓	✓		
Laboratory Duplicate	✓	✓	✓		
Internal Standards	**NA**	**NA**			**NA**
Serial Dilutions	**NA**	**NA**			**NA**
Other:					

Comments: (attach additional page if needed)

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Field Duplicate Precision

PCB Aroclors by 8082 & Total Solids by 160.3M

Client: Integral
Project Name: Terminal 117
Project No. 22127-2

Reviewer: MCS
Date: 10/22/08
SDG: K08080* *=15, 28, 40, 41, 43, 92, 96, 98
K0808138

RPD Control Limit: 50% (solids)

Compound	Sample Result ug/kg SPD0080 K0808028-010			Duplicate Result ug/kg SPD0079 K0808028-012			Calculated RPD	Calculated Difference	Suggested Qualifier
	Result	RL	Flag	Result	RL	Flag			
Aroclor 1016		57	U		58	U		0	None
Aroclor 1221		120	U		120	U		0	None
Aroclor 1232		57	U		58	U		0	None
Aroclor 1242		57	U		58	U		0	None
Aroclor 1248		260	U		150	U		0	None
Aroclor 1254		390	U		610	U		0	None
Aroclor 1260		590	U		440	U		0	None
Solids, Total (%)	88			86.8			1.4%	1.2	None

Compound	Sample Result ug/kg SPD0196 K0808098-002			Duplicate Result ug/kg SPD0197 K0808098-003			Calculated RPD	Calculated Difference	Suggested Qualifier
	Result	RL	Flag	Result	RL	Flag			
Aroclor 1016		10	U		10	U		0	None
Aroclor 1221		20	U		20	U		0	None
Aroclor 1232		10	U		10	U		0	None
Aroclor 1242		10	U		10	U		0	None
Aroclor 1248		10	U		10	U		0	None
Aroclor 1254		10	U		10	U		0	None
Aroclor 1260	340	10		330	10		3.0%	10	None
Solids, Total (%)	89.3			89.4			0.1%	0.1	None

Compound	Sample Result ug/kg SPD0221 K0808138-001			Duplicate Result ug/kg SPD0222 K0808138-002			Calculated RPD	Calculated Difference	Suggested Qualifier
	Result	RL	Flag	Result	RL	Flag			
Aroclor 1016		7.4	U		7.4	U		0	None
Aroclor 1221		15	U		15	U		0	None
Aroclor 1232		11	U		7.4	U		0	None
Aroclor 1242		7.4	U		7.4	U		0	None
Aroclor 1248		7.4	U		7.4	U		0	None
Aroclor 1254		7.4	U		7.4	U		0	None
Aroclor 1260	18	7.4		20	7.4		10.5%	2	None
Aroclor 1262		7.4	U		7.4	U		0	None
Aroclor 1268		7.4	U		7.4	U		0	None
Solids, Total (%)	77.4			76.7			0.9%	0.7	None

Compound	Sample Result ug/kg SPD0230 K0808138-012			Duplicate Result ug/kg SPD0231 K0808138-013			Calculated RPD	Calculated Difference	Suggested Qualifier
	Result	RL	Flag	Result	RL	Flag			
Aroclor 1016		11	U		10	U		0	None
Aroclor 1221		21	U		20	U		0	None
Aroclor 1232		11	U		10	U		0	None
Aroclor 1242		11	U		10	U		0	None
Aroclor 1248		11	U		10	U		0	None
Aroclor 1254		11	U		10	U		0	None
Aroclor 1260	130	11		110	10		16.7%	20	None
Solids, Total (%)	37.2			37.0			0.5%	0	None

J = Estimated concentration less than the reporting limit.
U = Not detected at the stated concentration.
The calculated difference control limit is equal to twice reporting limit of the compound.

OR 10/22/08

SPD0154 SPD0155 RPD
% Solids 37.2 37.4 0.5%
Aroclor 1260 5800 7000 18.8%

ALL OTHER ANALYTES ND

OR 11/14/08

Client: Integral
Project Name: Terminal 117
Project No. 22127-2

Reviewer: MCS
Date: 10/22/08
SDG: K0808080* *=15, 28, 40, 41, 43, 92, 96, 98
K0808138

SAMPLE RECALCULATION CHECK

Sample: SPD0128
Lab ID: K0808015-002 COLUMN:XLB
Amount Extracted (g-dry): 40.17 Dilution Factor: 1
Total Solids (%): 82.8% Final Vol. (mL): 4

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	465,036	703	661.50	80			
1260 #2	889,746	740	1,202.36	145			
1260 #3	0	919	0.00	0			
1260 #4	435,407	492	884.97	106			
1260 #5	963,133	1,060	908.62	109			
Aroclor 1260			914.36	110	110		
					Values reported from this column		
DCBP (surrogate)	1,124,342	13,300				84.5%	85

COLUMN:35MS

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	260,427	376	692.63	83			
1260 #2	0	701	0.00	0			
1260 #3	409,117	494	828.17	100			
1260 #4	409,897	452	906.85	109			
1260 #5	790,961	936	845.04	102			
Aroclor 1260			818.17	98			
DCBP (surrogate)	816,546	10,200				80.1%	

Sample: SPD0118
Lab ID: K0808015-009 COLUMN:XLB
Amount Extracted (g-dry): 40.12 Dilution Factor: 1
Total Solids (%): 81.1% Final Vol. (mL): 4

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	464,426	703	660.64	81			
1260 #2	498,287	740	673.36	83			
1260 #3	696,909	919	758.33	93			
1260 #4	251,933	492	512.06	63			
1260 #5	574,761	1,060	542.23	67			
Aroclor 1260			629.32	77	77		
					Aroclor value reported from this column		
DCBP (surrogate)	1,031,862	13,300				77.6%	

COLUMN:35MS

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	217,334	376	578.02	71			
1260 #2	0	701	0.00	0			
1260 #3	226,962	494	459.44	56			
1260 #4	176,932	452	391.44	48			
1260 #5	489,585	936	523.06	64			
Aroclor 1260			487.99	60			
					Surrogate value reported from this column		
DCBP (surrogate)	797,875	10,200				78.2%	78

Sample: SPD0180
Lab ID: K0808092-005 COLUMN:XLB
Amount Extracted (g-dry): 24.98 Dilution Factor: 1
Total Solids (%): 80.1% Final Vol. (mL): 4

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	16,159,272	25,700	628.77	126			
1260 #2	29,999,127	31,200	961.51	192			
1260 #3	0	30,300	0.00	0			
1260 #4	18,166,317	22,100	822.01	164			
1260 #5	40,026,932	48,500	825.30	165			
Aroclor 1260			809.39	161.81			
DCBP (surrogate)	38,455,342	453,000				84.9%	

COLUMN:35MS

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	17,455,086	19,900	877.14	175			
1260 #2	0	23,700	0.00	0			
1260 #3	13,200,553	13,200	1,000.04	200			
1260 #4	13,744,135	13,800	995.95	199			
1260 #5	28,845,021	31,400	918.63	184			
Aroclor 1260			947.94	189.50	190		
					Values reported from this column		
DCBP (surrogate)	26,386,926	319,000				82.7%	83

Sample: SPD0188
Lab ID: K0808092-015 COLUMN:XLB
Amount Extracted (g-dry): 24.84 Dilution Factor: 1
Total Solids (%): 80.5% Final Vol. (mL): 4

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	405,862	703	577.33	115			
1260 #2	617,827	740	834.90	167			
1260 #3	1,045,984	919	1,138.19	228			
1260 #4	451,669	492	918.03	184			
1260 #5	873,143	1,060	823.72	165			
Aroclor 1260			858.43	172	170		
					Values reported from this column		
DCBP (surrogate)	1,095,455	13,300				82.4%	83

COLUMN:35MS

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	198,678	376	528.40	106			
1260 #2	649,132	701	926.01	185			
1260 #3	392,950	494	795.45	159			
1260 #4	385,388	452	852.63	171			
1260 #5	730,426	936	780.37	156			
Aroclor 1260			776.57	155			
DCBP (surrogate)	832,871	10,200				81.7%	

Sample: SPD0221
Lab ID: K0808136-001 COLUMN:XLB
Amount Extracted (g-dry): 35.04 Dilution Factor: 1
Total Solids (%): 77.4% Final Vol. (mL): 4

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	2,392,208	25,700	93.08	14			
1260 #2	0	31,200	0.00	0			
1260 #3	0	30,300	0.00	0			
1260 #4	2,471,180	22,100	111.82	16			
1260 #5	5,948,011	48,500	122.64	18			
Aroclor 1260			109.18	16.10			
DCBP (surrogate)	35,757,810	453,000				78.9%	

COLUMN:35MS

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	2,087,787	19,900	104.91	15			
1260 #2	0	23,700	0.00	0			
1260 #3	2,108,851	13,200	159.76	24			
1260 #4	1,707,013	13,800	123.70	18			
1260 #5	3,469,098	31,400	110.45	16			
Aroclor 1260			124.71	18.39	18		
					Values reported from this column		
DCBP (surrogate)	25,949,907	319,000				81.3%	81

Sample: SPD0223
Lab ID: K0808136-004 COLUMN:XLB
Amount Extracted (g-dry): 35.26 Dilution Factor: 10
Total Solids (%): 83.9% Final Vol. (mL): 4

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	35,782,132	25,700	1,392.30	1,883			
1260 #2	62,147,677	31,200	1,991.91	2,693			
1260 #3	61,952,895	30,300	2,044.65	2,765			
1260 #4	43,668,103	22,100	1,975.93	2,672			
1260 #5	104,056,990	48,500	2,145.50	2,901			
Aroclor 1260			1,910.06	2,583			
					Surrogate value reported from this column		
DCBP (surrogate)	4,905,952	453,000				108.3%	108

COLUMN:35MS

Compound	Area of compound	ICAL RRF	On-Column Conc. (ug/kg)	Calc. Conc. (ug/kg)	Reported Conc.(ug/kg)	Calc. % Recovery	Reported % Recovery
1260 #1	41,495,770	19,900	2,085.21	2,819			
1260 #2	54,277,439	23,700	2,290.19	3,097			
1260 #3	28,231,618	13,200	2,138.76	2,892			
1260 #4	28,252,524	13,800	2,047.28	2,768			
1260 #5	72,623,671	31,400	2,312.86	3,127			
Aroclor 1260			2,174.86	2,941	2,900		
					Aroclor value reported from this column		
DCBP (surrogate)	2,911,490	319,000				91.3%	

Calculated amounts:
Avg RF =(Area of Compound X Dil. Factor X Final Volume) / (ICAL RF X Amt. Extracted X Total Solids)
Calculated Surrogate % Recovery = (Area of Compound / ICAL RRF)

Calculated amounts:
Avg RF =(Area of Compound X Dil. Factor X Final Volume) / (ICAL RF X Amt. Extracted X Total Solids)
Calculated Surrogate % Recovery = (Area of Compound / ICAL RRF)

Client: Integral
Project Name: Terminal 117
Project No. 22127-2

Reviewer: MCS
Date: 10/22/08
SDG: K0808O* *=15, 28, 40, 41, 43, 92, 96, 98
K0808138

INITIAL CALIBRATION CALCULATION CHECK

PCBs by 8082

ICAL Date: 09/22/08 CAL7795 Instrument: GC09.i

Compound	Area of peak	mass of cmpd (ng)	Reported CF	Calc. CF	Reported %RSD	Calc. %RSD
Aroclor 1016 (1)	5,985	25	239	239		
Column DB-35M	13,055	50	261	261		
	122,632	500	245	245		
	223,512	1,000	224	224		
	393,185	2,000	197	197		
	826,701	5,000	165	165		
			222	222	15.90%	15.911%
Aroclor 1260 (1)	10,768	25	431	431		
Column DB-35M	22,567	50	451	451		
	199,458	500	399	399		
	363,363	1,000	363	363		
	652,888	2,000	326	326		
	1,433,550	5,000	287	287		
			376	376	16.70%	16.718%
Aroclor 1016 (4)	11,531	25	461	461		
Column DB-XLB	23,963	50	479	479		
	227,692	500	455	455		
	411,719	1,000	412	412		
	725,169	2,000	363	363		
	1,544,755	5,000	309	309		
			413	413	16.00%	16.011%
Aroclor 1260 (2)	21,796	25	872	872		
Column DB-XLB	45,969	50	919	919		
	386,086	500	772	772		
	707,317	1,000	707	707		
	1,252,846	2,000	626	626		
	2,710,580	5,000	542	542		
			740	740	19.50%	19.467%

Concentration Factor (CF) = Area of Peak / Amount %RSD = std deviation of all CFs / average CF

CONTINUING CALIBRATION CALCULATION CHECK

ICAL 9/22/08 GC09.i CAL7795

Compound	Primary Column Secondary Column	Area of peak	ICAL AVG CF	True Conc.	Found Conc.	Calculated Concentration	Reported % Difference	Calculated % Difference
10/2/2008 16:43								
Aroclor 1016 (1	Column DB-35MS	206,713	222	1,000	930	931	-7%	-6.89%
Aroclor 1260 (2	Column DB-XLB	691,544	740	1,000	930	935	-7%	-6.55%
10/2/2008 22:14								
Aroclor 1016 (1	Column DB-35MS	197,875	222	1,000	890	891	-11%	-10.87%
Aroclor 1260 (2	Column DB-XLB	654,218	740	1,000	880	884	-12%	-11.59%
10/3/2008 4:37								
Aroclor 1016 (1	Column DB-35MS	205,580	222	1,000	930	926	-7%	-7.40%
Aroclor 1260 (2	Column DB-XLB	679,670	740	1,000	920	918	-8%	-8.15%
10/3/2008 17:59								
Aroclor 1016 (1	Column DB-35MS	223,295	222	1,000	1,000	1,006	1%	0.58%
Aroclor 1260 (2	Column DB-XLB	714,555	740	1,000	970	966	-3%	-3.44%
10/4/2008 0:24								
Aroclor 1016 (1	Column DB-35MS	195,278	222	1,000	880	880	-12%	-12.04%
Aroclor 1260 (2	Column DB-XLB	716,815	740	1,000	970	969	-3%	-3.13%
10/4/2008 6:21								
Aroclor 1016 (1	Column DB-35MS	214,672	222	1,000	970	967	-3%	-3.30%
Aroclor 1260 (2	Column DB-XLB	690,852	740	1,000	930	933	-7%	-6.67%
10/4/2008 11:45								
Aroclor 1016 (1	Column DB-35MS	220,945	222	1,000	1,000	995	0%	-0.48%
Aroclor 1260 (2	Column DB-XLB	701,732	740	1,000	950	948	-5%	-5.17%
10/4/2008 17:43								
Aroclor 1016 (1	Column DB-35MS	216,378	222	1,000	980	975	-2%	-2.53%
Aroclor 1260 (2	Column DB-XLB	729,955	740	1,000	990	986	-1%	-1.36%
10/7/2008 16:42								
Aroclor 1016 (1	Column DB-35MS	207,199	222	1,000	930	933	-7%	-6.67%
Aroclor 1260 (2	Column DB-XLB	623,507	740	1,000	840	843	-16%	-15.74%
10/7/2008 22:38								
Aroclor 1016 (1	Column DB-35MS	199,544	222	1,000	900	899	-10%	-10.12%
Aroclor 1260 (2	Column DB-XLB	654,385	740	1,000	880	884	-12%	-11.57%

CF = Response of Peak / Conc.
%D = (CCAL CF - ICAL CF) / ICAL CF

ICAL 9/19/08 GC32.i CAL7790

Compound	Primary Column Secondary Column	Area of peak	ICAL AVG CF	True Conc.	Found Conc.	Calculated Concentration	Reported % Difference	Calculated % Difference
9/20/2008 10:44								
Aroclor 1016	Column DB-35MS	3,993,808	4,090	1,000	980	976	-2%	-2.35%
Aroclor 1260	Column DB-XLB	29,061,118	31,200	1,000	930	931	-7%	-6.86%
9/20/2008 16:59								
Aroclor 1016	Column DB-35MS	3,977,295	4,090	1,000	970	972	-3%	-2.76%
Aroclor 1260	Column DB-XLB	29,261,764	31,200	1,000	940	938	-6%	-6.21%
9/20/2008 22:44								
Aroclor 1016	Column DB-35MS	3,969,625	4,090	1,000	970	971	-3%	-2.94%
Aroclor 1260	Column DB-XLB	29,717,644	31,200	1,000	950	952	-5%	-4.75%
10/8/2008 11:32								
Aroclor 1016	Column DB-35MS	3,972,278	4,090	1,000	970	971	-3%	-2.88%
Aroclor 1260	Column DB-XLB	29,471,576	31,200	1,000	950	945	-5%	-5.54%
10/8/2008 17:46								
Aroclor 1016	Column DB-35MS	3,772,210	4,090	1,000	920	922	-8%	-7.77%
Aroclor 1260	Column DB-XLB	28,050,745	31,200	1,000	900	899	-10%	-10.09%
10/8/2008 19:41								
Aroclor 1016	Column DB-35MS	3,864,368	4,090	1,000	940	945	-6%	-5.52%
Aroclor 1260	Column DB-XLB	28,660,924	31,200	1,000	920	919	-8%	-8.14%

Client: Integral
Project Name: Terminal 117
Project No. 22127-2

Reviewer: MCS
Date: 10/22/08
SDG: K080807* *=15, 28, 40, 41, 43, 92, 96, 98
K0808138

MATRIX SPIKE / MATRIX SPIKE DUPLICATE ANALYSES RECALCULATION CHECK

PCBs by 8082

QC Sample: SPU0116 MS only KWG0810203-1

Compound	Amount Found in Parent Sample	MS Reported Amount	MS Spike Added (ug/L)	Reported MS % Recovery	Calculated MS % Recovery	QAPP %R Limits
Aroclor 1016	0	68.5	104	66	65.9%	24-158
Aroclor 1260	120	183	104	56	60.6%	24-163

QC Sample: SPU0199 MS/MSD KWG0810354-1/-2

Compound	Amount Found in Parent Sample	MS Reported Amount	MSD Reported Amount	MS Spike Added (ug/L)	MSD Spike Added (ug/L)	Reported MS % Recovery	Reported MSD % Recovery	Reported RPD (%)	Calculated MS % Recovery	Calculated MSD % Recovery	Calculated RPD	QAPP %R & RPD Limits
Aroclor 1016	0	201	210	200	200	100	105	5.0	100.5%	105.0%	4.38%	24-158 <40
Aroclor 1260	1700	1900	1800	200	200	101	49	6.0	100.0%	50.0%	5.41%	24-163 <40

QC Sample: SPU0233 MS/MSD KWG0810402-1/-2

Compound	Amount Found in Parent Sample	MS Reported Amount	MSD Reported Amount	MS Spike Added (ug/L)	MSD Spike Added (ug/L)	Reported MS % Recovery	Reported MSD % Recovery	Reported RPD (%)	Calculated MS % Recovery	Calculated MSD % Recovery	Calculated RPD	QAPP %R & RPD Limits
Aroclor 1016	0	210	199	200	200	105	100	5.0	105.0%	99.5%	5.38%	24-158 <40
Aroclor 1260	640	761	773	200	200	58	64	2.0	60.5%	66.5%	1.56%	24-163 <40

MS Calc. Recovery = (Calc.Amt-Amt in Parent) * 100 / Spike Added
Calc.RPD = 100 * |MS Amt -MSD Amt| / (MS Amt +MSD Amt /2)

LABORATORY CONTROL SAMPLE RECALCULATION CHECK

PCBs by 8082

QC Sample: KWG0810402-3

Compound	LCS Reported Amount	LCS Spike Added (ug/L)	Reported % Recovery	Calculated % Recovery	QAPP %R & RPD Limits
Aroclor 1016	185	200	93	92.5%	44-130
Aroclor 1260	175	200	87	87.5%	52-127

QC Sample: KWG0810354-3

Compound	LCS Reported Amount	LCS Spike Added (ug/L)	Reported % Recovery	Calculated % Recovery	QAPP %R & RPD Limits
Aroclor 1016	147	200	74	73.5%	44-130
Aroclor 1260	168	200	84	84.0%	52-127

QC Sample: KWG0810203-2/-3

Compound	LCS Reported Amount	LCSD Reported Amount	LCS Spike Added (ug/L)	LCSD Spike Added (ug/L)	Reported LCS % Recovery	Reported LCSD % Recovery	Reported RPD (%)	Calculated LCS % Recovery	Calculated LCSD % Recovery	Calculated RPD	QAPP %R & RPD Limits
Aroclor 1016	196	178	200	200	98	89	10.0	98.0%	89.0%	9.63%	44-130 <40
Aroclor 1260	168	153	200	200	84	77	9.0	84.0%	76.5%	9.35%	52-127 <40

LCS Calc. Recovery = Calc.Amt * 100 / Spike Added

Client: Integral
Project Name: Terminal 117
Project No. 22127-2

Reviewer: MCS
Date: 10/22/08
SDG: K08080* *=15, 28, 40, 41, 43, 92, 96, 98
K0808138

LABORATORY DUPLICATE RECALCULATION CHECK

RPD Control Limit: 50% (sediments)

Total Solids by 160.3M

SDG	Parent Sample ID	Sample Result (%)	Duplicate Result (%)	Reported RPD	Calculated RPD
K0808015	SPD0128	82.8	82.6	<1%	0.2%
K0808028	SPD0084	90.2	90.6	<1%	0.4%
K0808040	SPD0167	91.7	91.3	<1%	0.4%
K0808041	SPD0155	37.4	34.5	8.0%	8.1%
K0808092	SPD0180	80.1	79.2	1.0%	1.1%
K0808098	SPD0199	92.8	92.5	<1%	0.3%
K0808138	SPD0228	94	93.5	<1%	0.5%

Calculated RPD = | (duplicate - parent)/(average of duplicate and parent) |

Attachment 1. Data Validation Report for Tier 1 Data, EcoChem 2008

EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

TERMINAL 117

Prepared for:

Integral Consulting
1201 Cornwall Avenue, Suite 208
Bellingham, Washington 98225

Prepared by:

EcoChem, Inc.
710 Second Avenue, Suite 660
Seattle, Washington 98104

EcoChem Project: C22127-1

October 14, 2008

Approved for Release:

Christine L. Ransom
Senior Project Chemist
EcoChem, INC.

BASIS OF DATA EVALUATION

The data were validated using guidance and quality control (QC) criteria documented in the analytical methods, the *Quality Assurance Project Plan (QAPP) Investigation of Potential PCDD/PCDF Contamination in Soil: City of Seattle Streets and Residential Yards T-117 Early Action Area, Seattle, Washington* (Aug. 14, 2008), *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA Sept 2005), *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review* (USEPA Aug 2002), and *National Functional Guidelines for Organic Data Review* (USEPA 1999).

Samples were analyzed for the following parameters and were reviewed by the listed chemists:

Test	Method	Primary	Secondary
Dioxins/Furans	EPA 1613B	Melissa Swanson	Mark Brindle
Polychlorinated Biphenyls (PCB) Aroclors	SW8082	Melissa Swanson	Mark Brindle
Total Solids	160.3	Melissa Swanson	Mark Brindle

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and methods.

Data qualifier definitions, reason codes, and validation criteria are included as **Appendix A**. A summary table of all qualified data is provided in **Appendix B**. Data validation worksheets are included in **Appendix C**.

References

1. *Quality Assurance Project Plan (QAPP) Investigation of Potential PCDD/PCDF Contamination in Soil: City of Seattle Streets and Residential Yards T-117 Early Action Area, Seattle, Washington* (Aug. 14, 2008)

2. *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA Sept 2005)

3. *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review* (USEPA Aug 2002)

4. *National Functional Guidelines for Organic Data Review* (USEPA 1999)

5. *EPA Region 10 SOP for the Validation of Polychlorinated Dibenzodioxin (PCDD) and Polychlorinated Dibenzofuran (PCDF) Data* (Dec 2002)

6. *EPA Method 1613B Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS* (Oct 1994)

7. *EPA SW846 Method 8082 Polychlorinated Biphenyls (PCBs) by gas Chromatography*

Sample Index
Integral
Terminal 117

SDG	Sample ID	Lab ID	Dioxins	PCB	Total Solids
E0800855	SPD0239	E0800855-001	✓		
K0807836	SPD0106	K0807836-015	✓		✓
K0807836	SPD0114	K0807836-016	✓		✓
K0807873	SPD0015	K0807873-001	✓	✓	✓
K0807873	SPD0020	K0807873-002	✓	✓	✓
K0807873	SPD0024	K0807873-003	✓	✓	✓
K0807873	SPD0027	K0807873-004	✓	✓	✓
K0807873	SPD0030	K0807873-005	✓	✓	✓
K0807873	SPD0033	K0807873-006	✓	✓	✓
K0807873	SPD0002	K0807873-008	✓	✓	✓
K0807873	SPD0036	K0807873-009	✓	✓	✓
K0807873	SPD0040	K0807873-010	✓	✓	✓
K0807873	SPD0043	K0807873-011	✓	✓	✓
K0807873	SPD0049	K0807873-012	✓	✓	✓
K0807873	SPD0046	K0807873-013	✓	✓	✓
K0807873	SPD0054	K0807873-014	✓	✓	✓
K0807873	SPD0056	K0807873-015	✓	✓	✓
K0807873	SPD0059	K0807873-016	✓	✓	✓
K0807873	SPD0066	K0807873-017	✓	✓	✓
K0807873	SPD0064	K0807873-018	✓	✓	✓
K0807873	SPD0077	K0807873-019	✓		✓
K0807873	SPD0086	K0807873-020	✓		✓
K0807873	SPD0164	K0807873-022	✓		✓
K0807873	SPD0094	K0807873-024	✓		✓
K0807873	SPD0143	K0807873-025	✓		✓
K0807873	SPD0184	K0807873-026	✓		✓
K0807873	SPD0186	K0807873-027	✓		✓
K0807873	SPD0212	K0807873-028	✓		✓
K0807873	SPD0194	K0807873-029	✓		✓
K0807873	SPD0204	K0807873-030	✓		✓
K0807873	SPD0145	K0807873-031	✓		✓
K0807873	SPD0154	K0807873-032	✓		✓
K0807873	SPD0155	K0807873-033	✓		✓
K0807873	SPD0156	K0807873-034	✓		✓
K0807873	SPD0055	K0807873-035	✓	✓	✓
K0807873	SPD0136	K0807873-036	✓		✓
K0807873	SPD0138	K0807873-037	✓		✓
K0807873	SPD0132	K0807873-038	✓		✓
K0807873	SPD0220	K0807873-039	✓		✓
K0807873	SPD0229	K0807873-040	✓		✓

DATA VALIDATION REPORT
Terminal 117
Dioxin/Furan Compounds by EPA 1613B

This report documents the review of analytical data from the analyses of soil, sediment, and filter samples and the associated laboratory and field quality control (QC) samples. Columbia Analytical Services, Houston, Texas, analyzed the samples. Please see the **Sample Index** for a complete list of samples for which data were reviewed.

SDG	Number of Samples	Validation Level
E0800855	1 Filter	Screening
K0807873	2 Filter, 2 Sediment, & 33 Soil	Full
K0807836	2 Soil	Full

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data package. Laboratory QC results were also verified (10%). The following errors were noted:

SDG K0807873: For Sample SPD0220, the values for the analytes reported from the 50x dilution were incorrect in the EDD. This was verified with the laboratory and corrections to the EDD were made by EcoChem. No further action was taken.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Holding Times and Sample Receipt	2	Laboratory Spike Sample/Laboratory Spike Sample Duplicate (LCS/LCSD)
	Initial Calibration (ICAL)	1	Field Duplicates
	Continuing Calibration (CCAL)	1	Laboratory Duplicates
2	Laboratory Blanks	2	Compound Identification
1	Field Blanks	1	Reporting Limits
2	Labeled Compounds	1	Calculation Verification (Full validation only)
1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Holding Times and Sample Receipt

The laboratory received many of the sample coolers with temperatures outside the advisory control limits of 2° to 6°C. The temperature outliers ranged from -0.9º to 7.9°C. These temperature outliers did not impact data quality and no qualifiers were required.

Laboratory Blanks

To assess the impact of each blank contaminant on the reported sample results, an action level is established at five times the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). If the result is also less than the reporting limit, then the result is elevated to the reporting limit. No action is taken if the sample result is greater than the action level, or for non-detected results.

Laboratory (method) blanks were analyzed at the appropriate frequency. Various target analytes were detected in the method blanks. The detected analytes, concentrations, associated samples, and action levels are documented in the data validation worksheets. However, only the following analytes required qualification in one or more samples:

SDG E0800855: 1,2,3,4,6,7,8-HpCDF (1 result) and OCDD (1 result)

SDG K0807873: 1,2,3,4,6,7,8-HpCDF (2 results), OCDD (3 results), OCDF (4 results), total heptachlorodioxins (1 result), total heptachlorofurans (1 result)

Field Blanks

Method blanks were first used to evaluate the filter wipes. After qualification for method blank contamination, several positive results remained. The filter wipes and associated outliers are noted below. All associated field sample results were either not-detected or were more than 10 times the highest possible contribution from the field blanks. No qualification of data was necessary based on potential field contamination.

SDG E0800855: SPD0239: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,7,8-HxCDF, OCDF

SDG K0807873: SPD0002: 1,2,3,6,7,8-HxCDD, 1,2,3,7,8,9-HxCDD, 1,2,3,4,6,7,8-HpCDD, OCDD, 1,2,3,7,8-PeCDF, 2,3,4,7,8-PeCDF, 2,3,4,6,7,8-HxCDF, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, OCDF

SPD0064: 1,2,3,4,6,7,8-HpCDD, OCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,4,6,7,8-HpCDF, OCDF

Labeled Compounds

SDG K0807873: The percent recovery (%R) values for $^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD, $^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF, $^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF, and $^{13}C_{12}$-OCDD were less than the lower control limit in Sample SPD0030. The %R values for $^{13}C_{12}$-OCDD were less than the lower control limit in Samples SPD0046, SPD0054, SPD0059, SPD0154, and SPD0155 and the %R value for $^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF was less than the lower control limit. Results and reporting limits for the associated congeners in these samples were estimated (J/UJ-13).

Matrix Spike/Matrix Spike Duplicate

No matrix spike/matrix spike duplicate (MS/MSD) sets were performed. Accuracy and precision were assessed using labeled compounds and laboratory control sample/laboratory control sample duplicates (LCS/LCSD).

Laboratory Control Sample/Laboratory Control Sample Duplicate

SDG K0807873: The LCS/LCSD %R values for 1,2,3,7,8,9-HxCDF and 1,2,3,4,7,8,9-HpCDF were less than the lower control limit for batch 72836. These results for these congeners were estimated (J/UJ-10) in the six associated samples.

Field Duplicates

The following acceptance criteria were used to evaluate field precision: the relative percent difference (RPD) control limit is 50% for results greater than five times the reporting limit (RL). For results less than five times the RL, the absolute difference between the sample and replicate must be less than two times the RL. No data were qualified based on field replicate precision outliers. Users of the data should consider the impact of field precision outliers on the reported results.

SDG K0807873: Two pair of field replicates were submitted, Samples SPD0055 & SPD0056 and SPD0154 & SPD0155. For samples SPD0055 & SPD0056, the RPD values for 19 of 25 congeners were outside control limits. For samples SPD00154 & SPD00155 the RPD values for 1,2,3,4,6,7,8-HxCDD, OCDD, and total heptachlorodioxins were outside control limits. Outliers are documented in the data validation worksheet.

Laboratory Duplicates

No laboratory duplicate analyses were performed. Precision was assessed using the LCS/LCSD analyses.

SDG K0807836: An LCSD was not analyzed with the samples in this SDG. Laboratory precision could not be evaluated.

Compound Identification

The laboratory assigned K-flags to results when a peak was detected but did not meet ion ratio quantitation criteria. The reported values cannot be considered as positive identification for these analytes. These results were considered potential false positives or "estimated maximum possible concentrations" and were qualified as not detected (U-22) at the reported values. Laboratory blank values with K flags were considered as non-detects.

All results for 2,3,7,8-TCDF were confirmed on a DB-225 column as required by the method. Although the 2,3,7,8-TCDF results from both columns were reported in the raw data, only the results from the DB-225 column were reported in the EDD.

The laboratory used an "E" flag to indicate when reported results (usually OCDD or OCDF) were at concentrations greater than the linear range of the instrument calibration. These samples were usually not reanalyzed at dilutions. Since results greater than the linear range could have a potential bias, all "E" flagged results were estimated (J-20).

SDG K0807836: 1,2,3,7,8,9-HxCDF in Samples SPD0106 & SPD0114 were "E" flagged and qualified as estimated (J-20).

SDG K0807873: Fifty-nine results were qualified as non-detected due to ion abundance outliers. Nineteen values over 16 samples were "E" flagged and qualified as estimated (J-20). Qualified data are documented in the Qualified Data Summary Table in **Appendix B** and in the data validation worksheet.

Reporting Limits

The laboratory did not meet the QAPP specified method reporting limits (MRL). Also, most method detection limits (MDL) were slightly higher than those listed in the QAPP. The MRLs used by the laboratory were those specified in the analytical method. All laboratory MDLs were less than the QAPP MRLs, therefore no action was taken on this basis.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were noted.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the labeled compound, and LCS/LCSD %R values, with the previously noted exceptions. Precision was acceptable as demonstrated by the RPD values for the LCS/LCSD and field duplicate analyses, with the exceptions previously noted.

Data were estimated due to results exceeding the linear range of the calibration, labeled compound recovery outliers, and LCS/LCSD recovery outliers. Data were qualified as not detected due to laboratory blank contamination and ion ratio criteria outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117
PCB Aroclors by Method SW8082

This report documents the review of analytical data from the analyses of soil and filter samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Columbia Analytical Services, Inc., Kelso, Washington. Please see the **Sample Index** for a complete list of samples for which data were reviewed.

SDG	Number of Samples	Validation Level
K0807873	16 Soil & 2 Filter	Full

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data package. Laboratory QC results were also verified (10%). No errors were found.

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

2	Holding Times and Sample Receipt	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
	Instrument Performance Check		Laboratory Control Samples (LCS)
	Initial Calibration (ICAL)	1	Field Duplicates
	Continuing Calibration (CCAL)	1	Reporting Limits
	Laboratory Blanks		Compound Identification
1	Field Blanks	1	Sample Preparation
2	Surrogate Compounds	1	Calculation Verification (Full validation only)

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Holding Times and Sample Receipt

The laboratory received many of the sample coolers with temperatures outside the advisory control limits of 2° to 6°C. The temperature outliers ranged from -0.9º to 7.9°C. These temperature outliers did not impact data quality and no qualifiers were required.

Sample SPD0002 was extracted 17 days after collection. There were no positive results for this sample; reporting limits were estimated (UJ-1).

Field Blanks

Two filter wipe samples, SPD0002 and SPD0064, were submitted. There were no Aroclors detected in these samples.

Surrogate Compounds

Only one surrogate compound, decachlorobiphenyl, was added to the samples. No action was taken on this basis.

For Sample SPD0059, the percent recovery (%R) value for decachlorobiphenyl (35%) was less than the lower control limit of 38%. Positive results and reporting limits were estimated (J/UJ-13) to indicate a potential low bias.

The %R values were outside control limits for three samples which had been analyzed at 10x, 100x, or 1,000x dilution factors and for the matrix spike (MS) sample. No qualifiers were applied to these samples.

Matrix Spike/Matrix Spike Duplicates

The %R values for Aroclor 1260 were outside control limits in the matrix spike/matrix spike duplicates (MS/MSD) performed on Sample SPD0033. The Aroclor 1260 concentration in the parent sample was greater than four times the concentration spiked, therefore no qualification of data was necessary.

Field Duplicates

Samples SPD0055 and SPD0056 were identified as field duplicates. The relative percent difference (RPD) value for Aroclor 1260 (199%) was greater than the control limit of 50%. No qualifiers were assigned based on the RPD outlier, however data users should take field precision into account when interpreting sample data.

Reporting Limits

The laboratory elevated several reporting limits (RL) due to matrix interferences. In some cases the elevated RL was greater than the QAPP specified method reporting limit (MRL).

Eight samples were analyzed at dilution due to high concentrations of Aroclor 1260. Reporting limits were elevated accordingly.

Sample Preparation

The QAPP specified that extracts should go through a silica gel clean-up. The laboratory used a florisil clean-up instead. This is an acceptable clean-up option as specified by the method The sample chromatograms did not indicate any significant interferences, therefore the florisil clean-up was adequate. The change in clean-up methods did not impact data quality.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

IV. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicate (LCS/LCSD), and MS/MSD %R values, with the exceptions noted above. Precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values, with the exception previously noted.

Data were estimated due to surrogate %R outliers and an exceeded holding time.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Terminal 117
General Chemistry Parameters

This report documents the review of analytical data from the analyses of soil, sediment and filter samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Columbia Analytical Services, Inc., Kelso, Washington. Please see the **Sample Index** for a complete list of samples for which data were reviewed.

SDG	Number of Samples	Validation Level
K0807873	2 Sediment & 35 Soil	Full
K0807836	2 Soil	Full

The analytical tests that were performed are summarized below:

Parameter	Method
Total Solids	160.3

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. EDD TO HARDCOPY VERIFICATION

A complete (100%) verification of the electronic data deliverable (EDD) results was performed by comparison to the hardcopy laboratory data package. Laboratory QC results were also verified (10%).

III. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1 Holding Times and Sample Preservation
  Method Blanks
  Laboratory Replicates
1 Field Duplicates
1 Calculation Verification

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[1] ***Quality control results are discussed below, but no data were qualified***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Holding Times and Sample Preservation

The laboratory received many of the sample coolers with temperatures outside the advisory control limits of 2° to 6°C. The temperature outliers ranged from -0.9º to 7.9°C. These temperature outliers did not impact data quality and no qualifiers were required.

Field Duplicates

SDG K0808763: Two sets of field duplicates were submitted: SPD0055 & SPD0056 and SPD0154 & SPD0155. The relative percent difference (RPD) values were less than the control limit of 50%. Field precision was acceptable.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

IV. OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. The laboratory replicate and field duplicate RPD and %RSD values indicated acceptable precision.

All data, as reported, are acceptable for use.

EcoChem, INC.
Environmental Data Quality

APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
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.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

1	Holding Time/Sample Preservation
2	Chromatographic pattern in sample does not match pattern of calibration standard.
3	Compound Confirmation
4	Tentatively Identified Compound (TIC) (associated with NJ only)
5A	Calibration (initial)
5B	Calibration (continuing)
6	Field Blank Contamination
7	Lab Blank Contamination (e.g., method blank, instrument, etc.)
8	Matrix Spike(MS & MSD) Recoveries
9	Precision (all replicates)
10	Laboratory Control Sample Recoveries
11	A more appropriate result is reported (associated with “R” and “DNR” only)
12	Reference Material
13	Surrogate Spike Recoveries (a.k.a., labeled compounds & recovery standards)
14	Other (define in validation report)
15	GFAA Post Digestion Spike Recoveries
16	ICP Serial Dilution % Difference
17	ICP Interference Check Standard Recovery
18	Trip Blank Contamination
19	Internal Standard Performance (e.g., area, retention time, recovery)
20	Linear Range Exceeded
21	Potential False Positives
22	Elevated Detection Limit Due to Interference (i.e., laboratory, chemical and/or matrix)

EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids < 4°C Tissues <-10°C	EcoChem PJ, see TM-05	1
Holding Time	Extraction - Water: 30 days from collection *Note:* Under CWA, SDWA, and RCRA the HT for H2O is 7 days* Extraction - Soil: 30 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext > 30 days J(+)/UJ(-) if analysis > 40 Days EcoChem PJ, see TM-05	1
Mass Resolution	>=10,000 resolving power at m/z 304.9824 Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift	R(+/-) if not met	14
Window Defining Mix and Column Performance Mix	Window defining mixture/Isomer specificity std run before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) x = ht. of TCDD y = baseline to bottom of valley For all isomers eluting near 2378-TCDD/TCDF isomers (TCDD only for 8290)	J(+) if valley > 25%	5A (ICAL) 5B (CCAL
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD <35% for labeled compounds under 1613b)	J(+) natives if %RSD > 20%	5A
	Abs. RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 >15 min on DB-225	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Continuing Calibration	Analyzed at the start and end of each 12 hour shift. %D+/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in Table 6, Method 1613B) (If %Ds in the closing CCAL are w/in 25%/35% the avg RF from the two CCAL may be used to calculate samples per Method 8290, Section 8.3.2.4)	Do not qualify labeled compounds. Narrate in report for labeled compound %D outliers. For native compound %D outliers: 8290: J(+)/UJ(-) if %D = 20% - 75% J(+)/R(-) if %D > 75% 1613: J(+)/UJ(-) if %D is outside Table 6 limits J(+)/R(-) if %D is +/- 75% of Table 6 limit	5B
	Abs. RT of $^{13}C_{12}$-1234-TCDD and $^{13}C12$-123789-HxCDD +/- 15 sec of ICAL.	EcoChem PJ, see ICAL section of TM-05	
	RRT of all other compounds must meet Table 2 of 1613B.	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7
Field Blanks (Not Required)	No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	Concentrations must meet limits in Table 6, Method 1613B or lab limits.	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (recovery)	May not analyze MS/MSD %R should meet lab limits.	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	May not analyze MS/MSD RPD < 20%	J(+) in parent sample if RPD > CL	9

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EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Lab Duplicate	RPD <25% if present.	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	*Method 8290:* %R = 40% - 135% in all samples --- *Method 1613B:* %R must meet limits specified in Table 7, Method 1613	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 IA ratios meet limits in Table 9 of 1613B or Table 8 of 8290 RRTs w/in limits in Table 2 of 1613B	If RT criteria not met, use PJ (see TM-05) If S/N criteria not met, J(+). if unlabelled ion abundance not met, change to EMPC If labelled ion abundance not met, J(+).	21
EMPC (estimated maximum possible concentration)	If quantitation idenfication criteria are not met, laboratory should report an EMPC value.	If laboratory correctly reported an EMPC value, qualify with U to indicate that the value is a detection limit.	14
Interferences	PCDF interferences from PCDPE	If both detected, change PCDF result to EMPC	14
Second Column Confirmation	All 2378-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC specs in this table must be met for the confirmation analysis.	Report lower of the two values. If not performed use PJ (see TM-05).	3
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used	11

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EcoChem Validation Guidelines for Pesticides/PCBs by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Method 8081/8082)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C ±2°	J(+)/UJ(-) if greater than 6 deg. C (EcoChem PJ)	1
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext/analyzed > HT J(+)/R(-) if ext/analyzed > 3X HT (EcoChem PJ)	1
Resolution Check	Beginning of ICAL Sequence Within RTW Resolution >90%	Narrate (Use Professional Judgement to qualify)	14
Instrument Performance (Breakdown)	DDT Breakdown: < 20% Endrin Breakdown: <20% Combined Breakdown: <30% Compounds within RTW	J(+) DDT NJ(+) DDD and/or DDE R(-) DDT - If (+) for either DDE or DDD J(+) Endrin NJ(+) EK and/or EA R(-) Endrin - If (+) for either EK or EA	5A
Retention Times	Surrogates: TCX (+/- 0.05); DCB (+/- 0.10) Target compounds: elute before heptachlor epoxide (+/- 0.05) elute after heptachlor epoxide (+/- 0.07)	NJ(+)/R(-) results for analytes with RT shifts For full DV, use PJ based on examination of raw data	5B
Initial Calibration	Pesticides: Low=CRQL, Mid=4X, High=16X Multiresponse - one point Calibration %RSD<20% %RSD<30% for surr; two comp. may exceed if <30% Resolution in Mix A and Mix B >90%	J(+)/UJ(-)	5A
Continuing Calibration	Alternating PEM standard and INDA/INDB standards every 12 hours (each preceeded by an inst. Blank) %D < 25% Resolution >90% in IND mixes; 100% for PEM	J(+)/UJ(-) J(+)R(-) if %D > 90% PJ for resolution	5B
Method Blank	One per matrix per batch No results > CRQL	U(+) if sample result is < CRQL and < 5X rule (raise sample value to CRQL) U(+) if sample result is > or equal to CRQL and < 5X rule (at reported sample value)	7
Instrument Blanks	Analyzed at the beginning of every 12 hour sequence No analyte > 1/2 CRQL	Same as Method Blank	7
Field Blanks	Not addressed by NFG No results > CRQL	Apply 5X rule; U(+) < action level	6

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EcoChem Validation Guidelines for Pesticides/PCBs by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Method 8081/8082)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS/MSD (recovery)	One set per matrix per batch Method Acceptance Criteria	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	One set per matrix per batch Method Acceptance Criteria	J(+) in parent sample if RPD > CL	9
LCS	One per SDG Method Acceptance Criteria	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J(+)/UJ(-) assoc. cmpd. in all samples	9
Surrogates	TCX and DCB added to every sample %R = 30-150%	J(+)/UJ(-) if both %R = 10 - 60% J(+) if both >150% J(+)/R(-) if any %R <10%	13
Quantitation/ Identification	Quantitated using ICAL calibration factor (CF) RPD between columns <40%	J(+) if RPD = 40 - 60% NJ(+) if RPD >60% EcoChem PJ - See TM-08	3
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	11
Sample Clean-up	GPC required for soil samples Florisil required for all samples Sulfur is optional Clean-up standard check %R within CLP limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL	14
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate (Qualifiy if required by project QAPP)	9

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EcoChem Validation Guidelines for Conventional Chemistry Analysis (Based on EPA Standard Methods)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature and Preservation	Cooler Temperature 4°C ±2°C Preservation: Method Specific	Use Professional Judgment to qualify based to qualify for coole temp outliers J(+)/UJ(-) if preservation requirements not met	1
Holding Time	Method Specific	Professional Judgment J(+)/UJ(-) if holding time exceeded J(+)/R(-) if HT exceeded by > 3X	1
Initial Calibration	Method specific r>0.995	Use professional judgment J(+)/UJ(-) for r < 0.995	5A
Initial Calibration Verification (ICV)	Where applicable to method Independent source analyzed immediately after calibration %R method specific, usually 90% - 110%	R(+/-) if %R significantly < LCL J(+)/UJ(-) if %R < LCL J(+) if %R > UCL R(+) if %R significantly > UCL	5A
Continuing Cal Verification (CCV)	Where applicable to method Every ten samples, immed. following ICV/ICB and end of run %R method specific, usually 90% - 110%	R(+/-) if %R significantly < LCL J(+)/UJ(-) if %R < LCL J(+) if %R > UCL R(+) if %R significantly > UCL	5B

Initial and Continuing Cal Blanks (ICB/CCB)	Where applicable to method
	After each ICV and CCV every ten samples and end of run
	| blank| < MDL
		Action level is 5x absolute value of blank conc.
		For (+) blanks, U(+) results < action level
		For (-) blanks, J(+)/UJ(-) results < action level
		refer to TM-02 for additional details
			7

Method Blank	One per matrix per batch
	(not to exceed 20 samples)
	blank < MDL
		Action level is 5x absolute value of blank conc.
		For (+) blk value, U(+) results < action level
		For (-) blk value, J(+)/UJ(-) results < action level
			7

Laboratory Control Sample	Waters: One per matrix per batch %R (80-120%)	R(+/-) if %R < 50% J(+)/UJ(-) if %R = 50-79% J(+) if %R >120%	10
	Soils: One per matrix per batch Result within manufacturer's certified acceptance range	J(+)/UJ(-) if < LCL, J(+) if > UCL	10
Matrix Spike	One per matrix per batch; 5% frequency 75-125% for samples less than 4 x spike level	J(+) if %R > 125% or < 75% UJ(-) if %R = 30-74% R(+/-) results < IDL if %R < 30%	8
Laboratory Duplicate	One per matrix per batch RPD <20% for samples > 5x RL Diff <RL for samples >RL and <5 x RL (may use RPD < 35%, Diff < 2X RL for solids)	J(+)/UJ(-) if RPD > 20% or diff > RL all samples in batch	9

EcoChem Validation Guidelines for Conventional Chemistry Analysis (Based on EPA Standard Methods)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Field Blank	blank < MDL	Action level is 5x blank conc. U(+) sample values < action level in associated field samples only	6
Field Duplicate	For results > 5X RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff<RL Solid: Diff < 2X RL	J(+)/UJ(-) in parent samples only	9

EcoChem, INC.
Environmental Data Quality

APPENDIX B
QUALIFIED DATA SUMMARY TABLE

QUALIFIED DATA SUMMARY TABLE
Integral
Terminal 117

SDG	Sample ID	Lab ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
E0800855	SPD0239	E0800855-001	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.76	ng/kg	BJ	U	7
E0800855	SPD0239	E0800855-001	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran	0.0937	ng/kg	JK	U	22
E0800855	SPD0239	E0800855-001	E1613B	Octachlorodibenzo-p-dioxin	20.1	ng/kg	BJ	U	7
K0807836	SPD0106	K0807836-015	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.0778	ng/kg	JK	U	22
K0807836	SPD0114	K0807836-016	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.0963	ng/kg	JK	U	22
K0807873	SPD0015	K0807873-001	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran	47.6	ng/kg		J	10
K0807873	SPD0015	K0807873-001	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.472	ng/kg	JK	UJ	10,22
K0807873	SPD0020	K0807873-002	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran	19.9	ng/kg		J	10
K0807873	SPD0020	K0807873-002	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.565	ng/kg	J	J	10
K0807873	SPD0024	K0807873-003	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran	3.16	ng/kg		J	10
K0807873	SPD0024	K0807873-003	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	7.03	ng/kg		J	10
K0807873	SPD0024	K0807873-003	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.13	ng/kg	JK	UJ	10,22
K0807873	SPD0024	K0807873-003	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	1.25	ng/kg	JK	U	22
K0807873	SPD0024	K0807873-003	E1613B	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.452	ng/kg	K	U	22
K0807873	SPD0024	K0807873-003	E1613B	Octachlorodibenzo-p-dioxin	1540	ng/kg	BE	J	20
K0807873	SPD0027	K0807873-004	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran	3.49	ng/kg		J	10
K0807873	SPD0027	K0807873-004	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.118	ng/kg	J	J	10
K0807873	SPD0030	K0807873-005	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran	228	ng/kg		J	13
K0807873	SPD0030	K0807873-005	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	111	ng/kg		J	13
K0807873	SPD0030	K0807873-005	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran	2.53	ng/kg		J	10,13
K0807873	SPD0030	K0807873-005	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran		ng/kg	U	UJ	10
K0807873	SPD0030	K0807873-005	E1613B	2,3,7,8-Tetrachlorodibenzofuran	2.59	ng/kg	K	U	22
K0807873	SPD0030	K0807873-005	E1613B	Octachlorodibenzo-p-dioxin	909	ng/kg		J	13
K0807873	SPD0033	K0807873-006	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran	1.77	ng/kg		J	10
K0807873	SPD0033	K0807873-006	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran		ng/kg	U	UJ	10
K0807873	SPD0002	K0807873-008	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	0.822	ng/kg	JK	U	22
K0807873	SPD0002	K0807873-008	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran	0.315	ng/kg	JK	U	22
K0807873	SPD0002	K0807873-008	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.363	ng/kg	JK	U	22
K0807873	SPD0036	K0807873-009	E1613B	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.0653	ng/kg	JK	U	22
K0807873	SPD0036	K0807873-009	E1613B	Octachlorodibenzo-p-dioxin	14.6	ng/kg	B	U	7
K0807873	SPD0040	K0807873-010	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.111	ng/kg	BJ	U	7
K0807873	SPD0040	K0807873-010	E1613B	Heptachlorodibenzofuran	0.233	ng/kg	J	U	7
K0807873	SPD0040	K0807873-010	E1613B	Heptachlorodibenzo-p-dioxin	0.901	ng/kg	J	U	7
K0807873	SPD0040	K0807873-010	E1613B	Octachlorodibenzofuran	0.182	ng/kg	BJ	U	7
K0807873	SPD0040	K0807873-010	E1613B	Octachlorodibenzo-p-dioxin	4.66	ng/kg	B	U	7
K0807873	SPD0043	K0807873-011	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	2.72	ng/kg	K	U	22
K0807873	SPD0043	K0807873-011	E1613B	Octachlorodibenzofuran	11.6	ng/kg	B	U	7
K0807873	SPD0049	K0807873-012	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	0.0476	ng/kg	JK	U	22
K0807873	SPD0049	K0807873-012	E1613B	Octachlorodibenzofuran	1.76	ng/kg	BJ	U	7
K0807873	SPD0049	K0807873-012	E1613B	Octachlorodibenzo-p-dioxin	17.3	ng/kg	B	U	7
K0807873	SPD0046	K0807873-013	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.156	ng/kg	JK	U	22
K0807873	SPD0046	K0807873-013	E1613B	Octachlorodibenzo-p-dioxin	2830	ng/kg	BE	J	13,20
K0807873	SPD0054	K0807873-014	E1613B	Octachlorodibenzo-p-dioxin	2190	ng/kg	BE	J	13,20
K0807873	SPD0056	K0807873-015	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	183	ng/kg	K	U	22
K0807873	SPD0056	K0807873-015	E1613B	Octachlorodibenzo-p-dioxin	2360	ng/kg	BE	J	13,20
K0807873	SPD0059	K0807873-016	E1613B	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.18	ng/kg	JK	U	22

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SDG	Sample ID	Lab ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
K0807873	SPD0059	K0807873-016	E1613B	Octachlorodibenzofuran	19.7	ng/kg	B	U	7
K0807873	SPD0059	K0807873-016	E1613B	Octachlorodibenzo-p-dioxin	392	ng/kg	B	J	13
K0807873	SPD0066	K0807873-017	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	13.3	ng/kg	K	U	22
K0807873	SPD0077	K0807873-019	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	10.9	ng/kg	K	U	22
K0807873	SPD0077	K0807873-019	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	2.76	ng/kg	K	U	22
K0807873	SPD0077	K0807873-019	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	7.53	ng/kg	K	U	22
K0807873	SPD0077	K0807873-019	E1613B	Octachlorodibenzo-p-dioxin	1770	ng/kg	BE	J	20
K0807873	SPD0086	K0807873-020	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	3.05	ng/kg	K	U	22
K0807873	SPD0086	K0807873-020	E1613B	Octachlorodibenzo-p-dioxin	2730	ng/kg	BE	J	20
K0807873	SPD0164	K0807873-022	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	14.5	ng/kg	K	U	22
K0807873	SPD0164	K0807873-022	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	3.86	ng/kg	K	U	22
K0807873	SPD0164	K0807873-022	E1613B	2,3,4,7,8-Pentachlorodibenzofuran	7.38	ng/kg	K	U	22
K0807873	SPD0164	K0807873-022	E1613B	Octachlorodibenzofuran	138	ng/kg	BK	U	22
K0807873	SPD0094	K0807873-024	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	851	ng/kg	BE	J	20
K0807873	SPD0094	K0807873-024	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	2.48	ng/kg	K	U	22
K0807873	SPD0094	K0807873-024	E1613B	Octachlorodibenzofuran	1900	ng/kg	BE	J	20
K0807873	SPD0094	K0807873-024	E1613B	Octachlorodibenzo-p-dioxin	12300	ng/kg	BE	J	20
K0807873	SPD0143	K0807873-025	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran	14.4	ng/kg	K	U	22
K0807873	SPD0143	K0807873-025	E1613B	Octachlorodibenzo-p-dioxin	1700	ng/kg	BE	J	20
K0807873	SPD0184	K0807873-026	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	4.91	ng/kg	K	U	22
K0807873	SPD0184	K0807873-026	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.086	ng/kg	JK	U	22
K0807873	SPD0184	K0807873-026	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	1.98	ng/kg	K	U	22
K0807873	SPD0184	K0807873-026	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	4	ng/kg	K	U	22
K0807873	SPD0184	K0807873-026	E1613B	2,3,4,7,8-Pentachlorodibenzofuran	3.49	ng/kg	K	U	22
K0807873	SPD0186	K0807873-027	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	10.8	ng/kg	K	U	22
K0807873	SPD0186	K0807873-027	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	5.06	ng/kg	K	U	22
K0807873	SPD0186	K0807873-027	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	8.79	ng/kg	K	U	22
K0807873	SPD0186	K0807873-027	E1613B	2,3,4,7,8-Pentachlorodibenzofuran	8.3	ng/kg	K	U	22
K0807873	SPD0212	K0807873-028	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.0661	ng/kg	JK	U	22
K0807873	SPD0212	K0807873-028	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	1.28	ng/kg	JK	U	22
K0807873	SPD0212	K0807873-028	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	5.6	ng/kg	K	U	22
K0807873	SPD0194	K0807873-029	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	12.2	ng/kg	K	U	22
K0807873	SPD0194	K0807873-029	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	3.3	ng/kg	K	U	22
K0807873	SPD0194	K0807873-029	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	8.78	ng/kg	K	U	22
K0807873	SPD0194	K0807873-029	E1613B	Octachlorodibenzo-p-dioxin	1560	ng/kg	BE	J	20
K0807873	SPD0204	K0807873-030	E1613B	Octachlorodibenzo-p-dioxin	2040	ng/kg	BE	J	20
K0807873	SPD0145	K0807873-031	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	13.8	ng/kg	K	U	22
K0807873	SPD0145	K0807873-031	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	3.9	ng/kg	K	U	22
K0807873	SPD0145	K0807873-031	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	16.6	ng/kg	K	U	22
K0807873	SPD0145	K0807873-031	E1613B	Octachlorodibenzo-p-dioxin	2450	ng/kg	BE	J	20
K0807873	SPD0154	K0807873-032	E1613B	Octachlorodibenzo-p-dioxin	6060	ng/kg	BE	J	20
K0807873	SPD0155	K0807873-033	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran	104	ng/kg	B	J	13
K0807873	SPD0155	K0807873-033	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	7.9	ng/kg	K	U	22
K0807873	SPD0155	K0807873-033	E1613B	Octachlorodibenzo-p-dioxin	13700	ng/kg	BE	J	20
K0807873	SPD0156	K0807873-034	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	3.04	ng/kg	K	U	22
K0807873	SPD0156	K0807873-034	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	7.84	ng/kg	K	U	22

QUALIFIED DATA SUMMARY TABLE
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SDG	Sample ID	Lab ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
K0807873	SPD0156	K0807873-034	E1613B	2,3,4,7,8-Pentachlorodibenzofuran	5.37	ng/kg	K	U	22
K0807873	SPD0156	K0807873-034	E1613B	Octachlorodibenzo-p-dioxin	1510	ng/kg	BE	J	20
K0807873	SPD0055	K0807873-035	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.874	ng/kg	BJ	U	7
K0807873	SPD0055	K0807873-035	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.334	ng/kg	JK	U	22
K0807873	SPD0055	K0807873-035	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	0.0266	ng/kg	JK	U	22
K0807873	SPD0055	K0807873-035	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.0673	ng/kg	JK	U	22
K0807873	SPD0138	K0807873-037	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.128	ng/kg	JK	U	22
K0807873	SPD0138	K0807873-037	E1613B	Octachlorodibenzo-p-dioxin	2270	ng/kg	BE	J	20
K0807873	SPD0132	K0807873-038	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	4.44	ng/kg	K	U	22
K0807873	SPD0132	K0807873-038	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran	0.0656	ng/kg	JK	U	22
K0807873	SPD0132	K0807873-038	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	1.53	ng/kg	JK	U	22
K0807873	SPD0220	K0807873-039	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	132	ng/kg	K	U	22
K0807873	SPD0220	K0807873-039	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	49.5	ng/kg	K	U	22
K0807873	SPD0220	K0807873-039	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	99.7	ng/kg	K	U	22
K0807873	SPD0220	K0807873-039	E1613B	Octachlorodibenzo-p-dioxin	175000	ng/kg	BE	J	20
K0807873	SPD0229	K0807873-040	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran	11	ng/kg	K	U	22
K0807873	SPD0229	K0807873-040	E1613B	1,2,3,7,8-Pentachlorodibenzofuran	2.67	ng/kg	K	U	22
K0807873	SPD0229	K0807873-040	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran	12.9	ng/kg	K	U	22
K0807873	SPD0229	K0807873-040	E1613B	Octachlorodibenzo-p-dioxin	1780	ng/kg	BE	J	20
K0807873	SPD0002	K0807873-008	SW8082	Aroclor 1016		ug/wipe	U	UJ	1
K0807873	SPD0002	K0807873-008	SW8082	Aroclor 1221		ug/wipe	U	UJ	1
K0807873	SPD0002	K0807873-008	SW8082	Aroclor 1232		ug/wipe	U	UJ	1
K0807873	SPD0002	K0807873-008	SW8082	Aroclor 1242		ug/wipe	U	UJ	1
K0807873	SPD0002	K0807873-008	SW8082	Aroclor 1248		ug/wipe	U	UJ	1
K0807873	SPD0002	K0807873-008	SW8082	Aroclor 1254		ug/wipe	U	UJ	1
K0807873	SPD0002	K0807873-008	SW8082	Aroclor 1260		ug/wipe	U	UJ	1
K0807873	SPD0059	K0807873-016	SW8082	Aroclor 1016		ug/kg	Ui	UJ	13
K0807873	SPD0059	K0807873-016	SW8082	Aroclor 1221		ug/kg	Ui	UJ	13
K0807873	SPD0059	K0807873-016	SW8082	Aroclor 1232		ug/kg	U	UJ	13
K0807873	SPD0059	K0807873-016	SW8082	Aroclor 1242		ug/kg	Ui	UJ	13
K0807873	SPD0059	K0807873-016	SW8082	Aroclor 1248	100	ug/kg		J	13
K0807873	SPD0059	K0807873-016	SW8082	Aroclor 1254		ug/kg	Ui	UJ	13
K0807873	SPD0059	K0807873-016	SW8082	Aroclor 1260	92	ug/kg		J	13

APPENDIX E

Results Tables

All sediment results (dw)

Location Name	Depth (cm)	Sample Type	Sample Name	Analyte Group	Metals	PCBs	PCBs	PCBs	PCBs	PCBs	PCBs
				Analyte	Mercury	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254
				Unit	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
				Sample Date							
98-G	0 – 6	N	T117-98-SG	8/29/2008	0.15	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.040
99-G	0 – 6	N	T117-99-SG	8/29/2008	0.07	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U	0.099 U
100-G	0 – 10	N	T117-100-SG	8/29/2008	na	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
101-G	0 – 10	N	T117-101-SG	8/29/2008	na	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.24 U
102-G	0 – 10	N	T117-102-SG	8/29/2008	na	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.24 U
103-G	0 – 10	N	T117-103-SG	8/29/2008	na	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
105-G	0 – 9	N	T117-105-SG	8/29/2008	na	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
106-G	0 – 9	N	T117-106-SG	8/29/2008	na	0.020 U	0.020 U	0.029 U	0.020 U	0.020 U	0.020 U
107-G	0 – 7	N	T117-107-SG	8/29/2008	na	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.058 U
108-G	0 – 8	N	T117-108-SG	8/29/2008	na	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
109-G	0 – 10	N	T117-109-SG	8/29/2008	na	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.025
109-G	0 – 10	FD	T117-120-SG	8/29/2008	na	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.031
110-G	0 – 10	N	T117-110-SG	8/29/2008	na	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
111-G	0 – 9	N	T117-111-SG	8/29/2008	na	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
113-G	0 – 10	N	T117-113-SG	8/29/2008	na	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
114-G	0 – 8	N	T117-114-SG	8/29/2008	na	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.032
115-G	0 – 7	N	T117-115-SG	8/29/2008	na	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.089 U
117-G	0 – 3	N	T117-117-SG	8/29/2008	na	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
119-G	0	RB	T117-117-SG	8/29/2008	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

FD = field duplicate
J = estimated value
N = normal sample
RB = rinsate blank (ug/L)
U = not detected at or above the value shown
na = not analyzed

All sediment results (dw), cont.

Location Name	Depth (cm)	Sample Type	Sample Name	Analyte Group	PCBs	PCBs	Pesticides	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	Aroclor-1260	Total PCBs	Dieldrin	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD
				Unit	mg/kg dw	mg/kg dw	mg/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date						
98-G	0 – 6	N	T117-98-SG	8/29/2008	0.078	0.118	0.0076 U	na	na	na
99-G	0 – 6	N	T117-99-SG	8/29/2008	0.28	0.28	0.0046 U	na	na	na
100-G	0 – 10	N	T117-100-SG	8/29/2008	0.059	0.059	na	0.722	1.61 J	2.01 J
101-G	0 – 10	N	T117-101-SG	8/29/2008	0.57	0.57	na	na	na	na
102-G	0 – 10	N	T117-102-SG	8/29/2008	0.57	0.57	na	0.392 J	2.50 U	1.67 J
103-G	0 – 10	N	T117-103-SG	8/29/2008	0.038	0.038	na	na	na	na
105-G	0 – 9	N	T117-105-SG	8/29/2008	0.020 U	0.020 U	na	na	na	na
106-G	0 – 9	N	T117-106-SG	8/29/2008	0.03	0.03	na	na	na	na
107-G	0 – 7	N	T117-107-SG	8/29/2008	0.12	0.12	na	0.480 U	0.452 J	0.563 J
108-G	0 – 8	N	T117-108-SG	8/29/2008	0.019 U	0.019 U	na	na	na	na
109-G	0 – 10	N	T117-109-SG	8/29/2008	0.021	0.046	na	0.550 U	0.806 J	0.975 J
109-G	0 – 10	FD	T117-120-SG	8/29/2008	0.028	0.059	na	na	na	na
110-G	0 – 10	N	T117-110-SG	8/29/2008	0.020 U	0.020 U	na	0.590 U	0.736 J	2.93 U
111-G	0 – 9	N	T117-111-SG	8/29/2008	0.020 U	0.020 U	na	0.520 U	0.637 J	0.825 J
113-G	0 – 10	N	T117-113-SG	8/29/2008	0.020 U	0.020 U	na	0.620 U	0.693 J	0.910 J
114-G	0 – 8	N	T117-114-SG	8/29/2008	0.022	0.054	na	na	na	na
115-G	0 – 7	N	T117-115-SG	8/29/2008	0.24	0.24	na	0.480 U	2.42 U	0.931 J
117-G	0 – 3	N	T117-117-SG	8/29/2008	0.020 U	0.020 U	na	na	na	na
119-G	0	RB	T117-117-SG	8/29/2008	1.0 U	1.0 U	na	na	na	na

FD = field duplicate
J = estimated value
N = normal sample
RB = rinsate blank (ug/L)
U = not detected at or above the value shown
na = not analyzed

All sediment results (dw), cont.

Location Name	Depth (cm)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date					
98-G	0 – 6	N	T117-98-SG	8/29/2008	na	na	na	na	na
99-G	0 – 6	N	T117-99-SG	8/29/2008	na	na	na	na	na
100-G	0 – 10	N	T117-100-SG	8/29/2008	7.69	4.61	246	2,500	1.01
101-G	0 – 10	N	T117-101-SG	8/29/2008	na	na	na	na	na
102-G	0 – 10	N	T117-102-SG	8/29/2008	5.79	3.54	156	1,420	0.899
103-G	0 – 10	N	T117-103-SG	8/29/2008	na	na	na	na	na
105-G	0 – 9	N	T117-105-SG	8/29/2008	na	na	na	na	na
106-G	0 – 9	N	T117-106-SG	8/29/2008	na	na	na	na	na
107-G	0 – 7	N	T117-107-SG	8/29/2008	2.40 U	1.11 J	40.0	339	0.480 U
108-G	0 – 8	N	T117-108-SG	8/29/2008	na	na	na	na	na
109-G	0 – 10	N	T117-109-SG	8/29/2008	3.58	2.74 U	105	1,020	1.53 U
109-G	0 – 10	FD	T117-120-SG	8/29/2008	na	na	na	na	na
110-G	0 – 10	N	T117-110-SG	8/29/2008	3.74	2.39 J	86.6	753	0.590 U
111-G	0 – 9	N	T117-111-SG	8/29/2008	3.1	2.01 J	76.6	657	0.564 U
113-G	0 – 10	N	T117-113-SG	8/29/2008	3.86	2.20 J	89.1	740	0.578 J
114-G	0 – 8	N	T117-114-SG	8/29/2008	na	na	na	na	na
115-G	0 – 7	N	T117-115-SG	8/29/2008	3.09	2.42 U	77.8	648	0.822
117-G	0 – 3	N	T117-117-SG	8/29/2008	na	na	na	na	na
119-G	0	RB	T117-117-SG	8/29/2008	na	na	na	na	na

FD = field duplicate
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U = not detected at or above the value shown
na = not analyzed

All sediment results (dw), cont.

Location Name	Depth (cm)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date					
98-G	0 – 6	N	T117-98-SG	8/29/2008	na	na	na	na	na
99-G	0 – 6	N	T117-99-SG	8/29/2008	na	na	na	na	na
100-G	0 – 10	N	T117-100-SG	8/29/2008	0.862 J	2.28 J	4.22	1.77 J	0.958 J
101-G	0 – 10	N	T117-101-SG	8/29/2008	na	na	na	na	na
102-G	0 – 10	N	T117-102-SG	8/29/2008	0.687 J	1.93 J	3.02	1.50 J	0.835 J
103-G	0 – 10	N	T117-103-SG	8/29/2008	na	na	na	na	na
105-G	0 – 9	N	T117-105-SG	8/29/2008	na	na	na	na	na
106-G	0 – 9	N	T117-106-SG	8/29/2008	na	na	na	na	na
107-G	0 – 7	N	T117-107-SG	8/29/2008	2.40 U	0.560 J	0.931 J	0.468 J	2.40 U
108-G	0 – 8	N	T117-108-SG	8/29/2008	na	na	na	na	na
109-G	0 – 10	N	T117-109-SG	8/29/2008	2.74 U	2.74 U	2.09 J	0.831 J	2.74 U
109-G	0 – 10	FD	T117-120-SG	8/29/2008	na	na	na	na	na
110-G	0 – 10	N	T117-110-SG	8/29/2008	2.93 U	1.28 J	1.84 J	0.930 J	2.93 U
111-G	0 – 9	N	T117-111-SG	8/29/2008	2.59 U	1.15 J	1.71 J	2.59 U	0.446 J
113-G	0 – 10	N	T117-113-SG	8/29/2008	0.385 J	3.08 U	1.90 J	0.833 J	0.847 J
114-G	0 – 8	N	T117-114-SG	8/29/2008	na	na	na	na	na
115-G	0 – 7	N	T117-115-SG	8/29/2008	2.42 U	1.58 J	2.02 J	0.850 J	0.460 J
117-G	0 – 3	N	T117-117-SG	8/29/2008	na	na	na	na	na
119-G	0	RB	T117-117-SG	8/29/2008	na	na	na	na	na

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na = not analyzed

All sediment results (dw), cont.

Location Name	Depth (cm)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date					
98-G	0 – 6	N	T117-98-SG	8/29/2008	na	na	na	na	na
99-G	0 – 6	N	T117-99-SG	8/29/2008	na	na	na	na	na
100-G	0 – 10	N	T117-100-SG	8/29/2008	2.74	52.6	2.94	170	7.76 U
101-G	0 – 10	N	T117-101-SG	8/29/2008	na	na	na	na	na
102-G	0 – 10	N	T117-102-SG	8/29/2008	2.13 J	31.4	2.53	104	5.68 U
103-G	0 – 10	N	T117-103-SG	8/29/2008	na	na	na	na	na
105-G	0 – 9	N	T117-105-SG	8/29/2008	na	na	na	na	na
106-G	0 – 9	N	T117-106-SG	8/29/2008	na	na	na	na	na
107-G	0 – 7	N	T117-107-SG	8/29/2008	0.536 J	7.02	0.695 J	21.6	0.959 U
108-G	0 – 8	N	T117-108-SG	8/29/2008	na	na	na	na	na
109-G	0 – 10	N	T117-109-SG	8/29/2008	1.25 J	19.7	1.65 J	74.8	0.550 U
109-G	0 – 10	FD	T117-120-SG	8/29/2008	na	na	na	na	na
110-G	0 – 10	N	T117-110-SG	8/29/2008	1.36 J	15.7	1.29 J	45.8	3.47 U
111-G	0 – 9	N	T117-111-SG	8/29/2008	2.59 U	13.9	1.13 J	42.4	2.73 U
113-G	0 – 10	N	T117-113-SG	8/29/2008	1.22 J	17.8	1.44 J	68.7	0.745 U
114-G	0 – 8	N	T117-114-SG	8/29/2008	na	na	na	na	na
115-G	0 – 7	N	T117-115-SG	8/29/2008	2.42 U	13.7	1.36 J	39.9	1.52 U
117-G	0 – 3	N	T117-117-SG	8/29/2008	na	na	na	na	na
119-G	0	RB	T117-117-SG	8/29/2008	na	na	na	na	na

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All sediment results (dw), cont.

Location Name	Depth (cm)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date							
98-G	0 – 6	N	T117-98-SG	8/29/2008	na	na	na	na	na	na	na
99-G	0 – 6	N	T117-99-SG	8/29/2008	na	na	na	na	na	na	na
100-G	0 – 10	N	T117-100-SG	8/29/2008	14.3 U	60.6	554	20.3 U	23.7	67.3 U	167
101-G	0 – 10	N	T117-101-SG	8/29/2008	na	na	na	na	na	na	na
102-G	0 – 10	N	T117-102-SG	8/29/2008	11.7 U	49.4 U	373	18.2 U	19.7 U	47.1 U	105
103-G	0 – 10	N	T117-103-SG	8/29/2008	na	na	na	na	na	na	na
105-G	0 – 9	N	T117-105-SG	8/29/2008	na	na	na	na	na	na	na
106-G	0 – 9	N	T117-106-SG	8/29/2008	na	na	na	na	na	na	na
107-G	0 – 7	N	T117-107-SG	8/29/2008	3.78 U	14.0 U	97.7	3.41 U	4.81 U	10.8 U	23.0 U
108-G	0 – 8	N	T117-108-SG	8/29/2008	na	na	na	na	na	na	na
109-G	0 – 10	N	T117-109-SG	8/29/2008	5.05 U	30.1 U	337	5.25 U	11.2 U	25.4 U	71.8
109-G	0 – 10	FD	T117-120-SG	8/29/2008	na	na	na	na	na	na	na
110-G	0 – 10	N	T117-110-SG	8/29/2008	6.14 U	27.5 U	208	12.7 U	11.7 U	25.2 U	52.5
111-G	0 – 9	N	T117-111-SG	8/29/2008	5.76 U	23.5	185	13.0 U	10.6 U	21.1 U	45.7
113-G	0 – 10	N	T117-113-SG	8/29/2008	5.63 U	26.9 U	199	12.0 U	11.0 U	25.7	66.7
114-G	0 – 8	N	T117-114-SG	8/29/2008	na	na	na	na	na	na	na
115-G	0 – 7	N	T117-115-SG	8/29/2008	5.82 U	27.5 U	219	13.9 U	14.2 U	24.3 U	45.3 U
117-G	0 – 3	N	T117-117-SG	8/29/2008	na	na	na	na	na	na	na
119-G	0	RB	T117-117-SG	8/29/2008	na	na	na	na	na	na	na

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All sediment results (dw), cont.

Location Name	Depth (cm)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Conventionals	Conventionals
				Analyte	Dioxin/furan TEQ	Total organic carbon	Total solids
				Unit	ng/kg dw	% dw	% ww
				Sample Date			
98-G	0 – 6	N	T117-98-SG	8/29/2008	na	1.91	34.5
99-G	0 – 6	N	T117-99-SG	8/29/2008	na	1.83	50.2
100-G	0 – 10	N	T117-100-SG	8/29/2008	9.36 J	3.1	38.67
101-G	0 – 10	N	T117-101-SG	8/29/2008	na	2.69	49.4
102-G	0 – 10	N	T117-102-SG	8/29/2008	6.54 J	2.69	49.4
103-G	0 – 10	N	T117-103-SG	8/29/2008	na	1.68	45.5
105-G	0 – 9	N	T117-105-SG	8/29/2008	na	1.45	48.0
106-G	0 – 9	N	T117-106-SG	8/29/2008	na	1.92	49.5
107-G	0 – 7	N	T117-107-SG	8/29/2008	2.11 J	0.828	56.5
108-G	0 – 8	N	T117-108-SG	8/29/2008	na	0.792	52.7
109-G	0 – 10	N	T117-109-SG	8/29/2008	4.35 J	1.33	49.6
109-G	0 – 10	FD	T117-120-SG	8/29/2008	na	1.63	49.1
110-G	0 – 10	N	T117-110-SG	8/29/2008	4.08 J	1.59	47.2
111-G	0 – 9	N	T117-111-SG	8/29/2008	3.50 J	1.59	53.3
113-G	0 – 10	N	T117-113-SG	8/29/2008	4.04 J	2.23	45.7
114-G	0 – 8	N	T117-114-SG	8/29/2008	na	1.18	47.9
115-G	0 – 7	N	T117-115-SG	8/29/2008	4.15 J	1.61	57.3
117-G	0 – 3	N	T117-117-SG	8/29/2008	na	0.857	65.2
119-G	0	RB	T117-117-SG	8/29/2008	na	na	na

FD = field duplicate
J = estimated value
N = normal sample
RB = rinsate blank (ug/L)
U = not detected at or above the value shown
na = not analyzed

Sediment results SMS comparison

Location Name	Depth (cm)	Sample Type	Sample Name	Analyte Group	Metals	PCBs	Pesticides
				Analyte	Mercury	Total PCBs	Dieldrin
				SQS/SL Criteria	0.41	12	10
				CSL/ML Criteria	0.59	65	
				Unit	mg/kg dw	mg/kg OC dw	ug/kg dw
				Sample Date			
98-G	0 – 6	N	T117-98-SG	8/29/2008	0.15	6.18	7.6 U
99-G	0 – 6	N	T117-99-SG	8/29/2008	0.07	**15**	4.6 U
100-G	0 – 10	N	T117-100-SG	8/29/2008	na	1.9	na
101-G	0 – 10	N	T117-101-SG	8/29/2008	na	**21**	na
102-G	0 – 10	N	T117-102-SG	8/29/2008	na	6.7	na
103-G	0 – 10	N	T117-103-SG	8/29/2008	na	2.3	na
105-G	0 – 9	N	T117-105-SG	8/29/2008	na	1.4 U	na
106-G	0 – 9	N	T117-106-SG	8/29/2008	na	1.6	na
107-G	0 – 7	N	T117-107-SG	8/29/2008	na	14	na
108-G	0 – 8	N	T117-108-SG	8/29/2008	na	2.4 U	na
109-G	0 – 10	N	T117-109-SG	8/29/2008	na	3.5	na
109-G	0 – 10	FD	T117-120-SG	8/29/2008	na	3.6	na
110-G	0 – 10	N	T117-110-SG	8/29/2008	na	1.3 U	na
111-G	0 – 9	N	T117-111-SG	8/29/2008	na	1.3 U	na
113-G	0 – 10	N	T117-113-SG	8/29/2008	na	0.90 U	na
114-G	0 – 8	N	T117-114-SG	8/29/2008	na	4.6	na
115-G	0 – 7	N	T117-115-SG	8/29/2008	na	15	na

Bold text = SQS exceedance

FD = field duplicate

N = normal sample

U = not detected at or above the value shown

na = not analyzed

Street, yard and CB5 results

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	PCBs	PCBs	PCBs	PCBs	PCBs	PCBs	PCBs	PCBs
				Analyte	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Total PCBs
				Unit	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
				Sample Date								
HA1	0 – 1	N	HA1-0.0-1.0	8/21/2008	0.011 U	0.022 U	0.011 U	0.011 U	0.011 U	0.026 U	0.18	0.18
P100	0.4 – 1	N	P100-0.4-1.0	8/20/2008	0.87 U	1.8 U	0.87 U	0.87 U	0.87 U	0.87 U	21	21
P100	1 – 2	N	P100-1.0-2.0	8/20/2008	7.5 U	15 U	7.5 U	7.5 U	7.5 U	7.5 U	98	98
P100	1 – 2	FD	P100-1.0-2.0DUP	8/20/2008	0.0089 U	0.018 U	0.0089 U	0.0089 U	0.0089 U	0.024 U	0.16	0.16
P88	0.2 – 1	N	P88-0.2-1.0	8/19/2008	0.10 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	2	2
P89	0.3 – 1	N	P89-0.3-1.0	8/19/2008	0.0099 U	0.020 U	0.0099 U	0.0099 U	0.0099 U	0.0099 U	0.73	0.73
P90	0.4 – 1	N	P90-0.4-1.0	8/20/2008	0.081 U	0.17 U	0.081 U	0.081 U	0.081 U	0.081 U	1.6	1.6
P91	0.2 – 1	N	P91-0.2-1.0	8/19/2008	0.097 U	0.20 U	0.097 U	0.097 U	0.097 U	0.097 U	1.6	1.6
P92	0.2 – 1	N	P92-0.2-1.0	8/20/2008	0.0082 UJ	0.017 UJ	0.0082 UJ	0.0082 UJ	0.1 J	0.0082 UJ	0.092 J	0.2 J
P93	0.2 – 1	N	P93-0.2-1.0	8/19/2008	0.094 U	0.19 U	0.094 U	0.094 U	0.094 U	0.094 U	1.5	1.5
P94	0.1 – 1	N	P94-0.1-1.0	8/19/2008	0.099 U	0.20 U	0.099 U	0.099 U	0.099 U	0.099 U	7.4	7.4
P95	0.1 – 1	N	P95-0.1-1.0	8/19/2008	0.98 U	2.0 U	0.98 U	0.98 U	0.98 U	0.98 U	57	57
P96	0.4 – 1	N	P96-0.4-1.0	8/19/2008	0.0081 U	0.017 U	0.0081 U	0.0081 U	0.0081 U	0.0081 U	0.027	0.027
P97	0.1 – 1	N	P97-0.1-1.0	8/19/2008	0.0085 U	0.017 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.057	0.057
P98	0.3 – 1	N	P98-0.3-1.0	8/19/2008	0.0084 U	0.017 U	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.0084 U	0.017 U
P99	0.3 – 1	N	P99-0.3-1.0	8/20/2008	0.0085 U	0.017 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.14	0.14
YC02	0 – 0.5	N	YC02-0.0-0.5	8/22/2008	na	na	na	na	na	na	na	na
YC03	0 – 0.5	N	YC03-0.0-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC04	0 – 0.5	N	YC04-0.0-0.5	8/21/2008	na	na	na	na	na	na	na	na
YC05	0 – 0.5	N	YC05-0.0-0.5	8/21/2008	na	na	na	na	na	na	na	na
YC06	0 – 0.5	N	YC06-0.0-0.5	8/21/2008	na	na	na	na	na	na	na	na
YC06	0.1 – 0.5	N	YC06c-0.1-0.5	8/21/2008	0.56 U	0.12 U	0.56 U	0.56 U	0.14 U	0.31 U	0.64 U	0.64 U
YC06	0.2 – 0.5	N	YC06a-0.2-0.5	8/21/2008	0.58 U	0.12 U	0.58 U	0.58 U	0.15 U	0.61 U	0.44 U	0.61 U
YC06	0.2 – 0.5	N	YC06b-0.2-0.5	8/21/2008	0.56 U	0.12 U	0.56 U	0.56 U	0.56 U	0.56 U	2.4	2.4
YC06	0.2 – 0.5	FD	YC06a-0.2-0.5DUP	8/21/2008	0.57 U	0.12 U	0.57 U	0.57 U	0.26 U	0.39 U	0.59 U	0.59 U
YC07	0 – 0.5	N	YC07-0.0-0.5	8/21/2008	na	na	na	na	na	na	na	na
YC07	0.1 – 0.5	N	YC07a-0.1-0.5	8/21/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.20	0.20
YC07	0.1 – 0.5	N	YC07b-0.1-0.5	8/21/2008	0.010 U	0.020 U	0.021 U	0.010 U	0.010 U	0.040 U	0.27	0.27
YC07	0.1 – 0.5	N	YC07c-0.1-0.5	8/21/2008	0.10 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	1.3	1.3
YC08	0 – 0.5	N	YC08-0.0-0.5	8/26/2008	na	na	na	na	na	na	na	na
YC08	0.1 – 0.5	N	YC08c-0.1-0.5	8/26/2008	0.061 U	0.13 U	0.061 U	0.061 U	0.061 U	0.061 U	4.7	4.7
YC08	0.2 – 0.5	N	YC08a-0.2-0.5	8/26/2008	0.0074 U	0.015 U	0.011 U	0.0074 U	0.0074 U	0.0074 U	0.018	0.018
YC08	0.2 – 0.5	N	YC08b-0.2-0.5	8/26/2008	0.068 U	0.14 U	0.068 U	0.068 U	0.068 U	0.068 U	2.9	2.9
YC08	0.2 – 0.5	FD	YC08a-0.2-0.5DUP	8/26/2008	0.0074 U	0.015 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.020	0.020
YC08	0.5 – 1	N	YC08a-0.5-1.0	8/26/2008	0.0068 U	0.014 U	0.024 U	0.0068 U	0.0068 U	0.0068 U	0.12	0.12
YC08	0.5 – 1	N	YC08b-0.5-1.0	8/26/2008	0.070 U	0.14 U	0.070 U	0.070 U	0.070 U	0.070 U	1.1	1.1
YC08	0.5 – 1	N	YC08c-0.5-1.0	8/26/2008	0.061 U	0.13 U	0.061 U	0.061 U	0.061 U	0.061 U	1.9	1.9
YC09	0 – 0.5	N	YC09-0.0-0.5	8/22/2008	na	na	na	na	na	na	na	na
YC09	0.1 – 0.5	N	YC09a-0.1-0.5	8/22/2008	0.0053 U	0.011 U	0.0090 U	0.0053 U	0.0053 U	0.024 U	0.13	0.13
YC09	0.1 – 0.5	N	YC09b-0.1-0.5	8/22/2008	0.0056 U	0.012 U	0.012 U	0.0058 U	0.0056 U	0.034 U	0.19	0.19
YC09	0.1 – 0.5	N	YC09c-0.1-0.5	8/22/2008	0.10 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	1.6	1.6
YC09	0.5 – 1	N	YC09-0.5-1.0	8/22/2008	na	na	na	na	na	na	na	na
YC10	0 – 0.5	N	YC10-0.0-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC10	0.2 – 0.5	N	YC10a-0.2-0.5	8/25/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.34	0.34
YC10	0.2 – 0.5	N	YC10b-0.2-0.5	8/25/2008	0.011 U	0.021 U	0.011 U	0.011 U	0.011 U	0.011 U	0.19	0.19
YC10	0.2 – 0.5	N	YC10c-0.2-0.5	8/25/2008	0.10 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	1.7	1.7
YC10	0.2 – 0.5	FD	YC10a-0.2-0.5DUP	8/25/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.33	0.33

Street, yard and CB5 results, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date							
HA1	0 – 1	N	HA1-0.0-1.0	8/21/2008	0.641	1.59 J	1.73 J	5.14	5.53	69.2	460
P100	0.4 – 1	N	P100-0.4-1.0	8/20/2008	0.285 J	0.819 J	0.92 J	18.7	4.55	262	2,190 J
P100	1 – 2	N	P100-1.0-2.0	8/20/2008	0.346 U	1.73 U	0.174 J	0.289 J	1.73 U	7.06	277
P100	1 – 2	FD	P100-1.0-2.0DUP	8/20/2008	0.933	4.04	3.14	21.4	9.33	300	2,360 J
P88	0.2 – 1	N	P88-0.2-1.0	8/19/2008	0.33 J	1.68 J	1.59 J	6.95	4.92	111 J	909 J
P89	0.3 – 1	N	P89-0.3-1.0	8/19/2008	0.452 U	2.08	2.26	9.66	6.55	167	1,540 J
P90	0.4 – 1	N	P90-0.4-1.0	8/20/2008	0.382	2.17	2.67	13.4	7.40	272	2,830 J
P91	0.2 – 1	N	P91-0.2-1.0	8/19/2008	0.352 J	1.81	1.73 J	7.56	5.11	125	1,070
P92	0.2 – 1	N	P92-0.2-1.0	8/20/2008	0.339 U	0.941 J	0.583 J	2.88	1.74	38.5	392 J
P93	0.2 – 1	N	P93-0.2-1.0	8/19/2008	0.245 J	1.4 J	0.924 J	6.06	3.35	51.1	378
P94	0.1 – 1	N	P94-0.1-1.0	8/19/2008	1.15	5.82	5.82	26.4	19.8	400	2,220
P95	0.1 – 1	N	P95-0.1-1.0	8/19/2008	1.51	1.77 U	2.08	7.90	6.16	104	767
P96	0.4 – 1	N	P96-0.4-1.0	8/19/2008	0.337 U	0.555 J	0.227 J	1.05 J	0.62 J	3.53	14.6 U
P97	0.1 – 1	N	P97-0.1-1.0	8/19/2008	0.366	1.27 J	1.05 J	3.13	3.07	36.4	242
P98	0.3 – 1	N	P98-0.3-1.0	8/19/2008	0.343 U	1.72 U	1.72 U	0.0337 J	1.72 U	0.469 J	4.66 U
P99	0.3 – 1	N	P99-0.3-1.0	8/20/2008	0.358 U	0.0348 J	0.0335 J	0.139 J	0.0967 J	2.08	17.3 U
YC02	0 – 0.5	N	YC02-0.0-0.5	8/22/2008	4.84	5.38	5.78	21.2	16.4	322	2,450 J
YC03	0 – 0.5	N	YC03-0.0-0.5	8/25/2008	1.32	6.76	4.96	21.1	13.3	258	2,040 J
YC04	0 – 0.5	N	YC04-0.0-0.5	8/21/2008	1.04	4.16	4.53	15.7	11.4	226	1,700 J
YC05	0 – 0.5	N	YC05-0.0-0.5	8/21/2008	0.88	2.35	3.24	10.4	8.97	227	1,770 J
YC06	0 – 0.5	N	YC06-0.0-0.5	8/21/2008	1.68	3.28	4.89	15.2	14.8	332	2,730 J
YC06	0.1 – 0.5	N	YC06c-0.1-0.5	8/21/2008	na	na	na	na	na	na	na
YC06	0.2 – 0.5	N	YC06a-0.2-0.5	8/21/2008	na	na	na	na	na	na	na
YC06	0.2 – 0.5	N	YC06b-0.2-0.5	8/21/2008	na	na	na	na	na	na	na
YC06	0.2 – 0.5	FD	YC06a-0.2-0.5DUP	8/21/2008	na	na	na	na	na	na	na
YC07	0 – 0.5	N	YC07-0.0-0.5	8/21/2008	0.524	3.23	5.73	27.0	12.8	851 J	12,300 J
YC07	0.1 – 0.5	N	YC07a-0.1-0.5	8/21/2008	na	na	na	na	na	na	na
YC07	0.1 – 0.5	N	YC07b-0.1-0.5	8/21/2008	na	na	na	na	na	na	na
YC07	0.1 – 0.5	N	YC07c-0.1-0.5	8/21/2008	na	na	na	na	na	na	na
YC08	0 – 0.5	N	YC08-0.0-0.5	8/26/2008	1.3	24.6	58	936	149	15,700	175,000 J
YC08	0.1 – 0.5	N	YC08c-0.1-0.5	8/26/2008	0.695 U	3.33 J	4.51 J	30.7	14.8 J	380	2,680
YC08	0.2 – 0.5	N	YC08a-0.2-0.5	8/26/2008	0.799 U	0.442 J	0.350 U	1.30 U	0.695 U	20.8 J	151
YC08	0.2 – 0.5	N	YC08b-0.2-0.5	8/26/2008	0.780 U	2.70 J	3.40 J	15.2 J	11.1 J	210	1,430
YC08	0.2 – 0.5	FD	YC08a-0.2-0.5DUP	8/26/2008	0.899 U	0.354 U	0.357 U	1.86 J	1.66 J	23.3	177
YC08	0.5 – 1	N	YC08a-0.5-1.0	8/26/2008	na	na	na	na	na	na	na
YC08	0.5 – 1	N	YC08b-0.5-1.0	8/26/2008	na	na	na	na	na	na	na
YC08	0.5 – 1	N	YC08c-0.5-1.0	8/26/2008	na	na	na	na	na	na	na
YC09	0 – 0.5	N	YC09-0.0-0.5	8/22/2008	1.09	2.74	3.39	13.5	9.57	197	1,510 J
YC09	0.1 – 0.5	N	YC09a-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC09	0.1 – 0.5	N	YC09b-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC09	0.1 – 0.5	N	YC09c-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC09	0.5 – 1	N	YC09-0.5-1.0	8/22/2008	na	na	na	na	na	na	na
YC10	0 – 0.5	N	YC10-0.0-0.5	8/25/2008	0.941	3.5	3.8	13.3	11.1	201	1,560 J
YC10	0.2 – 0.5	N	YC10a-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC10	0.2 – 0.5	N	YC10b-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC10	0.2 – 0.5	N	YC10c-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC10	0.2 – 0.5	FD	YC10a-0.2-0.5DUP	8/25/2008	na	na	na	na	na	na	na

Street, yard and CB5 results, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date							
HA1	0 – 1	N	HA1-0.0-1.0	8/21/2008	3.85	3.80	8.04	22.7	7.88	0.238 J	13.3 U
P100	0.4 – 1	N	P100-0.4-1.0	8/20/2008	9.06	4.61	23.6	84.9	16.6	0.407 J	8.63
P100	1 – 2	N	P100-1.0-2.0	8/20/2008	0.346 U	1.73 U	0.0362 J	0.0785 J	0.0581 J	1.73 U	0.0727 J
P100	1 – 2	FD	P100-1.0-2.0DUP	8/20/2008	25.4	12.5	54.1	183 U	35.8	0.748 J	19.8
P88	0.2 – 1	N	P88-0.2-1.0	8/19/2008	2.59 U	1.11 J	5.46	8.55	6.95	1.77 UJ	8.34
P89	0.3 – 1	N	P89-0.3-1.0	8/19/2008	1.87	1.70 U	3.90	7.03 J	7.38	1.70 UJ	16.7
P90	0.4 – 1	N	P90-0.4-1.0	8/20/2008	2.69	1.74	5.75	13.8	11.5	1.69 U	13.9
P91	0.2 – 1	N	P91-0.2-1.0	8/19/2008	2.55	1.31 J	4.33	7.82	6.7	0.118 J	14.5
P92	0.2 – 1	N	P92-0.2-1.0	8/20/2008	3.78	0.751 J	2.84	2.96	2.49	1.70 U	2.4
P93	0.2 – 1	N	P93-0.2-1.0	8/19/2008	1.58	0.716 J	2.79	4.64	3.83	1.72 UJ	9.53
P94	0.1 – 1	N	P94-0.1-1.0	8/19/2008	11.0	5.99	21.1	43.6	35.2	0.565 J	75.9
P95	0.1 – 1	N	P95-0.1-1.0	8/19/2008	9.88	7.87	22.5	91.7	29.1	1.77 UJ	37.6
P96	0.4 – 1	N	P96-0.4-1.0	8/19/2008	0.833	0.235 J	3.58	1.59 J	5.47	1.0.068 U	4.22
P97	0.1 – 1	N	P97-0.1-1.0	8/19/2008	3.39	1.17 J	2.92	2.61	2.69	1.75 U	2.72 U
P98	0.3 – 1	N	P98-0.3-1.0	8/19/2008	0.343 U	1.72 U	1.72 U	1.72 U	1.72 U	1.72 U	0.0329 J
P99	0.3 – 1	N	P99-0.3-1.0	8/20/2008	0.358 U	1.79 U	0.154 J	0.24 J	0.0636 J	1.79 U	0.11 J
YC02	0 – 0.5	N	YC02-0.0-0.5	8/22/2008	8.89	3.90 U	11.6	13.8 U	13.8	1.90 U	16.6 U
YC03	0 – 0.5	N	YC03-0.0-0.5	8/25/2008	16.4	6.72	46.7	22.2	63.3	1.94 U	84.3
YC04	0 – 0.5	N	YC04-0.0-0.5	8/21/2008	10.8	4.76	13.8	14.0	14.4 U	0.191 J	19.6
YC05	0 – 0.5	N	YC05-0.0-0.5	8/21/2008	4.66	2.76 U	5.05	10.9 U	5.03	0.188 J	7.53 U
YC06	0 – 0.5	N	YC06-0.0-0.5	8/21/2008	6.20	3.05 U	5.53	12.9	5.51	0.196 J	7.97
YC06	0.1 – 0.5	N	YC06c-0.1-0.5	8/21/2008	na	na	na	na	na	na	na
YC06	0.2 – 0.5	N	YC06a-0.2-0.5	8/21/2008	na	na	na	na	na	na	na
YC06	0.2 – 0.5	N	YC06b-0.2-0.5	8/21/2008	na	na	na	na	na	na	na
YC06	0.2 – 0.5	FD	YC06a-0.2-0.5DUP	8/21/2008	na	na	na	na	na	na	na
YC07	0 – 0.5	N	YC07-0.0-0.5	8/21/2008	5.32	2.48 U	4.62	10.2	5.59	0.147 J	8.72
YC07	0.1 – 0.5	N	YC07a-0.1-0.5	8/21/2008	na	na	na	na	na	na	na
YC07	0.1 – 0.5	N	YC07b-0.1-0.5	8/21/2008	na	na	na	na	na	na	na
YC07	0.1 – 0.5	N	YC07c-0.1-0.5	8/21/2008	na	na	na	na	na	na	na
YC08	0 – 0.5	N	YC08-0.0-0.5	8/26/2008	19.0	49.5 U	43.6	132 U	72.6	7.26	99.7 U
YC08	0.1 – 0.5	N	YC08c-0.1-0.5	8/26/2008	7.48	4.34 J	10.4 J	18.3 U	9.01 J	0.255 U	13.2 J
YC08	0.2 – 0.5	N	YC08a-0.2-0.5	8/26/2008	4.22 U	0.503 U	0.723 U	0.939 J	0.541 J	0.0696 J	0.744 J
YC08	0.2 – 0.5	N	YC08b-0.2-0.5	8/26/2008	6.38 U	3.64 U	7.80 J	11.9 J	5.37 J	0.238 U	7.60 J
YC08	0.2 – 0.5	FD	YC08a-0.2-0.5DUP	8/26/2008	3.74 U	0.604 J	0.948 J	1.17 J	0.524 U	18.7 U	0.863 J
YC08	0.5 – 1	N	YC08a-0.5-1.0	8/26/2008	na	na	na	na	na	na	na
YC08	0.5 – 1	N	YC08b-0.5-1.0	8/26/2008	na	na	na	na	na	na	na
YC08	0.5 – 1	N	YC08c-0.5-1.0	8/26/2008	na	na	na	na	na	na	na
YC09	0 – 0.5	N	YC09-0.0-0.5	8/22/2008	5.94	3.04 U	5.37 U	8.54	4.61	0.143 J	7.84 U
YC09	0.1 – 0.5	N	YC09a-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC09	0.1 – 0.5	N	YC09b-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC09	0.1 – 0.5	N	YC09c-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC09	0.5 – 1	N	YC09-0.5-1.0	8/22/2008	na	na	na	na	na	na	na
YC10	0 – 0.5	N	YC10-0.0-0.5	8/25/2008	6.90	3.30 U	8.05	12.2 U	8.57	0.152 J	8.78 U
YC10	0.2 – 0.5	N	YC10a-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC10	0.2 – 0.5	N	YC10b-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC10	0.2 – 0.5	N	YC10c-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC10	0.2 – 0.5	FD	YC10a-0.2-0.5DUP	8/25/2008	na	na	na	na	na	na	na

Street, yard and CB5 results, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date								
HA1	0 – 1	N	HA1-0.0-1.0	8/21/2008	52.5	3.21	52.6	19.5	27.5	53.2	136	92.4
P100	0.4 – 1	N	P100-0.4-1.0	8/20/2008	335	47.8	609	6.63	5.72	108	449	163
P100	1 – 2	N	P100-1.0-2.0	8/20/2008	1.73 U	1.73 U	2.55 J	0.346 U	0.160 J	2.03	13.4	0.346 U
P100	1 – 2	FD	P100-1.0-2.0DUP	8/20/2008	310	105	1,170	195	90.5	289	533	328
P88	0.2 – 1	N	P88-0.2-1.0	8/19/2008	228 J	2.53 J	129	8.34	8.88	61.5	227	94.1
P89	0.3 – 1	N	P89-0.3-1.0	8/19/2008	490	3.16 J	252	43.8	38.8	104	339	73.1
P90	0.4 – 1	N	P90-0.4-1.0	8/20/2008	672	5.38	346	4.89	11.6	95.0	558	80.9
P91	0.2 – 1	N	P91-0.2-1.0	8/19/2008	245	3.49 J	157	7.47	6.62	62.6	251	50.5
P92	0.2 – 1	N	P92-0.2-1.0	8/20/2008	26.3	0.685 J	19.7 U	2.63	8.07	25.7	80.5	51.4
P93	0.2 – 1	N	P93-0.2-1.0	8/19/2008	102	1.77 J	61.2	9.59	15.3	61.4	112	45.6
P94	0.1 – 1	N	P94-0.1-1.0	8/19/2008	4,290	19.9 J	1,580	34.5	31.5	188	786	376
P95	0.1 – 1	N	P95-0.1-1.0	8/19/2008	252	47.6 J	566	12.3	1.77 U	43.2	200	220
P96	0.4 – 1	N	P96-0.4-1.0	8/19/2008	32	0.378 J	10.0	1.76	6.46	11.1	7.76	72.6
P97	0.1 – 1	N	P97-0.1-1.0	8/19/2008	9.86	0.538 J	11.6 U	42.3	54.5	53.2	69.6	69.3
P98	0.3 – 1	N	P98-0.3-1.0	8/19/2008	1.72 U	1.72 U	3.43 U	0.0238 J	1.72 U	0.0337 J	1.72 U	0.343 U
P99	0.3 – 1	N	P99-0.3-1.0	8/20/2008	0.716 J	0.131 J	3.58 U	0.176 J	0.169 J	1.24 J	4.20	0.573
YC02	0 – 0.5	N	YC02-0.0-0.5	8/22/2008	102	3.95	211	52.5	50	164	616	341
YC03	0 – 0.5	N	YC03-0.0-0.5	8/25/2008	168	6.36	250	47.5	43.9	171	494	1,990
YC04	0 – 0.5	N	YC04-0.0-0.5	8/21/2008	130	4.17	178	40.5	45.9	133	437	272
YC05	0 – 0.5	N	YC05-0.0-0.5	8/21/2008	57.9	3.14	116	25.3	26.5	99.4	417	82.0
YC06	0 – 0.5	N	YC06-0.0-0.5	8/21/2008	87.2	4.23	225	25.1	38.2	164	657	72.8
YC06	0.1 – 0.5	N	YC06c-0.1-0.5	8/21/2008	na	na	na	na	na	na	na	na
YC06	0.2 – 0.5	N	YC06a-0.2-0.5	8/21/2008	na	na	na	na	na	na	na	na
YC06	0.2 – 0.5	N	YC06b-0.2-0.5	8/21/2008	na	na	na	na	na	na	na	na
YC06	0.2 – 0.5	FD	YC06a-0.2-0.5DUP	8/21/2008	na	na	na	na	na	na	na	na
YC07	0 – 0.5	N	YC07-0.0-0.5	8/21/2008	231	7.83	1,900 J	18.2	25.2	149	1,550	83.3
YC07	0.1 – 0.5	N	YC07a-0.1-0.5	8/21/2008	na	na	na	na	na	na	na	na
YC07	0.1 – 0.5	N	YC07b-0.1-0.5	8/21/2008	na	na	na	na	na	na	na	na
YC07	0.1 – 0.5	N	YC07c-0.1-0.5	8/21/2008	na	na	na	na	na	na	na	na
YC08	0 – 0.5	N	YC08-0.0-0.5	8/26/2008	881	34.4	2,740	25.7	64.7	3,360	25,400	155
YC08	0.1 – 0.5	N	YC08c-0.1-0.5	8/26/2008	103	6.91 J	155	22.5	20.7	157	711	94.1
YC08	0.2 – 0.5	N	YC08a-0.2-0.5	8/26/2008	4.14 J	0.225 U	5.66 J	2.35 J	4.59 J	8.68 J	39.6	5.50
YC08	0.2 – 0.5	N	YC08b-0.2-0.5	8/26/2008	50.4	4.01 J	95.7	23.1	23.9	108	397	92.5
YC08	0.2 – 0.5	FD	YC08a-0.2-0.5DUP	8/26/2008	4.52 J	0.246 J	6.62 J	1.86 J	3.75 J	14.1 J	45.1	3.79
YC08	0.5 – 1	N	YC08a-0.5-1.0	8/26/2008	na	na	na	na	na	na	na	na
YC08	0.5 – 1	N	YC08b-0.5-1.0	8/26/2008	na	na	na	na	na	na	na	na
YC08	0.5 – 1	N	YC08c-0.5-1.0	8/26/2008	na	na	na	na	na	na	na	na
YC09	0 – 0.5	N	YC09-0.0-0.5	8/22/2008	39.8	2.64	80.6	33.1	31.6	103	367	113
YC09	0.1 – 0.5	N	YC09a-0.1-0.5	8/22/2008	na	na	na	na	na	na	na	na
YC09	0.1 – 0.5	N	YC09b-0.1-0.5	8/22/2008	na	na	na	na	na	na	na	na
YC09	0.1 – 0.5	N	YC09c-0.1-0.5	8/22/2008	na	na	na	na	na	na	na	na
YC09	0.5 – 1	N	YC09-0.5-1.0	8/22/2008	na	na	na	na	na	na	na	na
YC10	0 – 0.5	N	YC10-0.0-0.5	8/25/2008	68.4	3.75	162	41.6	38.3	121	393	176
YC10	0.2 – 0.5	N	YC10a-0.2-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC10	0.2 – 0.5	N	YC10b-0.2-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC10	0.2 – 0.5	N	YC10c-0.2-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC10	0.2 – 0.5	FD	YC10a-0.2-0.5DUP	8/25/2008	na	na	na	na	na	na	na	na

Street, yard and CB5 results, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Conventionals
				Analyte	Total PeCDF	Total HxCDF	Total HpCDF	Dioxin/furan TEQ	Total solids
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	% ww
				Sample Date					
HA1	0 – 1	N	HA1-0.0-1.0	8/21/2008	101	103	83.7	11.5 J	73.3
P100	0.4 – 1	N	P100-0.4-1.0	8/20/2008	348	474	782	30.0 J	92.3
P100	1 – 2	N	P100-1.0-2.0	8/20/2008	0.200 J	0.743 J	2.03	1.50 J	87.8
P100	1 – 2	FD	P100-1.0-2.0DUP	8/20/2008	719	594	841	50.0 J	88.0
P88	0.2 – 1	N	P88-0.2-1.0	8/19/2008	377	238	381	11.4 J	92.4
P89	0.3 – 1	N	P89-0.3-1.0	8/19/2008	264	263	832	15.9 J	95.6
P90	0.4 – 1	N	P90-0.4-1.0	8/20/2008	400	758	1,150	21.4 J	96.8
P91	0.2 – 1	N	P91-0.2-1.0	8/19/2008	243	187	431	12.2 J	91.7
P92	0.2 – 1	N	P92-0.2-1.0	8/20/2008	172	122	48.7	4.53 J	94.8
P93	0.2 – 1	N	P93-0.2-1.0	8/19/2008	211	123	180	7.30 J	94.7
P94	0.1 – 1	N	P94-0.1-1.0	8/19/2008	1,140	1,470	7,680	84.0 J	85.5
P95	0.1 – 1	N	P95-0.1-1.0	8/19/2008	930	441	487	32.4 J	92.9
P96	0.4 – 1	N	P96-0.4-1.0	8/19/2008	369	128	56.5	3.65 J	96.6
P97	0.1 – 1	N	P97-0.1-1.0	8/19/2008	134	44.0	20.4	4.91 J	91.6
P98	0.3 – 1	N	P98-0.3-1.0	8/19/2008	0.272 J	0.29 J	1.72 U	1.79 J	95.6
P99	0.3 – 1	N	P99-0.3-1.0	8/20/2008	2.00	1.59 J	1.79 J	0.495 J	92.6
YC02	0 – 0.5	N	YC02-0.0-0.5	8/22/2008	705	266	238	27.1 J	86.6
YC03	0 – 0.5	N	YC03-0.0-0.5	8/25/2008	4,450	1,260	363	50.0 J	86.0
YC04	0 – 0.5	N	YC04-0.0-0.5	8/21/2008	729	317	260	22.0 J	91.4
YC05	0 – 0.5	N	YC05-0.0-0.5	8/21/2008	91.1	76.7	125	12.4 J	79.2
YC06	0 – 0.5	N	YC06-0.0-0.5	8/21/2008	125	153	208	18.6 J	87.6
YC06	0.1 – 0.5	N	YC06c-0.1-0.5	8/21/2008	na	na	na	na	90.4
YC06	0.2 – 0.5	N	YC06a-0.2-0.5	8/21/2008	na	na	na	na	86.8
YC06	0.2 – 0.5	N	YC06b-0.2-0.5	8/21/2008	na	na	na	na	88.9
YC06	0.2 – 0.5	FD	YC06a-0.2-0.5DUP	8/21/2008	na	na	na	na	88.0
YC07	0 – 0.5	N	YC07-0.0-0.5	8/21/2008	115	239	952	27.9 J	91.1
YC07	0.1 – 0.5	N	YC07a-0.1-0.5	8/21/2008	na	na	na	na	86.2
YC07	0.1 – 0.5	N	YC07b-0.1-0.5	8/21/2008	na	na	na	na	90.0
YC07	0.1 – 0.5	N	YC07c-0.1-0.5	8/21/2008	na	na	na	na	93.9
YC08	0 – 0.5	N	YC08-0.0-0.5	8/26/2008	1,250	2,290	3,510	395 J	83.4
YC08	0.1 – 0.5	N	YC08c-0.1-0.5	8/26/2008	234	132	220	21.6 J	94.0
YC08	0.2 – 0.5	N	YC08a-0.2-0.5	8/26/2008	10.0 J	6.87 J	8.63 J	1.81 J	77.4
YC08	0.2 – 0.5	N	YC08b-0.2-0.5	8/26/2008	126	84.5	113	14.4 J	83.9
YC08	0.2 – 0.5	FD	YC08a-0.2-0.5DUP	8/26/2008	13.7 J	9.69 J	9.86 J	2.99 J	76.7
YC08	0.5 – 1	N	YC08a-0.5-1.0	8/26/2008	na	na	na	na	84.3
YC08	0.5 – 1	N	YC08b-0.5-1.0	8/26/2008	na	na	na	na	82.4
YC08	0.5 – 1	N	YC08c-0.5-1.0	8/26/2008	na	na	na	na	94.0
YC09	0 – 0.5	N	YC09-0.0-0.5	8/22/2008	143	82.5	89.1	12.5 J	93.0
YC09	0.1 – 0.5	N	YC09a-0.1-0.5	8/22/2008	na	na	na	na	93.8
YC09	0.1 – 0.5	N	YC09b-0.1-0.5	8/22/2008	na	na	na	na	89.8
YC09	0.1 – 0.5	N	YC09c-0.1-0.5	8/22/2008	na	na	na	na	92.0
YC09	0.5 – 1	N	YC09-0.5-1.0	8/22/2008	na	na	na	na	94.1
YC10	0 – 0.5	N	YC10-0.0-0.5	8/25/2008	370	155	170	15.6 J	90.7
YC10	0.2 – 0.5	N	YC10a-0.2-0.5	8/25/2008	na	na	na	na	89.3
YC10	0.2 – 0.5	N	YC10b-0.2-0.5	8/25/2008	na	na	na	na	91.7
YC10	0.2 – 0.5	N	YC10c-0.2-0.5	8/25/2008	na	na	na	na	92.7
YC10	0.2 – 0.5	FD	YC10a-0.2-0.5DUP	8/25/2008	na	na	na	na	89.4

Street, yard and CB5 results, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	PCBs	PCBs	PCBs	PCBs	PCBs	PCBs	PCBs	PCBs
				Analyte	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Total PCBs
				Unit	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
				Sample Date								
YC11	0 – 0.5	N	YC11-0.0-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC11	0.2 – 0.5	N	YC11a-0.2-0.5	8/25/2008	0.10 U	0.20 U	0.10 U	0.10 U	0.10 U	1.5	0.10 U	1.5
YC11	0.2 – 0.5	N	YC11b-0.2-0.5	8/25/2008	0.011 U	0.021 U	0.011 U	0.011 U	0.011 U	0.27	0.19	0.46
YC11	0.2 – 0.5	N	YC11c-0.2-0.5	8/25/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.54	0.54
YC12	0 – 0.5	N	YC12-0.0-0.5	8/26/2008	na	na	na	na	na	na	na	na
YC12	0.1 – 0.5	N	YC12a-0.1-0.5	8/26/2008	0.011 U	0.021 U	0.011 U	0.011 U	0.011 U	0.011 U	0.13	0.13
YC12	0.1 – 0.5	FD	YC12a-0.1-0.5DUP	8/26/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.11	0.11
YC12	0.2 – 0.5	N	YC12b-0.2-0.5	8/26/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.58	0.58
YC12	0.2 – 0.5	N	YC12c-0.2-0.5	8/26/2008	0.050 U	0.10 U	0.050 U	0.050 U	0.050 U	0.050 U	0.64	0.64
YC13	0 – 0.5	N	YC13-0.0-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC13	0 – 0.5	N	YC13a-0.0-0.5	8/25/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.16	0.16
YC13	0 – 0.5	N	YC13b-0.0-0.5	8/25/2008	0.011 U	0.021 U	0.011 U	0.011 U	0.011 U	0.011 U	0.17	0.17
YC13	0.2 – 0.5	N	YC13c-0.2-0.5	8/25/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.67	0.67
YC14	0 – 0.5	N	YC14-0.0-0.5	8/22/2008	na	na	na	na	na	na	na	na
YC14	0.1 – 0.5	N	YC14a-0.1-0.5	8/22/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.20	0.20
YC14	0.1 – 0.5	N	YC14b-0.1-0.5	8/22/2008	0.037 U	0.036 U	0.022 U	0.012 U	0.0054 U	0.18	0.26	0.44
YC14	0.1 – 0.5	N	YC14c-0.1-0.5	8/22/2008	0.10 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	1.2	1.2
YC14	0.5 – 1	N	YC14-0.5-1.0	8/22/2008	na	na	na	na	na	na	na	na
YC15	0 – 0.5	N	YC15-0.0-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC15	0 – 0.5	N	YC15a-0.0-0.5	8/25/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.19	0.19
YC15	0 – 0.5	N	YC15c-0.0-0.5	8/25/2008	0.011 U	0.021 U	0.011 U	0.011 U	0.011 U	0.011 U	0.19	0.19
YC15	0.1 – 0.5	N	YC15b-0.1-0.5	8/25/2008	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U	0.42	0.42
YC16	0 – 0.5	N	YC16-0.0-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC16	0 – 0.5	N	YC16a-0.0-0.5	8/20/2008	0.0061 U	0.013 U	0.013 U	0.0071 U	0.0081 U	0.021 U	0.11	0.11
YC16	0 – 0.5	N	YC16c-0.0-0.5	8/20/2008	0.060 U	0.12 U	0.060 U	0.060 U	0.071 U	0.12 U	0.13 U	0.13 U
YC16	0.1 – 0.5	N	YC16b-0.1-0.5	8/20/2008	0.055 U	0.12 U	0.055 U	0.055 U	0.32 U	0.43 U	0.26 U	0.43 U
YC17	0 – 0.5	N	YC17-0.0-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC17	0 – 0.5	N	YC17a-0.0-0.5	8/20/2008	0.0052 U	0.011 U	0.0052 U	0.0052 U	0.0052 U	0.024 U	0.12	0.12
YC17	0 – 0.5	N	YC17b-0.0-0.5	8/20/2008	0.013 U	0.015 U	0.017 U	0.0099 U	0.0057 U	0.034 U	0.17	0.17
YC17	0 – 0.5	N	YC17c-0.0-0.5	8/20/2008	0.014 U	0.013 U	0.0062 U	0.0062 U	0.0062 U	0.068	0.077	0.145
YC18	0 – 0.5	N	YC18-0.0-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC18	0.1 – 0.5	N	YC18a-0.1-0.5	8/20/2008	0.0053 U	0.011 U	0.0068 U	0.0053 U	0.0053 U	0.034 U	0.26	0.26
YC18	0.1 – 0.5	N	YC18b-0.1-0.5	8/20/2008	0.0056 U	0.012 U	0.0078 U	0.0056 U	0.0056 U	0.016 U	0.14	0.14
YC18	0.1 – 0.5	N	YC18c-0.1-0.5	8/20/2008	0.0065 U	0.013 U	0.0095 U	0.0065 U	0.0065 U	0.015 U	0.12	0.12
YC19	0 – 0.5	N	YC19-0.0-0.5	8/18/2008	na	na	na	na	na	na	na	na
YC20	0 – 0.5	N	YC20-0.0-0.5	8/18/2008	na	na	na	na	na	na	na	na
CB5	0 – 0	N	CB5-00	8/22/2008	0.34 U	0.68 U	0.34 U	0.34 U	0.34 U	0.34 U	5.8	5.8
CB5	0 – 0	FD	CB5-00DUP	8/22/2008	0.34 U	0.67 U	0.34 U	0.34 U	0.34 U	0.34 U	7.0	7.0
-	0	FW	FW02	8/18/2008	0.0028 U	0.0055 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U
-	0	FW	FW05	8/21/2008	0.0031 U	0.0062 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U
-	0	FW	FW13	8/27/2008	na	na	na	na	na	na	na	na

N = normal sample
FD = field duplicate
FW = filter wipe
J = estimated value
U = not detected at or above the value shown
na = not analyzed

Street, yard and CB5 results, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date							
YC11	0 – 0.5	N	YC11-0.0-0.5	8/25/2008	0.415	1.16 J	1.33 J	4.98	3.95	77.8	651
YC11	0.2 – 0.5	N	YC11a-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC11	0.2 – 0.5	N	YC11b-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC11	0.2 – 0.5	N	YC11c-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC12	0 – 0.5	N	YC12-0.0-0.5	8/26/2008	0.839	3.62	4.11	13.9	11.3	225	1,780 J
YC12	0.1 – 0.5	N	YC12a-0.1-0.5	8/26/2008	na	na	na	na	na	na	na
YC12	0.1 – 0.5	FD	YC12a-0.1-0.5DUP	8/26/2008	na	na	na	na	na	na	na
YC12	0.2 – 0.5	N	YC12b-0.2-0.5	8/26/2008	na	na	na	na	na	na	na
YC12	0.2 – 0.5	N	YC12c-0.2-0.5	8/26/2008	na	na	na	na	na	na	na
YC13	0 – 0.5	N	YC13-0.0-0.5	8/25/2008	0.684	2.63	2.92	9.71	9.01	140	1,110
YC13	0 – 0.5	N	YC13a-0.0-0.5	8/25/2008	na	na	na	na	na	na	na
YC13	0 – 0.5	N	YC13b-0.0-0.5	8/25/2008	na	na	na	na	na	na	na
YC13	0.2 – 0.5	N	YC13c-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC14	0 – 0.5	N	YC14-0.0-0.5	8/22/2008	0.788	2.94	3.67	10.8	10.3	173	1,370
YC14	0.1 – 0.5	N	YC14a-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC14	0.1 – 0.5	N	YC14b-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC14	0.1 – 0.5	N	YC14c-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC14	0.5 – 1	N	YC14-0.5-1.0	8/22/2008	na	na	na	na	na	na	na
YC15	0 – 0.5	N	YC15-0.0-0.5	8/25/2008	2.18	1.71 J	2.13	6.23	5.97	101	761
YC15	0 – 0.5	N	YC15a-0.0-0.5	8/25/2008	na	na	na	na	na	na	na
YC15	0 – 0.5	N	YC15c-0.0-0.5	8/25/2008	na	na	na	na	na	na	na
YC15	0.1 – 0.5	N	YC15b-0.1-0.5	8/25/2008	na	na	na	na	na	na	na
YC16	0 – 0.5	N	YC16-0.0-0.5	8/20/2008	0.253 J	0.87 J	0.985 J	4.18	3.13	82.3	636
YC16	0 – 0.5	N	YC16a-0.0-0.5	8/20/2008	na	na	na	na	na	na	na
YC16	0 – 0.5	N	YC16c-0.0-0.5	8/20/2008	na	na	na	na	na	na	na
YC16	0.1 – 0.5	N	YC16b-0.1-0.5	8/20/2008	na	na	na	na	na	na	na
YC17	0 – 0.5	N	YC17-0.0-0.5	8/20/2008	0.121 J	0.585 J	0.778 J	8.78	2.81	207	2,270 J
YC17	0 – 0.5	N	YC17a-0.0-0.5	8/20/2008	na	na	na	na	na	na	na
YC17	0 – 0.5	N	YC17b-0.0-0.5	8/20/2008	na	na	na	na	na	na	na
YC17	0 – 0.5	N	YC17c-0.0-0.5	8/20/2008	na	na	na	na	na	na	na
YC18	0 – 0.5	N	YC18-0.0-0.5	8/20/2008	0.5	1.49 J	1.78 J	5.45	5.26	83.8	607
YC18	0.1 – 0.5	N	YC18a-0.1-0.5	8/20/2008	na	na	na	na	na	na	na
YC18	0.1 – 0.5	N	YC18b-0.1-0.5	8/20/2008	na	na	na	na	na	na	na
YC18	0.1 – 0.5	N	YC18c-0.1-0.5	8/20/2008	na	na	na	na	na	na	na
YC19	0 – 0.5	N	YC19-0.0-0.5	8/18/2008	0.844	2.34	2.41	8.43	7.16	130	1,010
YC20	0 – 0.5	N	YC20-0.0-0.5	8/18/2008	0.562	1.84 J	2.02	5.21	5.62	84.6	646
CB5	0 – 0	N	CB5-00	8/22/2008	0.918 J	4 J	5.02	17	14.8	495	6,060 J
CB5	0 – 0	FD	CB5-00DUP	8/22/2008	0.878	4.27	6.33	23.7	12.4	918	13,700 J
-	0	FW	FW02	8/18/2008	0.127 U	0.363 J	0.116 U	1.02 J	0.586 J	15.7 J	118
-	0	FW	FW05	8/21/2008	00.131 U	0.165 U	0.139 U	0.175 U	0.150 U	8.8 J	69.2 J
-	0	FW	FW13	8/27/2008	0.0178 U	0.0172 U	0.0283 U	0.0363 U	0.0309 U	1.75 J	20.1 J

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na = not analyzed

Street, yard and CB5 results, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date							
YC11	0 – 0.5	N	YC11-0.0-0.5	8/25/2008	3.23	1.85 U	3.2	4.92	3.52	1.85 U	5.60 U
YC11	0.2 – 0.5	N	YC11a-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC11	0.2 – 0.5	N	YC11b-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC11	0.2 – 0.5	N	YC11c-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC12	0 – 0.5	N	YC12-0.0-0.5	8/26/2008	6.33	2.67 U	8.00	11.0 U	9.89	0.184 J	12.9 U
YC12	0.1 – 0.5	N	YC12a-0.1-0.5	8/26/2008	na	na	na	na	na	na	na
YC12	0.1 – 0.5	FD	YC12a-0.1-0.5DUP	8/26/2008	na	na	na	na	na	na	na
YC12	0.2 – 0.5	N	YC12b-0.2-0.5	8/26/2008	na	na	na	na	na	na	na
YC12	0.2 – 0.5	N	YC12c-0.2-0.5	8/26/2008	na	na	na	na	na	na	na
YC13	0 – 0.5	N	YC13-0.0-0.5	8/25/2008	9.49	5.06 U	8.30 U	10.8 U	5.84	0.225 J	8.79 U
YC13	0 – 0.5	N	YC13a-0.0-0.5	8/25/2008	na	na	na	na	na	na	na
YC13	0 – 0.5	N	YC13b-0.0-0.5	8/25/2008	na	na	na	na	na	na	na
YC13	0.2 – 0.5	N	YC13c-0.2-0.5	8/25/2008	na	na	na	na	na	na	na
YC14	0 – 0.5	N	YC14-0.0-0.5	8/22/2008	7.34	3.86 U	7.38 U	14.5 U	6.77	0.219 J	10.5
YC14	0.1 – 0.5	N	YC14a-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC14	0.1 – 0.5	N	YC14b-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC14	0.1 – 0.5	N	YC14c-0.1-0.5	8/22/2008	na	na	na	na	na	na	na
YC14	0.5 – 1	N	YC14-0.5-1.0	8/22/2008	na	na	na	na	na	na	na
YC15	0 – 0.5	N	YC15-0.0-0.5	8/25/2008	3.98	1.98 U	3.49 U	4.91 U	2.67	1.89 U	4.00 U
YC15	0 – 0.5	N	YC15a-0.0-0.5	8/25/2008	na	na	na	na	na	na	na
YC15	0 – 0.5	N	YC15c-0.0-0.5	8/25/2008	na	na	na	na	na	na	na
YC15	0.1 – 0.5	N	YC15b-0.1-0.5	8/25/2008	na	na	na	na	na	na	na
YC16	0 – 0.5	N	YC16-0.0-0.5	8/20/2008	2.37	1.10 J	1.75 J	2.83	1.44 J	1.89 U	1.77 J
YC16	0 – 0.5	N	YC16a-0.0-0.5	8/20/2008	na	na	na	na	na	na	na
YC16	0 – 0.5	N	YC16c-0.0-0.5	8/20/2008	na	na	na	na	na	na	na
YC16	0.1 – 0.5	N	YC16b-0.1-0.5	8/20/2008	na	na	na	na	na	na	na
YC17	0 – 0.5	N	YC17-0.0-0.5	8/20/2008	0.803	0.534 J	0.911 J	3.36	1.58 J	1.98 U	1.35 J
YC17	0 – 0.5	N	YC17a-0.0-0.5	8/20/2008	na	na	na	na	na	na	na
YC17	0 – 0.5	N	YC17b-0.0-0.5	8/20/2008	na	na	na	na	na	na	na
YC17	0 – 0.5	N	YC17c-0.0-0.5	8/20/2008	na	na	na	na	na	na	na
YC18	0 – 0.5	N	YC18-0.0-0.5	8/20/2008	3.46	1.90 U	2.79	4.44 U	2.24	1.90 U	3.43
YC18	0.1 – 0.5	N	YC18a-0.1-0.5	8/20/2008	na	na	na	na	na	na	na
YC18	0.1 – 0.5	N	YC18b-0.1-0.5	8/20/2008	na	na	na	na	na	na	na
YC18	0.1 – 0.5	N	YC18c-0.1-0.5	8/20/2008	na	na	na	na	na	na	na
YC19	0 – 0.5	N	YC19-0.0-0.5	8/18/2008	7.38	3.2	5.84	7.82	4.27	1.88 U	6.74
YC20	0 – 0.5	N	YC20-0.0-0.5	8/18/2008	5.83	2.19	3.63	4.93	2.39	1.94 U	3.53
CB5	0 – 0	N	CB5-00	8/22/2008	11.1	3.9 J	15.2	18.4	6.86	4.88 U	10.2
CB5	0 – 0	FD	CB5-00DUP	8/22/2008	13.4	4.58	21.3	25.5	7.72	4.21 U	7.90 U
-	0	FW	FW02	8/18/2008	0.690 J	0.452 J	0.437 J	0.822 J	0.315 J	0.169 U	0.408 J
-	0	FW	FW05	8/21/2008	0.125 U	0.124 U	0.118 U	0.686 J	0.184 U	0.216 U	0.204 U
-	0	FW	FW13	8/27/2008	0.0134 U	0.0198 U	0.0190 U	0.175 J	0.0937 J	0.0229 U	0.0193 U

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Street, yard and CB5 results, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date								
YC11	0 – 0.5	N	YC11-0.0-0.5	8/25/2008	19.2	1.3 J	46.2	12.5	13.1	45.5	152	63.2
YC11	0.2 – 0.5	N	YC11a-0.2-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC11	0.2 – 0.5	N	YC11b-0.2-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC11	0.2 – 0.5	N	YC11c-0.2-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC12	0 – 0.5	N	YC12-0.0-0.5	8/26/2008	60.2	3.11	129	34.8	38.5	139	454	182
YC12	0.1 – 0.5	N	YC12a-0.1-0.5	8/26/2008	na	na	na	na	na	na	na	na
YC12	0.1 – 0.5	FD	YC12a-0.1-0.5DUP	8/26/2008	na	na	na	na	na	na	na	na
YC12	0.2 – 0.5	N	YC12b-0.2-0.5	8/26/2008	na	na	na	na	na	na	na	na
YC12	0.2 – 0.5	N	YC12c-0.2-0.5	8/26/2008	na	na	na	na	na	na	na	na
YC13	0 – 0.5	N	YC13-0.0-0.5	8/25/2008	37.6	2.44	73.5	25.8	27.7	88.9	271	138
YC13	0 – 0.5	N	YC13a-0.0-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC13	0 – 0.5	N	YC13b-0.0-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC13	0.2 – 0.5	N	YC13c-0.2-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC14	0 – 0.5	N	YC14-0.0-0.5	8/22/2008	55.6	5.89	138 U	41.3	37.8	102	337	150
YC14	0.1 – 0.5	N	YC14a-0.1-0.5	8/22/2008	na	na	na	na	na	na	na	na
YC14	0.1 – 0.5	N	YC14b-0.1-0.5	8/22/2008	na	na	na	na	na	na	na	na
YC14	0.1 – 0.5	N	YC14c-0.1-0.5	8/22/2008	na	na	na	na	na	na	na	na
YC14	0.5 – 1	N	YC14-0.5-1.0	8/22/2008	na	na	na	na	na	na	na	na
YC15	0 – 0.5	N	YC15-0.0-0.5	8/25/2008	27.6	1.51 J	67.6	21.4	19.5	60.6	197	69.2
YC15	0 – 0.5	N	YC15a-0.0-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC15	0 – 0.5	N	YC15c-0.0-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC15	0.1 – 0.5	N	YC15b-0.1-0.5	8/25/2008	na	na	na	na	na	na	na	na
YC16	0 – 0.5	N	YC16-0.0-0.5	8/20/2008	19.7	1.02 J	69.8	8.44	8.02	36.5	156	29.5
YC16	0 – 0.5	N	YC16a-0.0-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC16	0 – 0.5	N	YC16c-0.0-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC16	0.1 – 0.5	N	YC16b-0.1-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC17	0 – 0.5	N	YC17-0.0-0.5	8/20/2008	55.4	2.36	158	2.63	3.22	38.6	387	11.9
YC17	0 – 0.5	N	YC17a-0.0-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC17	0 – 0.5	N	YC17b-0.0-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC17	0 – 0.5	N	YC17c-0.0-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC18	0 – 0.5	N	YC18-0.0-0.5	8/20/2008	22.7	1.22 J	42.6	19.2	17.8	53.8	165	61.4
YC18	0.1 – 0.5	N	YC18a-0.1-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC18	0.1 – 0.5	N	YC18b-0.1-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC18	0.1 – 0.5	N	YC18c-0.1-0.5	8/20/2008	na	na	na	na	na	na	na	na
YC19	0 – 0.5	N	YC19-0.0-0.5	8/18/2008	59.9	1.98	72.6	39.9	34.4	89.5	248	139
YC20	0 – 0.5	N	YC20-0.0-0.5	8/18/2008	20.9	1.25 J	39.9	23.3	23	59.5	165	89.9
CB5	0 – 0	N	CB5-00	8/22/2008	78.5	7.59	280	12.7	23.5	200	1,990	166
CB5	0 – 0	FD	CB5-00DUP	8/22/2008	104 J	11.6	437	14.9	23.4	328	4,360	263
-	0	FW	FW02	8/18/2008	4.21 J	0.496 J	22.7 J	0.127 U	0.175 U	1.60 J	42.0 J	0.690 J
-	0	FW	FW05	8/21/2008	2.98 J	0.241 U	14.3 J	0.131 U	0.165 U	0.139 U	21.9 J	0.125 U
-	0	FW	FW13	8/27/2008	0.760 J	0.0471 U	3.19 J	0.0178 U	0.0172 U	0.0283 U	4.29 J	0.0134 U

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Street, yard and CB5 results, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Conventionals
				Analyte	Total PeCDF	Total HxCDF	Total HpCDF	Dioxin/furan TEQ	Total solids
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	% ww
				Sample Date					
YC11	0 – 0.5	N	YC11-0.0-0.5	8/25/2008	123	55.3	44.4	6.32 J	85.0
YC11	0.2 – 0.5	N	YC11a-0.2-0.5	8/25/2008	na	na	na	na	90.9
YC11	0.2 – 0.5	N	YC11b-0.2-0.5	8/25/2008	na	na	na	na	81.5
YC11	0.2 – 0.5	N	YC11c-0.2-0.5	8/25/2008	na	na	na	na	83.3
YC12	0 – 0.5	N	YC12-0.0-0.5	8/26/2008	479	204	152	16.0 J	89.2
YC12	0.1 – 0.5	N	YC12a-0.1-0.5	8/26/2008	na	na	na	na	83.5
YC12	0.1 – 0.5	FD	YC12a-0.1-0.5DUP	8/26/2008	na	na	na	na	83.0
YC12	0.2 – 0.5	N	YC12b-0.2-0.5	8/26/2008	na	na	na	na	89.9
YC12	0.2 – 0.5	N	YC12c-0.2-0.5	8/26/2008	na	na	na	na	92.9
YC13	0 – 0.5	N	YC13-0.0-0.5	8/25/2008	153	112	79.6	11.5 J	83.3
YC13	0 – 0.5	N	YC13a-0.0-0.5	8/25/2008	na	na	na	na	81.8
YC13	0 – 0.5	N	YC13b-0.0-0.5	8/25/2008	na	na	na	na	80.5
YC13	0.2 – 0.5	N	YC13c-0.2-0.5	8/25/2008	na	na	na	na	89.2
YC14	0 – 0.5	N	YC14-0.0-0.5	8/22/2008	198	108	126	13.4 J	89.3
YC14	0.1 – 0.5	N	YC14a-0.1-0.5	8/22/2008	na	na	na	na	82.3
YC14	0.1 – 0.5	N	YC14b-0.1-0.5	8/22/2008	na	na	na	na	92.0
YC14	0.1 – 0.5	N	YC14c-0.1-0.5	8/22/2008	na	na	na	na	91.5
YC14	0.5 – 1	N	YC14-0.5-1.0	8/22/2008	na	na	na	na	90.2
YC15	0 – 0.5	N	YC15-0.0-0.5	8/25/2008	76.3	42.8	63.2	8.63 J	82.3
YC15	0 – 0.5	N	YC15a-0.0-0.5	8/25/2008	na	na	na	na	79.7
YC15	0 – 0.5	N	YC15c-0.0-0.5	8/25/2008	na	na	na	na	81.9
YC15	0.1 – 0.5	N	YC15b-0.1-0.5	8/25/2008	na	na	na	na	86.1
YC16	0 – 0.5	N	YC16-0.0-0.5	8/20/2008	29.9	32.5	59.3	4.69 J	86.2
YC16	0 – 0.5	N	YC16a-0.0-0.5	8/20/2008	na	na	na	na	82.7
YC16	0 – 0.5	N	YC16c-0.0-0.5	8/20/2008	na	na	na	na	84.2
YC16	0.1 – 0.5	N	YC16b-0.1-0.5	8/20/2008	na	na	na	na	89.9
YC17	0 – 0.5	N	YC17-0.0-0.5	8/20/2008	31	85.6	182	6.42 J	84.3
YC17	0 – 0.5	N	YC17a-0.0-0.5	8/20/2008	na	na	na	na	95.1
YC17	0 – 0.5	N	YC17b-0.0-0.5	8/20/2008	na	na	na	na	87.4
YC17	0 – 0.5	N	YC17c-0.0-0.5	8/20/2008	na	na	na	na	81.1
YC18	0 – 0.5	N	YC18-0.0-0.5	8/20/2008	65.1	50.1	52.1	6.60 J	84.9
YC18	0.1 – 0.5	N	YC18a-0.1-0.5	8/20/2008	na	na	na	na	94.6
YC18	0.1 – 0.5	N	YC18b-0.1-0.5	8/20/2008	na	na	na	na	90.1
YC18	0.1 – 0.5	N	YC18c-0.1-0.5	8/20/2008	na	na	na	na	77.2
YC19	0 – 0.5	N	YC19-0.0-0.5	8/18/2008	136	110	118	11.8	90.8
YC20	0 – 0.5	N	YC20-0.0-0.5	8/18/2008	72.1	38.7	45.7	7.88 J	88.8
CB5	0 – 0	N	CB5-00	8/22/2008	244	187	235	26.0 J	33.5
CB5	0 – 0	FD	CB5-00DUP	8/22/2008	369	269	379	35.8 J	18.8
-	0	FW	FW02	8/18/2008	0.888 J	3.95 J	13.0 J	-	na
-	0	FW	FW05	8/21/2008	0.118 U	0.184 J	7.36 J		na
-	0	FW	FW13	8/27/2008	0.0190 U	0.800 J	1.56 J	-	na

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FD = field duplicate
FW = filter wipe
J = estimated value
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Upland Soil

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	PAHs	PAHs	PAHs	PAHs	PAHs	PAHs	PAHs
				Analyte	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene
				Unit	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
				Sample Date							
SB53	0.5 – 2	N	T117-SB53-0.5-2.0	9/3/2008	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 UJ
SB53	0.5 – 2	FD	T117-SB61-0.5-2.0	9/3/2008	na	na	na	na	na	na	na
SB54	2 – 3.5	N	T117-SB54-2.0-3.5	9/3/2008	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 UJ
SB54	3.5 – 5	N	T117-SB54-3.5-5.0	9/3/2008	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 UJ
SB54	8.5 - 10	N	T117-SB54-8.5-10.0	9/4/2008	na	na	na	na	na	na	na
SB55	2 – 3.5	N	T117-SB55-2.0-3.5	9/3/2008	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U
SB55	3.5 – 5	N	T117-SB55-3.5-5.0	9/3/2008	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U
SB55	11.5 - 13	N	T117-SB55-11.5-13.0	9/4/2008	na	na	na	na	na	na	na
SB56	1 – 2.5	N	T117-SB56-1.0-2.5	9/3/2008	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 UJ
SB56	2.5 – 4	N	T117-SB56-2.5-4.0	9/3/2008	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U
SB56	2.5 – 4	FD	T117-SB62-2.5-4.0	9/3/2008	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 UJ
SB56	4 – 5.5	N	T117-SB56-4.0-5.5	9/3/2008	0.85	0.85	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U
SB56	5.5 – 7	N	T117-SB56-5.5-7.0	9/3/2008	na	na	na	na	na	na	na
SB57b	2 – 3.5	N	T117-SB57b-2.0-3.5	9/2/2008	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U
SB57b	3.5 – 5	N	T117-SB57b-3.5-5.0	9/2/2008	0.070 U	0.070 U	0.072	0.070 U	0.16	0.29	0.26
SB57b	10 -11.5	N	T117-SB57b-10.0-11.5	9/3/2008	na	na	na	na	na	na	na
SB57b	0	RB	T117-SB57b-10.0-11.5-RB	9/3/2008	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
SB58	0.5 – 2	N	T117-SB58-0.5-2.0	9/3/2008	0.77	0.67	0.26	0.12 U	0.16	0.36	0.30 J
SB58	2 – 3.5	N	T117-SB58-2.0-3.5	9/3/2008	0.26	0.28	0.074 U	0.074 U	0.074 U	0.074 U	0.074 UJ
SB58	2 – 3.5	FD	T117-SB63-2.0-3.5	9/3/2008	na	na	na	na	na	na	na
SB58	3.5 – 5	N	T117-SB58-3.5-5.0	9/3/2008	na	na	na	na	na	na	na
SB58	0	RB	T117-SB58-0.5-3.5-RB	9/3/2008	na	na	na	na	na	na	na
SB59	1.5 – 3	N	T117-SB59-1.5-3.0	9/3/2008	0.14	0.16	0.13 U	0.13 U	0.13 U	0.14	0.13 U
SB59	3 – 4.5	N	T117-SB59-3.0-4.5	9/3/2008	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U
SB59	15 – 16.5	N	T117-SB59-15.0-16.5	9/3/2008	na	na	na	na	na	na	na
SB59	17.5 – 19	N	T117-SB59-17.5-19.0	9/3/2008	na	na	na	na	na	na	na
SB60	0.5 – 2	N	T117-SB60-0.5-2.0	9/2/2008	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.19	0.18
SB60	2 – 3.5	N	T117-SB60-2.0-3.5	9/2/2008	0.24	0.24	0.12 U	0.12 U	0.12 U	0.21	0.14
SB60	3.5 – 5	N	T117-SB60-3.5-5.0	9/2/2008	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U
SB60	12.5 – 14	N	T117-SB60-12.5-14.0	9/2/2008	na	na	na	na	na	na	na
SB60	15 – 16.5	N	T117-SB60-15.0-16.5	9/2/2008	na	na	na	na	na	na	na

FD = field duplicate
J = estimated value
N = normal sample
RB = rinsate blank (PCB and PAHs = ug/L, TPH = mg/L)
U = not detected at or above the value shown
na = not analyzed

Upland Soil, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	PAHs	PAHs	PAHs	PAHs	PAHs	PAHs
				Analyte	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Total benzofluoranthenes	Chrysene	Dibenzo(a,h)anthracene
				Unit	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
				Sample Date						
SB53	0.5 – 2	N	T117-SB53-0.5-2.0	9/3/2008	0.071 UJ	0.071 UJ	0.071 UJ	0.071 UJ	0.071 U	0.071 UJ
SB53	0.5 – 2	FD	T117-SB61-0.5-2.0	9/3/2008	na	na	na	na	na	na
SB54	2 – 3.5	N	T117-SB54-2.0-3.5	9/3/2008	0.069 UJ	0.069 UJ	0.077 J	0.077 J	0.15	0.069 UJ
SB54	3.5 – 5	N	T117-SB54-3.5-5.0	9/3/2008	0.071 UJ	0.071 UJ	0.071 J	0.071 J	0.092	0.071 UJ
SB54	8.5 - 10	N	T117-SB54-8.5-10.0	9/4/2008	na	na	na	na	na	na
SB55	2 – 3.5	N	T117-SB55-2.0-3.5	9/3/2008	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U
SB55	3.5 – 5	N	T117-SB55-3.5-5.0	9/3/2008	0.069 U	0.069 U	0.10	0.10	0.21	0.069 U
SB55	11.5 - 13	N	T117-SB55-11.5-13.0	9/4/2008	na	na	na	na	na	na
SB56	1 – 2.5	N	T117-SB56-1.0-2.5	9/3/2008	0.13 J	0.072 UJ	0.096 J	0.23 J	0.13	0.072 UJ
SB56	2.5 – 4	N	T117-SB56-2.5-4.0	9/3/2008	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U
SB56	2.5 – 4	FD	T117-SB62-2.5-4.0	9/3/2008	0.069 UJ	0.069 UJ	0.069 UJ	0.069 UJ	0.069 U	0.069 UJ
SB56	4 – 5.5	N	T117-SB56-4.0-5.5	9/3/2008	0.83 U	0.83 U	0.83 U	0.83 U	1.0	0.83 U
SB56	5.5 – 7	N	T117-SB56-5.5-7.0	9/3/2008	na	na	na	na	na	na
SB57b	2 – 3.5	N	T117-SB57b-2.0-3.5	9/2/2008	0.069 U	0.069 U	0.069 U	0.069 U	0.084	0.069 U
SB57b	3.5 – 5	N	T117-SB57b-3.5-5.0	9/2/2008	0.31	0.097 J	0.28	0.59	0.34	0.070 UJ
SB57b	10 -11.5	N	T117-SB57b-10.0-11.5	9/3/2008	na	na	na	na	na	na
SB57b	0	RB	T117-SB57b-10.0-11.5-RB	9/3/2008	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
SB58	0.5 – 2	N	T117-SB58-0.5-2.0	9/3/2008	0.31 J	0.18 J	0.13 J	0.44 J	0.66	0.12 UJ
SB58	2 – 3.5	N	T117-SB58-2.0-3.5	9/3/2008	0.074 UJ	0.074 UJ	0.074 UJ	0.074 UJ	0.074 U	0.074 UJ
SB58	2 – 3.5	FD	T117-SB63-2.0-3.5	9/3/2008	na	na	na	na	na	na
SB58	3.5 – 5	N	T117-SB58-3.5-5.0	9/3/2008	na	na	na	na	na	na
SB58	0	RB	T117-SB58-0.5-3.5-RB	9/3/2008	na	na	na	na	na	na
SB59	1.5 – 3	N	T117-SB59-1.5-3.0	9/3/2008	0.13 U	0.13 U	0.13 U	0.13 U	0.39	0.13 U
SB59	3 – 4.5	N	T117-SB59-3.0-4.5	9/3/2008	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U
SB59	15 – 16.5	N	T117-SB59-15.0-16.5	9/3/2008	na	na	na	na	na	na
SB59	17.5 – 19	N	T117-SB59-17.5-19.0	9/3/2008	na	na	na	na	na	na
SB60	0.5 – 2	N	T117-SB60-0.5-2.0	9/2/2008	0.17	0.13 U	0.28	0.45	0.4	0.13 U
SB60	2 – 3.5	N	T117-SB60-2.0-3.5	9/2/2008	0.16	0.12 U	0.18	0.34	0.46	0.12 U
SB60	3.5 – 5	N	T117-SB60-3.5-5.0	9/2/2008	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U
SB60	12.5 – 14	N	T117-SB60-12.5-14.0	9/2/2008	na	na	na	na	na	na
SB60	15 – 16.5	N	T117-SB60-15.0-16.5	9/2/2008	na	na	na	na	na	na

FD = field duplicate
J = estimated value
N = normal sample
RB = rinsate blank (PCB and PAHs = ug/L, TPH = mg/L)
U = not detected at or above the value shown
na = not analyzed

Upland Soil, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	PAHs	PAHs	PAHs	PAHs	PAHs	PAHs	PAHs	PAHs	PAHs
				Analyte	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total HPAHs	Total LPAHs
				Unit	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
				Sample Date									
SB53	0.5 – 2	N	T117-SB53-0.5-2.0	9/3/2008	0.071 U	0.071 U	0.071 U	0.071 UJ	0.071 U	0.071 U	0.081	0.081	0.071 U
SB53	0.5 – 2	FD	T117-SB61-0.5-2.0	9/3/2008	na	na	na	na	na	na	na	na	na
SB54	2 – 3.5	N	T117-SB54-2.0-3.5	9/3/2008	0.069 U	0.082 J	0.069 U	0.069 UJ	0.069 U	0.069 U	0.14	0.45 J	0.069 U
SB54	3.5 – 5	N	T117-SB54-3.5-5.0	9/3/2008	0.071 U	0.071 U	0.071 U	0.071 UJ	0.071 U	0.071 U	0.078	0.241 J	0.071 U
SB54	8.5 - 10	N	T117-SB54-8.5-10.0	9/4/2008		na	na	na	na	na	na	na	na
SB55	2 – 3.5	N	T117-SB55-2.0-3.5	9/3/2008	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U
SB55	3.5 – 5	N	T117-SB55-3.5-5.0	9/3/2008	0.069 U	0.098 J	0.069 U	0.069 U	0.069 U	0.096	0.14	0.55 J	0.096
SB55	11.5 - 13	N	T117-SB55-11.5-13.0	9/4/2008	na	na	na	na	na	na	na	na	na
SB56	1 – 2.5	N	T117-SB56-1.0-2.5	9/3/2008	0.072 U	0.072 U	0.072 U	0.072 UJ	0.072 U	0.072 U	0.14	0.50 J	0.072 U
SB56	2.5 – 4	N	T117-SB56-2.5-4.0	9/3/2008	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U
SB56	2.5 – 4	FD	T117-SB62-2.5-4.0	9/3/2008	0.069 U	0.069 U	0.069 U	0.069 UJ	0.069 U	0.069 U	0.069 U	0.069 UJ	0.069 U
SB56	4 – 5.5	N	T117-SB56-4.0-5.5	9/3/2008	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	1.6	2.6	0.83 U
SB56	5.5 – 7	N	T117-SB56-5.5-7.0	9/3/2008	na	na	na	na	na	na	na	na	na
SB57b	2 – 3.5	N	T117-SB57b-2.0-3.5	9/2/2008	0.069 U	0.10 J	0.069 U	0.069 U	0.069 U	0.069 U	0.099	0.28 J	0.069 U
SB57b	3.5 – 5	N	T117-SB57b-3.5-5.0	9/2/2008	0.070 U	0.64 J	0.076	0.087 J	0.070 U	0.54	0.60	2.90 J	0.85
SB57b	10 -11.5	N	T117-SB57b-10.0-11.5	9/3/2008	na	na	na	na	na	na	na	na	na
SB57b	0	RB	T117-SB57b-10.0-11.5-RB	9/3/2008	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
SB58	0.5 – 2	N	T117-SB58-0.5-2.0	9/3/2008	0.12 U	0.19 J	0.24	0.12 UJ	0.12 U	0.84	1.4	3.5 J	1.5
SB58	2 – 3.5	N	T117-SB58-2.0-3.5	9/3/2008	0.074 U	0.074 U	0.074 U	0.074 UJ	0.074 U	0.098	0.11	0.11	0.098
SB58	2 – 3.5	FD	T117-SB63-2.0-3.5	9/3/2008	na	na	na	na	na	na	na	na	na
SB58	3.5 – 5	N	T117-SB58-3.5-5.0	9/3/2008	na	na	na	na	na	na	na	na	na
SB58	0	RB	T117-SB58-0.5-3.5-RB	9/3/2008	na	na	na	na	na	na	na	na	na
SB59	1.5 – 3	N	T117-SB59-1.5-3.0	9/3/2008	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.32	0.44	0.97	0.32
SB59	3 – 4.5	N	T117-SB59-3.0-4.5	9/3/2008	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U	0.070 U
SB59	15 – 16.5	N	T117-SB59-15.0-16.5	9/3/2008	na	na	na	na	na	na	na	na	na
SB59	17.5 – 19	N	T117-SB59-17.5-19.0	9/3/2008	na	na	na	na	na	na	na	na	na
SB60	0.5 – 2	N	T117-SB60-0.5-2.0	9/2/2008	0.13 U	0.20 J	0.13 U	0.13 U	0.13 U	0.13 U	0.42	1.84 J	0.13 U
SB60	2 – 3.5	N	T117-SB60-2.0-3.5	9/2/2008	0.12 U	0.19 J	0.12 U	0.12 U	0.12 U	0.3	0.41	1.75 J	0.3
SB60	3.5 – 5	N	T117-SB60-3.5-5.0	9/2/2008	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U	0.072 U
SB60	12.5 – 14	N	T117-SB60-12.5-14.0	9/2/2008	na	na	na	na	na	na	na	na	na
SB60	15 – 16.5	N	T117-SB60-15.0-16.5	9/2/2008	na	na	na	na	na	na	na	na	na

FD = field duplicate
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RB = rinsate blank (PCB and PAHs = ug/L, TPH = mg/L)
U = not detected at or above the value shown
na = not analyzed

Upland Soil, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	PAHs	PAHs	PCBs	PCBs	PCBs	PCBs	PCBs	PCBs
				Analyte	cPAHs - mammal - half DL	Total PAHs	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254
				Unit	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
				Sample Date								
SB53	0.5 – 2	N	T117-SB53-0.5-2.0	9/3/2008	0.0640 UJ	0.081	17 U	17 U	17 U	17 U	17 U	17 U
SB53	0.5 – 2	FD	T117-SB61-0.5-2.0	9/3/2008	na	na	na	na	na	na	na	na
SB54	2 – 3.5	N	T117-SB54-2.0-3.5	9/3/2008	0.0680 J	0.45 J	33 U	33 U	33 U	33 U	33 U	33 U
SB54	3.5 – 5	N	T117-SB54-3.5-5.0	9/3/2008	0.0680 J	0.241 J	17 U	17 U	17 U	17 U	17 U	17 U
SB54	8.5 - 10	N	T117-SB54-8.5-10.0	9/4/2008	na	na	7.1 U	7.1 U	7.1 U	7.1 U	7.1 U	7.1 U
SB55	2 – 3.5	N	T117-SB55-2.0-3.5	9/3/2008	0.0640 U	0.071 U	34 U	34 U	34 U	34 U	34 U	34 U
SB55	3.5 – 5	N	T117-SB55-3.5-5.0	9/3/2008	0.071	0.64 J	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.78 U
SB55	11.5 - 13	N	T117-SB55-11.5-13.0	9/4/2008	na	na	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	13 U
SB56	1 – 2.5	N	T117-SB56-1.0-2.5	9/3/2008	0.0820 J	0.50 J	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
SB56	2.5 – 4	N	T117-SB56-2.5-4.0	9/3/2008	0.0560 U	0.062 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
SB56	2.5 – 4	FD	T117-SB62-2.5-4.0	9/3/2008	0.0620 UJ	0.069 UJ	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
SB56	4 – 5.5	N	T117-SB56-4.0-5.5	9/3/2008	0.76	2.6	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
SB56	5.5 – 7	N	T117-SB56-5.5-7.0	9/3/2008	na	na	na	na	na	na	na	na
SB57b	2 – 3.5	N	T117-SB57b-2.0-3.5	9/2/2008	0.063	0.28 J	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U
SB57b	3.5 – 5	N	T117-SB57b-3.5-5.0	9/2/2008	0.370 J	3.75 J	17 U	17 U	17 U	17 U	17 U	17 U
SB57b	10 -11.5	N	T117-SB57b-10.0-11.5	9/3/2008	na	na	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	7.1 U
SB57b	0	RB	T117-SB57b-10.0-11.5-RB	9/3/2008	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
SB58	0.5 – 2	N	T117-SB58-0.5-2.0	9/3/2008	0.420 J	5.0 J	18 U	18 U	18 U	18 U	18 U	18 U
SB58	2 – 3.5	N	T117-SB58-2.0-3.5	9/3/2008	0.0670 UJ	0.21	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
SB58	2 – 3.5	FD	T117-SB63-2.0-3.5	9/3/2008	na	na	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
SB58	3.5 – 5	N	T117-SB58-3.5-5.0	9/3/2008	na	na	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	3.4 U
SB58	0	RB	T117-SB58-0.5-3.5-RB	9/3/2008	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
SB59	1.5 – 3	N	T117-SB59-1.5-3.0	9/3/2008	0.128	1.29	45 U	45 U	45 U	45 U	45 U	45 U
SB59	3 – 4.5	N	T117-SB59-3.0-4.5	9/3/2008	0.0630 U	0.070 U	0.058 U	0.058 U	0.058 U	0.058 U	0.058 U	0.058 U
SB59	15 – 16.5	N	T117-SB59-15.0-16.5	9/3/2008	na	na	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
SB59	17.5 – 19	N	T117-SB59-17.5-19.0	9/3/2008	na	na	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U
SB60	0.5 – 2	N	T117-SB60-0.5-2.0	9/2/2008	0.28	1.84 J	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U
SB60	2 – 3.5	N	T117-SB60-2.0-3.5	9/2/2008	0.23	2.05 J	71 U	71 U	71 U	71 U	71 U	71 U
SB60	3.5 – 5	N	T117-SB60-3.5-5.0	9/2/2008	0.0650 U	0.072 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
SB60	12.5 – 14	N	T117-SB60-12.5-14.0	9/2/2008	na	na	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
SB60	15 – 16.5	N	T117-SB60-15.0-16.5	9/2/2008	na	na	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U

FD = field duplicate
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N = normal sample
RB = rinsate blank (PCB and PAHs = ug/L, TPH = mg/L)
U = not detected at or above the value shown
na = not analyzed

Upland Soil, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	PCBs	PCBs	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	Aroclor-1260	Total PCBs	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD
				Unit	mg/kg dw	mg/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date							
SB53	0.5 – 2	N	T117-SB53-0.5-2.0	9/3/2008	60	60	0.440 U	2.19 U	2.19 U	3.59	2.27 U
SB53	0.5 – 2	FD	T117-SB61-0.5-2.0	9/3/2008	na	na	0.440 U	2.19 U	1.05 J	3.44	2.30
SB54	2 – 3.5	N	T117-SB54-2.0-3.5	9/3/2008	150	150	1.77	2.43 U	18.1	61.8	35.6
SB54	3.5 – 5	N	T117-SB54-3.5-5.0	9/3/2008	82	82	0.876	2.35 U	6.2	20.4	12.1
SB54	8.5 - 10	N	T117-SB54-8.5-10.0	9/4/2008	23	23	0.396 J	0.448	3.42	11.7	6.53
SB55	2 – 3.5	N	T117-SB55-2.0-3.5	9/3/2008	190	190	0.430 U	2.17 U	2.17 U	6.01	2.17 U
SB55	3.5 – 5	N	T117-SB55-3.5-5.0	9/3/2008	2.4	2.4	2.06 U	28.8	60.5	170	142
SB55	11.5 - 13	N	T117-SB55-11.5-13.0	9/4/2008	39	39	0.480 J	0.316	7.86	25.1	19.0
SB56	1 – 2.5	N	T117-SB56-1.0-2.5	9/3/2008	1.5	1.5	0.965	4.03 U	3.17	11.8	6.40
SB56	2.5 – 4	N	T117-SB56-2.5-4.0	9/3/2008	5.7	5.7	na	na	na	na	na
SB56	2.5 – 4	FD	T117-SB62-2.5-4.0	9/3/2008	1.2	1.2	na	na	na	na	na
SB56	4 – 5.5	N	T117-SB56-4.0-5.5	9/3/2008	0.82	0.82	na	na	na	na	na
SB56	5.5 – 7	N	T117-SB56-5.5-7.0	9/3/2008	na	na	na	na	na	na	na
SB57b	2 – 3.5	N	T117-SB57b-2.0-3.5	9/2/2008	14	14	0.450 U	2.27 U	0.993 J	3.75	2.25 J
SB57b	3.5 – 5	N	T117-SB57b-3.5-5.0	9/2/2008	110	110	0.431 J	2.40 U	1.59 J	7.59	3.60
SB57b	10 -11.5	N	T117-SB57b-10.0-11.5	9/3/2008	23	23	0.315 J	0.300	1.36 J	5.12	3.06
SB57b	0	RB	T117-SB57b-10.0-11.5-RB	9/3/2008	1.0 U	1.0 U	na	na	na	na	na
SB58	0.5 – 2	N	T117-SB58-0.5-2.0	9/3/2008	42	42	0.887	3.47 U	3.94	17.8	7.10
SB58	2 – 3.5	N	T117-SB58-2.0-3.5	9/3/2008	1.5	1.5	2.97	18.4	9.07	43.9	18.5
SB58	2 – 3.5	FD	T117-SB63-2.0-3.5	9/3/2008	1.5	1.5	na	na	na	na	na
SB58	3.5 – 5	N	T117-SB58-3.5-5.0	9/3/2008	7.4	7.4	0.0820 U	0.352 U	2.50 U	1.03 J	0.428 J
SB58	0	RB	T117-SB58-0.5-3.5-RB	9/3/2008	1.0 U	1.0 U	na	na	na	na	na
SB59	1.5 – 3	N	T117-SB59-1.5-3.0	9/3/2008	450	450	0.774 U	2.85 U	2.06 U	5.83	3.94
SB59	3 – 4.5	N	T117-SB59-3.0-4.5	9/3/2008	0.26	0.26	0.430 U	2.15 U	2.15 U	2.15 U	2.15 U
SB59	15 – 16.5	N	T117-SB59-15.0-16.5	9/3/2008	6.5	6.5	na	na	na	na	na
SB59	17.5 – 19	N	T117-SB59-17.5-19.0	9/3/2008	22	22	na	na	na	na	na
SB60	0.5 – 2	N	T117-SB60-0.5-2.0	9/2/2008	33	33	0.400 U	2.00 U	1.56 J	5.25	2.81
SB60	2 – 3.5	N	T117-SB60-2.0-3.5	9/2/2008	300	300	0.720 U	2.60 U	2.24	9.28	5.74
SB60	3.5 – 5	N	T117-SB60-3.5-5.0	9/2/2008	4.0	4.0	0.480 U	2.41 U	2.41 U	0.516 J	2.41 U
SB60	12.5 – 14	N	T117-SB60-12.5-14.0	9/2/2008	0.041	0.041	na	na	na	na	na
SB60	15 – 16.5	N	T117-SB60-15.0-16.5	9/2/2008	0.024	0.024	0.0478	0.0966	0.0847	0.0923	0.0496

FD = field duplicate
J = estimated value
N = normal sample
RB = rinsate blank (PCB and PAHs = ug/L, TPH = mg/L)
U = not detected at or above the value shown
na = not analyzed

Upland Soil, cont.

Location Name	Depth (ft)	Sample Type	Sample Name	Analyte Group	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan	Dioxin/furan
				Analyte	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF
				Unit	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw	ng/kg dw
				Sample Date							
SB53	0.5 – 2	N	T117-SB53-0.5-2.0	9/3/2008	64.0	521	6.34	4.42	19.6	50.1	13.2
SB53	0.5 – 2	FD	T117-SB61-0.5-2.0	9/3/2008	62.4	492	7.71	2.19 U	16.9	87.6	14.4
SB54	2 – 3.5	N	T117-SB54-2.0-3.5	9/3/2008	1,180	8,930	29.8	15.0	76.3	154	52.5
SB54	3.5 – 5	N	T117-SB54-3.5-5.0	9/3/2008	371	2,570	8.94	6.68	43.7	67.7	21.4
SB54	8.5 - 10	N	T117-SB54-8.5-10.0	9/4/2008	239	1,940	7.24	3.69 U	17.6	34.0	10.6
SB55	2 – 3.5	N	T117-SB55-2.0-3.5	9/3/2008	94.5	686	9.00	10.3	38.6	211	44.3
SB55	3.5 – 5	N	T117-SB55-3.5-5.0	9/3/2008	3,390	19,000 J	7.61	12.7	78.4	108	178
SB55	11.5 - 13	N	T117-SB55-11.5-13.0	9/4/2008	467	2,810	6.96	4.13	31.0	75.8	38.5
SB56	1 – 2.5	N	T117-SB56-1.0-2.5	9/3/2008	103	845	4.78	5.14	26.1	15.8	9.71
SB56	2.5 – 4	N	T117-SB56-2.5-4.0	9/3/2008	na	na	na	na	na	na	na
SB56	2.5 – 4	FD	T117-SB62-2.5-4.0	9/3/2008	na	na	na	na	na	na	na
SB56	4 – 5.5	N	T117-SB56-4.0-5.5	9/3/2008	na	na	na	na	na	na	na
SB56	5.5 – 7	N	T117-SB56-5.5-7.0	9/3/2008	na	na	na	na	na	na	na
SB57b	2 – 3.5	N	T117-SB57b-2.0-3.5	9/2/2008	106	1,360	4.87	6.23	12.7	18.5	5.67
SB57b	3.5 – 5	N	T117-SB57b-3.5-5.0	9/2/2008	133	1,360	9.93	7.93	36.6	95.2	21.3
SB57b	10 -11.5	N	T117-SB57b-10.0-11.5	9/3/2008	97.2	1,120	6.37	3.65	33.2	33.9	10.0
SB57b	0	RB	T117-SB57b-10.0-11.5-RB	9/3/2008	na	na	na	na	na	na	na
SB58	0.5 – 2	N	T117-SB58-0.5-2.0	9/3/2008	417	4,260	5.38 U	3.95 U	35.4	47.8	14.6
SB58	2 – 3.5	N	T117-SB58-2.0-3.5	9/3/2008	320	3,310	9.24	7.39	313	29.0	47.3
SB58	2 – 3.5	FD	T117-SB63-2.0-3.5	9/3/2008	na	na	na	na	na	na	na
SB58	3.5 – 5	N	T117-SB58-3.5-5.0	9/3/2008	16.1	185	0.445 J	0.421 J	5.55	4.74	1.61 J
SB58	0	RB	T117-SB58-0.5-3.5-RB	9/3/2008	na	na	na	na	na	na	na
SB59	1.5 – 3	N	T117-SB59-1.5-3.0	9/3/2008	60.8	434	24.0	18.4	87.2	458	93.2
SB59	3 – 4.5	N	T117-SB59-3.0-4.5	9/3/2008	2.15 U	11	0.430 U	2.15 U	2.15 U	2.15 U	2.15 U
SB59	15 – 16.5	N	T117-SB59-15.0-16.5	9/3/2008	na	na	na	na	na	na	na
SB59	17.5 – 19	N	T117-SB59-17.5-19.0	9/3/2008	na	na	na	na	na	na	na
SB60	0.5 – 2	N	T117-SB60-0.5-2.0	9/2/2008	87.3	754	6.26	3.45	22.6	35.8	9.91
SB60	2 – 3.5	N	T117-SB60-2.0-3.5	9/2/2008	97.0	619	25.6	14.6	80.8	370	72.3
SB60	3.5 – 5	N	T117-SB60-3.5-5.0	9/2/2008	8.94	77.4	0.705	2.41 U	2.59	3.77	1.16 J
SB60	12.5 – 14	N	T117-SB60-12.5-14.0	9/2/2008	na	na	na	na	na	na	na
SB60	15 – 16.5	N	T117-SB60-15.0-16.5	9/2/2008	1.10 J	8.55	0.0502 J	0.182	0.173	0.0367	0.0368

FD = field duplicate
J = estimated value
N = normal sample
RB = rinsate blank (PCB and PAHs = ug/L, TPH = mg/L)
U = not detected at or above the value shown
na = not analyzed

APPENDIX F

Raw Laboratory Data

F-1 Sediment

DIELDRIN

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: T117-98-SG
SAMPLE

Lab Sample ID: NM89G
LIMS ID: 08-22122
Matrix: Sediment
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/08/08
Date Analyzed: 09/17/08 16:36
Instrument/Analyst: ECD4/AAR
GPC Cleanup: No
Sulfur Cleanup: Yes
Florisil Cleanup: No
Acid Cleanup: No

Sample Amount: 25.1 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 63.7%

CAS Number	Analyte	RL	Result
60-57-1	Dieldrin	7.6	< 7.6 Y

Reported in µg/kg (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	105%
Tetrachlorometaxylene	119%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: T117-99-SG
SAMPLE

Lab Sample ID: NM89H
LIMS ID: 08-22123
Matrix: Sediment
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/08/08
Date Analyzed: 09/17/08 16:57
Instrument/Analyst: ECD4/AAR
GPC Cleanup: No
Sulfur Cleanup: Yes
Florisil Cleanup: No
Acid Cleanup: No

Sample Amount: 25.2 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 46.5%

CAS Number	Analyte	RL	Result
60-57-1	Dieldrin	4.6	< 4.6 Y

Reported in µg/kg (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	88.8%
Tetrachlorometaxylene	87.8%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: T117-98-SG
SAMPLE

Lab Sample ID: NM89G
LIMS ID: 08-22122
Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Percent Total Solids: 48.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
CLP	09/16/08	7471A	09/19/08	**7439-97-6**	**Mercury**	0.08	**0.14**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: T117-98-SG
DUPLICATE

Lab Sample ID: NM89G
LIMS ID: 08-22122
Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Mercury	7471A	0.14	0.15	6.9%	+/- 0.08	L

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: T117-99-SG
SAMPLE

Lab Sample ID: NM89H
LIMS ID: 08-22123
Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Percent Total Solids: 52.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
CLP	09/16/08	7471A	09/19/08	**7439-97-6**	**Mercury**	0.07	**0.07**	

U-Analyte undetected at given RL
RL-Reporting Limit

PCBs

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: T117-98-SG
SAMPLE

Lab Sample ID: NM89G
LIMS ID: 08-22122
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/11/08 18:28
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.3 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 63.7%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	**Aroclor 1254**	**20**	**40**
11096-82-5	**Aroclor 1260**	**20**	**78**
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.5%
Tetrachlorometaxylene	79.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: T117-99-SG
SAMPLE

Lab Sample ID: NM89H
LIMS ID: 08-22123
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/13/08 15:48
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.2 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: 46.5%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	99	< 99 U
53469-21-9	Aroclor 1242	99	< 99 U
12672-29-6	Aroclor 1248	99	< 99 U
11097-69-1	Aroclor 1254	99	< 99 U
11096-82-5	**Aroclor 1260**	**99**	**280**
11104-28-2	Aroclor 1221	99	< 99 U
11141-16-5	Aroclor 1232	99	< 99 U
37324-23-5	Aroclor 1262	99	< 99 U
11100-14-4	Aroclor 1268	99	< 99 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	90.5%
Tetrachlorometaxylene	82.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: T117-100-SG
SAMPLE

Lab Sample ID: NM89A
LIMS ID: 08-22116
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/11/08 17:21
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.3 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 60.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	**Aroclor 1260**	**20**	**59**
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	87.2%
Tetrachlorometaxylene	83.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: T117-101-SG
SAMPLE

Lab Sample ID: NM89B
LIMS ID: 08-22117
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/13/08 15:25
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.5 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 5.00
Silica Gel: Yes

Percent Moisture: 48.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	98	< 98 U
53469-21-9	Aroclor 1242	98	< 98 U
12672-29-6	Aroclor 1248	98	< 98 U
11097-69-1	Aroclor 1254	240	< 240 Y
11096-82-5	**Aroclor 1260**	**98**	**570**
11104-28-2	Aroclor 1221	98	< 98 U
11141-16-5	Aroclor 1232	98	< 98 U
37324-23-5	Aroclor 1262	98	< 98 U
11100-14-4	Aroclor 1268	98	< 98 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	89.1%
Tetrachlorometaxylene	90.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: T17-102-SG
SAMPLE

Lab Sample ID: NT13A
LIMS ID: 08-26665
Matrix: Sediment
Data Release Authorized:
Reported: 10/14/08

QC Report No: NT13-Windward Environmental, LLC
Project: T-117 Sediment
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 10/09/08
Date Analyzed: 10/13/08 22:45
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.5 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 59.7%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	**Aroclor 1254**	**20**	**56**
11096-82-5	**Aroclor 1260**	**20**	**150**
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.2%
Tetrachlorometaxylene	77.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: T117-103-SG
SAMPLE

Lab Sample ID: NM89D
LIMS ID: 08-22119
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/11/08 18:06
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.3 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 52.8%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	**Aroclor 1260**	**20**	**38**
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	82.0%
Tetrachlorometaxylene	76.5%

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PSDDA PCB by GC/ECD
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Sample ID: T117-105-SG
SAMPLE

Lab Sample ID: NM89I
LIMS ID: 08-22124
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/11/08 20:43
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.5 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 48.1%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	Aroclor 1260	20	< 20 U
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	86.2%
Tetrachlorometaxylene	82.0%

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Sample ID: T117-106-SG
SAMPLE

Lab Sample ID: NM89J
LIMS ID: 08-22125
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/11/08 21:05
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.7 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 46.3%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	**Aroclor 1260**	**20**	**30**
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	29	< 29 Y
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	87.0%
Tetrachlorometaxylene	82.8%

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Sample ID: T117-107-SG
SAMPLE

Lab Sample ID: NM89K
LIMS ID: 08-22126
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/11/08 21:27
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.8 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 39.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	19	< 19 U
53469-21-9	Aroclor 1242	19	< 19 U
12672-29-6	Aroclor 1248	19	< 19 U
11097-69-1	Aroclor 1254	58	< 58 Y
11096-82-5	**Aroclor 1260**	**19**	**120**
11104-28-2	Aroclor 1221	19	< 19 U
11141-16-5	Aroclor 1232	19	< 19 U
37324-23-5	Aroclor 1262	19	< 19 U
11100-14-4	Aroclor 1268	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	83.8%
Tetrachlorometaxylene	79.0%

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Sample ID: T117-108-SG
SAMPLE

Lab Sample ID: NM89L
LIMS ID: 08-22127
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/11/08 21:50
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.7 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 42.7%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	19	< 19 U
53469-21-9	Aroclor 1242	19	< 19 U
12672-29-6	Aroclor 1248	19	< 19 U
11097-69-1	Aroclor 1254	19	< 19 U
11096-82-5	Aroclor 1260	19	< 19 U
11104-28-2	Aroclor 1221	19	< 19 U
11141-16-5	Aroclor 1232	19	< 19 U
37324-23-5	Aroclor 1262	19	< 19 U
11100-14-4	Aroclor 1268	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	85.8%
Tetrachlorometaxylene	80.0%

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ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
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Sample ID: T117-109-SG
SAMPLE

Lab Sample ID: NM89M
LIMS ID: 08-22128
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/11/08 22:12
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.8 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 48.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	19	< 19 U
53469-21-9	Aroclor 1242	19	< 19 U
12672-29-6	Aroclor 1248	19	< 19 U
11097-69-1	**Aroclor 1254**	**19**	**25**
11096-82-5	**Aroclor 1260**	**19**	**21**
11104-28-2	Aroclor 1221	19	< 19 U
11141-16-5	Aroclor 1232	19	< 19 U
37324-23-5	Aroclor 1262	19	< 19 U
11100-14-4	Aroclor 1268	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.5%
Tetrachlorometaxylene	74.5%

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ORGANICS ANALYSIS DATA SHEET
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Sample ID: T117-110-SG
SAMPLE

Lab Sample ID: NM89N
LIMS ID: 08-22129
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/11/08 22:35
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.2 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 50.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	Aroclor 1260	20	< 20 U
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.8%
Tetrachlorometaxylene	73.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: T117-111-SG
SAMPLE

Lab Sample ID: NM89O
LIMS ID: 08-22130
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/11/08 23:42
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.5 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 45.3%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	Aroclor 1260	20	< 20 U
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	88.2%
Tetrachlorometaxylene	86.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: T117-120-SG
SAMPLE

Lab Sample ID: NM89Q
LIMS ID: 08-22132
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/12/08 00:04
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.4 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 48.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	**Aroclor 1254**	**20**	**31**
11096-82-5	**Aroclor 1260**	**20**	**28**
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.0%
Tetrachlorometaxylene	73.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
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Sample ID: T117-113-SG
SAMPLE

Lab Sample ID: NM89R
LIMS ID: 08-22133
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/12/08 00:27
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.3 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 54.8%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	Aroclor 1260	20	< 20 U
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	84.5%
Tetrachlorometaxylene	79.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
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Sample ID: T117-114-SG
SAMPLE

Lab Sample ID: NM89S
LIMS ID: 08-22134
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/12/08 00:49
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.8 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 50.2%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	19	< 19 U
53469-21-9	Aroclor 1242	19	< 19 U
12672-29-6	Aroclor 1248	19	< 19 U
11097-69-1	**Aroclor 1254**	**19**	**32**
11096-82-5	**Aroclor 1260**	**19**	**22**
11104-28-2	Aroclor 1221	19	< 19 U
11141-16-5	Aroclor 1232	19	< 19 U
37324-23-5	Aroclor 1262	19	< 19 U
11100-14-4	Aroclor 1268	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	82.8%
Tetrachlorometaxylene	80.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
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Sample ID: T117-115-SG
SAMPLE

Lab Sample ID: NM89T
LIMS ID: 08-22135
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/13/08 16:10
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.4 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 3.00
Silica Gel: Yes

Percent Moisture: 39.8%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	59	< 59 U
53469-21-9	Aroclor 1242	59	< 59 U
12672-29-6	Aroclor 1248	59	< 59 U
11097-69-1	Aroclor 1254	89	< 89 Y
11096-82-5	**Aroclor 1260**	**59**	**240**
11104-28-2	Aroclor 1221	59	< 59 U
11141-16-5	Aroclor 1232	59	< 59 U
37324-23-5	Aroclor 1262	59	< 59 U
11100-14-4	Aroclor 1268	59	< 59 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	90.8%
Tetrachlorometaxylene	86.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
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Sample ID: T117-117-SG
SAMPLE

Lab Sample ID: NM89V
LIMS ID: 08-22137
Matrix: Sediment
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/10/08
Date Analyzed: 09/12/08 01:34
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.7 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 29.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	Aroclor 1260	20	< 20 U
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.2%
Tetrachlorometaxylene	75.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: T117-119-RB
SAMPLE

Lab Sample ID: NM89Y
LIMS ID: 08-22140
Matrix: Water
Data Release Authorized:
Reported: 09/16/08

QC Report No: NM89-Windward Environmental, LLC
Project: T-117 SEDIMENT
08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Date Extracted: 09/03/08
Date Analyzed: 09/06/08 20:11
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	1.0	< 1.0 U
53469-21-9	Aroclor 1242	1.0	< 1.0 U
12672-29-6	Aroclor 1248	1.0	< 1.0 U
11097-69-1	Aroclor 1254	1.0	< 1.0 U
11096-82-5	Aroclor 1260	1.0	< 1.0 U
11104-28-2	Aroclor 1221	1.0	< 1.0 U
11141-16-5	Aroclor 1232	1.0	< 1.0 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	59.2%
Tetrachlorometaxylene	69.0%

DIOXIN/FURAN

Sample ID: T117-100-SG

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9734	Date Received:	17 Sep 08
Project ID:	T117 Sediment	Weight/Volume:	10.03 g	Sample ID:	P9734_6260_001	Date Extracted:	10 Oct 08
Date Collected:	29 Aug 08	% Solids:	40.7 %	QC Batch No.:	6260	Date Analyzed:	18 Oct 08
		Split:	-	Dilution:	-	Time Analyzed:	23:40:50

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	0.722	[Ra=0.766]			13C-2,3,7,8-TCDD	67	
1,2,3,7,8-PeCDD	1.61			J	13C-1,2,3,7,8-PeCDD	50.8	
1,2,3,4,7,8-HxCDD	2.01			J	13C-1,2,3,4,7,8-HxCDD	67	
1,2,3,6,7,8-HxCDD	7.69				13C-1,2,3,6,7,8-HxCDD	68.4	
1,2,3,7,8,9-HxCDD	4.61				13C-1,2,3,7,8,9-HxCDD	62.4	
1,2,3,4,6,7,8-HpCDD	246				13C-1,2,3,4,6,7,8-HpCDD	56.4	
OCDD	2,500				13C-OCDD	67	
2,3,7,8-TCDF	1.01				13C-2,3,7,8-TCDF	77.2	
1,2,3,7,8-PeCDF	0.862			J	13C-1,2,3,7,8-PeCDF	50.2	
2,3,4,7,8-PeCDF	2.28			J	13C-2,3,4,7,8-PeCDF	52.9	
1,2,3,4,7,8-HxCDF	4.22				13C-1,2,3,4,7,8-HxCDF	62.1	
1,2,3,6,7,8-HxCDF	1.77			J	13C-1,2,3,6,7,8-HxCDF	56.7	
2,3,4,6,7,8-HxCDF	2.74				13C-2,3,4,6,7,8-HxCDF	59.1	
1,2,3,7,8,9-HxCDF	0.958			J	13C-1,2,3,7,8,9-HxCDF	56.6	
1,2,3,4,6,7,8-HpCDF	52.6				13C-1,2,3,4,6,7,8-HpCDF	61	
1,2,3,4,7,8,9-HpCDF	2.94				13C-1,2,3,4,7,8,9-HpCDF	55.8	
OCDF	170				13C-OCDF	60.3	
Totals						**CS Recoveries**	
TCDDs	5.07		7.76		37Cl-2,3,7,8-TCDD	69.1	
PeCDDs	7.45		14.3		13C-1,2,3,4,7-PeCDD	53.8	
HxCDDs	60.6				13C-1,2,3,4,6-PeCDF	57.4	
HpCDDs	554				13C-1,2,3,4,6,9-HxCDF	68.4	
					13C-1,2,3,4,6,8,9-HpCDF	62	
TCDFs	18.8		20.3				
PeCDFs	23.7					**AS Recoveries**	
HxCDFs	67		67.3		13C-1,3,6,8-TCDD	72.9	
HpCDFs	167				13C-1,3,6,8-TCDF	78.8	
Total PCDD/Fs	**3,570**		**3,590**				
WHO 2005 TEF TEQs							
TEQ: ND=0	9.36		9.36				
TEQ: ND=DL/2	9.36		9.36				
TEQ: ND=DL	9.36		9.36				

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AP 2008 Rev. H

Reviewer
Date

Sample ID: T117-102-SG

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9734	Date Received:	17 Sep 08
Project ID:	T117 Sediment	Weight/Volume:	10.05 g	Sample ID:	P9734_6260_003	Date Extracted:	10 Oct 08
Date Collected:	29 Aug 08	% Solids:	40.4 %	QC Batch No.:	6260	Date Analyzed:	19 Oct 08
		Split:	-	Dilution:	-	Time Analyzed:	0:32:50

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	0.392	[Ra=0.883]		J	13C-2,3,7,8-TCDD	69.1	
1,2,3,7,8-PeCDD	EMPC		1.32	J	13C-1,2,3,7,8-PeCDD	49.9	
1,2,3,4,7,8-HxCDD	1.67			J	13C-1,2,3,4,7,8-HxCDD	69.1	
1,2,3,6,7,8-HxCDD	5.79				13C-1,2,3,6,7,8-HxCDD	68.6	
1,2,3,7,8,9-HxCDD	3.54				13C-1,2,3,7,8,9-HxCDD	66.4	
1,2,3,4,6,7,8-HpCDD	156				13C-1,2,3,4,6,7,8-HpCDD	59.7	
OCDD	1,420				13C-OCDD	64.1	
2,3,7,8-TCDF	0.899				13C-2,3,7,8-TCDF	76.4	
1,2,3,7,8-PeCDF	0.687			J	13C-1,2,3,7,8-PeCDF	51.2	
2,3,4,7,8-PeCDF	1.93			J	13C-2,3,4,7,8-PeCDF	51.3	
1,2,3,4,7,8-HxCDF	3.02				13C-1,2,3,4,7,8-HxCDF	65.8	
1,2,3,6,7,8-HxCDF	1.5			J	13C-1,2,3,6,7,8-HxCDF	60.3	
2,3,4,6,7,8-HxCDF	2.13			J	13C-2,3,4,6,7,8-HxCDF	62.9	
1,2,3,7,8,9-HxCDF	0.835			J	13C-1,2,3,7,8,9-HxCDF	59.1	
1,2,3,4,6,7,8-HpCDF	31.4				13C-1,2,3,4,6,7,8-HpCDF	61.2	
1,2,3,4,7,8,9-HpCDF	2.53				13C-1,2,3,4,7,8,9-HpCDF	59.4	
OCDF	104				13C-OCDF	59.1	
Totals						**CS Recoveries**	
TCDDs	4.81		5.68		37Cl-2,3,7,8-TCDD	70.7	
PeCDDs	8.91		11.7		13C-1,2,3,4,7-PeCDD	52.9	
HxCDDs	48.4		49.4		13C-1,2,3,4,6-PeCDF	57.6	
HpCDDs	373				13C-1,2,3,4,6,9-HxCDF	71.4	
					13C-1,2,3,4,6,8,9-HpCDF	66.2	
TCDFs	17.1		18.2				
PeCDFs	18.6		19.7			**AS Recoveries**	
HxCDFs	46.4		47.1		13C-1,3,6,8-TCDD	73.1	
HpCDFs	105				13C-1,3,6,8-TCDF	81.1	
Total PCDD/Fs	**2,140**		**2,150**				
WHO 2005 TEF TEQs							
TEQ: ND=0	5.29		6.61				
TEQ: ND=DL/2	5.29		6.61				
TEQ: ND=DL	5.29		6.61				

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Date

Sample ID: T117-107-SG

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9732	Date Received:	17 Sep 08
Project ID:	T117 Sediment	Weight/Volume:	10.42 g	Sample ID:	P9732_6205_001RJ	Date Extracted:	19 Sep 08
Date Collected:	29 Aug 08	% Solids:	57.9 %	QC Batch No.:	6205	Date Analyzed:	07 Oct 08
		Split:	-	Dilution:	-	Time Analyzed:	14:56:46

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.231			13C-2,3,7,8-TCDD	60.4	
1,2,3,7,8-PeCDD	0.452			J	13C-1,2,3,7,8-PeCDD	69.5	
1,2,3,4,7,8-HxCDD	0.563			J	13C-1,2,3,4,7,8-HxCDD	52.6	
1,2,3,6,7,8-HxCDD	EMPC		1.58	J	13C-1,2,3,6,7,8-HxCDD	52.8	
1,2,3,7,8,9-HxCDD	1.11			J	13C-1,2,3,7,8,9-HxCDD	53.2	
1,2,3,4,6,7,8-HpCDD	40				13C-1,2,3,4,6,7,8-HpCDD	60.9	
OCDD	339				13C-OCDD	63.1	
2,3,7,8-TCDF	ND	0.407			13C-2,3,7,8-TCDF	64	
1,2,3,7,8-PeCDF	EMPC		0.341	J	13C-1,2,3,7,8-PeCDF	62.3	
2,3,4,7,8-PeCDF	0.56			J	13C-2,3,4,7,8-PeCDF	67.4	
1,2,3,4,7,8-HxCDF	0.931			J	13C-1,2,3,4,7,8-HxCDF	43.4	
1,2,3,6,7,8-HxCDF	0.468			J	13C-1,2,3,6,7,8-HxCDF	39.4	
2,3,4,6,7,8-HxCDF	0.536			J	13C-2,3,4,6,7,8-HxCDF	47.6	
1,2,3,7,8,9-HxCDF	ND	<0.24			13C-1,2,3,7,8,9-HxCDF	48.2	
1,2,3,4,6,7,8-HpCDF	7.02				13C-1,2,3,4,6,7,8-HpCDF	56.2	
1,2,3,4,7,8,9-HpCDF	0.695			J	13C-1,2,3,4,7,8,9-HpCDF	61.3	
OCDF	21.6				13C-OCDF	60.2	
Totals						**CS Recoveries**	
TCDDs	0.493		0.959		37Cl-2,3,7,8-TCDD	57.8	
PeCDDs	2.84		3.78		13C-1,2,3,4,7-PeCDD	65.8	
HxCDDs	10.4		14		13C-1,2,3,4,6-PeCDF	58.4	
HpCDDs	97.7				13C-1,2,3,4,6,9-HxCDF	45.6	
					13C-1,2,3,4,6,8,9-HpCDF	61.3	
TCDFs	2.39		3.41				
PeCDFs	4.46		4.81			**AS Recoveries**	
HxCDFs	10.5		10.8		13C-1,3,6,8-TCDD	50.3	
HpCDFs	22.8		23		13C-1,3,6,8-TCDF	56.6	
Total PCDD/Fs	**512**		**519**				
WHO 2005 TEF TEQs							
TEQ: ND=0	1.56		1.73				
TEQ: ND=DL/2	1.71		1.88				
TEQ: ND=DL	1.86		2.03				

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Date 10/7/08

Sample ID: T117-109-SG

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9732	Date Received:	17-Sep-08
Project ID:	T117 Sediment	Weight/Volume:	9.14 g	Sample ID:	P9732_6205_002RJ	Date Extracted:	19-Sep-08
Date Collected:	29-Aug-08	% Solids:	50.3 %	QC Batch No.:	6205	Date Analyzed:	07-Oct-08
		Split:	-	Dilution:	-	Time Analyzed:	15:48:03

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.833			13C-2,3,7,8-TCDD	70.6	
1,2,3,7,8-PeCDD	0.806			J	13C-1,2,3,7,8-PeCDD	112	
1,2,3,4,7,8-HxCDD	0.975			J	13C-1,2,3,4,7,8-HxCDD	58.7	
1,2,3,6,7,8-HxCDD	3.58				13C-1,2,3,6,7,8-HxCDD	56.9	
1,2,3,7,8,9-HxCDD	EMPC		1.81	J	13C-1,2,3,7,8,9-HxCDD	58	
1,2,3,4,6,7,8-HpCDD	105				13C-1,2,3,4,6,7,8-HpCDD	69.5	
OCDD	1,020				13C-OCDD	73.7	
2,3,7,8-TCDF	EMPC		1.53		13C-2,3,7,8-TCDF	74.5	
1,2,3,7,8-PeCDF	EMPC		0.46	J	13C-1,2,3,7,8-PeCDF	94.3	
2,3,4,7,8-PeCDF	EMPC		1.15	J	13C-2,3,4,7,8-PeCDF	107	
1,2,3,4,7,8-HxCDF	2.09			J	13C-1,2,3,4,7,8-HxCDF	45.7	
1,2,3,6,7,8-HxCDF	0.831			J	13C-1,2,3,6,7,8-HxCDF	41.6	
2,3,4,6,7,8-HxCDF	1.25			J	13C-2,3,4,6,7,8-HxCDF	49.1	
1,2,3,7,8,9-HxCDF	EMPC		0.36	J	13C-1,2,3,7,8,9-HxCDF	50.3	
1,2,3,4,6,7,8-HpCDF	19.7				13C-1,2,3,4,6,7,8-HpCDF	60.7	
1,2,3,4,7,8,9-HpCDF	1.65			J	13C-1,2,3,4,7,8,9-HpCDF	67	
OCDF	74.8				13C-OCDF	68.2	
Totals						**CS Recoveries**	
TCDDs	ND	0.833			37Cl-2,3,7,8-TCDD	67.7	
PeCDDs	4.28		5.05		13C-1,2,3,4,7-PeCDD	98.4	
HxCDDs	27.7		30.1		13C-1,2,3,4,6-PeCDF	87.1	
HpCDDs	337				13C-1,2,3,4,6,9-HxCDF	47.5	
					13C-1,2,3,4,6,8,9-HpCDF	66.4	
TCDFs	ND		5.25				
PeCDFs	7.43		11.2			**AS Recoveries**	
HxCDFs	24.8		25.4		13C-1,3,6,8-TCDD	52.5	
HpCDFs	71.8				13C-1,3,6,8-TCDF	60.5	
Total PCDD/Fs	**1,560**		**1,580**				
WHO 2005 TEF TEQs							
TEQ: ND=0	3.27		4				
TEQ: ND=DL/2	3.68		4.41				
TEQ: ND=DL	4.1		4.83				

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AP 2008 Rev. H

Reviewer ..... GAB

Date ..... 8 Oct 08

Sample ID: T117-110-SG

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9732	Date Received:	17 Sep 08
Project ID:	T117 Sediment	Weight/Volume:	8.54 g	Sample ID:	P9732_6205_003RJ	Date Extracted:	19 Sep 08
Date Collected:	29 Aug 08	% Solids:	47.4 %	QC Batch No.:	6205	Date Analyzed:	07 Oct 08
		Split:	-	Dilution:	-	Time Analyzed:	16:39:21

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	EMPC	[Ra=1.19]	0.339	J	13C-2,3,7,8-TCDD	68.7	
1,2,3,7,8-PeCDD	0.736			J	13C-1,2,3,7,8-PeCDD	79.3	
1,2,3,4,7,8-HxCDD	EMPC		0.941	J	13C-1,2,3,4,7,8-HxCDD	61.9	
1,2,3,6,7,8-HxCDD	3.74				13C-1,2,3,6,7,8-HxCDD	60.1	
1,2,3,7,8,9-HxCDD	2.39			J	13C-1,2,3,7,8,9-HxCDD	60.6	
1,2,3,4,6,7,8-HpCDD	86.6				13C-1,2,3,4,6,7,8-HpCDD	69.6	
OCDD	753				13C-OCDD	72.6	
2,3,7,8-TCDF	EMPC		0.512	J	13C-2,3,7,8-TCDF	73.5	
1,2,3,7,8-PeCDF	EMPC		0.397	J	13C-1,2,3,7,8-PeCDF	70.9	
2,3,4,7,8-PeCDF	1.28			J	13C-2,3,4,7,8-PeCDF	74.6	
1,2,3,4,7,8-HxCDF	1.84			J	13C-1,2,3,4,7,8-HxCDF	52.1	
1,2,3,6,7,8-HxCDF	0.93			J	13C-1,2,3,6,7,8-HxCDF	46.5	
2,3,4,6,7,8-HxCDF	1.36			J	13C-2,3,4,6,7,8-HxCDF	52.9	
1,2,3,7,8,9-HxCDF	EMPC		0.468	J	13C-1,2,3,7,8,9-HxCDF	53.6	
1,2,3,4,6,7,8-HpCDF	15.7				13C-1,2,3,4,6,7,8-HpCDF	62.7	
1,2,3,4,7,8,9-HpCDF	1.29			J	13C-1,2,3,4,7,8,9-HpCDF	66.8	
OCDF	45.8				13C-OCDF	67.3	
Totals						**CS Recoveries**	
TCDDs	1.86		3.47		37Cl-2,3,7,8-TCDD	71.2	
PeCDDs	5.27		6.14		13C-1,2,3,4,7-PeCDD	77.2	
HxCDDs	24.3		27.5		13C-1,2,3,4,6-PeCDF	71.2	
HpCDDs	208				13C-1,2,3,4,6,9-HxCDF	56.6	
					13C-1,2,3,4,6,8,9-HpCDF	73.4	
TCDFs	7.98		12.7				
PeCDFs	10.1		11.7			**AS Recoveries**	
HxCDFs	24.4		25.2		13C-1,3,6,8-TCDD	60.3	
HpCDFs	52.5				13C-1,3,6,8-TCDF	67.6	
Total PCDD/Fs	**1,130**		**1,150**				
WHO 2005 TEF TEQs							
TEQ: ND=0	3.42		3.97				
TEQ: ND=DL/2	3.42		3.97				
TEQ: ND=DL	3.42		3.97				

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Reviewer .....

Date .....

Sample ID: T117-111-SG

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9732	Date Received:	17 Sep 08
Project ID:	T117 Sediment	Weight/Volume:	9.67 g	Sample ID:	P9732_6205_004RJ	Date Extracted:	19 Sep 08
Date Collected:	29 Aug 08	% Solids:	52.8 %	QC Batch No.:	6205	Date Analyzed:	07 Oct 08
		Split:	-	Dilution:	-	Time Analyzed:	17:30:45

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.445			13C-2,3,7,8-TCDD	65.6	
1,2,3,7,8-PeCDD	0.637			J	13C-1,2,3,7,8-PeCDD	90.8	
1,2,3,4,7,8-HxCDD	0.825			J	13C-1,2,3,4,7,8-HxCDD	57.6	
1,2,3,6,7,8-HxCDD	3.1				13C-1,2,3,6,7,8-HxCDD	57	
1,2,3,7,8,9-HxCDD	2.01			J	13C-1,2,3,7,8,9-HxCDD	57.8	
1,2,3,4,6,7,8-HpCDD	76.6				13C-1,2,3,4,6,7,8-HpCDD	66.6	
OCDD	657				13C-OCDD	67	
2,3,7,8-TCDF	EMPC		0.564		13C-2,3,7,8-TCDF	67.7	
1,2,3,7,8-PeCDF	EMPC		0.466	J	13C-1,2,3,7,8-PeCDF	77.7	
2,3,4,7,8-PeCDF	1.15			J	13C-2,3,4,7,8-PeCDF	85.6	
1,2,3,4,7,8-HxCDF	1.71			J	13C-1,2,3,4,7,8-HxCDF	47.1	
1,2,3,6,7,8-HxCDF	EMPC		0.768	J	13C-1,2,3,6,7,8-HxCDF	42.6	
2,3,4,6,7,8-HxCDF	EMPC		1.05	J	13C-2,3,4,6,7,8-HxCDF	49.3	
1,2,3,7,8,9-HxCDF	0.446			J	13C-1,2,3,7,8,9-HxCDF	49.2	
1,2,3,4,6,7,8-HpCDF	13.9				13C-1,2,3,4,6,7,8-HpCDF	58.1	
1,2,3,4,7,8,9-HpCDF	1.13			J	13C-1,2,3,4,7,8,9-HpCDF	62.6	
OCDF	42.4				13C-OCDF	63.4	
Totals						**CS Recoveries**	
TCDDs	1.03		2.73		37Cl-2,3,7,8-TCDD	65.4	
PeCDDs	3.15		5.76		13C-1,2,3,4,7-PeCDD	83.6	
HxCDDs	23.5				13C-1,2,3,4,6-PeCDF	73	
HpCDDs	185				13C-1,2,3,4,6,9-HxCDF	50	
					13C-1,2,3,4,6,8,9-HpCDF	63.7	
TCDFs	7.41		13				
PeCDFs	8.64		10.6			**AS Recoveries**	
HxCDFs	17.7		21.1		13C-1,3,6,8-TCDD	51.7	
HpCDFs	45.7				13C-1,3,6,8-TCDF	60	
Total PCDD/Fs	**991**		**1,010**				
WHO 2005 TEF TEQs							
TEQ: ND=0	2.92		3.17				
TEQ: ND=DL/2	3.14		3.39				
TEQ: ND=DL	3.36		3.62				

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AP 2008 Rev 1

Reviewer .....

Date .....

Sample ID: T117-113-SG

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9732	Date Received:	17 Sep 08
Project ID:	T117 Sediment	Weight/Volume:	8.12 g	Sample ID:	P9732_6205_005RJ	Date Extracted:	19 Sep 08
Date Collected:	29 Aug 08	% Solids:	45.6 %	QC Batch No.:	6205	Date Analyzed:	07 Oct 08
		Split:	-	Dilution:	-	Time Analyzed:	18:22:03

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.356			13C-2,3,7,8-TCDD	57.2	
1,2,3,7,8-PeCDD	0.693			J	13C-1,2,3,7,8-PeCDD	53.1	
1,2,3,4,7,8-HxCDD	0.91			J	13C-1,2,3,4,7,8-HxCDD	53.2	
1,2,3,6,7,8-HxCDD	3.86				13C-1,2,3,6,7,8-HxCDD	53.1	
1,2,3,7,8,9-HxCDD	2.2			J	13C-1,2,3,7,8,9-HxCDD	54.3	
1,2,3,4,6,7,8-HpCDD	89.1				13C-1,2,3,4,6,7,8-HpCDD	60.1	
OCDD	740				13C-OCDD	61.2	
2,3,7,8-TCDF	0.578			J	13C-2,3,7,8-TCDF	59.3	
1,2,3,7,8-PeCDF	0.385			J	13C-1,2,3,7,8-PeCDF	50.1	
2,3,4,7,8-PeCDF	EMPC		1.16	J	13C-2,3,4,7,8-PeCDF	51.3	
1,2,3,4,7,8-HxCDF	1.9			J	13C-1,2,3,4,7,8-HxCDF	47.4	
1,2,3,6,7,8-HxCDF	0.833			J	13C-1,2,3,6,7,8-HxCDF	42.7	
2,3,4,6,7,8-HxCDF	1.22			J	13C-2,3,4,6,7,8-HxCDF	47.5	
1,2,3,7,8,9-HxCDF	0.847			J	13C-1,2,3,7,8,9-HxCDF	47.9	
1,2,3,4,6,7,8-HpCDF	17.8				13C-1,2,3,4,6,7,8-HpCDF	54.4	
1,2,3,4,7,8,9-HpCDF	1.44			J	13C-1,2,3,4,7,8,9-HpCDF	57.2	
OCDF	68.7				13C-OCDF	57	
Totals						**CS Recoveries**	
TCDDs	ND		0.745		37Cl-2,3,7,8-TCDD	56.6	
PeCDDs	2.43		5.63		13C-1,2,3,4,7-PeCDD	52.6	
HxCDDs	26.3		26.9		13C-1,2,3,4,6-PeCDF	49.8	
HpCDDs	199				13C-1,2,3,4,6,9-HxCDF	49.1	
					13C-1,2,3,4,6,8,9-HpCDF	58.7	
TCDFs	6.66		12				
PeCDFs	7.99		11			**AS Recoveries**	
HxCDFs	25.7				13C-1,3,6,8-TCDD	51.2	
HpCDFs	66.7				13C-1,3,6,8-TCDF	57.5	
Total PCDD/Fs	**1,140**		**1,160**				
WHO 2005 TEF TEQs							
TEQ: ND=0	3.26		3.61				
TEQ: ND=DL/2	3.44		3.79				
TEQ: ND=DL	3.62		3.97				

ANALYTICAL PERSPECTIVES

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Reviewer .....

Date 10/8/08

Sample ID: T117-115-SG

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9732	Date Received:	17 Sep 08
Project ID:	T117 Sediment	Weight/Volume:	10.33 g	Sample ID:	P9732_6205_006RJ	Date Extracted:	19 Sep 08
Date Collected:	29 Aug 08	% Solids:	58.3 %	QC Batch No.:	6205	Date Analyzed:	07 Oct 08
		Split:	-	Dilution:	-	Time Analyzed:	19:13:21

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.187			13C-2,3,7,8-TCDD	74.5	
1,2,3,7,8-PeCDD	EMPC		0.764	J	13C-1,2,3,7,8-PeCDD	93.6	
1,2,3,4,7,8-HxCDD	0.931			J	13C-1,2,3,4,7,8-HxCDD	63.3	
1,2,3,6,7,8-HxCDD	3.09				13C-1,2,3,6,7,8-HxCDD	62.5	
1,2,3,7,8,9-HxCDD	EMPC		1.84	J	13C-1,2,3,7,8,9-HxCDD	62.7	
1,2,3,4,6,7,8-HpCDD	77.8				13C-1,2,3,4,6,7,8-HpCDD	69.4	
OCDD	648				13C-OCDD	69.4	
2,3,7,8-TCDF	0.822				13C-2,3,7,8-TCDF	76.4	
1,2,3,7,8-PeCDF	EMPC		0.315	J	13C-1,2,3,7,8-PeCDF	77.3	
2,3,4,7,8-PeCDF	1.58			J	13C-2,3,4,7,8-PeCDF	86	
1,2,3,4,7,8-HxCDF	2.02			J	13C-1,2,3,4,7,8-HxCDF	54.3	
1,2,3,6,7,8-HxCDF	0.85			J	13C-1,2,3,6,7,8-HxCDF	49	
2,3,4,6,7,8-HxCDF	EMPC		1.24	J	13C-2,3,4,6,7,8-HxCDF	57.6	
1,2,3,7,8,9-HxCDF	0.46			J	13C-1,2,3,7,8,9-HxCDF	57.6	
1,2,3,4,6,7,8-HpCDF	13.7				13C-1,2,3,4,6,7,8-HpCDF	65.6	
1,2,3,4,7,8,9-HpCDF	1.36			J	13C-1,2,3,4,7,8,9-HpCDF	68.1	
OCDF	39.9				13C-OCDF	66.4	
Totals						**CS Recoveries**	
TCDDs	0.992		1.52		37Cl-2,3,7,8-TCDD	72.5	
PeCDDs	3.14		5.82		13C-1,2,3,4,7-PeCDD	90.2	
HxCDDs	25.6		27.5		13C-1,2,3,4,6-PeCDF	73.6	
HpCDDs	219				13C-1,2,3,4,6,9-HxCDF	59.8	
					13C-1,2,3,4,6,8,9-HpCDF	73.5	
TCDFs	13.3		13.9				
PeCDFs	13.9		14.2			**AS Recoveries**	
HxCDFs	22.6		24.3		13C-1,3,6,8-TCDD	62.7	
HpCDFs	44.7		45.3		13C-1,3,6,8-TCDF	70.5	
Total PCDD/Fs	**1,030**		**1,040**				
WHO 2005 TEF TEQs							
TEQ: ND=0	2.43		3.51				
TEQ: ND=DL/2	2.52		3.6				
TEQ: ND=DL	2.61		3.69				

ANALYTICAL PERSPECTIVES

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AP 2008 Rev. H

Reviewer GE

Date 8.D.08

CONVENTIONALS

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-98-SG
ARI ID: 08-22122 NM89G

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	34.50
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.91

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-99-SG
ARI ID: 08-22123 NM89H

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	50.20
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.83

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-100-SG
ARI ID: 08-22116 NM89A

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	38.80
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	3.19

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-101-SG
ARI ID: 08-22117 NM89B

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	49.40
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	2.69

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NT13-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 10/14/08

Project: T-117 Sediment
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T17-102-SG
ARI ID: 08-26665 NT13A

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/08/08 100808#1	EPA 160.3	Percent	0.01	41.10
Total Organic Carbon	10/13/08 101308#1	Plumb,1981	Percent	0.020	3.49

RL Analytical reporting limit
U Undetected at reported detection limit

REPLICATE RESULTS-CONVENTIONALS
NT13-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 10/14/08

Project: T-117 Sediment
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: NT13A Client ID: T17-102-SG					
Total Solids	10/08/08	Percent	41.10	41.40 41.10	0.4%
Total Organic Carbon	10/13/08	Percent	3.49	3.14 2.77	11.5%

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-103-SG
ARI ID: 08-22119 NM89D

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	45.50
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.68

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-105-SG
ARI ID: 08-22124 NM89I

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	48.00
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.45

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-106-SG
ARI ID: 08-22125 NM89J

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	49.50
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.92

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-107-SG
ARI ID: 08-22126 NM89K

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	56.50
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	0.828

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-108-SG
ARI ID: 08-22127 NM89L

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	52.70
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	0.792

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-109-SG
ARI ID: 08-22128 NM89M

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	49.60
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.33

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-110-SG
ARI ID: 08-22129 NM89N

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	47.20
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.59

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-111-SG
ARI ID: 08-22130 NM89O

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	53.30
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.59

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-120-SG
ARI ID: 08-22132 NM89Q

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	49.10
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.63

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-113-SG
ARI ID: 08-22133 NM89R

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	45.70
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	2.23

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-114-SG
ARI ID: 08-22134 NM89S

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	47.90
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.18

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-115-SG
ARI ID: 08-22135 NM89T

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	57.30
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	1.61

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Client ID: T117-117-SG
ARI ID: 08-22137 NM89V

Analyte	Date	Method	Units	RL	Sample
Total Solids	09/04/08 090408#1	EPA 160.3	Percent	0.01	65.20
Total Organic Carbon	09/18/08 091808#1	Plumb,1981	Percent	0.020	0.857

RL Analytical reporting limit
U Undetected at reported detection limit

REPLICATE RESULTS-CONVENTIONALS
NM89-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 09/22/08

Project: T-117 SEDIMENT
Event: 08-08-12-12
Date Sampled: 08/29/08
Date Received: 08/29/08

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: NM89A Client ID: T117-100-SG					
Total Solids	09/04/08	Percent	38.80	38.50 38.70	0.4%
Total Organic Carbon	09/18/08	Percent	3.19	3.06 3.05	2.5%

F-2 T-117 Upland

DIOXIN/FURAN

Sample ID: T117-SB53-0.5-2.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	11.44 g	Sample ID:	P9676_6178_007	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	92.9 %	QC Batch No.:	6178	Date Analyzed:	17 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	1:15:18

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.43			13C-2,3,7,8-TCDD	81.6	
1,2,3,7,8-PeCDD	ND	2.52			13C-1,2,3,7,8-PeCDD	72.7	
1,2,3,4,7,8-HxCDD	EMPC		1.09	J	13C-1,2,3,4,7,8-HxCDD	72.5	
1,2,3,6,7,8-HxCDD	3.59				13C-1,2,3,6,7,8-HxCDD	73.9	
1,2,3,7,8,9-HxCDD	EMPC		2.27		13C-1,2,3,7,8,9-HxCDD	71.9	
1,2,3,4,6,7,8-HpCDD	64				13C-1,2,3,4,6,7,8-HpCDD	71.8	
OCDD	521				13C-OCDD	76.5	
2,3,7,8-TCDF	6.34				13C-2,3,7,8-TCDF	80.2	
1,2,3,7,8-PeCDF	4.42				13C-1,2,3,7,8-PeCDF	73.6	
2,3,4,7,8-PeCDF	19.6				13C-2,3,4,7,8-PeCDF	71.7	
1,2,3,4,7,8-HxCDF	50.1				13C-1,2,3,4,7,8-HxCDF	75.8	
1,2,3,6,7,8-HxCDF	13.2				13C-1,2,3,6,7,8-HxCDF	70.5	
2,3,4,6,7,8-HxCDF	11.1				13C-2,3,4,6,7,8-HxCDF	74.7	
1,2,3,7,8,9-HxCDF	5.61				13C-1,2,3,7,8,9-HxCDF	68.3	
1,2,3,4,6,7,8-HpCDF	105				13C-1,2,3,4,6,7,8-HpCDF	74.2	
1,2,3,4,7,8,9-HpCDF	41.8				13C-1,2,3,4,7,8,9-HpCDF	72.4	
OCDF	293				13C-OCDF	72.8	
Totals						**CS Recoveries**	
TCDDs	6.15				37Cl-2,3,7,8-TCDD	101	
PeCDDs	2.44		3.11		13C-1,2,3,4,7-PeCDD	94	
HxCDDs	24.2		27.6		13C-1,2,3,4,6-PeCDF	94.6	
HpCDDs	125				13C-1,2,3,4,6,9-HxCDF	99.3	
					13C-1,2,3,4,6,8,9-HpCDF	101	
TCDFs	78.4		80.6				
PeCDFs	207					**AS Recoveries**	
HxCDFs	205				13C-1,3,6,8-TCDD	88.6	
HpCDFs	272				13C-1,3,6,8-TCDF	95.8	
Total PCDD/Fs	**1,730**		**1,740**				
WHO 2005 TEF TEQs							
TEQ: ND=0	17.4		17.7				
TEQ: ND=DL/2	18.8		19.2				
TEQ: ND=DL	20.3		20.6				

ANALYTICAL PERSPECTIVES

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AP 2008 Rev H

Reviewer .....

Date 23 Sep 08

Sample ID: T117-SB54-2.0-3.5

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.29 g	Sample ID:	P9676_6178_004	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	95.0 %	QC Batch No.:	6178	Date Analyzed:	16 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	23:32:42

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	1.77	[Ra=0.78]			13C-2,3,7,8-TCDD	80.8	
1,2,3,7,8-PeCDD	ND	0.728			13C-1,2,3,7,8-PeCDD	71.2	
1,2,3,4,7,8-HxCDD	18.1				13C-1,2,3,4,7,8-HxCDD	68.2	
1,2,3,6,7,8-HxCDD	61.8				13C-1,2,3,6,7,8-HxCDD	68.6	
1,2,3,7,8,9-HxCDD	35.6				13C-1,2,3,7,8,9-HxCDD	62.4	
1,2,3,4,6,7,8-HpCDD	1,180				13C-1,2,3,4,6,7,8-HpCDD	64.3	
OCDD	8,930				13C-OCDD	69.4	
2,3,7,8-TCDF	29.8				13C-2,3,7,8-TCDF	79	
1,2,3,7,8-PeCDF	15				13C-1,2,3,7,8-PeCDF	72.3	
2,3,4,7,8-PeCDF	76.3				13C-2,3,4,7,8-PeCDF	69	
1,2,3,4,7,8-HxCDF	154				13C-1,2,3,4,7,8-HxCDF	68.4	
1,2,3,6,7,8-HxCDF	52.5				13C-1,2,3,6,7,8-HxCDF	62.9	
2,3,4,6,7,8-HxCDF	55.2				13C-2,3,4,6,7,8-HxCDF	61.1	
1,2,3,7,8,9-HxCDF	17.9				13C-1,2,3,7,8,9-HxCDF	57.6	
1,2,3,4,6,7,8-HpCDF	589				13C-1,2,3,4,6,7,8-HpCDF	63	
1,2,3,4,7,8,9-HpCDF	132				13C-1,2,3,4,7,8,9-HpCDF	58.8	
OCDF	2,420				13C-OCDF	62.2	
Totals						**CS Recoveries**	
TCDDs	19.8		21.8		37Cl-2,3,7,8-TCDD	97.7	
PeCDDs	23.4		58.6		13C-1,2,3,4,7-PeCDD	92.9	
HxCDDs	381		387		13C-1,2,3,4,6-PeCDF	93.9	
HpCDDs	2,200				13C-1,2,3,4,6,9-HxCDF	93.9	
					13C-1,2,3,4,6,8,9-HpCDF	101	
TCDFs	339						
PeCDFs	787					**AS Recoveries**	
HxCDFs	1,070				13C-1,3,6,8-TCDD	86.2	
HpCDFs	2,100				13C-1,3,6,8-TCDF	98.5	
Total PCDD/Fs	**18,300**		**18,300**				
WHO 2005 TEF TEQs							
TEQ: ND=0	90		90				
TEQ: ND=DL/2	90.3		90.3				
TEQ: ND=DL	90.7		90.7				

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Reviewer .....

Date 24 Sep 08

Sample ID: T117-SB54-3.5-5.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.64 g	Sample ID:	P9676_6178_005	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	92.6 %	QC Batch No.:	6178	Date Analyzed:	17 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	0:24:00

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	0.876	[Ra=0.689]			13C-2,3,7,8-TCDD	83.6	
1,2,3,7,8-PeCDD	ND	0.694			13C-1,2,3,7,8-PeCDD	75	
1,2,3,4,7,8-HxCDD	6.2				13C-1,2,3,4,7,8-HxCDD	72.6	
1,2,3,6,7,8-HxCDD	20.4				13C-1,2,3,6,7,8-HxCDD	73.8	
1,2,3,7,8,9-HxCDD	12.1				13C-1,2,3,7,8,9-HxCDD	68.7	
1,2,3,4,6,7,8-HpCDD	371				13C-1,2,3,4,6,7,8-HpCDD	72	
OCDD	2,570				13C-OCDD	76.5	
2,3,7,8-TCDF	8.94				13C-2,3,7,8-TCDF	77.1	
1,2,3,7,8-PeCDF	6.68				13C-1,2,3,7,8-PeCDF	73.1	
2,3,4,7,8-PeCDF	43.7				13C-2,3,4,7,8-PeCDF	70.5	
1,2,3,4,7,8-HxCDF	67.7				13C-1,2,3,4,7,8-HxCDF	73.1	
1,2,3,6,7,8-HxCDF	21.4				13C-1,2,3,6,7,8-HxCDF	69.9	
2,3,4,6,7,8-HxCDF	25				13C-2,3,4,6,7,8-HxCDF	72	
1,2,3,7,8,9-HxCDF	8.93				13C-1,2,3,7,8,9-HxCDF	66	
1,2,3,4,6,7,8-HpCDF	208				13C-1,2,3,4,6,7,8-HpCDF	73.2	
1,2,3,4,7,8,9-HpCDF	56.2				13C-1,2,3,4,7,8,9-HpCDF	70.6	
OCDF	785				13C-OCDF	73.6	
Totals						**CS Recoveries**	
TCDDs	8.35		12.4		37Cl-2,3,7,8-TCDD	102	
PeCDDs	9.94		19.6		13C-1,2,3,4,7-PeCDD	98.2	
HxCDDs	136				13C-1,2,3,4,6-PeCDF	96.5	
HpCDDs	689				13C-1,2,3,4,6,9-HxCDF	101	
					13C-1,2,3,4,6,8,9-HpCDF	102	
TCDFs	194		196				
PeCDFs	423					**AS Recoveries**	
HxCDFs	448				13C-1,3,6,8-TCDD	93.4	
HpCDFs	683				13C-1,3,6,8-TCDF	100	
Total PCDD/Fs	**5,950**		**5,960**				
WHO 2005 TEF TEQs							
TEQ: ND=0	38.6		38.6				
TEQ: ND=DL/2	39		39				
TEQ: ND=DL	39.3		39.3				

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AP 2008 Rev. 0

Reviewer .....

Date 23 Sep 08

Sample ID: T117-SB54-8.5-10.0 — Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.26 g	Sample ID:	P9676_6595_006	Date Extracted:	18 Feb 09
Date Collected:	03 Sep 08	% Solids:	92.0 %	QC Batch No.:	6595	Date Analyzed:	22 Feb 09
		Split:	-	Dilution:	-	Time Analyzed:	4:03:29

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	0.396	[Ra=0.877]		J	13C-2,3,7,8-TCDD	78.4	
1,2,3,7,8-PeCDD	ND	0.448			13C-1,2,3,7,8-PeCDD	74.3	
1,2,3,4,7,8-HxCDD	3.42				13C-1,2,3,4,7,8-HxCDD	79.3	
1,2,3,6,7,8-HxCDD	11.7				13C-1,2,3,6,7,8-HxCDD	75.5	
1,2,3,7,8,9-HxCDD	6.53				13C-1,2,3,7,8,9-HxCDD	80.1	
1,2,3,4,6,7,8-HpCDD	239				13C-1,2,3,4,6,7,8-HpCDD	87.4	
OCDD	1,940				13C-OCDD	95.7	
2,3,7,8-TCDF	7.24				13C-2,3,7,8-TCDF	75	
1,2,3,7,8-PeCDF	EMPC		3.69		13C-1,2,3,7,8-PeCDF	75.1	
2,3,4,7,8-PeCDF	17.6				13C-2,3,4,7,8-PeCDF	70	
1,2,3,4,7,8-HxCDF	34				13C-1,2,3,4,7,8-HxCDF	77.1	
1,2,3,6,7,8-HxCDF	10.6				13C-1,2,3,6,7,8-HxCDF	76.1	
2,3,4,6,7,8-HxCDF	12.2				13C-2,3,4,6,7,8-HxCDF	79.3	
1,2,3,7,8,9-HxCDF	3.65				13C-1,2,3,7,8,9-HxCDF	78.4	
1,2,3,4,6,7,8-HpCDF	157				13C-1,2,3,4,6,7,8-HpCDF	79.7	
1,2,3,4,7,8,9-HpCDF	23.4				13C-1,2,3,4,7,8,9-HpCDF	88.1	
OCDF	424				13C-OCDF	89.9	
Totals						**CS Recoveries**	
TCDDs	8.09		9.05		37Cl-2,3,7,8-TCDD	88.1	
PeCDDs	4.8		9.18		13C-1,2,3,4,7-PeCDD	82.7	
HxCDDs	77.9				13C-1,2,3,4,6-PeCDF	84.6	
HpCDDs	439				13C-1,2,3,4,6,9-HxCDF	85.5	
					13C-1,2,3,4,6,8,9-HpCDF	97.5	
TCDFs	182		183				
PeCDFs	357		363			**AS Recoveries**	
HxCDFs	250		250		13C-1,3,6,8-TCDD	71.9	
HpCDFs	427		430		13C-1,3,6,8-TCDF	75.8	
Total PCDD/Fs	**4,110**		**4,130**				
WHO 2005 TEF TEQs							
TEQ: ND=0	19.5		19.6				
TEQ: ND=DL/2	19.7		19.8				
TEQ: ND=DL	20		20.1				

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AP 2008 Rev H

Reviewer .....

Date .....

Sample ID: T117-SB55-2.0-3.5

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	11.54 g	Sample ID:	P9676_6178_001	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	94.0 %	QC Batch No.:	6178	Date Analyzed:	16 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	21:49:54

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.483			13C-2,3,7,8-TCDD	78.8	
1,2,3,7,8-PeCDD	ND	2.25			13C-1,2,3,7,8-PeCDD	67.3	
1,2,3,4,7,8-HxCDD	ND	1.92			13C-1,2,3,4,7,8-HxCDD	69.5	
1,2,3,6,7,8-HxCDD	6.01				13C-1,2,3,6,7,8-HxCDD	70.6	
1,2,3,7,8,9-HxCDD	ND	2.4			13C-1,2,3,7,8,9-HxCDD	67.2	
1,2,3,4,6,7,8-HpCDD	94.5				13C-1,2,3,4,6,7,8-HpCDD	65.8	
OCDD	686				13C-OCDD	66.9	
2,3,7,8-TCDF	9				13C-2,3,7,8-TCDF	75	
1,2,3,7,8-PeCDF	10.3				13C-1,2,3,7,8-PeCDF	68.8	
2,3,4,7,8-PeCDF	38.6				13C-2,3,4,7,8-PeCDF	67	
1,2,3,4,7,8-HxCDF	211				13C-1,2,3,4,7,8-HxCDF	73.4	
1,2,3,6,7,8-HxCDF	44.3				13C-1,2,3,6,7,8-HxCDF	70.3	
2,3,4,6,7,8-HxCDF	31.5				13C-2,3,4,6,7,8-HxCDF	70.3	
1,2,3,7,8,9-HxCDF	24.8				13C-1,2,3,7,8,9-HxCDF	63	
1,2,3,4,6,7,8-HpCDF	338				13C-1,2,3,4,6,7,8-HpCDF	69.5	
1,2,3,4,7,8,9-HpCDF	197				13C-1,2,3,4,7,8,9-HpCDF	65.9	
OCDF	1,310				13C-OCDF	68.4	
Totals						**CS Recoveries**	
TCDDs	6.35		7.24		37Cl-2,3,7,8-TCDD	96.5	
PeCDDs	ND		1.18		13C-1,2,3,4,7-PeCDD	86.6	
HxCDDs	39				13C-1,2,3,4,6-PeCDF	89.8	
HpCDDs	175				13C-1,2,3,4,6,9-HxCDF	97.5	
					13C-1,2,3,4,6,8,9-HpCDF	94.3	
TCDFs	159		160				
PeCDFs	407					**AS Recoveries**	
HxCDFs	616				13C-1,3,6,8-TCDD	83.1	
HpCDFs	1,020				13C-1,3,6,8-TCDF	93.6	
Total PCDD/Fs	**4,420**		**4,420**				
WHO 2005 TEF TEQs							
TEQ: ND=0	51.5		51.5				
TEQ: ND=DL/2	53.1		53.1				
TEQ: ND=DL	54.7		54.7				

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AP 2008 Rev. H

Reviewer .....

Date 23 Sep 08

Sample ID: T117-SB55-3.5-5.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.51 g	Sample ID:	P9676_6178_002	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	95.4 %	QC Batch No.:	6178	Date Analyzed:	16 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	22:41:19

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	EMPC	[Ra=0.949]	2.06		13C-2,3,7,8-TCDD	80.5	
1,2,3,7,8-PeCDD	28.8				13C-1,2,3,7,8-PeCDD	68	
1,2,3,4,7,8-HxCDD	60.5				13C-1,2,3,4,7,8-HxCDD	66.8	
1,2,3,6,7,8-HxCDD	170				13C-1,2,3,6,7,8-HxCDD	66.8	
1,2,3,7,8,9-HxCDD	142				13C-1,2,3,7,8,9-HxCDD	64.8	
1,2,3,4,6,7,8-HpCDD	3,390				13C-1,2,3,4,6,7,8-HpCDD	75.7	
OCDD	19,000			*	13C-OCDD	81.4	
2,3,7,8-TCDF	7.61				13C-2,3,7,8-TCDF	76.3	
1,2,3,7,8-PeCDF	12.7				13C-1,2,3,7,8-PeCDF	68.5	
2,3,4,7,8-PeCDF	78.4				13C-2,3,4,7,8-PeCDF	68	
1,2,3,4,7,8-HxCDF	108				13C-1,2,3,4,7,8-HxCDF	72.5	
1,2,3,6,7,8-HxCDF	178				13C-1,2,3,6,7,8-HxCDF	68	
2,3,4,6,7,8-HxCDF	312				13C-2,3,4,6,7,8-HxCDF	69.7	
1,2,3,7,8,9-HxCDF	13.3				13C-1,2,3,7,8,9-HxCDF	61.9	
1,2,3,4,6,7,8-HpCDF	10,200			*	13C-1,2,3,4,6,7,8-HpCDF	80.3	
1,2,3,4,7,8,9-HpCDF	56.1				13C-1,2,3,4,7,8,9-HpCDF	67.5	
OCDF	3,080				13C-OCDF	72.9	
Totals						**CS Recoveries**	
TCDDs	18.5		30.9		37Cl-2,3,7,8-TCDD	101	
PeCDDs	200		210		13C-1,2,3,4,7-PeCDD	91.2	
HxCDDs	1,510		1,530		13C-1,2,3,4,6-PeCDF	91.5	
HpCDDs	6,920				13C-1,2,3,4,6,9-HxCDF	97.8	
					13C-1,2,3,4,6,8,9-HpCDF	110	
TCDFs	470		478				
PeCDFs	1,880		1,880			**AS Recoveries**	
HxCDFs	8,520				13C-1,3,6,8-TCDD	89.9	
HpCDFs	15,800				13C-1,3,6,8-TCDF	92.2	
Total PCDD/Fs	**57,400**		**57,500**				
WHO 2005 TEF TEQs							
TEQ: ND=0	295		297				
TEQ: ND=DL/2	295		297				
TEQ: ND=DL	295		297				

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Reviewer .....

Date 23 Sep 08

Sample ID: T117-SB55-11.5-13.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676C	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.25 g	Sample ID:	P9676_6595_003	Date Extracted:	18 Feb 09
Date Collected:	03 Sep 08	% Solids:	91.7 %	QC Batch No.:	6595	Date Analyzed:	22 Feb 09
		Split:	-	Dilution:	-	Time Analyzed:	3:13:12

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	0.48	[Ra=0.819]		J	13C-2,3,7,8-TCDD	83.6	
1,2,3,7,8-PeCDD	ND	0.316			13C-1,2,3,7,8-PeCDD	77.9	
1,2,3,4,7,8-HxCDD	7.86				13C-1,2,3,4,7,8-HxCDD	84.5	
1,2,3,6,7,8-HxCDD	25.1				13C-1,2,3,6,7,8-HxCDD	79.5	
1,2,3,7,8,9-HxCDD	19				13C-1,2,3,7,8,9-HxCDD	83.2	
1,2,3,4,6,7,8-HpCDD	467				13C-1,2,3,4,6,7,8-HpCDD	93	
OCDD	2,810				13C-OCDD	101	
2,3,7,8-TCDF	6.96				13C-2,3,7,8-TCDF	78.4	
1,2,3,7,8-PeCDF	4.13				13C-1,2,3,7,8-PeCDF	78	
2,3,4,7,8-PeCDF	31				13C-2,3,4,7,8-PeCDF	73.2	
1,2,3,4,7,8-HxCDF	75.8				13C-1,2,3,4,7,8-HxCDF	83.5	
1,2,3,6,7,8-HxCDF	38.5				13C-1,2,3,6,7,8-HxCDF	82.9	
2,3,4,6,7,8-HxCDF	58.3				13C-2,3,4,6,7,8-HxCDF	83.4	
1,2,3,7,8,9-HxCDF	7.88				13C-1,2,3,7,8,9-HxCDF	83.2	
1,2,3,4,6,7,8-HpCDF	1,810				13C-1,2,3,4,6,7,8-HpCDF	90.3	
1,2,3,4,7,8,9-HpCDF	53.6				13C-1,2,3,4,7,8,9-HpCDF	92.6	
OCDF	846				13C-OCDF	94.2	
Totals						**CS Recoveries**	
TCDDs	7.11		8.87		37Cl-2,3,7,8-TCDD	89.8	
PeCDDs	7.61		19.3		13C-1,2,3,4,7-PeCDD	84.5	
HxCDDs	202		204		13C-1,2,3,4,6-PeCDF	88.2	
HpCDDs	916				13C-1,2,3,4,6,9-HxCDF	89.7	
					13C-1,2,3,4,6,8,9-HpCDF	105	
TCDFs	274		276				
PeCDFs	666		669			**AS Recoveries**	
HxCDFs	1,470		1,470		13C-1,3,6,8-TCDD	72.8	
HpCDFs	2,890				13C-1,3,6,8-TCDF	76.1	
Total PCDD/Fs	**10,100**		**10,100**				
WHO 2005 TEF TEQs							
TEQ: ND=0	58.3		58.3				
TEQ: ND=DL/2	58.4		58.4				
TEQ: ND=DL	58.6		58.6				

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AP 2005 Rev. F

o/c 10 March 09

10 March 09

Reviewer .....

Date .....

Sample ID: T117-SB56-1.0-2.5

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	11.94 g	Sample ID:	P9676_6178_009	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	93.1 %	QC Batch No.:	6178	Date Analyzed:	17 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	6:29:37

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	0.965	[Ra=0.686]			13C-2,3,7,8-TCDD	82.9	
1,2,3,7,8-PeCDD	EMPC		4.03		13C-1,2,3,7,8-PeCDD	72.4	
1,2,3,4,7,8-HxCDD	3.17				13C-1,2,3,4,7,8-HxCDD	77.6	
1,2,3,6,7,8-HxCDD	11.8				13C-1,2,3,6,7,8-HxCDD	76.1	
1,2,3,7,8,9-HxCDD	6.4				13C-1,2,3,7,8,9-HxCDD	74.5	
1,2,3,4,6,7,8-HpCDD	103				13C-1,2,3,4,6,7,8-HpCDD	73.6	
OCDD	845				13C-OCDD	77.2	
2,3,7,8-TCDF	4.78				13C-2,3,7,8-TCDF	89.2	
1,2,3,7,8-PeCDF	5.14				13C-1,2,3,7,8-PeCDF	75.5	
2,3,4,7,8-PeCDF	26.1				13C-2,3,4,7,8-PeCDF	76.9	
1,2,3,4,7,8-HxCDF	15.8				13C-1,2,3,4,7,8-HxCDF	76.8	
1,2,3,6,7,8-HxCDF	9.71				13C-1,2,3,6,7,8-HxCDF	71.1	
2,3,4,6,7,8-HxCDF	13.5				13C-2,3,4,6,7,8-HxCDF	74.9	
1,2,3,7,8,9-HxCDF	6.3				13C-1,2,3,7,8,9-HxCDF	70.2	
1,2,3,4,6,7,8-HpCDF	37.7				13C-1,2,3,4,6,7,8-HpCDF	73.7	
1,2,3,4,7,8,9-HpCDF	6.46				13C-1,2,3,4,7,8,9-HpCDF	73	
OCDF	86.5				13C-OCDF	71.9	
Totals						**CS Recoveries**	
TCDDs	38.5		39.7		37Cl-2,3,7,8-TCDD	95.9	
PeCDDs	75.4		81.4		13C-1,2,3,4,7-PeCDD	88.1	
HxCDDs	122		124		13C-1,2,3,4,6-PeCDF	96.3	
HpCDDs	203				13C-1,2,3,4,6,9-HxCDF	95.4	
					13C-1,2,3,4,6,8,9-HpCDF	97.3	
TCDFs	156						
PeCDFs	227					**AS Recoveries**	
HxCDFs	174				13C-1,3,6,8-TCDD	83.7	
HpCDFs	110				13C-1,3,6,8-TCDF	96.2	
Total PCDD/Fs	**2,040**		**2,050**				
WHO 2005 TEF TEQs							
TEQ: ND=0	17.8		21.9				
TEQ: ND=DL/2	17.8		21.9				
TEQ: ND=DL	17.8		21.9				

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Reviewer .....

Date 23 Sep 08

Sample ID: T117-SB57b-2.0-3.5

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9678	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.99 g	Sample ID:	P9678_6179_006	Date Extracted:	10 Sep 08
Date Collected:	02 Sep 08	% Solids:	96.6 %	QC Batch No.:	6179	Date Analyzed:	16 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	6:07:48

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.117			13C-2,3,7,8-TCDD	81.5	
1,2,3,7,8-PeCDD	EMPC		0.851	J	13C-1,2,3,7,8-PeCDD	74.4	
1,2,3,4,7,8-HxCDD	0.993			J	13C-1,2,3,4,7,8-HxCDD	74.6	
1,2,3,6,7,8-HxCDD	3.75				13C-1,2,3,6,7,8-HxCDD	75.4	
1,2,3,7,8,9-HxCDD	2.25			J	13C-1,2,3,7,8,9-HxCDD	79.5	
1,2,3,4,6,7,8-HpCDD	106				13C-1,2,3,4,6,7,8-HpCDD	84.7	
OCDD	1,360				13C-OCDD	90.6	
2,3,7,8-TCDF	4.87				13C-2,3,7,8-TCDF	80.4	
1,2,3,7,8-PeCDF	6.23				13C-1,2,3,7,8-PeCDF	73.3	
2,3,4,7,8-PeCDF	12.7				13C-2,3,4,7,8-PeCDF	75.7	
1,2,3,4,7,8-HxCDF	18.5				13C-1,2,3,4,7,8-HxCDF	70.6	
1,2,3,6,7,8-HxCDF	5.67				13C-1,2,3,6,7,8-HxCDF	72.0	
2,3,4,6,7,8-HxCDF	7.11				13C-2,3,4,6,7,8-HxCDF	71.9	
1,2,3,7,8,9-HxCDF	ND	0.107			13C-1,2,3,7,8,9-HxCDF	75.2	
1,2,3,4,6,7,8-HpCDF	54.1				13C-1,2,3,4,6,7,8-HpCDF	74.0	
1,2,3,4,7,8,9-HpCDF	14.9				13C-1,2,3,4,7,8,9-HpCDF	79.7	
OCDF	157				13C-OCDF	87.1	
Totals						**CS Recoveries**	
TCDDs	2.71				37Cl-2,3,7,8-TCDD	93.5	
PeCDDs	3.78		6.39		13C-1,2,3,4,7-PeCDD	84.3	
HxCDDs	34.5				13C-1,2,3,4,6-PeCDF	82.1	
HpCDDs	312				13C-1,2,3,4,6,9-HxCDF	83.4	
					13C-1,2,3,4,6,8,9-HpCDF	93.1	
TCDFs	76.4						
PeCDFs	158					**AS Recoveries**	
HxCDFs	110				13C-1,3,6,8-TCDD	83.9	
HpCDFs	140				13C-1,3,6,8-TCDF	87.7	
Total PCDD/Fs	**2,360**		**2,360**				
WHO 2005 TEF TEQs							
TEQ: ND=0	10.5		11.4				
TEQ: ND=DL/2	10.6		11.4				
TEQ: ND=DL	10.7		11.5				

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AP 2008 Rev. H

Reviewer GK

Date 24 Sep08

Sample ID: T117-SB57b-3.5-5.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9678	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.40 g	Sample ID:	P9678_6179_007	Date Extracted:	10 Sep 08
Date Collected:	02 Sep 08	% Solids:	94.6 %	QC Batch No.:	6179	Date Analyzed:	16 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	7:02:05

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	0.431	[Ra=0.788]		J	13C-2,3,7,8-TCDD	80.7	
1,2,3,7,8-PeCDD	EMPC		1.50	J	13C-1,2,3,7,8-PeCDD	71.5	
1,2,3,4,7,8-HxCDD	1.59			J	13C-1,2,3,4,7,8-HxCDD	74.4	
1,2,3,6,7,8-HxCDD	7.59				13C-1,2,3,6,7,8-HxCDD	76.5	
1,2,3,7,8,9-HxCDD	3.60				13C-1,2,3,7,8,9-HxCDD	77.8	
1,2,3,4,6,7,8-HpCDD	133				13C-1,2,3,4,6,7,8-HpCDD	83.4	
OCDD	1,360				13C-OCDD	83.0	
2,3,7,8-TCDF	9.93				13C-2,3,7,8-TCDF	80.1	
1,2,3,7,8-PeCDF	7.93				13C-1,2,3,7,8-PeCDF	74.6	
2,3,4,7,8-PeCDF	36.6				13C-2,3,4,7,8-PeCDF	74.2	
1,2,3,4,7,8-HxCDF	95.2				13C-1,2,3,4,7,8-HxCDF	72.5	
1,2,3,6,7,8-HxCDF	21.3				13C-1,2,3,6,7,8-HxCDF	72.9	
2,3,4,6,7,8-HxCDF	23.3				13C-2,3,4,6,7,8-HxCDF	70.9	
1,2,3,7,8,9-HxCDF	ND	0.102			13C-1,2,3,7,8,9-HxCDF	73.6	
1,2,3,4,6,7,8-HpCDF	191				13C-1,2,3,4,6,7,8-HpCDF	75.0	
1,2,3,4,7,8,9-HpCDF	86				13C-1,2,3,4,7,8,9-HpCDF	78.9	
OCDF	639				13C-OCDF	82.9	
Totals						**CS Recoveries**	
TCDDs	8.74		11.2		37Cl-2,3,7,8-TCDD	94.0	
PeCDDs	15.8		20.1		13C-1,2,3,4,7-PeCDD	84.4	
HxCDDs	56.2		57.1		13C-1,2,3,4,6-PeCDF	90.4	
HpCDDs	261				13C-1,2,3,4,6,9-HxCDF	88.1	
					13C-1,2,3,4,6,8,9-HpCDF	97.7	
TCDFs	169						
PeCDFs	373					**AS Recoveries**	
HxCDFs	372				13C-1,3,6,8-TCDD	80.7	
HpCDFs	525				13C-1,3,6,8-TCDF	90.1	
Total PCDD/Fs	**3,780**		**3,790**				
WHO 2005 TEF TEQs							
TEQ: ND=0	32.6		34.1				
TEQ: ND=DL/2	32.6		34.1				
TEQ: ND=DL	32.6		34.1				

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AP 2008 Rev. H

Reviewer GAG

Date 24Sep08

Sample ID: T117-SB57b-10.0-11.5

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9678B	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	11.83 g	Sample ID:	P9678_6595_008	Date Extracted:	18 Feb 09
Date Collected:	02 Sep 08	% Solids:	81.9 %	QC Batch No.:	6595	Date Analyzed:	22 Feb 09
		Split:	-	Dilution:	-	Time Analyzed:	5:43:59

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	0.315	[Ra=0.765]		J	13C-2,3,7,8-TCDD	75.8	
1,2,3,7,8-PeCDD	ND	0.3			13C-1,2,3,7,8-PeCDD	70.8	
1,2,3,4,7,8-HxCDD	1.36			J	13C-1,2,3,4,7,8-HxCDD	73.5	
1,2,3,6,7,8-HxCDD	5.12				13C-1,2,3,6,7,8-HxCDD	70	
1,2,3,7,8,9-HxCDD	3.06				13C-1,2,3,7,8,9-HxCDD	71.7	
1,2,3,4,6,7,8-HpCDD	97.2				13C-1,2,3,4,6,7,8-HpCDD	82.4	
OCDD	1,120				13C-OCDD	88.2	
2,3,7,8-TCDF	6.37				13C-2,3,7,8-TCDF	72.9	
1,2,3,7,8-PeCDF	3.65				13C-1,2,3,7,8-PeCDF	73.1	
2,3,4,7,8-PeCDF	33.2				13C-2,3,4,7,8-PeCDF	68.7	
1,2,3,4,7,8-HxCDF	33.9				13C-1,2,3,4,7,8-HxCDF	71	
1,2,3,6,7,8-HxCDF	10				13C-1,2,3,6,7,8-HxCDF	68.2	
2,3,4,6,7,8-HxCDF	14.6				13C-2,3,4,6,7,8-HxCDF	72.2	
1,2,3,7,8,9-HxCDF	4.4				13C-1,2,3,7,8,9-HxCDF	73.5	
1,2,3,4,6,7,8-HpCDF	73.2				13C-1,2,3,4,6,7,8-HpCDF	74.6	
1,2,3,4,7,8,9-HpCDF	27.2				13C-1,2,3,4,7,8,9-HpCDF	80.1	
OCDF	216				13C-OCDF	83.6	
Totals						**CS Recoveries**	
TCDDs	8.06		8.34		37Cl-2,3,7,8-TCDD	86.2	
PeCDDs	6.93		11.8		13C-1,2,3,4,7-PeCDD	79.5	
HxCDDs	41.4				13C-1,2,3,4,6-PeCDF	84.3	
HpCDDs	208				13C-1,2,3,4,6,9-HxCDF	81.4	
					13C-1,2,3,4,6,8,9-HpCDF	92.2	
TCDFs	173		178				
PeCDFs	382					**AS Recoveries**	
HxCDFs	235				13C-1,3,6,8-TCDD	70.9	
HpCDFs	202		205		13C-1,3,6,8-TCDF	76	
Total PCDD/Fs	**2,590**		**2,610**				
ITEF TEQs							
TEQ: ND=0	28.3		28.3				
TEQ: ND=DL/2	28.4		28.4				
TEQ: ND=DL	28.4		28.4				

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AP 2008 Rev. H

ok 10 March 09

10 March 09

Reviewer .....

Date .....

Sample ID: T117-SB58-0.5-2.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	11.75 g	Sample ID:	P9676_6178_013	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	92.3 %	QC Batch No.:	6178	Date Analyzed:	17 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	7:20:55

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	0.887	[Ra=0.811]			13C-2,3,7,8-TCDD	82.2	
1,2,3,7,8-PeCDD	EMPC		3.47		13C-1,2,3,7,8-PeCDD	67	
1,2,3,4,7,8-HxCDD	3.94				13C-1,2,3,4,7,8-HxCDD	70.6	
1,2,3,6,7,8-HxCDD	17.8				13C-1,2,3,6,7,8-HxCDD	70.4	
1,2,3,7,8,9-HxCDD	7.1				13C-1,2,3,7,8,9-HxCDD	64.1	
1,2,3,4,6,7,8-HpCDD	417				13C-1,2,3,4,6,7,8-HpCDD	60.4	
OCDD	4,260				13C-OCDD	60.2	
2,3,7,8-TCDF	EMPC		5.38		13C-2,3,7,8-TCDF	82.2	
1,2,3,7,8-PeCDF	EMPC		3.95		13C-1,2,3,7,8-PeCDF	68.6	
2,3,4,7,8-PeCDF	35.4				13C-2,3,4,7,8-PeCDF	67.4	
1,2,3,4,7,8-HxCDF	47.8				13C-1,2,3,4,7,8-HxCDF	68.5	
1,2,3,6,7,8-HxCDF	14.6				13C-1,2,3,6,7,8-HxCDF	63.6	
2,3,4,6,7,8-HxCDF	20.4				13C-2,3,4,6,7,8-HxCDF	64.1	
1,2,3,7,8,9-HxCDF	7.15				13C-1,2,3,7,8,9-HxCDF	59.9	
1,2,3,4,6,7,8-HpCDF	175				13C-1,2,3,4,6,7,8-HpCDF	61.4	
1,2,3,4,7,8,9-HpCDF	43.2				13C-1,2,3,4,7,8,9-HpCDF	57	
OCDF	653				13C-OCDF	53.5	
Totals						**CS Recoveries**	
TCDDs	14.6		17.1		37Cl-2,3,7,8-TCDD	96.5	
PeCDDs	19.6		36.1		13C-1,2,3,4,7-PeCDD	82.8	
HxCDDs	117		120		13C-1,2,3,4,6-PeCDF	88	
HpCDDs	789				13C-1,2,3,4,6,9-HxCDF	89.8	
					13C-1,2,3,4,6,8,9-HpCDF	85.3	
TCDFs	136		144				
PeCDFs	304		309			**AS Recoveries**	
HxCDFs	354		355		13C-1,3,6,8-TCDD	83.2	
HpCDFs	615				13C-1,3,6,8-TCDF	92.4	
Total PCDD/Fs	**7,270**		**7,300**				
WHO 2005 TEF TEQs							
TEQ: ND=0	31.2		35.3				
TEQ: ND=DL/2	31.2		35.3				
TEQ: ND=DL	31.2		35.3				

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Reviewer .....

Date 23 Sep 08

Sample ID: T117-SB58-2.0-3.5

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.08 g	Sample ID:	P9676_6178_014	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	90.8 %	QC Batch No.:	6178	Date Analyzed:	17 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	8:12:18

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	2.97	[Ra=0.805]			13C-2,3,7,8-TCDD	75.4	
1,2,3,7,8-PeCDD	18.4				13C-1,2,3,7,8-PeCDD	67.3	
1,2,3,4,7,8-HxCDD	9.07				13C-1,2,3,4,7,8-HxCDD	64.9	
1,2,3,6,7,8-HxCDD	43.9				13C-1,2,3,6,7,8-HxCDD	66.9	
1,2,3,7,8,9-HxCDD	18.5				13C-1,2,3,7,8,9-HxCDD	64.1	
1,2,3,4,6,7,8-HpCDD	320				13C-1,2,3,4,6,7,8-HpCDD	62.6	
OCDD	3,310				13C-OCDD	68.3	
2,3,7,8-TCDF	9.24				13C-2,3,7,8-TCDF	73.4	
1,2,3,7,8-PeCDF	7.39				13C-1,2,3,7,8-PeCDF	67	
2,3,4,7,8-PeCDF	313				13C-2,3,4,7,8-PeCDF	67.5	
1,2,3,4,7,8-HxCDF	29				13C-1,2,3,4,7,8-HxCDF	61.7	
1,2,3,6,7,8-HxCDF	47.3				13C-1,2,3,6,7,8-HxCDF	58.5	
2,3,4,6,7,8-HxCDF	116				13C-2,3,4,6,7,8-HxCDF	59.1	
1,2,3,7,8,9-HxCDF	19.5				13C-1,2,3,7,8,9-HxCDF	56.7	
1,2,3,4,6,7,8-HpCDF	71.8				13C-1,2,3,4,6,7,8-HpCDF	59.6	
1,2,3,4,7,8,9-HpCDF	10.7				13C-1,2,3,4,7,8,9-HpCDF	58.7	
OCDF	65.1				13C-OCDF	62.6	
Totals						**CS Recoveries**	
TCDDs	39.1		42.8		37Cl-2,3,7,8-TCDD	98.1	
PeCDDs	234		239		13C-1,2,3,4,7-PeCDD	90.3	
HxCDDs	458				13C-1,2,3,4,6-PeCDF	93.8	
HpCDDs	760				13C-1,2,3,4,6,9-HxCDF	86.4	
					13C-1,2,3,4,6,8,9-HpCDF	91.5	
TCDFs	1,170		1,170				
PeCDFs	2,920					**AS Recoveries**	
HxCDFs	1,540		1,540		13C-1,3,6,8-TCDD	86.6	
HpCDFs	234				13C-1,3,6,8-TCDF	95.1	
Total PCDD/Fs	**10,700**		**10,700**				
WHO 2005 TEF TEQs							
TEQ: ND=0	150		150				
TEQ: ND=DL/2	150		150				
TEQ: ND=DL	150		150				

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AP 2008 Rev H

Reviewer .....

Date 23 Sep 08

Sample ID: T117-SB58-3.5-5.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.13 g	Sample ID:	P9676_6424_015	Date Extracted:	10 Dec 08
Date Collected:	03 Sep 08	% Solids:	88.1 %	QC Batch No.:	6424	Date Analyzed:	20 Dec 08
		Split:	-	Dilution:	-	Time Analyzed:	8:40:12

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	EMPC	[Ra=1.03]	0.082	J	13C-2,3,7,8-TCDD	84.9	
1,2,3,7,8-PeCDD	EMPC		0.352	J	13C-1,2,3,7,8-PeCDD	72.6	
1,2,3,4,7,8-HxCDD	ND	<0.247			13C-1,2,3,4,7,8-HxCDD	75.8	
1,2,3,6,7,8-HxCDD	1.03			J	13C-1,2,3,6,7,8-HxCDD	77.2	
1,2,3,7,8,9-HxCDD	0.428			J	13C-1,2,3,7,8,9-HxCDD	76.7	
1,2,3,4,6,7,8-HpCDD	16.1				13C-1,2,3,4,6,7,8-HpCDD	69.1	
OCDD	185				13C-OCDD	75.1	
2,3,7,8-TCDF	0.445			J	13C-2,3,7,8-TCDF	89.6	
1,2,3,7,8-PeCDF	0.421			J	13C-1,2,3,7,8-PeCDF	69.7	
2,3,4,7,8-PeCDF	5.55				13C-2,3,4,7,8-PeCDF	76.6	
1,2,3,4,7,8-HxCDF	4.74				13C-1,2,3,4,7,8-HxCDF	62.4	
1,2,3,6,7,8-HxCDF	1.61			J	13C-1,2,3,6,7,8-HxCDF	60.6	
2,3,4,6,7,8-HxCDF	2.36			J	13C-2,3,4,6,7,8-HxCDF	65	
1,2,3,7,8,9-HxCDF	0.857			J	13C-1,2,3,7,8,9-HxCDF	60.9	
1,2,3,4,6,7,8-HpCDF	9.3				13C-1,2,3,4,6,7,8-HpCDF	59.3	
1,2,3,4,7,8,9-HpCDF	3.67				13C-1,2,3,4,7,8,9-HpCDF	61.7	
OCDF	30.5				13C-OCDF	72.3	
Totals						**CS Recoveries**	
TCDDs	0.17		0.932		37Cl-2,3,7,8-TCDD	98.3	
PeCDDs	2.93		4.2		13C-1,2,3,4,7-PeCDD	97.2	
HxCDDs	9.44		9.59		13C-1,2,3,4,6-PeCDF	92.7	
HpCDDs	33.6				13C-1,2,3,4,6,9-HxCDF	81.5	
					13C-1,2,3,4,6,8,9-HpCDF	78.8	
TCDFs	14.3		15.4				
PeCDFs	49.9					**AS Recoveries**	
HxCDFs	35.4		36.3		13C-1,3,6,8-TCDD	81.3	
HpCDFs	29.4				13C-1,3,6,8-TCDF	87.4	
Total PCDD/Fs	**390**		**394**				
WHO 2005 TEF TEQs							
TEQ: ND=0	3.18		3.61				
TEQ: ND=DL/2	3.19		3.63				
TEQ: ND=DL	3.21		3.64				

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AP 2008 Rev. H

Reviewer .....

Date 12/20/08

Sample ID: T117-SB59-1.5-3.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	12.11 g	Sample ID:	P9676_6178_016	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	88.6 %	QC Batch No.:	6178	Date Analyzed:	17 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	9:03:36

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	EMPC	[Ra=0.903]	0.774		13C-2,3,7,8-TCDD	81.2	
1,2,3,7,8-PeCDD	EMPC		2.85		13C-1,2,3,7,8-PeCDD	70.2	
1,2,3,4,7,8-HxCDD	ND	1.65			13C-1,2,3,4,7,8-HxCDD	73.4	
1,2,3,6,7,8-HxCDD	5.83				13C-1,2,3,6,7,8-HxCDD	70.3	
1,2,3,7,8,9-HxCDD	3.94				13C-1,2,3,7,8,9-HxCDD	69.2	
1,2,3,4,6,7,8-HpCDD	60.8				13C-1,2,3,4,6,7,8-HpCDD	66.5	
OCDD	434				13C-OCDD	67.4	
2,3,7,8-TCDF	24				13C-2,3,7,8-TCDF	89.9	
1,2,3,7,8-PeCDF	18.4				13C-1,2,3,7,8-PeCDF	75.5	
2,3,4,7,8-PeCDF	87.2				13C-2,3,4,7,8-PeCDF	76.4	
1,2,3,4,7,8-HxCDF	458				13C-1,2,3,4,7,8-HxCDF	69.3	
1,2,3,6,7,8-HxCDF	93.2				13C-1,2,3,6,7,8-HxCDF	63.2	
2,3,4,6,7,8-HxCDF	71.6				13C-2,3,4,6,7,8-HxCDF	65.7	
1,2,3,7,8,9-HxCDF	50.5				13C-1,2,3,7,8,9-HxCDF	60.5	
1,2,3,4,6,7,8-HpCDF	702				13C-1,2,3,4,6,7,8-HpCDF	64.4	
1,2,3,4,7,8,9-HpCDF	449				13C-1,2,3,4,7,8,9-HpCDF	65.8	
OCDF	2,940				13C-OCDF	66.1	
Totals						**CS Recoveries**	
TCDDs	14.1		17.9		37Cl-2,3,7,8-TCDD	96.5	
PeCDDs	ND		4.68		13C-1,2,3,4,7-PeCDD	83.3	
HxCDDs	62.3				13C-1,2,3,4,6-PeCDF	94.1	
HpCDDs	118				13C-1,2,3,4,6,9-HxCDF	87.3	
					13C-1,2,3,4,6,8,9-HpCDF	90.2	
TCDFs	357		364				
PeCDFs	804					**AS Recoveries**	
HxCDFs	1,360				13C-1,3,6,8-TCDD	83.2	
HpCDFs	2,090				13C-1,3,6,8-TCDF	97.6	
Total PCDD/Fs	**8,180**		**8,190**				
WHO 2005 TEF TEQs							
TEQ: ND=0	111		114				
TEQ: ND=DL/2	111		114				
TEQ: ND=DL	111		114				

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Reviewer .....

Date 23 Sep 08

Sample ID: T117-SB59-3.0-4.5

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	11.65 g	Sample ID:	P9676_6178_017	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	94.4 %	QC Batch No.:	6178	Date Analyzed:	17 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	9:54:59

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.291			13C-2,3,7,8-TCDD	83.1	
1,2,3,7,8-PeCDD	ND	0.785			13C-1,2,3,7,8-PeCDD	75	
1,2,3,4,7,8-HxCDD	ND	0.476			13C-1,2,3,4,7,8-HxCDD	74.8	
1,2,3,6,7,8-HxCDD	ND	0.517			13C-1,2,3,6,7,8-HxCDD	75.5	
1,2,3,7,8,9-HxCDD	ND	0.53			13C-1,2,3,7,8,9-HxCDD	74.3	
1,2,3,4,6,7,8-HpCDD	EMPC		2.14	J	13C-1,2,3,4,6,7,8-HpCDD	70.3	
OCDD	11				13C-OCDD	72.7	
2,3,7,8-TCDF	ND	0.254			13C-2,3,7,8-TCDF	87.8	
1,2,3,7,8-PeCDF	ND	0.43			13C-1,2,3,7,8-PeCDF	77.6	
2,3,4,7,8-PeCDF	EMPC		0.733	J	13C-2,3,4,7,8-PeCDF	79.1	
1,2,3,4,7,8-HxCDF	ND	0.266			13C-1,2,3,4,7,8-HxCDF	69.3	
1,2,3,6,7,8-HxCDF	ND	0.259			13C-1,2,3,6,7,8-HxCDF	65.2	
2,3,4,6,7,8-HxCDF	ND	0.267			13C-2,3,4,6,7,8-HxCDF	70.7	
1,2,3,7,8,9-HxCDF	ND	0.362			13C-1,2,3,7,8,9-HxCDF	65.6	
1,2,3,4,6,7,8-HpCDF	0.701			J	13C-1,2,3,4,6,7,8-HpCDF	69.8	
1,2,3,4,7,8,9-HpCDF	ND	1.26			13C-1,2,3,4,7,8,9-HpCDF	66.7	
OCDF	ND	0.576			13C-OCDF	65.2	
Totals						**CS Recoveries**	
TCDDs	2.34				37Cl-2,3,7,8-TCDD	99.3	
PeCDDs	ND	0.785			13C-1,2,3,4,7-PeCDD	90.3	
HxCDDs	3.23		4.11		13C-1,2,3,4,6-PeCDF	97.7	
HpCDDs	3.06		5.2		13C-1,2,3,4,6,9-HxCDF	89.8	
					13C-1,2,3,4,6,8,9-HpCDF	89	
TCDFs	3.36						
PeCDFs	4.97		5.71			**AS Recoveries**	
HxCDFs	3.04				13C-1,3,6,8-TCDD	85.2	
HpCDFs	0.701		1.46		13C-1,3,6,8-TCDF	97.1	
Total PCDD/Fs	**31.7**		**36.2**				
WHO 2005 TEF TEQs							
TEQ: ND=0	0.0103		0.252				
TEQ: ND=DL/2	0.708		0.949				
TEQ: ND=DL	1.41		1.65				

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AP 2008 Rev. H

Reviewer .....

Date 23 Sep 08

Sample ID: T117-SB60-0.5-2.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9678	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	12.47 g	Sample ID:	P9678_6179_001	Date Extracted:	10 Sep 08
Date Collected:	02 Sep 08	% Solids:	90.0 %	QC Batch No.:	6179	Date Analyzed:	16 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	3:25:03

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	EMPC	[Ra=0.629]	0.366	J	13C-2,3,7,8-TCDD	74.2	
1,2,3,7,8-PeCDD	EMPC		1.36	J	13C-1,2,3,7,8-PeCDD	66.2	
1,2,3,4,7,8-HxCDD	1.56			J	13C-1,2,3,4,7,8-HxCDD	67.9	
1,2,3,6,7,8-HxCDD	5.25				13C-1,2,3,6,7,8-HxCDD	69.5	
1,2,3,7,8,9-HxCDD	2.81				13C-1,2,3,7,8,9-HxCDD	70.1	
1,2,3,4,6,7,8-HpCDD	87.3				13C-1,2,3,4,6,7,8-HpCDD	73.7	
OCDD	754				13C-OCDD	69.8	
2,3,7,8-TCDF	6.26				13C-2,3,7,8-TCDF	73.6	
1,2,3,7,8-PeCDF	3.45				13C-1,2,3,7,8-PeCDF	66.0	
2,3,4,7,8-PeCDF	22.6				13C-2,3,4,7,8-PeCDF	68.5	
1,2,3,4,7,8-HxCDF	35.8				13C-1,2,3,4,7,8-HxCDF	67.8	
1,2,3,6,7,8-HxCDF	9.91				13C-1,2,3,6,7,8-HxCDF	70.0	
2,3,4,6,7,8-HxCDF	11.9				13C-2,3,4,6,7,8-HxCDF	66.9	
1,2,3,7,8,9-HxCDF	ND	0.386			13C-1,2,3,7,8,9-HxCDF	67.7	
1,2,3,4,6,7,8-HpCDF	74.0				13C-1,2,3,4,6,7,8-HpCDF	66.7	
1,2,3,4,7,8,9-HpCDF	31.0				13C-1,2,3,4,7,8,9-HpCDF	73.8	
OCDF	250				13C-OCDF	72.4	
Totals						**CS Recoveries**	
TCDDs	9.84		10.5		37Cl-2,3,7,8-TCDD	92.6	
PeCDDs	15.1		19.0		13C-1,2,3,4,7-PeCDD	85.6	
HxCDDs	41.9		44.0		13C-1,2,3,4,6-PeCDF	82.2	
HpCDDs	160				13C-1,2,3,4,6,9-HxCDF	89.1	
					13C-1,2,3,4,6,8,9-HpCDF	92.9	
TCDFs	108		109				
PeCDFs	192					**AS Recoveries**	
HxCDFs	177				13C-1,3,6,8-TCDD	89.4	
HpCDFs	208				13C-1,3,6,8-TCDF	94.8	
Total PCDD/Fs	**1,920**		**1,920**				
WHO 2005 TEF TEQs							
TEQ: ND=0	16.4		18.2				
TEQ: ND=DL/2	16.5		18.2				
TEQ: ND=DL	16.5		18.2				

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Reviewer GK

Date 24Sep08

Sample ID: T117-SB60-2.0-3.5

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9678	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	11.54 g	Sample ID:	P9678_6179_002	Date Extracted:	10 Sep 08
Date Collected:	02 Sep 08	% Solids:	91.0 %	QC Batch No.:	6179	Date Analyzed:	16 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	4:19:16

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	EMPC	[Ra=0.646]	0.720		13C-2,3,7,8-TCDD	66.9	
1,2,3,7,8-PeCDD	EMPC		2.60		13C-1,2,3,7,8-PeCDD	59.7	
1,2,3,4,7,8-HxCDD	2.24				13C-1,2,3,4,7,8-HxCDD	61.4	
1,2,3,6,7,8-HxCDD	9.28				13C-1,2,3,6,7,8-HxCDD	63.1	
1,2,3,7,8,9-HxCDD	5.74				13C-1,2,3,7,8,9-HxCDD	61.6	
1,2,3,4,6,7,8-HpCDD	97.0				13C-1,2,3,4,6,7,8-HpCDD	64.0	
OCDD	619				13C-OCDD	60.9	
2,3,7,8-TCDF	25.6				13C-2,3,7,8-TCDF	73.0	
1,2,3,7,8-PeCDF	14.6				13C-1,2,3,7,8-PeCDF	67.8	
2,3,4,7,8-PeCDF	80.8				13C-2,3,4,7,8-PeCDF	66.3	
1,2,3,4,7,8-HxCDF	370				13C-1,2,3,4,7,8-HxCDF	58.0	
1,2,3,6,7,8-HxCDF	72.3				13C-1,2,3,6,7,8-HxCDF	55.7	
2,3,4,6,7,8-HxCDF	62.5				13C-2,3,4,6,7,8-HxCDF	53.6	
1,2,3,7,8,9-HxCDF	ND	0.283			13C-1,2,3,7,8,9-HxCDF	56.1	
1,2,3,4,6,7,8-HpCDF	634				13C-1,2,3,4,6,7,8-HpCDF	55.9	
1,2,3,4,7,8,9-HpCDF	377				13C-1,2,3,4,7,8,9-HpCDF	56.7	
OCDF	2,640				13C-OCDF	58.9	
Totals						**CS Recoveries**	
TCDDs	17.3		21.5		37Cl-2,3,7,8-TCDD	93.3	
PeCDDs	10.5		40.4		13C-1,2,3,4,7-PeCDD	81.5	
HxCDDs	86.1		87.9		13C-1,2,3,4,6-PeCDF	100	
HpCDDs	185				13C-1,2,3,4,6,9-HxCDF	86.4	
					13C-1,2,3,4,6,8,9-HpCDF	94.6	
TCDFs	525						
PeCDFs	939					**AS Recoveries**	
HxCDFs	1,160				13C-1,3,6,8-TCDD	84.0	
HpCDFs	1,840				13C-1,3,6,8-TCDF	100	
Total PCDD/Fs	**8,020**		**8,050**				
WHO 2005 TEF TEQs							
TEQ: ND=0	91.5		94.8				
TEQ: ND=DL/2	91.5		94.8				
TEQ: ND=DL	91.5		94.8				

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AP 2008 Rev. H

Reviewer CAG

Date 24Sep08

Sample ID: T117-SB60-3.5-5.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9678	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.36 g	Sample ID:	P9678_6179_003	Date Extracted:	10 Sep 08
Date Collected:	02 Sep 08	% Solids:	93.3 %	QC Batch No.:	6179	Date Analyzed:	16 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	5:13:32

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.103			13C-2,3,7,8-TCDD	79.9	
1,2,3,7,8-PeCDD	ND	0.235			13C-1,2,3,7,8-PeCDD	74.5	
1,2,3,4,7,8-HxCDD	ND	0.421			13C-1,2,3,4,7,8-HxCDD	72.4	
1,2,3,6,7,8-HxCDD	0.516			J	13C-1,2,3,6,7,8-HxCDD	74.7	
1,2,3,7,8,9-HxCDD	ND	0.413			13C-1,2,3,7,8,9-HxCDD	76.5	
1,2,3,4,6,7,8-HpCDD	8.94				13C-1,2,3,4,6,7,8-HpCDD	78.7	
OCDD	77.4				13C-OCDD	79.4	
2,3,7,8-TCDF	0.705				13C-2,3,7,8-TCDF	84.5	
1,2,3,7,8-PeCDF	EMPC		0.447	J	13C-1,2,3,7,8-PeCDF	78.6	
2,3,4,7,8-PeCDF	2.59				13C-2,3,4,7,8-PeCDF	78.6	
1,2,3,4,7,8-HxCDF	3.77				13C-1,2,3,4,7,8-HxCDF	67.9	
1,2,3,6,7,8-HxCDF	1.16			J	13C-1,2,3,6,7,8-HxCDF	66.0	
2,3,4,6,7,8-HxCDF	1.47			J	13C-2,3,4,6,7,8-HxCDF	68.0	
1,2,3,7,8,9-HxCDF	ND	0.108			13C-1,2,3,7,8,9-HxCDF	71.8	
1,2,3,4,6,7,8-HpCDF	7.49				13C-1,2,3,4,6,7,8-HpCDF	71.0	
1,2,3,4,7,8,9-HpCDF	3.05				13C-1,2,3,4,7,8,9-HpCDF	73.3	
OCDF	25.4				13C-OCDF	78.0	
Totals						**CS Recoveries**	
TCDDs	ND		0.396		37Cl-2,3,7,8-TCDD	94.8	
PeCDDs	ND	0.235			13C-1,2,3,4,7-PeCDD	85.1	
HxCDDs	4.23				13C-1,2,3,4,6-PeCDF	95.6	
HpCDDs	16.9				13C-1,2,3,4,6,9-HxCDF	84.0	
					13C-1,2,3,4,6,8,9-HpCDF	93.2	
TCDFs	13.5		13.8				
PeCDFs	25.6		26.0			**AS Recoveries**	
HxCDFs	19.3				13C-1,3,6,8-TCDD	82.2	
HpCDFs	20.5		20.8		13C-1,3,6,8-TCDF	92.5	
Total PCDD/Fs	**203**		**204**				
WHO 2005 TEF TEQs							
TEQ: ND=0	1.77		1.78				
TEQ: ND=DL/2	1.98		1.99				
TEQ: ND=DL	2.20		2.21				

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Reviewer GMG
Date 24Sep08

Sample ID: T117-SB61-0.5-2.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9676	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	11.42 g	Sample ID:	P9676_6178_008	Date Extracted:	10 Sep 08
Date Collected:	03 Sep 08	% Solids:	94.1 %	QC Batch No.:	6178	Date Analyzed:	17 Sep 08
		Split:	-	Dilution:	-	Time Analyzed:	02:06:35

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.225			13C-2,3,7,8-TCDD	80.5	
1,2,3,7,8-PeCDD	ND	1.46			13C-1,2,3,7,8-PeCDD	75.9	
1,2,3,4,7,8-HxCDD	1.05			J	13C-1,2,3,4,7,8-HxCDD	78.1	
1,2,3,6,7,8-HxCDD	3.44				13C-1,2,3,6,7,8-HxCDD	76.6	
1,2,3,7,8,9-HxCDD	2.3				13C-1,2,3,7,8,9-HxCDD	73.8	
1,2,3,4,6,7,8-HpCDD	62.4				13C-1,2,3,4,6,7,8-HpCDD	74.2	
OCDD	492				13C-OCDD	78	
2,3,7,8-TCDF	7.71				13C-2,3,7,8-TCDF	79.6	
1,2,3,7,8-PeCDF	ND	1.12			13C-1,2,3,7,8-PeCDF	73	
2,3,4,7,8-PeCDF	16.9				13C-2,3,4,7,8-PeCDF	69.9	
1,2,3,4,7,8-HxCDF	87.6				13C-1,2,3,4,7,8-HxCDF	77.9	
1,2,3,6,7,8-HxCDF	14.4				13C-1,2,3,6,7,8-HxCDF	70.7	
2,3,4,6,7,8-HxCDF	11.2				13C-2,3,4,6,7,8-HxCDF	75.4	
1,2,3,7,8,9-HxCDF	7.14				13C-1,2,3,7,8,9-HxCDF	70.5	
1,2,3,4,6,7,8-HpCDF	106				13C-1,2,3,4,6,7,8-HpCDF	77.8	
1,2,3,4,7,8,9-HpCDF	41				13C-1,2,3,4,7,8,9-HpCDF	74.4	
OCDF	297				13C-OCDF	75.8	
Totals						**CS Recoveries**	
TCDDs	3.73		7.43		37Cl-2,3,7,8-TCDD	93.9	
PeCDDs	ND	1.46			13C-1,2,3,4,7-PeCDD	88.9	
HxCDDs	23.6		27.9		13C-1,2,3,4,6-PeCDF	91.4	
HpCDDs	123				13C-1,2,3,4,6,9-HxCDF	97.4	
					13C-1,2,3,4,6,8,9-HpCDF	101	
TCDFs	120		129				
PeCDFs	977		994			**AS Recoveries**	
HxCDFs	474		475		13C-1,3,6,8-TCDD	83.3	
HpCDFs	272				13C-1,3,6,8-TCDF	92.8	
Total PCDD/Fs	**2,780**		**2,820**				
WHO 2005 TEF TEQs							
TEQ: ND=0	20.9		20.9				
TEQ: ND=DL/2	21.7		21.7				
TEQ: ND=DL	22.6		22.6				

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AP 2008 Rev. H

Reviewer TM for JH

Date 13 Oct 08

Sample ID: T117-SB60-12.5-14.0

Method 1613

Client Data		Sample Data		Laboratory Data			
Name:	Windward Environmental LLC	Matrix:	Solids	Project No.:	P9678	Date Received:	04 Sep 08
Project ID:	T-117	Weight/Volume:	10.08 g	Sample ID:	P9678_6595_004	Date Extracted:	18 Feb 09
Date Collected:	02 Sep 08	% Solids:	69.8 %	QC Batch No.:	6595	Date Analyzed:	22 Feb 09
		Split:	-	Dilution:	-	Time Analyzed:	4:53:44

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2,3,7,8-TCDD	ND	0.0478			13C-2,3,7,8-TCDD	80.9	
1,2,3,7,8-PeCDD	ND	0.0996			13C-1,2,3,7,8-PeCDD	75.1	
1,2,3,4,7,8-HxCDD	ND	0.0847			13C-1,2,3,4,7,8-HxCDD	77.8	
1,2,3,6,7,8-HxCDD	ND	0.0923			13C-1,2,3,6,7,8-HxCDD	74.7	
1,2,3,7,8,9-HxCDD	ND	<0.248			13C-1,2,3,7,8,9-HxCDD	78	
1,2,3,4,6,7,8-HpCDD	1.1			J	13C-1,2,3,4,6,7,8-HpCDD	84.1	
OCDD	8.55				13C-OCDD	83.3	
2,3,7,8-TCDF	0.0502			J	13C-2,3,7,8-TCDF	80.6	
1,2,3,7,8-PeCDF	ND	0.182			13C-1,2,3,7,8-PeCDF	78.6	
2,3,4,7,8-PeCDF	ND	<0.248			13C-2,3,4,7,8-PeCDF	73.8	
1,2,3,4,7,8-HxCDF	ND	<0.248			13C-1,2,3,4,7,8-HxCDF	75.2	
1,2,3,6,7,8-HxCDF	ND	<0.248			13C-1,2,3,6,7,8-HxCDF	74.3	
2,3,4,6,7,8-HxCDF	ND	0.0378			13C-2,3,4,6,7,8-HxCDF	77.7	
1,2,3,7,8,9-HxCDF	ND	0.0496			13C-1,2,3,7,8,9-HxCDF	77.4	
1,2,3,4,6,7,8-HpCDF	0.322			J	13C-1,2,3,4,6,7,8-HpCDF	74.9	
1,2,3,4,7,8,9-HpCDF	ND	0.152			13C-1,2,3,4,7,8,9-HpCDF	85.9	
OCDF	0.738			J	13C-OCDF	80.3	
Totals						**CS Recoveries**	
TCDDs	0.834		0.851		37Cl-2,3,7,8-TCDD	85.8	
PeCDDs	ND		0.28		13C-1,2,3,4,7-PeCDD	82	
HxCDDs	1.05		1.23		13C-1,2,3,4,6-PeCDF	87.5	
HpCDDs	2.75				13C-1,2,3,4,6,9-HxCDF	83.1	
					13C-1,2,3,4,6,8,9-HpCDF	90.9	
TCDFs	0.212		0.423				
PeCDFs	0.254		0.434			**AS Recoveries**	
HxCDFs	0.377		0.476		13C-1,3,6,8-TCDD	73.1	
HpCDFs	0.695				13C-1,3,6,8-TCDF	79.2	
Total PCDD/Fs	**15.5**		**16.4**				
ITEF TEQs							
TEQ: ND=0	0.0285		0.0285				
TEQ: ND=DL/2	0.195		0.195				
TEQ: ND=DL	0.362		0.362				

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Reviewer .....

Date .....

PCBs

ANALYTICAL RESOURCES INCORPORATED

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PSDDA PCB by GC/ECD
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Sample ID: T117-SB53-0.5-2.0
SAMPLE

Lab Sample ID: NN19E
LIMS ID: 08-22356
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/13/08 22:41
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 2.34 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 6.5%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	17,000	< 17,000 U
53469-21-9	Aroclor 1242	17,000	< 17,000 U
12672-29-6	Aroclor 1248	17,000	< 17,000 U
11097-69-1	Aroclor 1254	17,000	< 17,000 U
11096-82-5	**Aroclor 1260**	**17,000**	**60,000**
11104-28-2	Aroclor 1221	17,000	< 17,000 U
11141-16-5	Aroclor 1232	17,000	< 17,000 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	125%
Tetrachlorometaxylene	110%

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PSDDA PCB by GC/ECD
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Sample ID: T117-SB54-2.0-3.5
SAMPLE

Lab Sample ID: NN19C
LIMS ID: 08-22354
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/15/08 16:44
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 2.40 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 20.0
Silica Gel: No

Percent Moisture: 4.1%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33,000	< 33,000 U
53469-21-9	Aroclor 1242	33,000	< 33,000 U
12672-29-6	Aroclor 1248	33,000	< 33,000 U
11097-69-1	Aroclor 1254	33,000	< 33,000 U
11096-82-5	**Aroclor 1260**	**33,000**	**150,000**
11104-28-2	Aroclor 1221	33,000	< 33,000 U
11141-16-5	Aroclor 1232	33,000	< 33,000 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	133%
Tetrachlorometaxylene	110%

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Sample ID: T117-SB54-3.5-5.0
SAMPLE

Lab Sample ID: NN19D
LIMS ID: 08-22355
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/13/08 22:23
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 2.32 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 7.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	17,000	< 17,000 U
53469-21-9	Aroclor 1242	17,000	< 17,000 U
12672-29-6	Aroclor 1248	17,000	< 17,000 U
11097-69-1	Aroclor 1254	17,000	< 17,000 U
11096-82-5	**Aroclor 1260**	**17,000**	**82,000**
11104-28-2	Aroclor 1221	17,000	< 17,000 U
11141-16-5	Aroclor 1232	17,000	< 17,000 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	129%
Tetrachlorometaxylene	110%

ANALYTICAL RESOURCES INCORPORATED

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PSDDA PCB by GC/ECD
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Sample ID: T117-SB54-8.5-10.0
SAMPLE

Lab Sample ID: ON06B
LIMS ID: 09-4760
Matrix: Soil
Data Release Authorized:
Reported: 03/02/09

QC Report No: ON06-Windward Environmental, LLC
Project: T117

Date Sampled: 09/03/08
Date Received: 02/18/09

Date Extracted: 02/24/09
Date Analyzed: 02/27/09 17:20
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 2.83 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 7.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	7,100	< 7,100 U
53469-21-9	Aroclor 1242	7,100	< 7,100 U
12672-29-6	Aroclor 1248	7,100	< 7,100 U
11097-69-1	Aroclor 1254	7,100	< 7,100 U
11096-82-5	**Aroclor 1260**	**7,100**	**23,000**
11104-28-2	Aroclor 1221	7,100	< 7,100 U
11141-16-5	Aroclor 1232	7,100	< 7,100 U
37324-23-5	Aroclor 1262	7,100	< 7,100 U
11100-14-4	Aroclor 1268	7,100	< 7,100 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	114%
Tetrachlorometaxylene	93.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
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Sample ID: T117-SB55-2.0-3.5
SAMPLE

Lab Sample ID: NN19A
LIMS ID: 08-22352
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/15/08 16:26
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 2.34 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 20.0
Silica Gel: No

Percent Moisture: 6.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	34,000	< 34,000 U
53469-21-9	Aroclor 1242	34,000	< 34,000 U
12672-29-6	Aroclor 1248	34,000	< 34,000 U
11097-69-1	Aroclor 1254	34,000	< 34,000 U
11096-82-5	**Aroclor 1260**	**34,000**	**190,000**
11104-28-2	Aroclor 1221	34,000	< 34,000 U
11141-16-5	Aroclor 1232	34,000	< 34,000 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	137%
Tetrachlorometaxylene	106%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: T117-SB55-3.5-5.0
SAMPLE

Lab Sample ID: NN19B
LIMS ID: 08-22353
Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/16/08 14:51
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 9.59 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 10.0
Silica Gel: Yes

Percent Moisture: 4.7%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	520	< 520 U
53469-21-9	Aroclor 1242	520	< 520 U
12672-29-6	Aroclor 1248	520	< 520 U
11097-69-1	Aroclor 1254	780	< 780 Y
11096-82-5	**Aroclor 1260**	**520**	**2,400**
11104-28-2	Aroclor 1221	520	< 520 U
11141-16-5	Aroclor 1232	520	< 520 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	121%
Tetrachlorometaxylene	88.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
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Sample ID: T117-SB55-11.5-13.0
SAMPLE

Lab Sample ID: ON06A
LIMS ID: 09-4759
Matrix: Soil
Data Release Authorized:
Reported: 03/02/09

QC Report No: ON06-Windward Environmental, LLC
Project: T117

Date Sampled: 09/03/08
Date Received: 02/18/09

Date Extracted: 02/24/09
Date Analyzed: 03/02/09 09:50
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 9.37 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 6.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	4,300	< 4,300 U
53469-21-9	Aroclor 1242	4,300	< 4,300 U
12672-29-6	Aroclor 1248	4,300	< 4,300 U
11097-69-1	Aroclor 1254	13,000	< 13,000 Y
11096-82-5	**Aroclor 1260**	**4,300**	**39,000**
11104-28-2	Aroclor 1221	4,300	< 4,300 U
11141-16-5	Aroclor 1232	4,300	< 4,300 U
37324-23-5	Aroclor 1262	4,300	< 4,300 U
11100-14-4	Aroclor 1268	4,300	< 4,300 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	123%
Tetrachlorometaxylene	105%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
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Sample ID: T117-SB56-1.0-2.5
SAMPLE

Lab Sample ID: NN19F
LIMS ID: 08-22357
Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/16/08 15:09
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 9.39 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 6.00
Silica Gel: No

Percent Moisture: 7.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	320	< 320 U
53469-21-9	Aroclor 1242	320	< 320 U
12672-29-6	Aroclor 1248	320	< 320 U
11097-69-1	Aroclor 1254	320	< 320 U
11096-82-5	**Aroclor 1260**	**320**	**1,500**
11104-28-2	Aroclor 1221	320	< 320 U
11141-16-5	Aroclor 1232	320	< 320 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	114%
Tetrachlorometaxylene	78.8%

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Sample ID: T117-SB56-2.5-4.0
SAMPLE

Lab Sample ID: NN19G
LIMS ID: 08-22358
Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/16/08 15:26
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 9.65 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 20.0
Silica Gel: No

Percent Moisture: 4.8%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	1,000	< 1,000 U
53469-21-9	Aroclor 1242	1,000	< 1,000 U
12672-29-6	Aroclor 1248	1,000	< 1,000 U
11097-69-1	Aroclor 1254	1,000	< 1,000 U
11096-82-5	**Aroclor 1260**	**1,000**	**5,700**
11104-28-2	Aroclor 1221	1,000	< 1,000 U
11141-16-5	Aroclor 1232	1,000	< 1,000 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	119%
Tetrachlorometaxylene	88.0%

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Sample ID: T117-SB56-4.0-5.5
SAMPLE

Lab Sample ID: NN19H
LIMS ID: 08-22359
Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/16/08 15:44
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.8 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 10.0
Silica Gel: Yes

Percent Moisture: 5.5%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	190	< 190 U
53469-21-9	Aroclor 1242	190	< 190 U
12672-29-6	Aroclor 1248	190	< 190 U
11097-69-1	Aroclor 1254	190	< 190 U
11096-82-5	**Aroclor 1260**	**190**	**820**
11104-28-2	Aroclor 1221	190	< 190 U
11141-16-5	Aroclor 1232	190	< 190 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	112%
Tetrachlorometaxylene	84.0%

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Sample ID: T117-SB56-5.5-7.0
SAMPLE

Lab Sample ID: NN19I
LIMS ID: 08-22360
Matrix: Soil
Data Release Authorized:
Reported: 10/01/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/01/08 08:02
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.8 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 9.00
Silica Gel: Yes

Percent Moisture: 5.7%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	180	< 180 U
53469-21-9	Aroclor 1242	180	< 180 U
12672-29-6	Aroclor 1248	180	< 180 U
11097-69-1	Aroclor 1254	180	< 180 U
11096-82-5	**Aroclor 1260**	**180**	**930**
11104-28-2	Aroclor 1221	180	< 180 U
11141-16-5	Aroclor 1232	180	< 180 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	110%
Tetrachlorometaxylene	96.8%

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Sample ID: T117-SB57b-2.0-3.5
SAMPLE

Lab Sample ID: NN04F
LIMS ID: 08-22279
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/13/08 18:51
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 4.83 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 4.2%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	4,100	< 4,100 U
53469-21-9	Aroclor 1242	4,100	< 4,100 U
12672-29-6	Aroclor 1248	4,100	< 4,100 U
11097-69-1	Aroclor 1254	4,100	< 4,100 U
11096-82-5	**Aroclor 1260**	**4,100**	**14,000**
11104-28-2	Aroclor 1221	4,100	< 4,100 U
11141-16-5	Aroclor 1232	4,100	< 4,100 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	121%
Tetrachlorometaxylene	113%

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Sample ID: T117-SB57b-3.5-5.0
SAMPLE

Lab Sample ID: NN04G
LIMS ID: 08-22280
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/13/08 19:44
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 2.40 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 5.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	17,000	< 17,000 U
53469-21-9	Aroclor 1242	17,000	< 17,000 U
12672-29-6	Aroclor 1248	17,000	< 17,000 U
11097-69-1	Aroclor 1254	17,000	< 17,000 U
11096-82-5	**Aroclor 1260**	**17,000**	**110,000**
11104-28-2	Aroclor 1221	17,000	< 17,000 U
11141-16-5	Aroclor 1232	17,000	< 17,000 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	128%
Tetrachlorometaxylene	108%

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Sample ID: T117-SB57b-10.0-11.5
SAMPLE

Lab Sample ID: ON65A
LIMS ID: 09-5163
Matrix: Sediment
Data Release Authorized:
Reported: 03/02/09

QC Report No: ON65-Windward Environmental, LLC
Project:

Date Sampled: 09/02/08
Date Received: 02/20/09

Date Extracted: 02/25/09
Date Analyzed: 03/02/09 10:07
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 10.5 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 100
Silica Gel: No

Percent Moisture: 16.2%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	4,800	< 4,800 U
53469-21-9	Aroclor 1242	4,800	< 4,800 U
12672-29-6	Aroclor 1248	4,800	< 4,800 U
11097-69-1	Aroclor 1254	7,100	< 7,100 Y
11096-82-5	**Aroclor 1260**	**4,800**	**23,000**
11104-28-2	Aroclor 1221	4,800	< 4,800 U
11141-16-5	Aroclor 1232	4,800	< 4,800 U
37324-23-5	Aroclor 1262	4,800	< 4,800 U
11100-14-4	Aroclor 1268	4,800	< 4,800 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	D
Tetrachlorometaxylene	D

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Sample ID: T117-SB58-0.5-2.0
SAMPLE

Lab Sample ID: NN19K
LIMS ID: 08-22362
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/13/08 22:58
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 2.28 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 8.8%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	18,000	< 18,000 U
53469-21-9	Aroclor 1242	18,000	< 18,000 U
12672-29-6	Aroclor 1248	18,000	< 18,000 U
11097-69-1	Aroclor 1254	18,000	< 18,000 U
11096-82-5	**Aroclor 1260**	**18,000**	**42,000**
11104-28-2	Aroclor 1221	18,000	< 18,000 U
11141-16-5	Aroclor 1232	18,000	< 18,000 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	130%
Tetrachlorometaxylene	112%

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Sample ID: T117-SB58-2.0-3.5
SAMPLE

Lab Sample ID: NN19L
LIMS ID: 08-22363
Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/15/08 18:13
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 8.94 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 3.00
Silica Gel: No

Percent Moisture: 11.1%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	170	< 170 U
53469-21-9	Aroclor 1242	170	< 170 U
12672-29-6	Aroclor 1248	170	< 170 U
11097-69-1	Aroclor 1254	170	< 170 U
11096-82-5	**Aroclor 1260**	**170**	**1,500**
11104-28-2	Aroclor 1221	170	< 170 U
11141-16-5	Aroclor 1232	170	< 170 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	111%
Tetrachlorometaxylene	84.0%

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Sample ID: T117-SB58-3.5-5.0
SAMPLE

Lab Sample ID: OJ07A
LIMS ID: 09-2241
Matrix: Soil
Data Release Authorized:
Reported: 01/23/09

QC Report No: OJ07-Windward Environmental, LLC
Project: T-117
08-08-12-12
Date Sampled: 09/03/08
Date Received: 01/21/09

Date Extracted: 01/22/09
Date Analyzed: 01/23/09 11:41
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 5.36 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 15.0
Silica Gel: No

Percent Moisture: 11.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	1,100	< 1,100 U
53469-21-9	Aroclor 1242	1,100	< 1,100 U
12672-29-6	Aroclor 1248	1,100	< 1,100 U
11097-69-1	Aroclor 1254	3,400	< 3,400 Y
11096-82-5	**Aroclor 1260**	**1,100**	**7,400**
11104-28-2	Aroclor 1221	1,100	< 1,100 U
11141-16-5	Aroclor 1232	1,100	< 1,100 U
37324-23-5	Aroclor 1262	1,100	< 1,100 U
11100-14-4	Aroclor 1268	1,100	< 1,100 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	121%
Tetrachlorometaxylene	116%

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Sample ID: T117-SB59-1.5-3.0
SAMPLE

Lab Sample ID: NN190
LIMS ID: 08-22366
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/13/08 23:51
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 0.89 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 11.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	45,000	< 45,000 U
53469-21-9	Aroclor 1242	45,000	< 45,000 U
12672-29-6	Aroclor 1248	45,000	< 45,000 U
11097-69-1	Aroclor 1254	45,000	< 45,000 U
11096-82-5	**Aroclor 1260**	**45,000**	**450,000**
11104-28-2	Aroclor 1221	45,000	< 45,000 U
11141-16-5	Aroclor 1232	45,000	< 45,000 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	142%
Tetrachlorometaxylene	113%

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Sample ID: T117-SB59-3.0-4.5
SAMPLE

Lab Sample ID: NN19P
LIMS ID: 08-22367
Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/16/08 16:01
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.8 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 3.00
Silica Gel: No

Percent Moisture: 5.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	58	< 58 U
53469-21-9	Aroclor 1242	58	< 58 U
12672-29-6	Aroclor 1248	58	< 58 U
11097-69-1	Aroclor 1254	58	< 58 U
11096-82-5	**Aroclor 1260**	**58**	**260**
11104-28-2	Aroclor 1221	58	< 58 U
11141-16-5	Aroclor 1232	58	< 58 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	93.0%
Tetrachlorometaxylene	84.8%

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Sample ID: T117-SB59-15.0-16.5
SAMPLE

Lab Sample ID: NN19Q
LIMS ID: 08-22368
Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/16/08 16:19
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 7.76 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 20.0
Silica Gel: No

Percent Moisture: 25.2%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	1,300	< 1,300 U
53469-21-9	Aroclor 1242	1,300	< 1,300 U
12672-29-6	Aroclor 1248	1,300	< 1,300 U
11097-69-1	Aroclor 1254	1,300	< 1,300 U
11096-82-5	**Aroclor 1260**	**1,300**	**6,500**
11104-28-2	Aroclor 1221	1,300	< 1,300 U
11141-16-5	Aroclor 1232	1,300	< 1,300 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	126%
Tetrachlorometaxylene	94.5%

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Sample ID: T117-SB59-17.5-19.0
SAMPLE

Lab Sample ID: NN19R
LIMS ID: 08-22369
Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/16/08 16:36
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 3.99 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 30.0
Silica Gel: No

Percent Moisture: 25.3%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	3,800	< 3,800 U
53469-21-9	Aroclor 1242	3,800	< 3,800 U
12672-29-6	Aroclor 1248	3,800	< 3,800 U
11097-69-1	Aroclor 1254	3,800	< 3,800 U
11096-82-5	**Aroclor 1260**	**3,800**	**22,000**
11104-28-2	Aroclor 1221	3,800	< 3,800 U
11141-16-5	Aroclor 1232	3,800	< 3,800 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	134%
Tetrachlorometaxylene	87.8%

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Sample ID: T117-SB60-0.5-2.0
SAMPLE

Lab Sample ID: NN04A
LIMS ID: 08-22274
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/18/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/13/08 18:15
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 4.49 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 11.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	4,500	< 4,500 U
53469-21-9	Aroclor 1242	4,500	< 4,500 U
12672-29-6	Aroclor 1248	4,500	< 4,500 U
11097-69-1	Aroclor 1254	4,500	< 4,500 U
11096-82-5	**Aroclor 1260**	**4,500**	**33,000**
11104-28-2	Aroclor 1221	4,500	< 4,500 U
11141-16-5	Aroclor 1232	4,500	< 4,500 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	111%
Tetrachlorometaxylene	95.0%

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Sample ID: T117-SB60-2.0-3.5
SAMPLE

Lab Sample ID: NN04B
LIMS ID: 08-22275
Matrix: Soil
Data Release Authorized: VJS
Reported: 09/18/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/15/08 16:08
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 2.24 g-dry-wt
Final Extract Volume: 40 mL
Dilution Factor: 40.0
Silica Gel: No

Percent Moisture: 11.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	71,000	< 71,000 U
53469-21-9	Aroclor 1242	71,000	< 71,000 U
12672-29-6	Aroclor 1248	71,000	< 71,000 U
11097-69-1	Aroclor 1254	71,000	< 71,000 U
11096-82-5	**Aroclor 1260**	**71,000**	**300,000**
11104-28-2	Aroclor 1221	71,000	< 71,000 U
11141-16-5	Aroclor 1232	71,000	< 71,000 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	162%
Tetrachlorometaxylene	114%

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Sample ID: T117-SB60-3.5-5.0
SAMPLE

Lab Sample ID: NN04C
LIMS ID: 08-22276
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/19/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/15/08 15:14
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 4.62 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 7.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	540	< 540 U
53469-21-9	Aroclor 1242	540	< 540 U
12672-29-6	Aroclor 1248	540	< 540 U
11097-69-1	Aroclor 1254	540	< 540 U
11096-82-5	**Aroclor 1260**	**540**	**4,000**
11104-28-2	Aroclor 1221	540	< 540 U
11141-16-5	Aroclor 1232	540	< 540 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	113%
Tetrachlorometaxylene	103%

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PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: T117-SB60-12.5-14.0
SAMPLE

Lab Sample ID: NN04D
LIMS ID: 08-22277
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/19/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/14/08 03:00
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.4 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 30.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	**Aroclor 1260**	**20**	**41**
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	112%
Tetrachlorometaxylene	114%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: T117-SB60-15.0-16.5
SAMPLE

Lab Sample ID: NN04E
LIMS ID: 08-22278
Matrix: Soil
Data Release Authorized: VNB
Reported: 09/19/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/14/08 03:22
Instrument/Analyst: ECD6/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 25.4 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 27.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	**Aroclor 1260**	**20**	**24**
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	83.2%
Tetrachlorometaxylene	85.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: T117-SB62-2.5-4.0
SAMPLE

Lab Sample ID: NN19J
LIMS ID: 08-22361
Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/15/08 15:50
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 9.61 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 3.00
Silica Gel: No

Percent Moisture: 4.1%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	Aroclor 1254	160	< 160 U
11096-82-5	**Aroclor 1260**	**160**	**1,200**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	96.0%
Tetrachlorometaxylene	78.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
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Sample ID: T117-SB63-2.0-3.5
SAMPLE

Lab Sample ID: NN19M
LIMS ID: 08-22364
Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/15/08 18:30
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 6.74 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 3.00
Silica Gel: No

Percent Moisture: 10.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	220	< 220 U
53469-21-9	Aroclor 1242	220	< 220 U
12672-29-6	Aroclor 1248	220	< 220 U
11097-69-1	Aroclor 1254	220	< 220 U
11096-82-5	**Aroclor 1260**	**220**	**1,500**
11104-28-2	Aroclor 1221	220	< 220 U
11141-16-5	Aroclor 1232	220	< 220 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	109%
Tetrachlorometaxylene	82.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: T117-SB57b-10.0-11.5-RB
SAMPLE

Lab Sample ID: NN04H
LIMS ID: 08-22281
Matrix: Water
Data Release Authorized:
Reported: 09/16/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/08/08
Date Analyzed: 09/13/08 03:42
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	1.0	< 1.0 U
53469-21-9	Aroclor 1242	1.0	< 1.0 U
12672-29-6	Aroclor 1248	1.0	< 1.0 U
11097-69-1	Aroclor 1254	1.0	< 1.0 U
11096-82-5	Aroclor 1260	1.0	< 1.0 U
11104-28-2	Aroclor 1221	1.0	< 1.0 U
11141-16-5	Aroclor 1232	1.0	< 1.0 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	66.2%
Tetrachlorometaxylene	90.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: T117-SB58-0.5-3.5-RB
SAMPLE

Lab Sample ID: NN19N
LIMS ID: 08-22365
Matrix: Water
Data Release Authorized:
Reported: 09/16/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/08/08
Date Analyzed: 09/13/08 03:59
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	1.0	< 1.0 U
53469-21-9	Aroclor 1242	1.0	< 1.0 U
12672-29-6	Aroclor 1248	1.0	< 1.0 U
11097-69-1	Aroclor 1254	1.0	< 1.0 U
11096-82-5	Aroclor 1260	1.0	< 1.0 U
11104-28-2	Aroclor 1221	1.0	< 1.0 U
11141-16-5	Aroclor 1232	1.0	< 1.0 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	71.5%
Tetrachlorometaxylene	91.8%

PAHs

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB53-0.5-2.0
SAMPLE

Lab Sample ID: NN19E
LIMS ID: 08-22356
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/19/08 00:18
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.64 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Percent Moisture: 6.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	290	< 290 U
91-57-6	2-Methylnaphthalene	290	< 290 U
90-12-0	1-Methylnaphthalene	290	< 290 U
208-96-8	Acenaphthylene	290	< 290 U
83-32-9	Acenaphthene	290	< 290 U
86-73-7	Fluorene	290	< 290 U
85-01-8	Phenanthrene	290	< 290 U
120-12-7	Anthracene	290	< 290 U
206-44-0	Fluoranthene	290	< 290 U
129-00-0	Pyrene	290	< 290 U
56-55-3	Benzo(a)anthracene	290	< 290 U
218-01-9	Chrysene	290	< 290 U
205-99-2	Benzo(b)fluoranthene	290	< 290 U
207-08-9	Benzo(k)fluoranthene	290	< 290 U
50-32-8	Benzo(a)pyrene	290	< 290 U
193-39-5	Indeno(1,2,3-cd)pyrene	290	< 290 U
53-70-3	Dibenz(a,h)anthracene	290	< 290 U
191-24-2	Benzo(g,h,i)perylene	290	< 290 U
132-64-9	Dibenzofuran	290	< 290 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	93.4%
2-Fluorobiphenyl	75.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
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Sample ID: T117-SB53-0.5-2.0
REEXTRACT

Lab Sample ID: NN19E
LIMS ID: 08-22356
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 09:11
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.07 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 6.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	71	< 71 U
91-57-6	2-Methylnaphthalene	71	< 71 U
90-12-0	1-Methylnaphthalene	71	< 71 U
208-96-8	Acenaphthylene	71	< 71 U
83-32-9	Acenaphthene	71	< 71 U
86-73-7	Fluorene	71	< 71 U
85-01-8	Phenanthrene	71	< 71 U
120-12-7	Anthracene	71	< 71 U
206-44-0	Fluoranthene	71	< 71 U
129-00-0	**Pyrene**	**71**	**81**
56-55-3	Benzo(a)anthracene	71	< 71 U
218-01-9	Chrysene	71	< 71 U
205-99-2	Benzo(b)fluoranthene	71	< 71 U
207-08-9	Benzo(k)fluoranthene	71	< 71 U
50-32-8	Benzo(a)pyrene	71	< 71 U
193-39-5	Indeno(1,2,3-cd)pyrene	71	< 71 U
53-70-3	Dibenz(a,h)anthracene	71	< 71 U
191-24-2	Benzo(g,h,i)perylene	71	< 71 U
132-64-9	Dibenzofuran	71	< 71 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	84.8%
2-Fluorobiphenyl	66.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
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Sample ID: T117-SB53-0.5-2.0
REEXTRACT DILUTION

Lab Sample ID: NN19E
LIMS ID: 08-22356
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/07/08 13:38
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.07 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 6.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	350	< 350 U
91-57-6	2-Methylnaphthalene	350	< 350 U
90-12-0	1-Methylnaphthalene	350	< 350 U
208-96-8	Acenaphthylene	350	< 350 U
83-32-9	Acenaphthene	350	< 350 U
86-73-7	Fluorene	350	< 350 U
85-01-8	Phenanthrene	350	< 350 U
120-12-7	Anthracene	350	< 350 U
206-44-0	Fluoranthene	350	< 350 U
129-00-0	Pyrene	350	< 350 U
56-55-3	Benzo(a)anthracene	350	< 350 U
218-01-9	Chrysene	350	< 350 U
205-99-2	Benzo(b)fluoranthene	350	< 350 U
207-08-9	Benzo(k)fluoranthene	350	< 350 U
50-32-8	Benzo(a)pyrene	350	< 350 U
193-39-5	Indeno(1,2,3-cd)pyrene	350	< 350 U
53-70-3	Dibenz(a,h)anthracene	350	< 350 U
191-24-2	Benzo(g,h,i)perylene	350	< 350 U
132-64-9	Dibenzofuran	350	< 350 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	69.0%
2-Fluorobiphenyl	68.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB54-2.0-3.5
SAMPLE

Lab Sample ID: NN19C
LIMS ID: 08-22354
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/18/08 23:10
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.79 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: 4.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	640	< 640 U
91-57-6	2-Methylnaphthalene	640	< 640 U
90-12-0	1-Methylnaphthalene	640	< 640 U
208-96-8	Acenaphthylene	640	< 640 U
83-32-9	Acenaphthene	640	< 640 U
86-73-7	Fluorene	640	< 640 U
85-01-8	Phenanthrene	640	< 640 U
120-12-7	Anthracene	640	< 640 U
206-44-0	Fluoranthene	640	< 640 U
129-00-0	Pyrene	640	< 640 U
56-55-3	Benzo(a)anthracene	640	< 640 U
218-01-9	Chrysene	640	< 640 U
205-99-2	Benzo(b)fluoranthene	640	< 640 U
207-08-9	Benzo(k)fluoranthene	640	< 640 U
50-32-8	Benzo(a)pyrene	640	< 640 U
193-39-5	Indeno(1,2,3-cd)pyrene	640	< 640 U
53-70-3	Dibenz(a,h)anthracene	640	< 640 U
191-24-2	Benzo(g,h,i)perylene	640	< 640 U
132-64-9	Dibenzofuran	640	< 640 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	87.6%
2-Fluorobiphenyl	71.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
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Sample ID: T117-SB54-2.0-3.5
REEXTRACT

Lab Sample ID: NN19C
LIMS ID: 08-22354
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 07:20
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.25 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	69	< 69 U
91-57-6	2-Methylnaphthalene	69	< 69 U
90-12-0	1-Methylnaphthalene	69	< 69 U
208-96-8	Acenaphthylene	69	< 69 U
83-32-9	Acenaphthene	69	< 69 U
86-73-7	Fluorene	69	< 69 U
85-01-8	Phenanthrene	69	< 69 U
120-12-7	Anthracene	69	< 69 U
206-44-0	**Fluoranthene**	**69**	**82**
129-00-0	**Pyrene**	**69**	**140**
56-55-3	Benzo(a)anthracene	69	< 69 U
218-01-9	**Chrysene**	**69**	**150**
205-99-2	Benzo(b)fluoranthene	69	< 69 U
207-08-9	**Benzo(k)fluoranthene**	**69**	**77**
50-32-8	Benzo(a)pyrene	69	< 69 U
193-39-5	Indeno(1,2,3-cd)pyrene	69	< 69 U
53-70-3	Dibenz(a,h)anthracene	69	< 69 U
191-24-2	Benzo(g,h,i)perylene	69	< 69 U
132-64-9	Dibenzofuran	69	< 69 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	72.4%
2-Fluorobiphenyl	51.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB54-2.0-3.5
REEXTRACT DILUTION

Lab Sample ID: NN19C
LIMS ID: 08-22354
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 18:28
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.25 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 4.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	340	< 340 U
91-57-6	2-Methylnaphthalene	340	< 340 U
90-12-0	1-Methylnaphthalene	340	< 340 U
208-96-8	Acenaphthylene	340	< 340 U
83-32-9	Acenaphthene	340	< 340 U
86-73-7	Fluorene	340	< 340 U
85-01-8	Phenanthrene	340	< 340 U
120-12-7	Anthracene	340	< 340 U
206-44-0	Fluoranthene	340	< 340 U
129-00-0	Pyrene	340	< 340 U
56-55-3	Benzo(a)anthracene	340	< 340 U
218-01-9	Chrysene	340	< 340 U
205-99-2	Benzo(b)fluoranthene	340	< 340 U
207-08-9	Benzo(k)fluoranthene	340	< 340 U
50-32-8	Benzo(a)pyrene	340	< 340 U
193-39-5	Indeno(1,2,3-cd)pyrene	340	< 340 U
53-70-3	Dibenz(a,h)anthracene	340	< 340 U
191-24-2	Benzo(g,h,i)perylene	340	< 340 U
132-64-9	Dibenzofuran	340	< 340 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	43.6%
2-Fluorobiphenyl	49.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB54-3.5-5.0
SAMPLE

Lab Sample ID: NN19D
LIMS ID: 08-22355
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/18/08 23:44
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.46 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: 7.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	590	< 590 U
91-57-6	2-Methylnaphthalene	590	< 590 U
90-12-0	1-Methylnaphthalene	590	< 590 U
208-96-8	Acenaphthylene	590	< 590 U
83-32-9	Acenaphthene	590	< 590 U
86-73-7	Fluorene	590	< 590 U
85-01-8	Phenanthrene	590	< 590 U
120-12-7	Anthracene	590	< 590 U
206-44-0	Fluoranthene	590	< 590 U
129-00-0	Pyrene	590	< 590 U
56-55-3	Benzo(a)anthracene	590	< 590 U
218-01-9	Chrysene	590	< 590 U
205-99-2	Benzo(b)fluoranthene	590	< 590 U
207-08-9	Benzo(k)fluoranthene	590	< 590 U
50-32-8	Benzo(a)pyrene	590	< 590 U
193-39-5	Indeno(1,2,3-cd)pyrene	590	< 590 U
53-70-3	Dibenz(a,h)anthracene	590	< 590 U
191-24-2	Benzo(g,h,i)perylene	590	< 590 U
132-64-9	Dibenzofuran	590	< 590 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	81.6%
2-Fluorobiphenyl	65.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB54-3.5-5.0
REEXTRACT

Lab Sample ID: NN19D
LIMS ID: 08-22355
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 07:54
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.03 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 7.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	71	< 71 U
91-57-6	2-Methylnaphthalene	71	< 71 U
90-12-0	1-Methylnaphthalene	71	< 71 U
208-96-8	Acenaphthylene	71	< 71 U
83-32-9	Acenaphthene	71	< 71 U
86-73-7	Fluorene	71	< 71 U
85-01-8	Phenanthrene	71	< 71 U
120-12-7	Anthracene	71	< 71 U
206-44-0	Fluoranthene	71	< 71 U
129-00-0	**Pyrene**	**71**	**78**
56-55-3	Benzo(a)anthracene	71	< 71 U
218-01-9	**Chrysene**	**71**	**92**
205-99-2	Benzo(b)fluoranthene	71	< 71 U
207-08-9	**Benzo(k)fluoranthene**	**71**	**71**
50-32-8	Benzo(a)pyrene	71	< 71 U
193-39-5	Indeno(1,2,3-cd)pyrene	71	< 71 U
53-70-3	Dibenz(a,h)anthracene	71	< 71 U
191-24-2	Benzo(g,h,i)perylene	71	< 71 U
132-64-9	Dibenzofuran	71	< 71 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	88.0%
2-Fluorobiphenyl	60.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB54-3.5-5.0
REEXTRACT DILUTION

Lab Sample ID: NN19D
LIMS ID: 08-22355
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/07/08 13:04
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.03 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 7.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	360	< 360 U
91-57-6	2-Methylnaphthalene	360	< 360 U
90-12-0	1-Methylnaphthalene	360	< 360 U
208-96-8	Acenaphthylene	360	< 360 U
83-32-9	Acenaphthene	360	< 360 U
86-73-7	Fluorene	360	< 360 U
85-01-8	Phenanthrene	360	< 360 U
120-12-7	Anthracene	360	< 360 U
206-44-0	Fluoranthene	360	< 360 U
129-00-0	Pyrene	360	< 360 U
56-55-3	Benzo(a)anthracene	360	< 360 U
218-01-9	Chrysene	360	< 360 U
205-99-2	Benzo(b)fluoranthene	360	< 360 U
207-08-9	Benzo(k)fluoranthene	360	< 360 U
50-32-8	Benzo(a)pyrene	360	< 360 U
193-39-5	Indeno(1,2,3-cd)pyrene	360	< 360 U
53-70-3	Dibenz(a,h)anthracene	360	< 360 U
191-24-2	Benzo(g,h,i)perylene	360	< 360 U
132-64-9	Dibenzofuran	360	< 360 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	69.6%
2-Fluorobiphenyl	71.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
Page 1 of 1

Sample ID: T117-SB55-2.0-3.5
SAMPLE

Lab Sample ID: NN19A
LIMS ID: 08-22352
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/18/08 22:02
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.59 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Percent Moisture: 6.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	290	< 290 U
91-57-6	2-Methylnaphthalene	290	< 290 U
90-12-0	1-Methylnaphthalene	290	< 290 U
208-96-8	Acenaphthylene	290	< 290 U
83-32-9	Acenaphthene	290	< 290 U
86-73-7	Fluorene	290	< 290 U
85-01-8	Phenanthrene	290	< 290 U
120-12-7	Anthracene	290	< 290 U
206-44-0	Fluoranthene	290	< 290 U
129-00-0	Pyrene	290	< 290 U
56-55-3	Benzo(a)anthracene	290	< 290 U
218-01-9	Chrysene	290	< 290 U
205-99-2	Benzo(b)fluoranthene	290	< 290 U
207-08-9	Benzo(k)fluoranthene	290	< 290 U
50-32-8	Benzo(a)pyrene	290	< 290 U
193-39-5	Indeno(1,2,3-cd)pyrene	290	< 290 U
53-70-3	Dibenz(a,h)anthracene	290	< 290 U
191-24-2	Benzo(g,h,i)perylene	290	< 290 U
132-64-9	Dibenzofuran	290	< 290 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	83.6%
2-Fluorobiphenyl	67.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB55-2.0-3.5
REEXTRACT

Lab Sample ID: NN19A
LIMS ID: 08-22352
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 06:12
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.04 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 6.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	71	< 71 U
91-57-6	2-Methylnaphthalene	71	< 71 U
90-12-0	1-Methylnaphthalene	71	< 71 U
208-96-8	Acenaphthylene	71	< 71 U
83-32-9	Acenaphthene	71	< 71 U
86-73-7	Fluorene	71	< 71 U
85-01-8	Phenanthrene	71	< 71 U
120-12-7	Anthracene	71	< 71 U
206-44-0	Fluoranthene	71	< 71 U
129-00-0	Pyrene	71	< 71 U
56-55-3	Benzo(a)anthracene	71	< 71 U
218-01-9	Chrysene	71	< 71 U
205-99-2	Benzo(b)fluoranthene	71	< 71 U
207-08-9	Benzo(k)fluoranthene	71	< 71 U
50-32-8	Benzo(a)pyrene	71	< 71 U
193-39-5	Indeno(1,2,3-cd)pyrene	71	< 71 U
53-70-3	Dibenz(a,h)anthracene	71	< 71 U
191-24-2	Benzo(g,h,i)perylene	71	< 71 U
132-64-9	Dibenzofuran	71	< 71 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	80.0%
2-Fluorobiphenyl	68.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB55-3.5-5.0
SAMPLE

Lab Sample ID: NN19B
LIMS ID: 08-22353
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/18/08 22:36
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.62 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.7%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	330	< 330 U
91-57-6	2-Methylnaphthalene	330	< 330 U
90-12-0	1-Methylnaphthalene	330	< 330 U
208-96-8	Acenaphthylene	330	< 330 U
83-32-9	Acenaphthene	330	< 330 U
86-73-7	Fluorene	330	< 330 U
85-01-8	Phenanthrene	330	< 330 U
120-12-7	Anthracene	330	< 330 U
206-44-0	Fluoranthene	330	< 330 U
129-00-0	Pyrene	330	< 330 U
56-55-3	Benzo(a)anthracene	330	< 330 U
218-01-9	Chrysene	330	< 330 U
205-99-2	Benzo(b)fluoranthene	330	< 330 U
207-08-9	Benzo(k)fluoranthene	330	< 330 U
50-32-8	Benzo(a)pyrene	330	< 330 U
193-39-5	Indeno(1,2,3-cd)pyrene	330	< 330 U
53-70-3	Dibenz(a,h)anthracene	330	< 330 U
191-24-2	Benzo(g,h,i)perylene	330	< 330 U
132-64-9	Dibenzofuran	330	< 330 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	94.6%
2-Fluorobiphenyl	77.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB55-3.5-5.0
REEXTRACT

Lab Sample ID: NN19B
LIMS ID: 08-22353
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 06:46
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.20 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.7%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	69	< 69 U
91-57-6	2-Methylnaphthalene	69	< 69 U
90-12-0	1-Methylnaphthalene	69	< 69 U
208-96-8	Acenaphthylene	69	< 69 U
83-32-9	Acenaphthene	69	< 69 U
86-73-7	Fluorene	69	< 69 U
85-01-8	**Phenanthrene**	**69**	**96**
120-12-7	Anthracene	69	< 69 U
206-44-0	**Fluoranthene**	**69**	**98**
129-00-0	**Pyrene**	**69**	**140**
56-55-3	Benzo(a)anthracene	69	< 69 U
218-01-9	**Chrysene**	**69**	**210**
205-99-2	Benzo(b)fluoranthene	69	< 69 U
207-08-9	**Benzo(k)fluoranthene**	**69**	**100**
50-32-8	Benzo(a)pyrene	69	< 69 U
193-39-5	Indeno(1,2,3-cd)pyrene	69	< 69 U
53-70-3	Dibenz(a,h)anthracene	69	< 69 U
191-24-2	Benzo(g,h,i)perylene	69	< 69 U
132-64-9	Dibenzofuran	69	< 69 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	86.4%
2-Fluorobiphenyl	68.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
Page 1 of 1

Sample ID: T117-SB56-1.0-2.5
SAMPLE

Lab Sample ID: NN19F
LIMS ID: 08-22357
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/19/08 00:52
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.87 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: 7.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	560	< 560 U
91-57-6	2-Methylnaphthalene	560	< 560 U
90-12-0	1-Methylnaphthalene	560	< 560 U
208-96-8	Acenaphthylene	560	< 560 U
83-32-9	Acenaphthene	560	< 560 U
86-73-7	Fluorene	560	< 560 U
85-01-8	Phenanthrene	560	< 560 U
120-12-7	Anthracene	560	< 560 U
206-44-0	Fluoranthene	560	< 560 U
129-00-0	Pyrene	560	< 560 U
56-55-3	Benzo(a)anthracene	560	< 560 U
218-01-9	Chrysene	560	< 560 U
205-99-2	Benzo(b)fluoranthene	560	< 560 U
207-08-9	Benzo(k)fluoranthene	560	< 560 U
50-32-8	Benzo(a)pyrene	560	< 560 U
193-39-5	Indeno(1,2,3-cd)pyrene	560	< 560 U
53-70-3	Dibenz(a,h)anthracene	560	< 560 U
191-24-2	Benzo(g,h,i)perylene	560	< 560 U
132-64-9	Dibenzofuran	560	< 560 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	90.8%
2-Fluorobiphenyl	73.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB56-1.0-2.5
REEXTRACT

Lab Sample ID: NN19F
LIMS ID: 08-22357
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 09:45
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 6.99 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 7.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	72	< 72 U
91-57-6	2-Methylnaphthalene	72	< 72 U
90-12-0	1-Methylnaphthalene	72	< 72 U
208-96-8	Acenaphthylene	72	< 72 U
83-32-9	Acenaphthene	72	< 72 U
86-73-7	Fluorene	72	< 72 U
85-01-8	Phenanthrene	72	< 72 U
120-12-7	Anthracene	72	< 72 U
206-44-0	Fluoranthene	72	< 72 U
129-00-0	**Pyrene**	**72**	**140**
56-55-3	Benzo(a)anthracene	72	< 72 U
218-01-9	**Chrysene**	**72**	**130**
205-99-2	**Benzo(b)fluoranthene**	**72**	**130**
207-08-9	**Benzo(k)fluoranthene**	**72**	**96**
50-32-8	Benzo(a)pyrene	72	< 72 U
193-39-5	Indeno(1,2,3-cd)pyrene	72	< 72 U
53-70-3	Dibenz(a,h)anthracene	72	< 72 U
191-24-2	Benzo(g,h,i)perylene	72	< 72 U
132-64-9	Dibenzofuran	72	< 72 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	84.4%
2-Fluorobiphenyl	67.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB56-1.0-2.5
REEXTRACT DILUTION

Lab Sample ID: NN19F
LIMS ID: 08-22357
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/07/08 14:13
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 6.99 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 7.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	360	< 360 U
91-57-6	2-Methylnaphthalene	360	< 360 U
90-12-0	1-Methylnaphthalene	360	< 360 U
208-96-8	Acenaphthylene	360	< 360 U
83-32-9	Acenaphthene	360	< 360 U
86-73-7	Fluorene	360	< 360 U
85-01-8	Phenanthrene	360	< 360 U
120-12-7	Anthracene	360	< 360 U
206-44-0	Fluoranthene	360	< 360 U
129-00-0	Pyrene	360	< 360 U
56-55-3	Benzo(a)anthracene	360	< 360 U
218-01-9	Chrysene	360	< 360 U
205-99-2	Benzo(b)fluoranthene	360	< 360 U
207-08-9	Benzo(k)fluoranthene	360	< 360 U
50-32-8	Benzo(a)pyrene	360	< 360 U
193-39-5	Indeno(1,2,3-cd)pyrene	360	< 360 U
53-70-3	Dibenz(a,h)anthracene	360	< 360 U
191-24-2	Benzo(g,h,i)perylene	360	< 360 U
132-64-9	Dibenzofuran	360	< 360 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	58.4%
2-Fluorobiphenyl	66.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
Page 1 of 1

Sample ID: T117-SB56-2.5-4.0
SAMPLE

Lab Sample ID: NN19G
LIMS ID: 08-22358
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/19/08 01:25
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.11 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	62	< 62 U
91-57-6	2-Methylnaphthalene	62	< 62 U
90-12-0	1-Methylnaphthalene	62	< 62 U
208-96-8	Acenaphthylene	62	< 62 U
83-32-9	Acenaphthene	62	< 62 U
86-73-7	Fluorene	62	< 62 U
85-01-8	Phenanthrene	62	< 62 U
120-12-7	Anthracene	62	< 62 U
206-44-0	Fluoranthene	62	< 62 U
129-00-0	Pyrene	62	< 62 U
56-55-3	Benzo(a)anthracene	62	< 62 U
218-01-9	Chrysene	62	< 62 U
205-99-2	Benzo(b)fluoranthene	62	< 62 U
207-08-9	Benzo(k)fluoranthene	62	< 62 U
50-32-8	Benzo(a)pyrene	62	< 62 U
193-39-5	Indeno(1,2,3-cd)pyrene	62	< 62 U
53-70-3	Dibenz(a,h)anthracene	62	< 62 U
191-24-2	Benzo(g,h,i)perylene	62	< 62 U
132-64-9	Dibenzofuran	62	< 62 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	86.0%
2-Fluorobiphenyl	64.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
Page 1 of 1

Sample ID: T117-SB56-4.0-5.5
SAMPLE

Lab Sample ID: NN19H
LIMS ID: 08-22359
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/19/08 01:59
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 3.02 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Percent Moisture: 5.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	830	< 830 U
91-57-6	**2-Methylnaphthalene**	**830**	**850**
90-12-0	**1-Methylnaphthalene**	**830**	**850**
208-96-8	Acenaphthylene	830	< 830 U
83-32-9	Acenaphthene	830	< 830 U
86-73-7	Fluorene	830	< 830 U
85-01-8	Phenanthrene	830	< 830 U
120-12-7	Anthracene	830	< 830 U
206-44-0	Fluoranthene	830	< 830 U
129-00-0	**Pyrene**	**830**	**1,600**
56-55-3	Benzo(a)anthracene	830	< 830 U
218-01-9	**Chrysene**	**830**	**1,000**
205-99-2	Benzo(b)fluoranthene	830	< 830 U
207-08-9	Benzo(k)fluoranthene	830	< 830 U
50-32-8	Benzo(a)pyrene	830	< 830 U
193-39-5	Indeno(1,2,3-cd)pyrene	830	< 830 U
53-70-3	Dibenz(a,h)anthracene	830	< 830 U
191-24-2	Benzo(g,h,i)perylene	830	< 830 U
132-64-9	Dibenzofuran	830	< 830 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	91.8%
2-Fluorobiphenyl	76.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB57b-2.0-3.5
SAMPLE

Lab Sample ID: NN04F
LIMS ID: 08-22279
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/18/08 19:46
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.20 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	300	< 300 U
91-57-6	2-Methylnaphthalene	300	< 300 U
90-12-0	1-Methylnaphthalene	300	< 300 U
208-96-8	Acenaphthylene	300	< 300 U
83-32-9	Acenaphthene	300	< 300 U
86-73-7	Fluorene	300	< 300 U
85-01-8	Phenanthrene	300	< 300 U
120-12-7	Anthracene	300	< 300 U
206-44-0	Fluoranthene	300	< 300 U
129-00-0	Pyrene	300	< 300 U
56-55-3	Benzo(a)anthracene	300	< 300 U
218-01-9	Chrysene	300	< 300 U
205-99-2	Benzo(b)fluoranthene	300	< 300 U
207-08-9	Benzo(k)fluoranthene	300	< 300 U
50-32-8	Benzo(a)pyrene	300	< 300 U
193-39-5	Indeno(1,2,3-cd)pyrene	300	< 300 U
53-70-3	Dibenz(a,h)anthracene	300	< 300 U
191-24-2	Benzo(g,h,i)perylene	300	< 300 U
132-64-9	Dibenzofuran	300	< 300 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	96.2%
2-Fluorobiphenyl	76.4%

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Sample ID: T117-SB57b-2.0-3.5
REEXTRACT

Lab Sample ID: NN04F
LIMS ID: 08-22279
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 03:57
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.24 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	69	< 69 U
91-57-6	2-Methylnaphthalene	69	< 69 U
90-12-0	1-Methylnaphthalene	69	< 69 U
208-96-8	Acenaphthylene	69	< 69 U
83-32-9	Acenaphthene	69	< 69 U
86-73-7	Fluorene	69	< 69 U
85-01-8	Phenanthrene	69	< 69 U
120-12-7	Anthracene	69	< 69 U
206-44-0	**Fluoranthene**	**69**	**100**
129-00-0	**Pyrene**	**69**	**99**
56-55-3	Benzo(a)anthracene	69	< 69 U
218-01-9	**Chrysene**	**69**	**84**
205-99-2	Benzo(b)fluoranthene	69	< 69 U
207-08-9	Benzo(k)fluoranthene	69	< 69 U
50-32-8	Benzo(a)pyrene	69	< 69 U
193-39-5	Indeno(1,2,3-cd)pyrene	69	< 69 U
53-70-3	Dibenz(a,h)anthracene	69	< 69 U
191-24-2	Benzo(g,h,i)perylene	69	< 69 U
132-64-9	Dibenzofuran	69	< 69 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	80.4%
2-Fluorobiphenyl	75.2%

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PNAs by SW8270D GC/MS
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Sample ID: T117-SB57b-3.5-5.0
SAMPLE

Lab Sample ID: NN04G
LIMS ID: 08-22280
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/18/08 20:20
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.29 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: 5.4%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	600	< 600 U
91-57-6	2-Methylnaphthalene	600	< 600 U
90-12-0	1-Methylnaphthalene	600	< 600 U
208-96-8	Acenaphthylene	600	< 600 U
83-32-9	Acenaphthene	600	< 600 U
86-73-7	Fluorene	600	< 600 U
85-01-8	Phenanthrene	600	< 600 U
120-12-7	Anthracene	600	< 600 U
206-44-0	Fluoranthene	600	< 600 U
129-00-0	Pyrene	600	< 600 U
56-55-3	Benzo(a)anthracene	600	< 600 U
218-01-9	Chrysene	600	< 600 U
205-99-2	Benzo(b)fluoranthene	600	< 600 U
207-08-9	Benzo(k)fluoranthene	600	< 600 U
50-32-8	Benzo(a)pyrene	600	< 600 U
193-39-5	Indeno(1,2,3-cd)pyrene	600	< 600 U
53-70-3	Dibenz(a,h)anthracene	600	< 600 U
191-24-2	Benzo(g,h,i)perylene	600	< 600 U
132-64-9	Dibenzofuran	600	< 600 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	93.6%
2-Fluorobiphenyl	72.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
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Sample ID: T117-SB57b-3.5-5.0
REEXTRACT

Lab Sample ID: NN04G
LIMS ID: 08-26267
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 04:31
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.15 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 5.4%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	70	< 70 U
91-57-6	2-Methylnaphthalene	70	< 70 U
90-12-0	1-Methylnaphthalene	70	< 70 U
208-96-8	Acenaphthylene	70	< 70 U
83-32-9	**Acenaphthene**	**70**	**72**
86-73-7	**Fluorene**	**70**	**76**
85-01-8	**Phenanthrene**	**70**	**540**
120-12-7	**Anthracene**	**70**	**160**
206-44-0	**Fluoranthene**	**70**	**640**
129-00-0	**Pyrene**	**70**	**600**
56-55-3	**Benzo(a)anthracene**	**70**	**290**
218-01-9	**Chrysene**	**70**	**340**
205-99-2	**Benzo(b)fluoranthene**	**70**	**310**
207-08-9	**Benzo(k)fluoranthene**	**70**	**280**
50-32-8	**Benzo(a)pyrene**	**70**	**260**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**70**	**87**
53-70-3	Dibenz(a,h)anthracene	70	< 70 U
191-24-2	**Benzo(g,h,i)perylene**	**70**	**97**
132-64-9	Dibenzofuran	70	< 70 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	72.0%
2-Fluorobiphenyl	66.0%

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PNAs by SW8270D GC/MS
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Sample ID: T117-SB58-0.5-2.0
SAMPLE

Lab Sample ID: NN19K
LIMS ID: 08-22362
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/19/08 03:06
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.30 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: 8.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	600	< 600 U
91-57-6	**2-Methylnaphthalene**	**600**	**1,600**
90-12-0	**1-Methylnaphthalene**	**600**	**1,700**
208-96-8	Acenaphthylene	600	< 600 U
83-32-9	Acenaphthene	600	< 600 U
86-73-7	Fluorene	600	< 600 U
85-01-8	**Phenanthrene**	**600**	**900**
120-12-7	Anthracene	600	< 600 U
206-44-0	Fluoranthene	600	< 600 U
129-00-0	**Pyrene**	**600**	**1,600**
56-55-3	Benzo(a)anthracene	600	< 600 U
218-01-9	**Chrysene**	**600**	**870**
205-99-2	Benzo(b)fluoranthene	600	< 600 U
207-08-9	Benzo(k)fluoranthene	600	< 600 U
50-32-8	Benzo(a)pyrene	600	< 600 U
193-39-5	Indeno(1,2,3-cd)pyrene	600	< 600 U
53-70-3	Dibenz(a,h)anthracene	600	< 600 U
191-24-2	Benzo(g,h,i)perylene	600	< 600 U
132-64-9	Dibenzofuran	600	< 600 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	77.6%
2-Fluorobiphenyl	63.6%

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PNAs by SW8270D GC/MS
Page 1 of 1

Sample ID: T117-SB58-0.5-2.0
REEXTRACT

Lab Sample ID: NN19K
LIMS ID: 08-22362
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 11:14
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 4.01 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 8.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	120	< 120 U
91-57-6	**2-Methylnaphthalene**	**120**	**670**
90-12-0	**1-Methylnaphthalene**	**120**	**770**
208-96-8	Acenaphthylene	120	< 120 U
83-32-9	**Acenaphthene**	**120**	**260**
86-73-7	**Fluorene**	**120**	**240**
85-01-8	**Phenanthrene**	**120**	**840**
120-12-7	**Anthracene**	**120**	**160**
206-44-0	**Fluoranthene**	**120**	**190**
129-00-0	**Pyrene**	**120**	**1,400**
56-55-3	**Benzo(a)anthracene**	**120**	**360**
218-01-9	**Chrysene**	**120**	**660**
205-99-2	**Benzo(b)fluoranthene**	**120**	**310**
207-08-9	**Benzo(k)fluoranthene**	**120**	**130**
50-32-8	**Benzo(a)pyrene**	**120**	**300**
193-39-5	Indeno(1,2,3-cd)pyrene	120	< 120 U
53-70-3	Dibenz(a,h)anthracene	120	< 120 U
191-24-2	**Benzo(g,h,i)perylene**	**120**	**180**
132-64-9	Dibenzofuran	120	< 120 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	90.0%
2-Fluorobiphenyl	64.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB58-0.5-2.0
REEXTRACT DILUTION

Lab Sample ID: NN19K
LIMS ID: 08-22362
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 21:20
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 4.01 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 8.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	620	< 620 U
91-57-6	**2-Methylnaphthalene**	**620**	**700**
90-12-0	**1-Methylnaphthalene**	**620**	**830**
208-96-8	Acenaphthylene	620	< 620 U
83-32-9	Acenaphthene	620	< 620 U
86-73-7	Fluorene	620	< 620 U
85-01-8	**Phenanthrene**	**620**	**920**
120-12-7	Anthracene	620	< 620 U
206-44-0	Fluoranthene	620	< 620 U
129-00-0	**Pyrene**	**620**	**1,000**
56-55-3	Benzo(a)anthracene	620	< 620 U
218-01-9	**Chrysene**	**620**	**770**
205-99-2	Benzo(b)fluoranthene	620	< 620 U
207-08-9	Benzo(k)fluoranthene	620	< 620 U
50-32-8	Benzo(a)pyrene	620	< 620 U
193-39-5	Indeno(1,2,3-cd)pyrene	620	< 620 U
53-70-3	Dibenz(a,h)anthracene	620	< 620 U
191-24-2	Benzo(g,h,i)perylene	620	< 620 U
132-64-9	Dibenzofuran	620	< 620 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	72.2%
2-Fluorobiphenyl	69.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
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Sample ID: T117-SB58-2.0-3.5
SAMPLE

Lab Sample ID: NN19L
LIMS ID: 08-22363
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/19/08 03:40
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.05 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: 11.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	620	< 620 U
91-57-6	2-Methylnaphthalene	620	< 620 U
90-12-0	1-Methylnaphthalene	620	< 620 U
208-96-8	Acenaphthylene	620	< 620 U
83-32-9	Acenaphthene	620	< 620 U
86-73-7	Fluorene	620	< 620 U
85-01-8	Phenanthrene	620	< 620 U
120-12-7	Anthracene	620	< 620 U
206-44-0	Fluoranthene	620	< 620 U
129-00-0	Pyrene	620	< 620 U
56-55-3	Benzo(a)anthracene	620	< 620 U
218-01-9	Chrysene	620	< 620 U
205-99-2	Benzo(b)fluoranthene	620	< 620 U
207-08-9	Benzo(k)fluoranthene	620	< 620 U
50-32-8	Benzo(a)pyrene	620	< 620 U
193-39-5	Indeno(1,2,3-cd)pyrene	620	< 620 U
53-70-3	Dibenz(a,h)anthracene	620	< 620 U
191-24-2	Benzo(g,h,i)perylene	620	< 620 U
132-64-9	Dibenzofuran	620	< 620 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	87.2%
2-Fluorobiphenyl	68.0%

ANALYTICAL RESOURCES INCORPORATED

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PNAs by SW8270D GC/MS
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Sample ID: T117-SB58-2.0-3.5
REEXTRACT

Lab Sample ID: NN19L
LIMS ID: 08-22363
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 11:48
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 6.72 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 11.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	74	< 74 U
91-57-6	**2-Methylnaphthalene**	**74**	**280**
90-12-0	**1-Methylnaphthalene**	**74**	**260**
208-96-8	Acenaphthylene	74	< 74 U
83-32-9	Acenaphthene	74	< 74 U
86-73-7	Fluorene	74	< 74 U
85-01-8	**Phenanthrene**	**74**	**98**
120-12-7	Anthracene	74	< 74 U
206-44-0	Fluoranthene	74	< 74 U
129-00-0	**Pyrene**	**74**	**110**
56-55-3	Benzo(a)anthracene	74	< 74 U
218-01-9	Chrysene	74	< 74 U
205-99-2	Benzo(b)fluoranthene	74	< 74 U
207-08-9	Benzo(k)fluoranthene	74	< 74 U
50-32-8	Benzo(a)pyrene	74	< 74 U
193-39-5	Indeno(1,2,3-cd)pyrene	74	< 74 U
53-70-3	Dibenz(a,h)anthracene	74	< 74 U
191-24-2	Benzo(g,h,i)perylene	74	< 74 U
132-64-9	Dibenzofuran	74	< 74 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	98.0%
2-Fluorobiphenyl	63.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB58-2.0-3.5
REEXTRACT DILUTION

Lab Sample ID: NN19L
LIMS ID: 08-22363
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 21:55
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 6.72 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 11.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	370	< 370 U
91-57-6	2-Methylnaphthalene	370	< 370 U
90-12-0	1-Methylnaphthalene	370	< 370 U
208-96-8	Acenaphthylene	370	< 370 U
83-32-9	Acenaphthene	370	< 370 U
86-73-7	Fluorene	370	< 370 U
85-01-8	Phenanthrene	370	< 370 U
120-12-7	Anthracene	370	< 370 U
206-44-0	Fluoranthene	370	< 370 U
129-00-0	Pyrene	370	< 370 U
56-55-3	Benzo(a)anthracene	370	< 370 U
218-01-9	Chrysene	370	< 370 U
205-99-2	Benzo(b)fluoranthene	370	< 370 U
207-08-9	Benzo(k)fluoranthene	370	< 370 U
50-32-8	Benzo(a)pyrene	370	< 370 U
193-39-5	Indeno(1,2,3-cd)pyrene	370	< 370 U
53-70-3	Dibenz(a,h)anthracene	370	< 370 U
191-24-2	Benzo(g,h,i)perylene	370	< 370 U
132-64-9	Dibenzofuran	370	< 370 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	66.2%
2-Fluorobiphenyl	66.6%

ANALYTICAL RESOURCES INCORPORATED

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PNAs by SW8270D GC/MS
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Sample ID: T117-SB59-1.5-3.0
SAMPLE

Lab Sample ID: NN190
LIMS ID: 08-22366
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/23/08 19:48
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.21 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: 11.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	610	< 610 U
91-57-6	2-Methylnaphthalene	610	< 610 U
90-12-0	1-Methylnaphthalene	610	< 610 U
208-96-8	Acenaphthylene	610	< 610 U
83-32-9	Acenaphthene	610	< 610 U
86-73-7	Fluorene	610	< 610 U
85-01-8	Phenanthrene	610	< 610 U
120-12-7	Anthracene	610	< 610 U
206-44-0	Fluoranthene	610	< 610 U
129-00-0	Pyrene	610	< 610 U
56-55-3	Benzo(a)anthracene	610	< 610 U
218-01-9	Chrysene	610	< 610 U
205-99-2	Benzo(b)fluoranthene	610	< 610 U
207-08-9	Benzo(k)fluoranthene	610	< 610 U
50-32-8	Benzo(a)pyrene	610	< 610 U
193-39-5	Indeno(1,2,3-cd)pyrene	610	< 610 U
53-70-3	Dibenz(a,h)anthracene	610	< 610 U
191-24-2	Benzo(g,h,i)perylene	610	< 610 U
132-64-9	Dibenzofuran	610	< 610 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	85.6%
2-Fluorobiphenyl	78.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
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Sample ID: T117-SB59-1.5-3.0
REEXTRACT

Lab Sample ID: NN19O
LIMS ID: 08-22366
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 17:19
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 3.86 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 11.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	130	< 130 U
91-57-6	**2-Methylnaphthalene**	**130**	**160**
90-12-0	**1-Methylnaphthalene**	**130**	**140**
208-96-8	Acenaphthylene	130	< 130 U
83-32-9	Acenaphthene	130	< 130 U
86-73-7	Fluorene	130	< 130 U
85-01-8	**Phenanthrene**	**130**	**320**
120-12-7	Anthracene	130	< 130 U
206-44-0	Fluoranthene	130	< 130 U
129-00-0	**Pyrene**	**130**	**440**
56-55-3	**Benzo(a)anthracene**	**130**	**140**
218-01-9	**Chrysene**	**130**	**390**
205-99-2	Benzo(b)fluoranthene	130	< 130 U
207-08-9	Benzo(k)fluoranthene	130	< 130 U
50-32-8	Benzo(a)pyrene	130	< 130 U
193-39-5	Indeno(1,2,3-cd)pyrene	130	< 130 U
53-70-3	Dibenz(a,h)anthracene	130	< 130 U
191-24-2	Benzo(g,h,i)perylene	130	< 130 U
132-64-9	Dibenzofuran	130	< 130 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	70.8%
2-Fluorobiphenyl	72.0%

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Sample ID: T117-SB59-3.0-4.5
SAMPLE

Lab Sample ID: NN19P
LIMS ID: 08-22367
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/23/08 20:20
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.34 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 5.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	60	< 60 U
91-57-6	2-Methylnaphthalene	60	< 60 U
90-12-0	1-Methylnaphthalene	60	< 60 U
208-96-8	Acenaphthylene	60	< 60 U
83-32-9	Acenaphthene	60	< 60 U
86-73-7	Fluorene	60	< 60 U
85-01-8	Phenanthrene	60	< 60 U
120-12-7	Anthracene	60	< 60 U
206-44-0	Fluoranthene	60	< 60 U
129-00-0	Pyrene	60	< 60 U
56-55-3	Benzo(a)anthracene	60	< 60 U
218-01-9	Chrysene	60	< 60 U
205-99-2	Benzo(b)fluoranthene	60	< 60 U
207-08-9	Benzo(k)fluoranthene	60	< 60 U
50-32-8	Benzo(a)pyrene	60	< 60 U
193-39-5	Indeno(1,2,3-cd)pyrene	60	< 60 U
53-70-3	Dibenz(a,h)anthracene	60	< 60 U
191-24-2	Benzo(g,h,i)perylene	60	< 60 U
132-64-9	Dibenzofuran	60	< 60 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	88.0%
2-Fluorobiphenyl	63.6%

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Sample ID: T117-SB57b-10.0-11.5-RB
SAMPLE

Lab Sample ID: NN04H
LIMS ID: 08-22281
Matrix: Water
Data Release Authorized:
Reported: 09/26/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/08/08
Date Analyzed: 09/17/08 15:06
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Silica Gel: No

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	62.8%
2-Fluorobiphenyl	42.4%

ANALYTICAL RESOURCES INCORPORATED

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Sample ID: T117-SB60-0.5-2.0
SAMPLE

Lab Sample ID: NN04A
LIMS ID: 08-22274
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/18/08 18:04
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.03 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: 11.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	620	< 620 U
91-57-6	2-Methylnaphthalene	620	< 620 U
90-12-0	1-Methylnaphthalene	620	< 620 U
208-96-8	Acenaphthylene	620	< 620 U
83-32-9	Acenaphthene	620	< 620 U
86-73-7	Fluorene	620	< 620 U
85-01-8	Phenanthrene	620	< 620 U
120-12-7	Anthracene	620	< 620 U
206-44-0	Fluoranthene	620	< 620 U
129-00-0	Pyrene	620	< 620 U
56-55-3	Benzo(a)anthracene	620	< 620 U
218-01-9	Chrysene	620	< 620 U
205-99-2	Benzo(b)fluoranthene	620	< 620 U
207-08-9	Benzo(k)fluoranthene	620	< 620 U
50-32-8	Benzo(a)pyrene	620	< 620 U
193-39-5	Indeno(1,2,3-cd)pyrene	620	< 620 U
53-70-3	Dibenz(a,h)anthracene	620	< 620 U
191-24-2	Benzo(g,h,i)perylene	620	< 620 U
132-64-9	Dibenzofuran	620	< 620 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	87.2%
2-Fluorobiphenyl	72.0%

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Sample ID: T117-SB60-0.5-2.0
REEXTRACT

Lab Sample ID: NN04A
LIMS ID: 08-22274
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 02:15
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 3.74 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 11.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	130	< 130 U
91-57-6	2-Methylnaphthalene	130	< 130 U
90-12-0	1-Methylnaphthalene	130	< 130 U
208-96-8	Acenaphthylene	130	< 130 U
83-32-9	Acenaphthene	130	< 130 U
86-73-7	Fluorene	130	< 130 U
85-01-8	Phenanthrene	130	< 130 U
120-12-7	Anthracene	130	< 130 U
206-44-0	**Fluoranthene**	**130**	**200**
129-00-0	**Pyrene**	**130**	**420**
56-55-3	**Benzo(a)anthracene**	**130**	**190**
218-01-9	**Chrysene**	**130**	**400**
205-99-2	**Benzo(b)fluoranthene**	**130**	**170**
207-08-9	**Benzo(k)fluoranthene**	**130**	**280**
50-32-8	**Benzo(a)pyrene**	**130**	**180**
193-39-5	Indeno(1,2,3-cd)pyrene	130	< 130 U
53-70-3	Dibenz(a,h)anthracene	130	< 130 U
191-24-2	Benzo(g,h,i)perylene	130	< 130 U
132-64-9	Dibenzofuran	130	< 130 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	73.2%
2-Fluorobiphenyl	69.2%

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Sample ID: T117-SB60-2.0-3.5
SAMPLE

Lab Sample ID: NN04B
LIMS ID: 08-22275
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/18/08 18:38
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.12 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Percent Moisture: 11.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	620	< 620 U
91-57-6	2-Methylnaphthalene	620	< 620 U
90-12-0	1-Methylnaphthalene	620	< 620 U
208-96-8	Acenaphthylene	620	< 620 U
83-32-9	Acenaphthene	620	< 620 U
86-73-7	Fluorene	620	< 620 U
85-01-8	Phenanthrene	620	< 620 U
120-12-7	Anthracene	620	< 620 U
206-44-0	Fluoranthene	620	< 620 U
129-00-0	Pyrene	620	< 620 U
56-55-3	Benzo(a)anthracene	620	< 620 U
218-01-9	**Chrysene**	**620**	**840**
205-99-2	Benzo(b)fluoranthene	620	< 620 U
207-08-9	Benzo(k)fluoranthene	620	< 620 U
50-32-8	Benzo(a)pyrene	620	< 620 U
193-39-5	Indeno(1,2,3-cd)pyrene	620	< 620 U
53-70-3	Dibenz(a,h)anthracene	620	< 620 U
191-24-2	Benzo(g,h,i)perylene	620	< 620 U
132-64-9	Dibenzofuran	620	< 620 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	68.4%
2-Fluorobiphenyl	59.6%

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Sample ID: T117-SB60-2.0-3.5
REEXTRACT

Lab Sample ID: NN04B
LIMS ID: 08-22275
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 02:49
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 4.18 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 11.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	120	< 120 U
91-57-6	**2-Methylnaphthalene**	**120**	**240**
90-12-0	**1-Methylnaphthalene**	**120**	**240**
208-96-8	Acenaphthylene	120	< 120 U
83-32-9	Acenaphthene	120	< 120 U
86-73-7	Fluorene	120	< 120 U
85-01-8	**Phenanthrene**	**120**	**300**
120-12-7	Anthracene	120	< 120 U
206-44-0	**Fluoranthene**	**120**	**190**
129-00-0	**Pyrene**	**120**	**410**
56-55-3	**Benzo(a)anthracene**	**120**	**210**
218-01-9	**Chrysene**	**120**	**460**
205-99-2	**Benzo(b)fluoranthene**	**120**	**160**
207-08-9	**Benzo(k)fluoranthene**	**120**	**180**
50-32-8	**Benzo(a)pyrene**	**120**	**140**
193-39-5	Indeno(1,2,3-cd)pyrene	120	< 120 U
53-70-3	Dibenz(a,h)anthracene	120	< 120 U
191-24-2	Benzo(g,h,i)perylene	120	< 120 U
132-64-9	Dibenzofuran	120	< 120 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	73.6%
2-Fluorobiphenyl	68.8%

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Sample ID: T117-SB60-3.5-5.0
SAMPLE

Lab Sample ID: NN04C
LIMS ID: 08-22276
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/11/08
Date Analyzed: 09/18/08 19:12
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.74 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Percent Moisture: 7.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	290	< 290 U
91-57-6	2-Methylnaphthalene	290	< 290 U
90-12-0	1-Methylnaphthalene	290	< 290 U
208-96-8	Acenaphthylene	290	< 290 U
83-32-9	Acenaphthene	290	< 290 U
86-73-7	Fluorene	290	< 290 U
85-01-8	Phenanthrene	290	< 290 U
120-12-7	Anthracene	290	< 290 U
206-44-0	Fluoranthene	290	< 290 U
129-00-0	Pyrene	290	< 290 U
56-55-3	Benzo(a)anthracene	290	< 290 U
218-01-9	Chrysene	290	< 290 U
205-99-2	Benzo(b)fluoranthene	290	< 290 U
207-08-9	Benzo(k)fluoranthene	290	< 290 U
50-32-8	Benzo(a)pyrene	290	< 290 U
193-39-5	Indeno(1,2,3-cd)pyrene	290	< 290 U
53-70-3	Dibenz(a,h)anthracene	290	< 290 U
191-24-2	Benzo(g,h,i)perylene	290	< 290 U
132-64-9	Dibenzofuran	290	< 290 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	83.4%
2-Fluorobiphenyl	70.4%

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Sample ID: T117-SB60-3.5-5.0
REEXTRACT

Lab Sample ID: NN04C
LIMS ID: 08-22276
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Sampled: 09/02/08
Date Received: 09/02/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 03:23
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 6.97 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 7.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	72	< 72 U
91-57-6	2-Methylnaphthalene	72	< 72 U
90-12-0	1-Methylnaphthalene	72	< 72 U
208-96-8	Acenaphthylene	72	< 72 U
83-32-9	Acenaphthene	72	< 72 U
86-73-7	Fluorene	72	< 72 U
85-01-8	Phenanthrene	72	< 72 U
120-12-7	Anthracene	72	< 72 U
206-44-0	Fluoranthene	72	< 72 U
129-00-0	Pyrene	72	< 72 U
56-55-3	Benzo(a)anthracene	72	< 72 U
218-01-9	Chrysene	72	< 72 U
205-99-2	Benzo(b)fluoranthene	72	< 72 U
207-08-9	Benzo(k)fluoranthene	72	< 72 U
50-32-8	Benzo(a)pyrene	72	< 72 U
193-39-5	Indeno(1,2,3-cd)pyrene	72	< 72 U
53-70-3	Dibenz(a,h)anthracene	72	< 72 U
191-24-2	Benzo(g,h,i)perylene	72	< 72 U
132-64-9	Dibenzofuran	72	< 72 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	67.6%
2-Fluorobiphenyl	64.0%

ANALYTICAL RESOURCES INCORPORATED

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Sample ID: T117-SB62-2.5-4.0
SAMPLE

Lab Sample ID: NN19J
LIMS ID: 08-22361
Matrix: Soil
Data Release Authorized:
Reported: 09/24/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/11/08
Date Analyzed: 09/19/08 02:33
Instrument/Analyst: NT4/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 8.17 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	61	< 61 U
91-57-6	2-Methylnaphthalene	61	< 61 U
90-12-0	1-Methylnaphthalene	61	< 61 U
208-96-8	Acenaphthylene	61	< 61 U
83-32-9	Acenaphthene	61	< 61 U
86-73-7	Fluorene	61	< 61 U
85-01-8	Phenanthrene	61	< 61 U
120-12-7	Anthracene	61	< 61 U
206-44-0	Fluoranthene	61	< 61 U
129-00-0	Pyrene	61	< 61 U
56-55-3	Benzo(a)anthracene	61	< 61 U
218-01-9	Chrysene	61	< 61 U
205-99-2	Benzo(b)fluoranthene	61	< 61 U
207-08-9	**Benzo(k)fluoranthene**	**61**	**64**
50-32-8	Benzo(a)pyrene	61	< 61 U
193-39-5	Indeno(1,2,3-cd)pyrene	61	< 61 U
53-70-3	Dibenz(a,h)anthracene	61	< 61 U
191-24-2	Benzo(g,h,i)perylene	61	< 61 U
132-64-9	Dibenzofuran	61	< 61 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	84.4%
2-Fluorobiphenyl	65.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
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Sample ID: T117-SB62-2.5-4.0
REEXTRACT

Lab Sample ID: NN19J
LIMS ID: 08-22361
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 10:19
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.23 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	69	< 69 U
91-57-6	2-Methylnaphthalene	69	< 69 U
90-12-0	1-Methylnaphthalene	69	< 69 U
208-96-8	Acenaphthylene	69	< 69 U
83-32-9	Acenaphthene	69	< 69 U
86-73-7	Fluorene	69	< 69 U
85-01-8	Phenanthrene	69	< 69 U
120-12-7	Anthracene	69	< 69 U
206-44-0	Fluoranthene	69	< 69 U
129-00-0	Pyrene	69	< 69 U
56-55-3	Benzo(a)anthracene	69	< 69 U
218-01-9	Chrysene	69	< 69 U
205-99-2	Benzo(b)fluoranthene	69	< 69 U
207-08-9	Benzo(k)fluoranthene	69	< 69 U
50-32-8	Benzo(a)pyrene	69	< 69 U
193-39-5	Indeno(1,2,3-cd)pyrene	69	< 69 U
53-70-3	Dibenz(a,h)anthracene	69	< 69 U
191-24-2	Benzo(g,h,i)perylene	69	< 69 U
132-64-9	Dibenzofuran	69	< 69 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	82.8%
2-Fluorobiphenyl	65.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB62-2.5-4.0
REEXTRACT DILUTION

Lab Sample ID: NN19J
LIMS ID: 08-22361
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/07/08 14:47
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.23 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 5.00
Percent Moisture: 4.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	350	< 350 U
91-57-6	2-Methylnaphthalene	350	< 350 U
90-12-0	1-Methylnaphthalene	350	< 350 U
208-96-8	Acenaphthylene	350	< 350 U
83-32-9	Acenaphthene	350	< 350 U
86-73-7	Fluorene	350	< 350 U
85-01-8	Phenanthrene	350	< 350 U
120-12-7	Anthracene	350	< 350 U
206-44-0	Fluoranthene	350	< 350 U
129-00-0	Pyrene	350	< 350 U
56-55-3	Benzo(a)anthracene	350	< 350 U
218-01-9	Chrysene	350	< 350 U
205-99-2	Benzo(b)fluoranthene	350	< 350 U
207-08-9	Benzo(k)fluoranthene	350	< 350 U
50-32-8	Benzo(a)pyrene	350	< 350 U
193-39-5	Indeno(1,2,3-cd)pyrene	350	< 350 U
53-70-3	Dibenz(a,h)anthracene	350	< 350 U
191-24-2	Benzo(g,h,i)perylene	350	< 350 U
132-64-9	Dibenzofuran	350	< 350 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	59.0%
2-Fluorobiphenyl	60.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: T117-SB59-3.0-4.5
REEXTRACT

Lab Sample ID: NN19P
LIMS ID: 08-22367
Matrix: Soil
Data Release Authorized:
Reported: 10/08/08

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Date Extracted: 09/29/08
Date Analyzed: 10/03/08 17:53
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.12 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 5.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	70	< 70 U
91-57-6	2-Methylnaphthalene	70	< 70 U
90-12-0	1-Methylnaphthalene	70	< 70 U
208-96-8	Acenaphthylene	70	< 70 U
83-32-9	Acenaphthene	70	< 70 U
86-73-7	Fluorene	70	< 70 U
85-01-8	Phenanthrene	70	< 70 U
120-12-7	Anthracene	70	< 70 U
206-44-0	Fluoranthene	70	< 70 U
129-00-0	Pyrene	70	< 70 U
56-55-3	Benzo(a)anthracene	70	< 70 U
218-01-9	Chrysene	70	< 70 U
205-99-2	Benzo(b)fluoranthene	70	< 70 U
207-08-9	Benzo(k)fluoranthene	70	< 70 U
50-32-8	Benzo(a)pyrene	70	< 70 U
193-39-5	Indeno(1,2,3-cd)pyrene	70	< 70 U
53-70-3	Dibenz(a,h)anthracene	70	< 70 U
191-24-2	Benzo(g,h,i)perylene	70	< 70 U
132-64-9	Dibenzofuran	70	< 70 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	70.8%
2-Fluorobiphenyl	69.6%

TPH

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 2
Matrix: Soil

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Received: 09/03/08

Data Release Authorized:
Reported: 09/17/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-091008	Method Blank	09/10/08	09/15/08	1.00	Diesel	5.0	< 5.0 U
08-22352	HC ID: ---		FID3A	1.0	Motor Oil	10	< 10 U
					o-Terphenyl		88.0%
NN19A	T117-SB55-2.0-3.5	09/10/08	09/16/08	1.00	**Diesel**	**53**	**210**
08-22352	HC ID: **DRO/MOTOR OIL**		FID3A	10	**Motor Oil**	**110**	**590**
					o-Terphenyl		68.0%
NN19B	T117-SB55-3.5-5.0	09/10/08	09/16/08	1.00	**Diesel**	**52**	**160**
08-22353	HC ID: **DRO/MOTOR OIL**		FID3A	10	**Motor Oil**	**100**	**980**
					o-Terphenyl		82.4%
NN19C	T117-SB54-2.0-3.5	09/10/08	09/16/08	1.00	**Diesel**	**52**	**350**
08-22354	HC ID: **DRO/MOTOR OIL**		FID3A	10	**Motor Oil**	**100**	**2,800**
					o-Terphenyl		74.4%
NN19D	T117-SB54-3.5-5.0	09/10/08	09/16/08	1.00	**Diesel**	**53**	**390**
08-22355	HC ID: **DRO/MOTOR OIL**		FID3A	10	**Motor Oil**	**110**	**2,100**
					o-Terphenyl		72.7%
NN19E	T117-SB53-0.5-2.0	09/10/08	09/16/08	1.00	**Diesel**	**110**	**160**
08-22356	HC ID: **DRO/MOTOR OIL**		FID3A	20	**Motor Oil**	**210**	**690**
					o-Terphenyl		D
NN19F	T117-SB56-1.0-2.5	09/10/08	09/16/08	1.00	**Diesel**	**540**	**1,200**
08-22357	HC ID: **DRO/MOTOR OIL**		FID3A	100	**Motor Oil**	**1,100**	**2,000**
					o-Terphenyl		D
NN19G	T117-SB56-2.5-4.0	09/10/08	09/16/08	1.00	**Diesel**	**52**	**160**
08-22358	HC ID: **DRO/MOTOR OIL**		FID3A	10	**Motor Oil**	**100**	**300**
					o-Terphenyl		69.1%
NN19H	T117-SB56-4.0-5.5	09/10/08	09/16/08	1.00	**Diesel**	**1,000**	**17,000**
08-22359	HC ID: **DRO/MOTOR OIL**		FID3A	200	**Motor Oil**	**2,100**	**13,000**
					o-Terphenyl		D
NN19J	T117-SB62-2.5-4.0	09/10/08	09/13/08	1.00	**Diesel**	**52**	**220**
08-22361	HC ID: **DRO/MOTOR OIL**		FID3A	10	**Motor Oil**	**100**	**260**
					o-Terphenyl		71.1%
NN19K	T117-SB58-0.5-2.0	09/10/08	09/13/08	1.00	**Diesel**	**1,100**	**1,600**
08-22362	HC ID: **DRO/MOTOR OIL**		FID3A	200	**Motor Oil**	**2,200**	**4,100**
					o-Terphenyl		D

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 1
Matrix: Soil

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12
Date Received: 09/02/08

Data Release Authorized:
Reported: 09/17/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
NN04A	T117-SB60-0.5-2.0	09/10/08	09/15/08	1.00	**Diesel**	**560**	**1,900**
08-22274	HC ID: **DRO/MOTOR OIL**		FID3A	100	**Motor Oil**	**1,100**	**3,800**
					o-Terphenyl		D
NN04B	T117-SB60-2.0-3.5	09/10/08	09/15/08	1.00	**Diesel**	**560**	**1,300**
08-22275	HC ID: **DRO/MOTOR OIL**		FID3A	100	**Motor Oil**	**1,100**	**6,400**
					o-Terphenyl		D
MB-091008	Method Blank	09/10/08	09/15/08	1.00	Diesel	5.0	< 5.0 U
08-22276	HC ID: ---		FID3A	1.0	Motor Oil	10	< 10 U
					o-Terphenyl		88.0%
NN04C	T117-SB60-3.5-5.0	09/10/08	09/16/08	1.00	**Diesel**	**27**	**120**
08-22276	HC ID: **DRO/MOTOR OIL**		FID3A	5.0	**Motor Oil**	**54**	**280**
					o-Terphenyl		78.4%
NN04F	T117-SB57b-2.0-3.5	09/10/08	09/16/08	1.00	**Diesel**	**5.2**	**47**
08-22279	HC ID: **DRO/MOTOR OIL**		FID3A	1.0	**Motor Oil**	**10**	**290**
					o-Terphenyl		80.0%
NN04G	T117-SB57b-3.5-5.0	09/10/08	09/16/08	1.00	**Diesel**	**100**	**320**
08-22280	HC ID: **DRO/MOTOR OIL**		FID3A	20	**Motor Oil**	**210**	**1,200**
					o-Terphenyl		D

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID

Matrix: Soil

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212
Date Received: 09/03/08

Data Release Authorized:
Reported: 09/17/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
NN19L	T117-SB58-2.0-3.5	09/10/08	09/13/08	1.00	**Diesel**	**560**	**820**
08-22363	HC ID: **DRO/MOTOR OIL**		FID3A	100	**Motor Oil**	**1,100**	**2,000**
					o-Terphenyl		D
NN19O	T117-SB59-1.5-3.0	09/10/08	09/13/08	1.00	**Diesel**	**560**	**1,800**
08-22366	HC ID: **DRO/MOTOR OIL**		FID3A	100	**Motor Oil**	**1,100**	**2,800**
					o-Terphenyl		D
NN19P	T117-SB59-3.0-4.5	09/10/08	09/13/08	1.00	Diesel	5.2	< 5.2 U
08-22367	HC ID: ---		FID3A	1.0	Motor Oil	10	< 10 U
					o-Terphenyl		81.8%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 1
Matrix: Water

QC Report No: NN04-Windward Environmental, L
Project: T-117/WINDWARD
08-08-12-12
Date Received: 09/02/08

Data Release Authorized:
Reported: 09/17/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-090608	Method Blank	09/06/08	09/11/08	1.00	Diesel	0.25	< 0.25 U
08-22281	HC ID: ---		FID3A	1.0	Motor Oil	0.50	< 0.50 U
					o-Terphenyl		71.3%
NN04H	T117-SB57b-10.0-11.5-	09/06/08	09/11/08	1.00	Diesel	0.25	< 0.25 U
08-22281	HC ID: ---		FID3A	1.0	Motor Oil	0.50	< 0.50 U
					o-Terphenyl		72.4%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

CONVENTIONALS

INORGANICS ANALYSIS DATA SHEET
Total Solids by Method EPA 160.3

ANALYTICAL RESOURCES INCORPORATED

Data Release Authorized:
Reported: 09/17/08
Date Received: 09/03/08
Page 1 of 1

QC Report No: NN19-Windward Environmental, LLC
Project: T-117
08-08-1212

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	RL	Result
T117-SB55-2.0-3.5 NN19A 08-22352	09/03/08	Soil	09/09/08	0.01	93.90
T117-SB55-3.5-5.0 NN19B 08-22353	09/03/08	Soil	09/09/08	0.01	94.60
T117-SB54-2.0-3.5 NN19C 08-22354	09/03/08	Soil	09/09/08	0.01	94.70
T117-SB54-3.5-5.0 NN19D 08-22355	09/03/08	Soil	09/09/08	0.01	92.60
T117-SB53-0.5-2.0 NN19E 08-22356	09/03/08	Soil	09/09/08	0.01	94.50
T117-SB56-1.0-2.5 NN19F 08-22357	09/03/08	Soil	09/09/08	0.01	93.60
T117-SB56-2.5-4.0 NN19G 08-22358	09/03/08	Soil	09/09/08	0.01	94.20
T117-SB56-4.0-5.5 NN19H 08-22359	09/03/08	Soil	09/09/08	0.01	95.20
T117-SB56-5.5-7.0 NN19I 08-22360	09/03/08	Soil	09/09/08	0.01	94.30
T117-SB62-2.5-4.0 NN19J 08-22361	09/03/08	Soil	09/09/08	0.01	95.30
T117-SB58-0.5-2.0 NN19K 08-22362	09/03/08	Soil	09/09/08	0.01	93.00
T117-SB58-2.0-3.5 NN19L 08-22363	09/03/08	Soil	09/09/08	0.01	91.60
T117-SB63-2.0-3.5 NN19M 08-22364	09/03/08	Soil	09/09/08	0.01	90.60
T117-SB59-1.5-3.0 NN19O 08-22366	09/03/08	Soil	09/09/08	0.01	88.80
T117-SB59-3.0-4.5 NN19P 08-22367	09/03/08	Soil	09/09/08	0.01	95.10
T117-SB59-15.0-16.5 NN19Q 08-22368	09/03/08	Soil	09/09/08	0.01	73.40
T117-SB59-17.5-19.0 NN19R 08-22369	09/03/08	Soil	09/09/08	0.01	74.10

Reported in Percent

RL-Analytical reporting limit
U-Undetected at reported detection limit
Report for NN19

INORGANICS ANALYSIS DATA SHEET
Total Solids by Method EPA 160.3

ANALYTICAL RESOURCES INCORPORATED

Data Release Authorized:
Reported: 09/17/08
Date Received: 09/02/08
Page 1 of 1

QC Report No: NN04-Windward Environmental, LLC
Project: T-117/WINDWARD
08-08-12-12

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	RL	Result
T117-SB60-0.5-2.0 NN04A 08-22274	09/02/08	Soil	09/09/08	0.01	87.30
T117-SB60-2.0-3.5 NN04B 08-22275	09/02/08	Soil	09/09/08	0.01	90.80
T117-SB60-3.5-5.0 NN04C 08-22276	09/02/08	Soil	09/09/08	0.01	92.30
T117-SB60-12.5-14.0 NN04D 08-22277	09/02/08	Soil	09/09/08	0.01	72.60
T117-SB60-15.0-16.5 NN04E 08-22278	09/02/08	Soil	09/09/08	0.01	72.90
T117-SB57b-2.0-3.5 NN04F 08-22279	09/02/08	Soil	09/09/08	0.01	95.50
T117-SB57b-3.5-5.0 NN04G 08-22280	09/02/08	Soil	09/09/08	0.01	95.00

Reported in Percent

RL-Analytical reporting limit
U-Undetected at reported detection limit

REPLICATE RESULTS-CONVENTIONALS
NN19-Windward Environmental, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 09/17/08

Project: T-117
Event: 08-08-1212
Date Sampled: 09/03/08
Date Received: 09/03/08

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: NN19A Client ID: T117-SB55-2.0-3.5					
Total Solids	09/09/08	Percent	93.90	93.20 93.30	0.4%

F-3 Streets and Yards

DIOXIN/FURAN

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/18/2008
Sample Matrix:	Filter	**Date Received:**	08/20/2008
Sample Name:	SPD0002	**Units:**	ng/Kg
Lab Code:	K0807873-008	**Basis:**	Wet

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/7/08 10:53:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	1.000g	**Instrument Name:**	E-HRMS-04
		GC Column:	DB-5
Data File Name:	P200239	**Blank File Name:**	U129725
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200236

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.127	10.0			1
1,2,3,7,8-PeCDD	**0.363**	JK	0.175	50.0	1.05	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.116	50.0			1
1,2,3,6,7,8-HxCDD	**1.02**	J	0.143	50.0	1.25	1.000	1
1,2,3,7,8,9-HxCDD	**0.586**	J	0.124	50.0	1.08	1.008	1
1,2,3,4,6,7,8-HpCDD	**15.7**	BJ	0.236	50.0	1.07	1.000	1
OCDD	**118**	B	0.217	100	0.89	1.000	1
2,3,7,8-TCDF	**0.690**	CJ	0.137	10.0	0.70	1.001	1
1,2,3,7,8-PeCDF	**0.452**	J	0.110	50.0	1.70	1.000	1
2,3,4,7,8-PeCDF	**0.437**	J	0.107	50.0	1.57	1.000	1
1,2,3,4,7,8-HxCDF	**0.822**	JK	0.156	50.0	1.56	1.000	1
1,2,3,6,7,8-HxCDF	**0.315**	JK	0.157	50.0	1.71	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.169	50.0			1
2,3,4,6,7,8-HxCDF	**0.408**	J	0.167	50.0	1.42	1.000	1
1,2,3,4,6,7,8-HpCDF	**4.21**	BJ	0.200	50.0	1.17	1.000	1
1,2,3,4,7,8,9-HpCDF	**0.496**	J	0.218	50.0	1.11	1.000	1
OCDF	**22.7**	BJ	0.348	100	0.92	1.004	1
Total Tetra-Dioxins	ND	U	0.127	10.0			1
Total Penta-Dioxins	ND	U	0.175	50.0			1
Total Hexa-Dioxins	**1.60**	J	0.116	50.0	1.25		1
Total Hepta-Dioxins	**42.0**	J	0.236	50.0	1.07		1
Total Tetra-Furans	**0.690**	J	0.137	10.0	0.70		1
Total Penta-Furans	**0.888**	J	0.107	50.0	1.70		1
Total Hexa-Furans	**3.95**	J	0.156	50.0	1.25		1
Total Hepta-Furans	**13.0**	J	0.200	50.0	1.17		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/18/2008
Sample Matrix:	Filter	**Date Received:**	08/20/2008
Sample Name:	SPD0002RE	**Units:**	ng/Kg
Lab Code:	K0807873-008	**Basis:**	Wet

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 20:57:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	1.000g	**Instrument Name:**	E-HRMS-70
		GC Column:	DB-225
Data File Name:	C15326#5	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	ND	U	0.924	10.0			1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1396.335	70		24-169	0.77	1.053
37Cl-2,3,7,8-TCDD	800	780.783	98		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0015	**Units:**	ng/Kg
Lab Code:	K0807873-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 00:54:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.410g	**Instrument Name:**	E-HRMS-01
Percent Solids:	92.9	**GC Column:**	DB-5
Data File Name:	U129697	**Blank File Name:**	U129691
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129688

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**1.51**		0.0238	0.354	0.68	1.001	1
1,2,3,7,8-PeCDD	ND	U	0.151	1.77			1
1,2,3,4,7,8-HxCDD	**2.08**		0.210	1.77	1.19	1.000	1
1,2,3,6,7,8-HxCDD	**7.90**		0.275	1.77	1.21	1.000	1
1,2,3,7,8,9-HxCDD	**6.16**		0.227	1.77	1.31	1.008	1
1,2,3,4,6,7,8-HpCDD	**104**	B	0.117	1.77	1.04	1.000	1
OCDD	**767**	B	0.0732	3.54	0.89	1.000	1
2,3,7,8-TCDF	**12.8**	C	1.53	0.354	0.79	1.001	1
1,2,3,7,8-PeCDF	**7.87**		0.324	1.77	1.64	1.000	1
2,3,4,7,8-PeCDF	**22.5**		0.202	1.77	1.58	1.000	1
1,2,3,4,7,8-HxCDF	**91.7**		0.0753	1.77	1.23	1.000	1
1,2,3,6,7,8-HxCDF	**29.1**		0.0746	1.77	1.28	1.000	1
1,2,3,7,8,9-HxCDF	**0.472**	JK	0.0817	1.77	0.93	1.000	1
2,3,4,6,7,8-HxCDF	**37.6**		0.0881	1.77	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	**252**	B	0.185	1.77	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	**47.6**		0.205	1.77	1.04	1.000	1
OCDF	**566**	B	0.0601	3.54	0.89	1.003	1
Total Tetra-Dioxins	**12.3**		0.0238	0.354	0.79		1
Total Penta-Dioxins	ND	U	0.151	1.77			1
Total Hexa-Dioxins	**43.2**		0.210	1.77	1.35		1
Total Hepta-Dioxins	**200**		0.117	1.77	1.03		1
Total Tetra-Furans	**220**		1.53	0.354	0.75		1
Total Penta-Furans	**930**		0.202	1.77	1.58		1
Total Hexa-Furans	**441**		0.0753	1.77	1.23		1
Total Hepta-Furans	**487**		0.185	1.77	1.04		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0015RE	**Units:**	ng/Kg
Lab Code:	K0807873-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 14:27:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.410g	**Instrument Name:**	E-HRMS-70
Percent Solids:	92.9	**GC Column:**	DB-225
Data File Name:	C15319#2	**Blank File Name:**	C15319#1
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15318#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**9.88**		1.14	0.354	0.78	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1360.818	68		24-169	0.76	1.055
37Cl-2,3,7,8-TCDD	800	843.013	105		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0020	**Units:**	ng/Kg
Lab Code:	K0807873-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 01:43:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.137g	**Instrument Name:**	E-HRMS-01
Percent Solids:		**GC Column:**	DB-5
Data File Name:	U129698	**Blank File Name:**	U129691
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129688

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**1.15**		0.0163	0.388	0.75	1.001	1
1,2,3,7,8-PeCDD	**5.82**		0.0808	1.94	1.48	1.000	1
1,2,3,4,7,8-HxCDD	**5.82**		0.0872	1.94	1.24	1.000	1
1,2,3,6,7,8-HxCDD	**26.4**		0.114	1.94	1.23	1.000	1
1,2,3,7,8,9-HxCDD	**19.8**		0.0943	1.94	1.28	1.008	1
1,2,3,4,6,7,8-HpCDD	**400**	B	0.124	1.94	1.03	1.000	1
OCDD	**2920**	BE	0.0565	3.88	0.89	1.000	1
2,3,7,8-TCDF	**20.1**	C	0.327	0.388	0.76	1.001	1
1,2,3,7,8-PeCDF	**5.99**		0.416	1.94	1.67	1.001	1
2,3,4,7,8-PeCDF	**21.1**		0.0892	1.94	1.58	1.000	1
1,2,3,4,7,8-HxCDF	**43.6**		0.141	1.94	1.25	1.000	1
1,2,3,6,7,8-HxCDF	**35.2**		0.181	1.94	1.24	1.000	1
1,2,3,7,8,9-HxCDF	**0.565**	J	0.184	1.94	1.29	1.000	1
2,3,4,6,7,8-HxCDF	**75.9**		0.187	1.94	1.30	1.000	1
1,2,3,4,6,7,8-HpCDF	**4270**	BE	0.229	1.94	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	**19.9**		0.261	1.94	1.04	1.000	1
OCDF	**2260**	BE	0.0432	3.88	0.89	1.004	1
Total Tetra-Dioxins	**34.5**		0.0163	0.388	0.78		1
Total Penta-Dioxins	**31.5**		0.0808	1.94	1.39		1
Total Hexa-Dioxins	**188**		0.0872	1.94	1.25		1
Total Hepta-Dioxins	**786**		0.124	1.94	1.04		1
Total Tetra-Furans	**376**		0.327	0.388	0.81		1
Total Penta-Furans	**1140**		0.0892	1.94	1.57		1
Total Hexa-Furans	**1470**		0.141	1.94	1.23		1
Total Hepta-Furans	**7680**		0.229	1.94	1.06		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0020DL	**Units:**	ng/Kg
Lab Code:	K0807873-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/17/08 13:46:0(
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.137g	**Instrument Name:**	E-HRMS-01
Percent Solids:	85.5	**GC Column:**	DB-5
Data File Name:	U129856	**Blank File Name:**	U129691
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129854

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.28	38.8			100
1,2,3,7,8-PeCDD	**5.19**	JK	2.04	194	1.08	1.000	100
1,2,3,4,7,8-HxCDD	**6.28**	JK	2.38	194	1.50	1.000	100
1,2,3,6,7,8-HxCDD	**27.4**	J	3.31	194	1.36	1.000	100
1,2,3,7,8,9-HxCDD	**16.7**	JK	2.67	194	0.93	1.008	100
1,2,3,4,6,7,8-HpCDD	**364**	B	3.34	194	0.95	1.000	100
OCDD	**2220**	B	3.38	388	0.90	1.000	100
2,3,7,8-TCDF	**12.6**	CJK	4.71	38.8	0.56	1.001	100
1,2,3,7,8-PeCDF	ND	U	10.2	194			100
2,3,4,7,8-PeCDF	ND	U	11.4	194			100
1,2,3,4,7,8-HxCDF	**30.9**	JK	24.1	194	1.03	1.000	100
1,2,3,6,7,8-HxCDF	**33.2**	J	25.3	194	1.32	1.000	100
1,2,3,7,8,9-HxCDF	ND	U	21.8	194			100
2,3,4,6,7,8-HxCDF	**56.3**	JK	22.4	194	0.97	1.000	100
1,2,3,4,6,7,8-HpCDF	**4290**	B	14.5	194	1.05	1.000	100
1,2,3,4,7,8,9-HpCDF	ND	U	12.1	194			100
OCDF	**1580**	B	3.92	388	0.89	1.004	100
Total Tetra-Dioxins	**8.91**	J	2.28	38.8	0.77		100
Total Penta-Dioxins	ND	U	2.04	194			100
Total Hexa-Dioxins	**161**	J	2.38	194	1.09		100
Total Hepta-Dioxins	**714**		3.34	194	1.10		100
Total Tetra-Furans	**185**		4.71	38.8	0.68		100
Total Penta-Furans	**693**		11.4	194	1.47		100
Total Hexa-Furans	**2510**		24.1	194	1.17		100
Total Hepta-Furans	**7220**		14.5	194	1.05		100

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0020RE	**Units:**	ng/Kg
Lab Code:	K0807873-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 14:59:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.137g	**Instrument Name:**	E-HRMS-70
Percent Solids:	85.5	**GC Column:**	DB-225
Data File Name:	C15319#3	**Blank File Name:**	C15319#1
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15318#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**11.0**		0.223	0.388	0.73	1.002	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1162.471	58		24-169	0.75	1.054
37Cl-2,3,7,8-TCDD	800	731.844	91		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0024	**Units:**	ng/Kg
Lab Code:	K0807873-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 02:31:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.750g	**Instrument Name:**	E-HRMS-01
Percent Solids:	95.6	**GC Column:**	DB-5
Data File Name:	U129699	**Blank File Name:**	U129691
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129688

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.452**	K	0.0300	0.340	0.63	1.001	1
1,2,3,7,8-PeCDD	**2.08**		0.0335	1.70	1.58	1.000	1
1,2,3,4,7,8-HxCDD	**2.26**		0.0294	1.70	1.21	1.000	1
1,2,3,6,7,8-HxCDD	**9.66**		0.0363	1.70	1.25	1.000	1
1,2,3,7,8,9-HxCDD	**6.55**		0.0309	1.70	1.26	1.008	1
1,2,3,4,6,7,8-HpCDD	**167**	B	0.0989	1.70	1.03	1.000	1
OCDD	**1540**	BE	0.0809	3.40	0.90	1.000	1
2,3,7,8-TCDF	**3.97**	C	0.0569	0.340	0.76	1.001	1
1,2,3,7,8-PeCDF	**1.25**	JK	0.302	1.70	1.86	1.001	1
2,3,4,7,8-PeCDF	**3.90**		0.387	1.70	1.73	1.000	1
1,2,3,4,7,8-HxCDF	**7.03**		0.0544	1.70	1.29	1.000	1
1,2,3,6,7,8-HxCDF	**7.38**		0.0557	1.70	1.23	1.000	1
1,2,3,7,8,9-HxCDF	**0.130**	JK	0.0592	1.70	1.04	1.000	1
2,3,4,6,7,8-HxCDF	**16.7**		0.0654	1.70	1.24	1.000	1
1,2,3,4,6,7,8-HpCDF	**490**	B	0.299	1.70	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	**3.16**		0.356	1.70	1.03	1.000	1
OCDF	**252**	B	0.0664	3.40	0.88	1.004	1
Total Tetra-Dioxins	**43.8**		0.0300	0.340	0.77		1
Total Penta-Dioxins	**38.8**		0.0335	1.70	1.55		1
Total Hexa-Dioxins	**104**		0.0294	1.70	1.27		1
Total Hepta-Dioxins	**339**		0.0989	1.70	1.06		1
Total Tetra-Furans	**73.1**		0.0569	0.340	0.79		1
Total Penta-Furans	**264**		0.387	1.70	1.58		1
Total Hexa-Furans	**263**		0.0544	1.70	1.23		1
Total Hepta-Furans	**832**		0.299	1.70	1.05		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0024RE	**Units:**	ng/Kg
Lab Code:	K0807873-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 15:32:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.750g	**Instrument Name:**	E-HRMS-70
Percent Solids:	95.6	**GC Column:**	DB-225
Data File Name:	C15319#4	**Blank File Name:**	C15319#1
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15318#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**1.87**		0.291	0.340	0.65	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1040.437	52		24-169	0.76	1.054
37Cl-2,3,7,8-TCDD	800	571.848	71		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0027	**Units:**	ng/Kg
Lab Code:	K0807873-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 03:20:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.540g	**Instrument Name:**	E-HRMS-01
Percent Solids:	91.7	**GC Column:**	DB-5
Data File Name:	U129700	**Blank File Name:**	U129691
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129688

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.352**	J	0.0208	0.357	0.70	1.001	1
1,2,3,7,8-PeCDD	**1.81**		0.0382	1.79	1.70	1.000	1
1,2,3,4,7,8-HxCDD	**1.73**	J	0.0286	1.79	1.20	1.000	1
1,2,3,6,7,8-HxCDD	**7.56**		0.0360	1.79	1.29	1.000	1
1,2,3,7,8,9-HxCDD	**5.11**		0.0304	1.79	1.19	1.008	1
1,2,3,4,6,7,8-HpCDD	**125**	B	0.113	1.79	1.04	1.000	1
OCDD	**1070**	B	0.0825	3.57	0.89	1.000	1
2,3,7,8-TCDF	**3.70**	C	0.0324	0.357	0.79	1.001	1
1,2,3,7,8-PeCDF	**1.31**	J	0.245	1.79	1.70	1.000	1
2,3,4,7,8-PeCDF	**4.33**		0.265	1.79	1.53	1.000	1
1,2,3,4,7,8-HxCDF	**7.82**		0.0486	1.79	1.19	1.000	1
1,2,3,6,7,8-HxCDF	**6.70**		0.0502	1.79	1.18	1.000	1
1,2,3,7,8,9-HxCDF	**0.118**	J	0.0567	1.79	1.10	1.001	1
2,3,4,6,7,8-HxCDF	**14.5**		0.0579	1.79	1.20	1.000	1
1,2,3,4,6,7,8-HpCDF	**245**	B	0.287	1.79	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	**3.49**		0.325	1.79	1.05	1.000	1
OCDF	**157**	B	0.0666	3.57	0.90	1.004	1
Total Tetra-Dioxins	**7.47**		0.0208	0.357	0.75		1
Total Penta-Dioxins	**6.62**		0.0382	1.79	1.46		1
Total Hexa-Dioxins	**62.6**		0.0286	1.79	1.27		1
Total Hepta-Dioxins	**251**		0.113	1.79	1.05		1
Total Tetra-Furans	**50.5**		0.0324	0.357	0.80		1
Total Penta-Furans	**243**		0.265	1.79	1.58		1
Total Hexa-Furans	**187**		0.0486	1.79	1.32		1
Total Hepta-Furans	**431**		0.287	1.79	1.04		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0027RE	**Units:**	ng/Kg
Lab Code:	K0807873-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 16:05:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.540g	**Instrument Name:**	E-HRMS-70
Percent Solids:	91.7	**GC Column:**	DB-225
Data File Name:	C15319#5	**Blank File Name:**	C15319#1
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15318#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**2.55**		0.147	0.357	0.76	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1186.358	59		24-169	0.77	1.055
37Cl-2,3,7,8-TCDD	800	614.229	77		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0030	**Units:**	ng/Kg
Lab Code:	K0807873-005	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 09:32:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.641g	**Instrument Name:**	E-HRMS-02
Percent Solids:	92.4	**GC Column:**	DB-5
Data File Name:	U217401	**Blank File Name:**	U129691
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217399

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.330**	J	0.0263	0.353	0.87	1.001	1
1,2,3,7,8-PeCDD	**1.68**	J	0.254	1.77	1.63	1.000	1
1,2,3,4,7,8-HxCDD	**1.59**	J	0.205	1.77	1.25	1.000	1
1,2,3,6,7,8-HxCDD	**6.95**		0.280	1.77	1.21	1.000	1
1,2,3,7,8,9-HxCDD	**4.92**		0.225	1.77	1.36	1.008	1
1,2,3,4,6,7,8-HpCDD	**111**		0.228	1.77	1.03	1.000	1
OCDD	**909**		0.864	3.53	0.89	1.000	1
2,3,7,8-TCDF	**3.96**	C	1.70	0.353	0.73	1.001	1
1,2,3,7,8-PeCDF	**1.11**	J	0.274	1.77	1.64	1.000	1
2,3,4,7,8-PeCDF	**5.46**		0.368	1.77	1.55	1.000	1
1,2,3,4,7,8-HxCDF	**8.55**		0.175	1.77	1.31	1.000	1
1,2,3,6,7,8-HxCDF	**6.95**		0.179	1.77	1.25	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.254	1.77			1
2,3,4,6,7,8-HxCDF	**8.34**		0.240	1.77	1.33	1.000	1
1,2,3,4,6,7,8-HpCDF	**228**		0.614	1.77	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	**2.53**		0.819	1.77	0.92	1.000	1
OCDF	**129**		0.442	3.53	0.87	1.004	1
Total Tetra-Dioxins	**8.34**		0.0263	0.353	0.79		1
Total Penta-Dioxins	**8.88**		0.254	1.77	1.43		1
Total Hexa-Dioxins	**61.5**		0.205	1.77	1.22		1
Total Hepta-Dioxins	**227**		0.228	1.77	1.06		1
Total Tetra-Furans	**94.1**		1.70	0.353	0.72		1
Total Penta-Furans	**377**		0.368	1.77	1.53		1
Total Hexa-Furans	**238**		0.175	1.77	1.24		1
Total Hepta-Furans	**381**		0.614	1.77	1.04		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0030RE	**Units:**	ng/Kg
Lab Code:	K0807873-005	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 16:16:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.641g	**Instrument Name:**	E-HRMS-70
Percent Solids:	92.4	**GC Column:**	DB-225
Data File Name:	C15322#19	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**2.59**	K	0.334	0.353	0.61	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	574.957	29		24-169	0.80	1.055
37Cl-2,3,7,8-TCDD	800	318.697	40		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0033	**Units:**	ng/Kg
Lab Code:	K0807873-006	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 15:16:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.640g	**Instrument Name:**	E-HRMS-02
Percent Solids:	94.9	**GC Column:**	DB-5
Data File Name:	U217406	**Blank File Name:**	U129691
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217399

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.245**	J	0.0108	0.344	0.65	1.001	1
1,2,3,7,8-PeCDD	**1.40**	J	0.293	1.72	1.56	1.000	1
1,2,3,4,7,8-HxCDD	**0.924**	J	0.0708	1.72	1.21	1.001	1
1,2,3,6,7,8-HxCDD	**6.06**		0.0946	1.72	1.27	1.000	1
1,2,3,7,8,9-HxCDD	**3.35**		0.0768	1.72	1.17	1.008	1
1,2,3,4,6,7,8-HpCDD	**51.1**		0.0686	1.72	1.05	1.000	1
OCDD	**378**		0.709	3.44	0.91	1.000	1
2,3,7,8-TCDF	**2.18**	C	1.68	0.344	0.76	1.001	1
1,2,3,7,8-PeCDF	**0.716**	J	0.543	1.72	1.47	1.001	1
2,3,4,7,8-PeCDF	**2.79**		0.642	1.72	1.58	1.001	1
1,2,3,4,7,8-HxCDF	**4.64**		0.0826	1.72	1.15	1.000	1
1,2,3,6,7,8-HxCDF	**3.83**		0.0831	1.72	1.19	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.133	1.72			1
2,3,4,6,7,8-HxCDF	**9.53**		0.112	1.72	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	**102**		0.179	1.72	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	**1.77**		0.234	1.72	1.08	1.000	1
OCDF	**61.2**		0.301	3.44	0.89	1.004	1
Total Tetra-Dioxins	**9.59**		0.0108	0.344	0.78		1
Total Penta-Dioxins	**15.3**		0.293	1.72	1.70		1
Total Hexa-Dioxins	**61.4**		0.0708	1.72	1.26		1
Total Hepta-Dioxins	**112**		0.0686	1.72	1.04		1
Total Tetra-Furans	**45.6**		1.68	0.344	0.76		1
Total Penta-Furans	**211**		0.642	1.72	1.50		1
Total Hexa-Furans	**123**		0.0826	1.72	1.25		1
Total Hepta-Furans	**180**		0.179	1.72	1.02		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0033RE	**Units:**	ng/Kg
Lab Code:	K0807873-006	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 15:11:00
Prep Method:	Method	**Date Extracted:**	8/28/08
Sample Amount:	30.640g	**Instrument Name:**	E-HRMS-70
Percent Solids:	94.9	**GC Column:**	DB-225
Data File Name:	C15322#17	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**1.58**		0.0946	0.344	0.74	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1138.832	57		24-169	0.79	1.054
37Cl-2,3,7,8-TCDD	800	568.571	71		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0036	**Units:**	ng/Kg
Lab Code:	K0807873-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 21:33:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.727g	**Instrument Name:**	E-HRMS-02
Percent Solids:	96.6	**GC Column:**	DB-5
Data File Name:	U217413	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.0653**	JK	0.00950	0.337	0.53	1.001	1
1,2,3,7,8-PeCDD	**0.555**	J	0.0107	1.68	1.48	1.000	1
1,2,3,4,7,8-HxCDD	**0.227**	J	0.0161	1.68	1.35	1.000	1
1,2,3,6,7,8-HxCDD	**1.05**	J	0.0210	1.68	1.24	1.000	1
1,2,3,7,8,9-HxCDD	**0.620**	J	0.0172	1.68	1.28	1.009	1
1,2,3,4,6,7,8-HpCDD	**3.53**	B	0.0204	1.68	1.06	1.000	1
OCDD	**14.6**	B	0.0474	3.37	0.92	1.000	1
2,3,7,8-TCDF	**1.28**	C	0.0959	0.337	0.78	1.001	1
1,2,3,7,8-PeCDF	**0.235**	J	0.173	1.68	1.45	1.001	1
2,3,4,7,8-PeCDF	**3.58**		0.169	1.68	1.56	1.001	1
1,2,3,4,7,8-HxCDF	**1.59**	J	0.0264	1.68	1.16	1.000	1
1,2,3,6,7,8-HxCDF	**5.47**		0.0267	1.68	1.23	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.0290	1.68			1
2,3,4,6,7,8-HxCDF	**4.22**		0.0278	1.68	1.18	1.000	1
1,2,3,4,6,7,8-HpCDF	**32.0**	B	0.0140	1.68	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**0.378**	J	0.0152	1.68	0.92	1.000	1
OCDF	**10.0**	B	0.0427	3.37	0.87	1.004	1
Total Tetra-Dioxins	**1.76**		0.00950	0.337	0.78		1
Total Penta-Dioxins	**6.46**		0.0107	1.68	1.53		1
Total Hexa-Dioxins	**11.1**		0.0161	1.68	1.27		1
Total Hepta-Dioxins	**7.76**		0.0204	1.68	1.08		1
Total Tetra-Furans	**72.6**		0.0959	0.337	0.85		1
Total Penta-Furans	**369**		0.169	1.68	1.51		1
Total Hexa-Furans	**128**		0.0264	1.68	1.24		1
Total Hepta-Furans	**56.5**		0.0140	1.68	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0036RE	**Units:**	ng/Kg
Lab Code:	K0807873-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 08:38:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.727g	**Instrument Name:**	E-HRMS-70
Percent Solids:	96.6	**GC Column:**	DB-225
Data File Name:	C15322#5	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**0.833**		0.0925	0.337	0.88	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1242.781	62		24-169	0.81	1.055
37Cl-2,3,7,8-TCDD	800	716.753	90		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0040	**Units:**	ng/Kg
Lab Code:	K0807873-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 22:20:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.487g	**Instrument Name:**	E-HRMS-02
Percent Solids:	95.6	**GC Column:**	DB-5
Data File Name:	U217414	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.0108	0.343			1
1,2,3,7,8-PeCDD	ND	U	0.0132	1.72			1
1,2,3,4,7,8-HxCDD	ND	U	0.0183	1.72			1
1,2,3,6,7,8-HxCDD	**0.0337**	J	0.0248	1.72	1.07	1.000	1
1,2,3,7,8,9-HxCDD	ND	U	0.0200	1.72			1
1,2,3,4,6,7,8-HpCDD	**0.469**	BJ	0.0196	1.72	0.96	1.000	1
OCDD	**4.66**	B	0.0544	3.43	0.90	1.001	1
2,3,7,8-TCDF	ND	U	0.0115	0.343			1
1,2,3,7,8-PeCDF	ND	U	0.0135	1.72			1
2,3,4,7,8-PeCDF	ND	U	0.0126	1.72			1
1,2,3,4,7,8-HxCDF	ND	U	0.0133	1.72			1
1,2,3,6,7,8-HxCDF	ND	U	0.0133	1.72			1
1,2,3,7,8,9-HxCDF	ND	U	0.0154	1.72			1
2,3,4,6,7,8-HxCDF	**0.0329**	J	0.0138	1.72	1.34	1.000	1
1,2,3,4,6,7,8-HpCDF	**0.111**	BJ	0.0102	1.72	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0108	1.72			1
OCDF	**0.182**	BJ	0.0336	3.43	0.78	1.004	1
Total Tetra-Dioxins	**0.0238**	J	0.0108	0.343	0.78		1
Total Penta-Dioxins	ND	U	0.0132	1.72			1
Total Hexa-Dioxins	**0.0337**	J	0.0183	1.72	1.07		1
Total Hepta-Dioxins	**0.901**	J	0.0196	1.72	1.03		1
Total Tetra-Furans	ND	U	0.0115	0.343			1
Total Penta-Furans	**0.272**	J	0.0126	1.72	1.34		1
Total Hexa-Furans	**0.290**	J	0.0133	1.72	1.17		1
Total Hepta-Furans	**0.233**	J	0.0102	1.72	0.99		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0043	**Units:**	ng/Kg
Lab Code:	K0807873-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 23:08:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	31.034g	**Instrument Name:**	E-HRMS-02
Percent Solids:	91.9	**GC Column:**	DB-5
Data File Name:	U217415	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.366**		0.0115	0.351	0.73	1.001	1
1,2,3,7,8-PeCDD	**1.27**	J	0.0364	1.75	1.58	1.000	1
1,2,3,4,7,8-HxCDD	**1.05**	J	0.0373	1.75	1.34	1.000	1
1,2,3,6,7,8-HxCDD	**3.13**		0.0500	1.75	1.26	1.000	1
1,2,3,7,8,9-HxCDD	**3.07**		0.0405	1.75	1.25	1.008	1
1,2,3,4,6,7,8-HpCDD	**36.4**	B	0.0178	1.75	1.06	1.000	1
OCDD	**242**	B	0.122	3.51	0.91	1.000	1
2,3,7,8-TCDF	**6.22**	C	0.0390	0.351	0.75	1.001	1
1,2,3,7,8-PeCDF	**1.17**	J	0.0603	1.75	1.58	1.000	1
2,3,4,7,8-PeCDF	**2.92**		0.0555	1.75	1.52	1.001	1
1,2,3,4,7,8-HxCDF	**2.61**		0.0789	1.75	1.25	1.000	1
1,2,3,6,7,8-HxCDF	**2.69**		0.0796	1.75	1.26	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.0966	1.75			1
2,3,4,6,7,8-HxCDF	**2.72**	K	0.0842	1.75	1.66	1.000	1
1,2,3,4,6,7,8-HpCDF	**9.86**	B	0.228	1.75	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	**0.538**	J	0.242	1.75	0.99	1.000	1
OCDF	**11.6**	B	0.0697	3.51	0.86	1.004	1
Total Tetra-Dioxins	**42.3**		0.0115	0.351	0.78		1
Total Penta-Dioxins	**54.5**		0.0364	1.75	1.52		1
Total Hexa-Dioxins	**53.2**		0.0373	1.75	1.22		1
Total Hepta-Dioxins	**69.6**		0.0178	1.75	1.04		1
Total Tetra-Furans	**69.3**		0.0390	0.351	0.73		1
Total Penta-Furans	**134**		0.0555	1.75	1.51		1
Total Hexa-Furans	**44.0**		0.0789	1.75	1.21		1
Total Hepta-Furans	**20.4**		0.228	1.75	1.04		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0043RE	**Units:**	ng/Kg
Lab Code:	K0807873-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 08:05:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	31.034g	**Instrument Name:**	E-HRMS-70
Percent Solids:	91.9	**GC Column:**	DB-225
Data File Name:	C15322#4	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**3.39**		0.106	0.351	0.76	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1192.681	60		24-169	0.79	1.054
37Cl-2,3,7,8-TCDD	800	780.899	98		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0046	**Units:**	ng/Kg
Lab Code:	K0807873-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/6/08 00:43:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.603g	**Instrument Name:**	E-HRMS-02
Percent Solids:	96.8	**GC Column:**	DB-5
Data File Name:	U217417	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.382**		0.0118	0.338	0.74	1.001	1
1,2,3,7,8-PeCDD	**2.17**		0.231	1.69	1.55	1.000	1
1,2,3,4,7,8-HxCDD	**2.67**		0.0432	1.69	1.25	1.000	1
1,2,3,6,7,8-HxCDD	**13.4**		0.0593	1.69	1.23	1.000	1
1,2,3,7,8,9-HxCDD	**7.40**		0.0473	1.69	1.25	1.008	1
1,2,3,4,6,7,8-HpCDD	**272**	B	0.0635	1.69	1.04	1.001	1
OCDD	**2830**	BE	1.24	3.38	0.91	1.000	1
2,3,7,8-TCDF	**3.90**	C	0.0309	0.338	0.75	1.001	1
1,2,3,7,8-PeCDF	**1.74**		0.0695	1.69	1.47	1.000	1
2,3,4,7,8-PeCDF	**5.75**		0.0691	1.69	1.59	1.001	1
1,2,3,4,7,8-HxCDF	**13.8**		0.0898	1.69	1.28	1.000	1
1,2,3,6,7,8-HxCDF	**11.5**		0.0915	1.69	1.24	1.000	1
1,2,3,7,8,9-HxCDF	**0.156**	JK	0.148	1.69	1.77	1.000	1
2,3,4,6,7,8-HxCDF	**13.9**		0.111	1.69	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	**672**	B	0.0594	1.69	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**5.38**		0.0787	1.69	1.05	1.000	1
OCDF	**346**	B	0.322	3.38	0.88	1.004	1
Total Tetra-Dioxins	**4.89**		0.0118	0.338	0.76		1
Total Penta-Dioxins	**11.6**		0.231	1.69	1.49		1
Total Hexa-Dioxins	**95.0**		0.0432	1.69	1.24		1
Total Hepta-Dioxins	**558**		0.0635	1.69	1.05		1
Total Tetra-Furans	**80.9**		0.0309	0.338	0.77		1
Total Penta-Furans	**400**		0.0691	1.69	1.52		1
Total Hexa-Furans	**758**		0.0898	1.69	1.19		1
Total Hepta-Furans	**1150**		0.0594	1.69	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0046RE	**Units:**	ng/Kg
Lab Code:	K0807873-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 09:43:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.603g	**Instrument Name:**	E-HRMS-70
Percent Solids:	96.8	**GC Column:**	DB-225
Data File Name:	C15322#7	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**2.69**		0.104	0.338	0.80	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1042.212	52		24-169	0.79	1.055
37Cl-2,3,7,8-TCDD	800	589.027	74		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0049	**Units:**	ng/Kg
Lab Code:	K0807873-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 23:55:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.130g	**Instrument Name:**	E-HRMS-02
Percent Solids:	92.6	**GC Column:**	DB-5
Data File Name:	U217416	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.00677	0.358			1
1,2,3,7,8-PeCDD	**0.0348**	J	0.0142	1.79	1.61	1.001	1
1,2,3,4,7,8-HxCDD	**0.0335**	J	0.0263	1.79	1.23	1.000	1
1,2,3,6,7,8-HxCDD	**0.139**	J	0.0360	1.79	1.09	1.000	1
1,2,3,7,8,9-HxCDD	**0.0967**	J	0.0289	1.79	1.34	1.008	1
1,2,3,4,6,7,8-HpCDD	**2.08**	B	0.0285	1.79	1.05	1.000	1
OCDD	**17.3**	B	0.170	3.58	0.90	1.000	1
2,3,7,8-TCDF	**0.172**	CJ	0.0348	0.358	0.79	1.001	1
1,2,3,7,8-PeCDF	**0.0476**	JK	0.0299	1.79	1.30	1.001	1
2,3,4,7,8-PeCDF	**0.154**	J	0.0275	1.79	1.59	1.001	1
1,2,3,4,7,8-HxCDF	**0.240**	J	0.0140	1.79	1.18	1.000	1
1,2,3,6,7,8-HxCDF	**0.0636**	J	0.0143	1.79	1.21	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.0171	1.79			1
2,3,4,6,7,8-HxCDF	**0.110**	J	0.0153	1.79	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	**0.716**	BJ	0.0137	1.79	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	**0.131**	J	0.0141	1.79	1.10	1.000	1
OCDF	**1.76**	BJ	0.0889	3.58	0.88	1.004	1
Total Tetra-Dioxins	**0.176**	J	0.00677	0.358	0.82		1
Total Penta-Dioxins	**0.169**	J	0.0142	1.79	1.37		1
Total Hexa-Dioxins	**1.24**	J	0.0263	1.79	1.08		1
Total Hepta-Dioxins	**4.20**		0.0285	1.79	1.04		1
Total Tetra-Furans	**0.573**		0.0348	0.358	0.84		1
Total Penta-Furans	**2.00**		0.0275	1.79	1.52		1
Total Hexa-Furans	**1.59**	J	0.0140	1.79	1.22		1
Total Hepta-Furans	**1.79**	J	0.0137	1.79	1.01		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0049RE	**Units:**	ng/Kg
Lab Code:	K0807873-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 09:11:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.130g	**Instrument Name:**	E-HRMS-70
Percent Solids:	92.6	**GC Column:**	DB-225
Data File Name:	C15322#6	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	ND	U	0.101	0.358			1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1135.035	57		24-169	0.80	1.055
37Cl-2,3,7,8-TCDD	800	712.702	89		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0054	**Units:**	ng/Kg
Lab Code:	K0807873-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/6/08 01:31:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.907g	**Instrument Name:**	E-HRMS-02
Percent Solids:	92.3	**GC Column:**	DB-5
Data File Name:	U217418	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.285**	J	0.0120	0.351	0.78	1.001	1
1,2,3,7,8-PeCDD	**0.819**	J	0.0579	1.75	1.45	1.000	1
1,2,3,4,7,8-HxCDD	**0.920**	J	0.0845	1.75	1.42	1.001	1
1,2,3,6,7,8-HxCDD	**18.7**		0.119	1.75	1.25	1.000	1
1,2,3,7,8,9-HxCDD	**4.55**		0.0938	1.75	1.25	1.008	1
1,2,3,4,6,7,8-HpCDD	**262**	B	0.108	1.75	1.05	1.000	1
OCDD	**2190**	BE	1.06	3.51	0.90	1.000	1
2,3,7,8-TCDF	**14.7**	C	0.133	0.351	0.78	1.001	1
1,2,3,7,8-PeCDF	**4.61**		0.0664	1.75	1.51	1.001	1
2,3,4,7,8-PeCDF	**23.6**		0.0664	1.75	1.57	1.000	1
1,2,3,4,7,8-HxCDF	**84.9**		0.123	1.75	1.22	1.000	1
1,2,3,6,7,8-HxCDF	**16.6**		0.126	1.75	1.22	1.000	1
1,2,3,7,8,9-HxCDF	**0.407**	J	0.197	1.75	1.30	1.000	1
2,3,4,6,7,8-HxCDF	**8.63**		0.161	1.75	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	**335**	B	0.148	1.75	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**47.8**		0.187	1.75	1.00	1.000	1
OCDF	**609**	B	0.510	3.51	0.89	1.004	1
Total Tetra-Dioxins	**6.63**		0.0120	0.351	0.79		1
Total Penta-Dioxins	**5.72**		0.0579	1.75	1.46		1
Total Hexa-Dioxins	**108**		0.0845	1.75	1.30		1
Total Hepta-Dioxins	**449**		0.108	1.75	1.04		1
Total Tetra-Furans	**163**		0.133	0.351	0.73		1
Total Penta-Furans	**348**		0.0664	1.75	1.51		1
Total Hexa-Furans	**474**		0.123	1.75	1.23		1
Total Hepta-Furans	**782**		0.148	1.75	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0054RE	**Units:**	ng/Kg
Lab Code:	K0807873-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 10:16:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.907g	**Instrument Name:**	E-HRMS-70
Percent Solids:	92.3	**GC Column:**	DB-225
Data File Name:	C15322#8	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**9.06**		0.142	0.351	0.77	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	916.817	46		24-169	0.80	1.055
37Cl-2,3,7,8-TCDD	800	516.360	65		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0055	**Units:**	ng/Kg
Lab Code:	K0807873-035	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 13:12:00
Prep Method:	Method	**Date Extracted:**	9/4/08
Sample Amount:	32.873g	**Instrument Name:**	E-HRMS-01
Percent Solids:	87.8	**GC Column:**	DB-5
Data File Name:	U129752	**Blank File Name:**	U129751
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129750

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.0155	0.346			1
1,2,3,7,8-PeCDD	**0.0673**	JK	0.0191	1.73	1.18	1.000	1
1,2,3,4,7,8-HxCDD	**0.174**	J	0.0137	1.73	1.18	1.000	1
1,2,3,6,7,8-HxCDD	**0.289**	J	0.0185	1.73	1.28	1.000	1
1,2,3,7,8,9-HxCDD	**0.334**	JK	0.0151	1.73	1.52	1.008	1
1,2,3,4,6,7,8-HpCDD	**7.06**	B	0.171	1.73	1.03	1.000	1
OCDD	**277**	B	0.0315	3.46	0.88	1.000	1
2,3,7,8-TCDF	ND	U	0.0243	0.346			1
1,2,3,7,8-PeCDF	**0.0266**	JK	0.0118	1.73	0.98	1.001	1
2,3,4,7,8-PeCDF	**0.0362**	J	0.0125	1.73	1.36	1.000	1
1,2,3,4,7,8-HxCDF	**0.0785**	J	0.0209	1.73	1.16	1.000	1
1,2,3,6,7,8-HxCDF	**0.0581**	J	0.0212	1.73	1.18	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.0236	1.73			1
2,3,4,6,7,8-HxCDF	**0.0727**	J	0.0212	1.73	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	**0.874**	BJ	0.0881	1.73	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.111	1.73			1
OCDF	**2.55**	BJ	0.0354	3.46	0.85	1.004	1
Total Tetra-Dioxins	ND	U	0.0155	0.346			1
Total Penta-Dioxins	**0.160**	J	0.0191	1.73	1.49		1
Total Hexa-Dioxins	**2.03**		0.0137	1.73	1.24		1
Total Hepta-Dioxins	**13.4**		0.171	1.73	1.01		1
Total Tetra-Furans	ND	U	0.0243	0.346			1
Total Penta-Furans	**0.200**	J	0.0125	1.73	1.71		1
Total Hexa-Furans	**0.743**	J	0.0209	1.73	1.17		1
Total Hepta-Furans	**2.03**		0.0881	1.73	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0056	**Units:**	ng/Kg
Lab Code:	K0807873-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/6/08 02:18:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.705g	**Instrument Name:**	E-HRMS-02
Percent Solids:	88.0	**GC Column:**	DB-5
Data File Name:	U217419	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.933**		0.0174	0.370	0.74	1.001	1
1,2,3,7,8-PeCDD	**4.04**		0.0320	1.85	1.47	1.000	1
1,2,3,4,7,8-HxCDD	**3.14**		0.136	1.85	1.31	1.000	1
1,2,3,6,7,8-HxCDD	**21.4**		0.187	1.85	1.28	1.000	1
1,2,3,7,8,9-HxCDD	**9.33**		0.149	1.85	1.27	1.008	1
1,2,3,4,6,7,8-HpCDD	**300**	B	0.0791	1.85	1.05	1.000	1
OCDD	**2360**	BE	1.01	3.70	0.91	1.000	1
2,3,7,8-TCDF	**39.5**	C	0.0300	0.370	0.76	1.001	1
1,2,3,7,8-PeCDF	**12.5**		0.0544	1.85	1.53	1.001	1
2,3,4,7,8-PeCDF	**54.1**		0.0540	1.85	1.54	1.001	1
1,2,3,4,7,8-HxCDF	**183**	K	0.103	1.85	1.23	1.000	1
1,2,3,6,7,8-HxCDF	**35.8**		0.106	1.85	1.25	1.000	1
1,2,3,7,8,9-HxCDF	**0.748**	J	0.183	1.85	1.05	1.000	1
2,3,4,6,7,8-HxCDF	**19.8**		0.137	1.85	1.28	1.000	1
1,2,3,4,6,7,8-HpCDF	**310**	B	0.116	1.85	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**105**		0.147	1.85	1.03	1.000	1
OCDF	**1170**	B	0.686	3.70	0.88	1.004	1
Total Tetra-Dioxins	**195**		0.0174	0.370	0.77		1
Total Penta-Dioxins	**90.5**		0.0320	1.85	1.43		1
Total Hexa-Dioxins	**289**		0.136	1.85	1.29		1
Total Hepta-Dioxins	**533**		0.0791	1.85	1.05		1
Total Tetra-Furans	**328**		0.0300	0.370	0.76		1
Total Penta-Furans	**719**		0.0540	1.85	1.52		1
Total Hexa-Furans	**594**		0.103	1.85	1.24		1
Total Hepta-Furans	**841**		0.116	1.85	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0056RE	**Units:**	ng/Kg
Lab Code:	K0807873-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 10:49:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.705g	**Instrument Name:**	E-HRMS-70
Percent Solids:	88.0	**GC Column:**	DB-225
Data File Name:	C15322#9	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**25.4**		0.239	0.370	0.79	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1151.972	58		24-169	0.79	1.055
37Cl-2,3,7,8-TCDD	800	584.090	73		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0059	**Units:**	ng/Kg
Lab Code:	K0807873-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/6/08 03:06:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	31.074g	**Instrument Name:**	E-HRMS-02
Percent Solids:	94.8	**GC Column:**	DB-5
Data File Name:	U217420	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.180**	JK	0.00845	0.339	0.63	1.001	1
1,2,3,7,8-PeCDD	**0.941**	J	0.0316	1.70	1.55	1.000	1
1,2,3,4,7,8-HxCDD	**0.583**	J	0.0755	1.70	1.07	1.000	1
1,2,3,6,7,8-HxCDD	**2.88**		0.103	1.70	1.27	1.000	1
1,2,3,7,8,9-HxCDD	**1.74**		0.0823	1.70	1.28	1.008	1
1,2,3,4,6,7,8-HpCDD	**38.5**	B	0.184	1.70	1.05	1.000	1
OCDD	**392**	B	0.572	3.39	0.90	1.000	1
2,3,7,8-TCDF	**5.73**	C	0.0238	0.339	0.75	1.001	1
1,2,3,7,8-PeCDF	**0.751**	J	0.0388	1.70	1.74	1.001	1
2,3,4,7,8-PeCDF	**2.84**		0.0419	1.70	1.56	1.001	1
1,2,3,4,7,8-HxCDF	**2.96**		0.0455	1.70	1.24	1.000	1
1,2,3,6,7,8-HxCDF	**2.49**		0.0464	1.70	1.19	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.0785	1.70			1
2,3,4,6,7,8-HxCDF	**2.40**		0.0581	1.70	1.11	1.000	1
1,2,3,4,6,7,8-HpCDF	**26.3**	B	0.226	1.70	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	**0.685**	J	0.312	1.70	1.02	1.000	1
OCDF	**19.7**	B	0.342	3.39	0.87	1.004	1
Total Tetra-Dioxins	**2.63**		0.00845	0.339	0.75		1
Total Penta-Dioxins	**8.07**		0.0316	1.70	1.34		1
Total Hexa-Dioxins	**25.7**		0.0755	1.70	1.29		1
Total Hepta-Dioxins	**80.5**		0.184	1.70	1.02		1
Total Tetra-Furans	**51.4**		0.0238	0.339	0.77		1
Total Penta-Furans	**172**		0.0419	1.70	1.52		1
Total Hexa-Furans	**122**		0.0455	1.70	1.24		1
Total Hepta-Furans	**48.7**		0.226	1.70	1.05		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
Sample Name:	SPD0059RE	**Units:**	ng/Kg
Lab Code:	K0807873-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 11:21:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	31.074g	**Instrument Name:**	E-HRMS-70
Percent Solids:	94.8	**GC Column:**	DB-225
Data File Name:	C15322#10	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**3.78**		0.134	0.339	0.79	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	941.490	47		24-169	0.81	1.054
37Cl-2,3,7,8-TCDD	800	496.238	62		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Filter	**Date Received:**	08/22/2008
Sample Name:	SPD0064	**Units:**	ng/Kg
Lab Code:	K0807873-018	**Basis:**	Wet

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/7/08 11:40:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	1.000g	**Instrument Name:**	E-HRMS-04
		GC Column:	DB-5
Data File Name:	P200240	**Blank File Name:**	U129725
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200236

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.131	10.0			1
1,2,3,7,8-PeCDD	ND	U	0.165	50.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.139	50.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.175	50.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.150	50.0			1
1,2,3,4,6,7,8-HpCDD	**8.80**	BJ	0.221	50.0	1.04	1.000	1
OCDD	**69.2**	BJ	0.330	100	0.89	1.000	1
2,3,7,8-TCDF	ND	U	0.125	10.0			1
1,2,3,7,8-PeCDF	ND	U	0.124	50.0			1
2,3,4,7,8-PeCDF	ND	U	0.118	50.0			1
1,2,3,4,7,8-HxCDF	**0.686**	J	0.184	50.0	1.15	1.000	1
1,2,3,6,7,8-HxCDF	ND	U	0.184	50.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.216	50.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.204	50.0			1
1,2,3,4,6,7,8-HpCDF	**2.98**	BJ	0.208	50.0	0.90	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.241	50.0			1
OCDF	**14.3**	BJ	0.511	100	0.82	1.004	1
Total Tetra-Dioxins	ND	U	0.131	10.0			1
Total Penta-Dioxins	ND	U	0.165	50.0			1
Total Hexa-Dioxins	ND	U	0.139	50.0			1
Total Hepta-Dioxins	**21.9**	J	0.221	50.0	0.98		1
Total Tetra-Furans	ND	U	0.125	10.0			1
Total Penta-Furans	ND	U	0.118	50.0			1
Total Hexa-Furans	**0.686**	J	0.184	50.0	1.15		1
Total Hepta-Furans	**7.36**	J	0.208	50.0	0.90		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0066	**Units:**	ng/Kg
Lab Code:	K0807873-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/7/08 12:39:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.658g	**Instrument Name:**	E-HRMS-01
Percent Solids:	73.3	**GC Column:**	DB-5
Data File Name:	U129728	**Blank File Name:**	U217412
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129723

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.641**		0.0137	0.445	0.70	1.001	1
1,2,3,7,8-PeCDD	**1.59**	J	0.0178	2.22	1.56	1.000	1
1,2,3,4,7,8-HxCDD	**1.73**	J	0.0186	2.22	1.25	1.000	1
1,2,3,6,7,8-HxCDD	**5.14**		0.0265	2.22	1.25	1.000	1
1,2,3,7,8,9-HxCDD	**5.53**		0.0209	2.22	1.28	1.008	1
1,2,3,4,6,7,8-HpCDD	**69.2**	B	0.0200	2.22	1.03	1.000	1
OCDD	**460**	B	0.0551	4.45	0.89	1.000	1
2,3,7,8-TCDF	**18.8**	C	0.0801	0.445	0.78	1.002	1
1,2,3,7,8-PeCDF	**3.80**		0.0678	2.22	1.59	1.001	1
2,3,4,7,8-PeCDF	**8.04**		0.0736	2.22	1.59	1.000	1
1,2,3,4,7,8-HxCDF	**22.7**		0.0426	2.22	1.27	1.000	1
1,2,3,6,7,8-HxCDF	**7.88**		0.0438	2.22	1.29	1.000	1
1,2,3,7,8,9-HxCDF	**0.238**	J	0.0507	2.22	1.14	1.001	1
2,3,4,6,7,8-HxCDF	**13.3**	K	0.0447	2.22	1.31	1.000	1
1,2,3,4,6,7,8-HpCDF	**52.5**	B	0.0597	2.22	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**3.21**		0.0684	2.22	1.07	1.000	1
OCDF	**52.6**	B	0.0584	4.45	0.89	1.003	1
Total Tetra-Dioxins	**19.5**		0.0137	0.445	0.75		1
Total Penta-Dioxins	**27.5**		0.0178	2.22	1.52		1
Total Hexa-Dioxins	**53.2**		0.0186	2.22	1.23		1
Total Hepta-Dioxins	**136**		0.0200	2.22	1.05		1
Total Tetra-Furans	**92.4**		0.0801	0.445	0.80		1
Total Penta-Furans	**101**		0.0736	2.22	1.56		1
Total Hexa-Furans	**103**		0.0426	2.22	1.26		1
Total Hepta-Furans	**83.7**		0.0597	2.22	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0066RE	**Units:**	ng/Kg
Lab Code:	K0807873-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 10:06:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.658g	**Instrument Name:**	E-HRMS-70
Percent Solids:	73.3	**GC Column:**	DB-225
Data File Name:	C15331#3	**Blank File Name:**	C15331#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15331#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**3.85**		1.52	0.445	0.78	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1047.876	52		24-169	0.75	1.054
37Cl-2,3,7,8-TCDD	800	710.625	89		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0077	**Units:**	ng/Kg
Lab Code:	K0807873-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/7/08 13:27:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.968g	**Instrument Name:**	E-HRMS-01
Percent Solids:	79.2	**GC Column:**	DB-5
Data File Name:	U129729	**Blank File Name:**	U217412
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129723

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.880**		0.0134	0.408	0.79	1.001	1
1,2,3,7,8-PeCDD	**2.35**		0.0214	2.04	1.46	1.001	1
1,2,3,4,7,8-HxCDD	**3.24**		0.0176	2.04	1.20	1.000	1
1,2,3,6,7,8-HxCDD	**10.4**		0.0237	2.04	1.27	1.000	1
1,2,3,7,8,9-HxCDD	**8.97**		0.0193	2.04	1.26	1.008	1
1,2,3,4,6,7,8-HpCDD	**227**	B	0.0270	2.04	1.04	1.000	1
OCDD	**1770**	BE	0.0731	4.08	0.89	1.000	1
2,3,7,8-TCDF	**11.1**	C	0.0556	0.408	0.79	1.001	1
1,2,3,7,8-PeCDF	**2.76**	K	0.0528	2.04	1.68	1.001	1
2,3,4,7,8-PeCDF	**5.05**		0.0568	2.04	1.60	1.000	1
1,2,3,4,7,8-HxCDF	**10.9**	K	0.0650	2.04	1.25	1.000	1
1,2,3,6,7,8-HxCDF	**5.03**		0.0660	2.04	1.29	1.000	1
1,2,3,7,8,9-HxCDF	**0.188**	J	0.0755	2.04	1.22	1.000	1
2,3,4,6,7,8-HxCDF	**7.53**	K	0.0658	2.04	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	**57.9**	B	0.0572	2.04	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	**3.14**		0.0692	2.04	1.03	1.000	1
OCDF	**116**	B	0.0688	4.08	0.88	1.003	1
Total Tetra-Dioxins	**25.3**		0.0134	0.408	0.79		1
Total Penta-Dioxins	**26.5**		0.0214	2.04	1.39		1
Total Hexa-Dioxins	**99.4**		0.0176	2.04	1.28		1
Total Hepta-Dioxins	**417**		0.0270	2.04	1.06		1
Total Tetra-Furans	**82.0**		0.0556	0.408	0.85		1
Total Penta-Furans	**91.1**		0.0568	2.04	1.57		1
Total Hexa-Furans	**76.7**		0.0650	2.04	1.26		1
Total Hepta-Furans	**125**		0.0572	2.04	1.04		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0077RE	**Units:**	ng/Kg
Lab Code:	K0807873-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 10:39:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.968g	**Instrument Name:**	E-HRMS-70
Percent Solids:	79.2	**GC Column:**	DB-225
Data File Name:	C15331#4	**Blank File Name:**	C15331#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15331#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**4.66**		0.0903	0.408	0.74	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	951.569	48		24-169	0.76	1.055
37Cl-2,3,7,8-TCDD	800	713.680	89		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0086	**Units:**	ng/Kg
Lab Code:	K0807873-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/6/08 03:54:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.866g	**Instrument Name:**	E-HRMS-02
Percent Solids:	87.6	**GC Column:**	DB-5
Data File Name:	U217421	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**1.68**		0.0146	0.370	0.79	1.001	1
1,2,3,7,8-PeCDD	**3.28**		0.0393	1.85	1.54	1.000	1
1,2,3,4,7,8-HxCDD	**4.89**		0.0798	1.85	1.22	1.000	1
1,2,3,6,7,8-HxCDD	**15.2**		0.112	1.85	1.27	1.000	1
1,2,3,7,8,9-HxCDD	**14.8**		0.0884	1.85	1.26	1.008	1
1,2,3,4,6,7,8-HpCDD	**332**	B	0.451	1.85	1.04	1.000	1
OCDD	**2730**	BE	1.17	3.70	0.90	1.000	1
2,3,7,8-TCDF	**9.56**	C	0.0167	0.370	0.75	1.001	1
1,2,3,7,8-PeCDF	**3.05**	K	0.0424	1.85	1.54	1.001	1
2,3,4,7,8-PeCDF	**5.53**		0.0420	1.85	1.50	1.001	1
1,2,3,4,7,8-HxCDF	**12.9**		0.0578	1.85	1.27	1.000	1
1,2,3,6,7,8-HxCDF	**5.51**		0.0612	1.85	1.22	1.000	1
1,2,3,7,8,9-HxCDF	**0.196**	J	0.0962	1.85	1.15	1.000	1
2,3,4,6,7,8-HxCDF	**7.97**		0.0647	1.85	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	**87.2**	B	0.267	1.85	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	**4.23**		0.361	1.85	1.07	1.000	1
OCDF	**225**	B	0.238	3.70	0.88	1.004	1
Total Tetra-Dioxins	**25.1**		0.0146	0.370	0.77		1
Total Penta-Dioxins	**38.2**		0.0393	1.85	1.56		1
Total Hexa-Dioxins	**164**		0.0798	1.85	1.24		1
Total Hepta-Dioxins	**657**		0.451	1.85	1.06		1
Total Tetra-Furans	**72.8**		0.0167	0.370	0.73		1
Total Penta-Furans	**125**		0.0420	1.85	1.55		1
Total Hexa-Furans	**153**		0.0578	1.85	1.25		1
Total Hepta-Furans	**208**		0.267	1.85	1.02		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0086RE	**Units:**	ng/Kg
Lab Code:	K0807873-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 11:54:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.866g	**Instrument Name:**	E-HRMS-70
Percent Solids:	87.6	**GC Column:**	DB-225
Data File Name:	C15322#11	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**6.20**		0.174	0.370	0.75	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	941.124	47		24-169	0.80	1.055
37Cl-2,3,7,8-TCDD	800	692.241	87		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
Sample Name:	SPD0094	**Units:**	ng/Kg
Lab Code:	K0807873-024	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/6/08 04:41:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.558g	**Instrument Name:**	E-HRMS-02
Percent Solids:	91.1	**GC Column:**	DB-5
Data File Name:	U217422	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.524**		0.0119	0.359	0.76	1.001	1
1,2,3,7,8-PeCDD	**3.23**		0.0125	1.80	1.60	1.000	1
1,2,3,4,7,8-HxCDD	**5.73**		0.181	1.80	1.27	1.000	1
1,2,3,6,7,8-HxCDD	**27.0**		0.249	1.80	1.26	1.000	1
1,2,3,7,8,9-HxCDD	**12.8**		0.199	1.80	1.24	1.008	1
1,2,3,4,6,7,8-HpCDD	**851**	BE	0.799	1.80	1.05	1.000	1
OCDD	**12300**	BE	3.98	3.59	0.91	1.000	1
2,3,7,8-TCDF	**10.7**	C	0.0144	0.359	0.77	1.001	1
1,2,3,7,8-PeCDF	**2.48**	K	0.0283	1.80	1.48	1.000	1
2,3,4,7,8-PeCDF	**4.62**		0.0272	1.80	1.57	1.001	1
1,2,3,4,7,8-HxCDF	**10.2**		0.0458	1.80	1.22	1.000	1
1,2,3,6,7,8-HxCDF	**5.59**		0.0472	1.80	1.21	1.000	1
1,2,3,7,8,9-HxCDF	**0.147**	J	0.0710	1.80	1.39	1.000	1
2,3,4,6,7,8-HxCDF	**8.72**		0.0487	1.80	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	**231**	B	0.180	1.80	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**7.83**		0.239	1.80	1.08	1.000	1
OCDF	**1900**	BE	1.10	3.59	0.89	1.004	1
Total Tetra-Dioxins	**18.2**		0.0119	0.359	0.79		1
Total Penta-Dioxins	**25.2**		0.0125	1.80	1.75		1
Total Hexa-Dioxins	**149**		0.181	1.80	1.26		1
Total Hepta-Dioxins	**1550**		0.799	1.80	1.07		1
Total Tetra-Furans	**83.3**		0.0144	0.359	0.76		1
Total Penta-Furans	**115**		0.0272	1.80	1.53		1
Total Hexa-Furans	**239**		0.0458	1.80	1.23		1
Total Hepta-Furans	**952**		0.180	1.80	1.03		1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
Sample Name:	SPD0094RE	**Units:**	ng/Kg
Lab Code:	K0807873-024	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 12:27:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	30.558g	**Instrument Name:**	E-HRMS-70
Percent Solids:	91.1	**GC Column:**	DB-225
Data File Name:	C15322#12	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**5.32**		0.0818	0.359	0.77	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1368.557	68		24-169	0.78	1.055
37Cl-2,3,7,8-TCDD	800	752.532	94		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	Service Request:	K0807836
Project:	T-117 EAA Soils INV./A0006-15F	Date Collected:	08/18/2008
Sample Matrix:	Soil	Date Received:	08/20/2008
Sample Name:	SPD0106	Units:	ng/Kg
Lab Code:	K0807836-015	Basis:	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	Date Analyzed:	9/5/08 15:06:00
Prep Method:	Method	Date Extracted:	9/2/08
Sample Amount:	28.981g	Instrument Name:	E-HRMS-01
Percent Solids:	88.8	GC Column:	DB-5
Data File Name:	U129706	Blank File Name:	U129705
ICAL Name:	05/02/08	Cal Ver. File Name:	U129704

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.562**		0.0126	0.389	0.76	1.001	1
1,2,3,7,8-PeCDD	**1.84**	J	0.0214	1.94	1.61	1.000	1
1,2,3,4,7,8-HxCDD	**2.02**		0.0176	1.94	1.19	1.000	1
1,2,3,6,7,8-HxCDD	**5.21**		0.0227	1.94	1.28	1.000	1
1,2,3,7,8,9-HxCDD	**5.62**		0.0189	1.94	1.28	1.008	1
1,2,3,4,6,7,8-HpCDD	**84.6**	B	0.0947	1.94	1.05	1.000	1
OCDD	**646**	B	0.0535	3.89	0.88	1.000	1
2,3,7,8-TCDF	**12.5**	C	0.108	0.389	0.77	1.002	1
1,2,3,7,8-PeCDF	**2.19**		0.0900	1.94	1.47	1.001	1
2,3,4,7,8-PeCDF	**3.63**		0.0892	1.94	1.60	1.000	1
1,2,3,4,7,8-HxCDF	**4.93**		0.0373	1.94	1.25	1.000	1
1,2,3,6,7,8-HxCDF	**2.39**		0.0363	1.94	1.32	1.000	1
1,2,3,7,8,9-HxCDF	**0.0778**	JK	0.0413	1.94	1.01	1.000	1
2,3,4,6,7,8-HxCDF	**3.53**		0.0369	1.94	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	**20.9**	B	0.0495	1.94	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	**1.25**	J	0.0556	1.94	1.06	1.000	1
OCDF	**39.9**		0.0627	3.89	0.90	1.003	1
Total Tetra-Dioxins	**23.3**		0.0126	0.389	0.79		1
Total Penta-Dioxins	**23.0**		0.0214	1.94	1.61		1
Total Hexa-Dioxins	**59.5**		0.0176	1.94	1.27		1
Total Hepta-Dioxins	**165**		0.0947	1.94	1.07		1
Total Tetra-Furans	**89.9**		0.108	0.389	0.79		1
Total Penta-Furans	**72.1**		0.0892	1.94	1.59		1
Total Hexa-Furans	**38.7**		0.0373	1.94	1.23		1
Total Hepta-Furans	**45.7**		0.0495	1.94	1.04		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807836
Project:	T-117 EAA Soils INV./A0006-15F	**Date Collected:**	08/18/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0106RE	**Units:**	ng/Kg
Lab Code:	K0807836-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 15:44:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	28.981g	**Instrument Name:**	E-HRMS-70
Percent Solids:	88.8	**GC Column:**	DB-225
Data File Name:	C15322#18	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**5.83**		0.984	0.389	0.81	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	986.569	49		24-169	0.77	1.054
37Cl-2,3,7,8-TCDD	800	573.076	72		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807836
Project:	T-117 EAA Soils INV./A0006-15F	**Date Collected:**	08/18/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
Sample Name:	SPD0114	**Units:**	ng/Kg
Lab Code:	K0807836-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/5/08 15:52:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	29.405g	**Instrument Name:**	E-HRMS-01
Percent Solids:	90.6	**GC Column:**	DB-5
Data File Name:	U129707	**Blank File Name:**	U129705
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129704

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.844**		0.0179	0.375	0.80	1.001	1
1,2,3,7,8-PeCDD	**2.34**		0.0270	1.88	1.63	1.000	1
1,2,3,4,7,8-HxCDD	**2.41**		0.0419	1.88	1.27	1.000	1
1,2,3,6,7,8-HxCDD	**8.43**		0.0564	1.88	1.27	1.000	1
1,2,3,7,8,9-HxCDD	**7.16**		0.0459	1.88	1.20	1.008	1
1,2,3,4,6,7,8-HpCDD	**130**	B	0.0908	1.88	1.03	1.000	1
OCDD	**1010**	B	0.0509	3.75	0.89	1.000	1
2,3,7,8-TCDF	**16.8**	C	0.0738	0.375	0.79	1.001	1
1,2,3,7,8-PeCDF	**3.20**		0.194	1.88	1.52	1.001	1
2,3,4,7,8-PeCDF	**5.84**		0.200	1.88	1.52	1.000	1
1,2,3,4,7,8-HxCDF	**7.82**		0.0571	1.88	1.26	1.000	1
1,2,3,6,7,8-HxCDF	**4.27**		0.0578	1.88	1.28	1.000	1
1,2,3,7,8,9-HxCDF	**0.0963**	JK	0.0708	1.88	1.51	1.000	1
2,3,4,6,7,8-HxCDF	**6.74**		0.0595	1.88	1.30	1.000	1
1,2,3,4,6,7,8-HpCDF	**59.9**	B	0.0846	1.88	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	**1.98**		0.0947	1.88	1.08	1.000	1
OCDF	**72.6**		0.0463	3.75	0.88	1.003	1
Total Tetra-Dioxins	**39.9**		0.0179	0.375	0.78		1
Total Penta-Dioxins	**34.4**		0.0270	1.88	1.76		1
Total Hexa-Dioxins	**89.5**		0.0419	1.88	1.25		1
Total Hepta-Dioxins	**248**		0.0908	1.88	1.04		1
Total Tetra-Furans	**139**		0.0738	0.375	0.77		1
Total Penta-Furans	**136**		0.200	1.88	1.56		1
Total Hexa-Furans	**110**		0.0571	1.88	1.31		1
Total Hepta-Furans	**118**		0.0846	1.88	1.04		1

Comments:

Client:	Integral Consulting, Incorporated	Service Request:	K0807836
Project:	T-117 EAA Soils INV./A0006-15F	Date Collected:	08/18/2008
Sample Matrix:	Soil	Date Received:	08/20/2008
Sample Name:	SPD0114RE	Units:	ng/Kg
Lab Code:	K0807836-016	Basis:	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	Date Analyzed:	9/8/08 14:38:00
Prep Method:	Method	Date Extracted:	9/2/08
Sample Amount:	29.405g	Instrument Name:	E-HRMS-70
Percent Solids:	90.6	GC Column:	DB-225
Data File Name:	C15322#16	Blank File Name:	C15322#3
ICAL Name:	05/30/08	Cal Ver. File Name:	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	7.38		1.42	0.375	0.80	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1019.005	51		24-169	0.78	1.055
37Cl-2,3,7,8-TCDD	800	610.676	76		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0132	**Units:**	ng/Kg
Lab Code:	K0807873-038	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 21:17:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.963g	**Instrument Name:**	E-HRMS-01
Percent Solids:	84.9	**GC Column:**	DB-5
Data File Name:	U129746	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129743

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.500**		0.0134	0.380	0.67	1.001	1
1,2,3,7,8-PeCDD	**1.49**	J	0.0228	1.90	1.59	1.000	1
1,2,3,4,7,8-HxCDD	**1.78**	J	0.0176	1.90	1.20	1.000	1
1,2,3,6,7,8-HxCDD	**5.45**		0.0243	1.90	1.28	1.000	1
1,2,3,7,8,9-HxCDD	**5.26**		0.0196	1.90	1.22	1.008	1
1,2,3,4,6,7,8-HpCDD	**83.8**	B	0.0203	1.90	1.03	1.001	1
OCDD	**607**	B	0.0642	3.80	0.89	1.000	1
2,3,7,8-TCDF	**7.15**	C	0.0140	0.380	0.80	1.001	1
1,2,3,7,8-PeCDF	**1.53**	JK	0.130	1.90	1.55	1.001	1
2,3,4,7,8-PeCDF	**2.79**		0.135	1.90	1.56	1.000	1
1,2,3,4,7,8-HxCDF	**4.44**	K	0.0381	1.90	1.29	1.000	1
1,2,3,6,7,8-HxCDF	**2.24**		0.0390	1.90	1.33	1.000	1
1,2,3,7,8,9-HxCDF	**0.0656**	JK	0.0460	1.90	0.72	1.000	1
2,3,4,6,7,8-HxCDF	**3.43**		0.0393	1.90	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	**22.7**	B	0.0883	1.90	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	**1.22**	J	0.104	1.90	1.03	1.000	1
OCDF	**42.6**	B	0.0591	3.80	0.88	1.003	1
Total Tetra-Dioxins	**19.2**		0.0134	0.380	0.71		1
Total Penta-Dioxins	**17.8**		0.0228	1.90	1.63		1
Total Hexa-Dioxins	**53.8**		0.0176	1.90	1.29		1
Total Hepta-Dioxins	**165**		0.0203	1.90	1.04		1
Total Tetra-Furans	**61.4**		0.0140	0.380	0.74		1
Total Penta-Furans	**65.1**		0.135	1.90	1.58		1
Total Hexa-Furans	**50.1**		0.0381	1.90	1.21		1
Total Hepta-Furans	**52.1**		0.0883	1.90	1.05		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0132RE	**Units:**	ng/Kg
Lab Code:	K0807873-038	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 11:12:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.963g	**Instrument Name:**	E-HRMS-70
Percent Solids:	84.9	**GC Column:**	DB-225
Data File Name:	C15331#5	**Blank File Name:**	C15331#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15331#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**3.46**		2.47	0.380	0.80	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	436.188	22	Y	24-169	0.75	1.056
37Cl-2,3,7,8-TCDD	800	683.747	85		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0136	**Units:**	ng/Kg
Lab Code:	K0807873-036	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 15:45:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.688g	**Instrument Name:**	E-HRMS-01
Percent Solids:	86.2	**GC Column:**	DB-5
Data File Name:	U129741	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129734

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.253**	J	0.0176	0.378	0.71	1.001	1
1,2,3,7,8-PeCDD	**0.870**	J	0.0311	1.89	1.62	1.000	1
1,2,3,4,7,8-HxCDD	**0.985**	J	0.0411	1.89	1.33	1.000	1
1,2,3,6,7,8-HxCDD	**4.18**		0.0541	1.89	1.23	1.000	1
1,2,3,7,8,9-HxCDD	**3.13**		0.0446	1.89	1.29	1.008	1
1,2,3,4,6,7,8-HpCDD	**82.3**	B	0.141	1.89	1.03	1.000	1
OCDD	**636**	B	0.110	3.78	0.88	1.000	1
2,3,7,8-TCDF	**4.12**	C	0.0518	0.378	0.81	1.001	1
1,2,3,7,8-PeCDF	**1.10**	J	0.0787	1.89	1.46	1.000	1
2,3,4,7,8-PeCDF	**1.75**	J	0.0835	1.89	1.54	1.000	1
1,2,3,4,7,8-HxCDF	**2.83**		0.110	1.89	1.31	1.000	1
1,2,3,6,7,8-HxCDF	**1.44**	J	0.110	1.89	1.27	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.136	1.89			1
2,3,4,6,7,8-HxCDF	**1.77**	J	0.116	1.89	1.29	1.000	1
1,2,3,4,6,7,8-HpCDF	**19.7**	B	0.0832	1.89	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	**1.02**	J	0.102	1.89	1.00	1.000	1
OCDF	**69.8**	B	0.0910	3.78	0.88	1.004	1
Total Tetra-Dioxins	**8.44**		0.0176	0.378	0.80		1
Total Penta-Dioxins	**8.02**		0.0311	1.89	1.51		1
Total Hexa-Dioxins	**36.5**		0.0411	1.89	1.23		1
Total Hepta-Dioxins	**156**		0.141	1.89	1.04		1
Total Tetra-Furans	**29.5**		0.0518	0.378	0.72		1
Total Penta-Furans	**29.9**		0.0835	1.89	1.61		1
Total Hexa-Furans	**32.5**		0.110	1.89	1.24		1
Total Hepta-Furans	**59.3**		0.0832	1.89	1.06		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0136RE	**Units:**	ng/Kg
Lab Code:	K0807873-036	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 02:57:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.688g	**Instrument Name:**	E-HRMS-70
Percent Solids:	86.2	**GC Column:**	DB-225
Data File Name:	C15326#16	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**2.37**		0.183	0.378	0.82	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	632.757	32		24-169	0.78	1.053
37Cl-2,3,7,8-TCDD	800	661.509	83		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0138	**Units:**	ng/Kg
Lab Code:	K0807873-037	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 16:33:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	29.912g	**Instrument Name:**	E-HRMS-01
Percent Solids:	84.3	**GC Column:**	DB-5
Data File Name:	U129742	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129734

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.121**	J	0.0125	0.397	0.78	1.001	1
1,2,3,7,8-PeCDD	**0.585**	J	0.0242	1.98	1.40	1.000	1
1,2,3,4,7,8-HxCDD	**0.778**	J	0.0215	1.98	1.27	1.000	1
1,2,3,6,7,8-HxCDD	**8.78**		0.0288	1.98	1.21	1.000	1
1,2,3,7,8,9-HxCDD	**2.81**		0.0235	1.98	1.22	1.008	1
1,2,3,4,6,7,8-HpCDD	**207**	B	0.265	1.98	1.05	1.000	1
OCDD	**2270**	BE	0.0775	3.97	0.88	1.000	1
2,3,7,8-TCDF	**1.49**	C	0.0309	0.397	0.83	1.001	1
1,2,3,7,8-PeCDF	**0.534**	J	0.0601	1.98	1.55	1.001	1
2,3,4,7,8-PeCDF	**0.911**	J	0.0662	1.98	1.49	1.000	1
1,2,3,4,7,8-HxCDF	**3.36**		0.0515	1.98	1.18	1.000	1
1,2,3,6,7,8-HxCDF	**1.58**	J	0.0532	1.98	1.34	1.000	1
1,2,3,7,8,9-HxCDF	**0.128**	JK	0.0647	1.98	0.97	1.000	1
2,3,4,6,7,8-HxCDF	**1.35**	J	0.0550	1.98	1.26	1.000	1
1,2,3,4,6,7,8-HpCDF	**55.4**	B	0.132	1.98	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	**2.36**		0.176	1.98	1.10	1.000	1
OCDF	**158**	B	0.0577	3.97	0.89	1.003	1
Total Tetra-Dioxins	**2.63**		0.0125	0.397	0.81		1
Total Penta-Dioxins	**3.22**		0.0242	1.98	1.57		1
Total Hexa-Dioxins	**38.6**		0.0215	1.98	1.27		1
Total Hepta-Dioxins	**387**		0.265	1.98	1.03		1
Total Tetra-Furans	**11.9**		0.0309	0.397	0.88		1
Total Penta-Furans	**31.0**		0.0662	1.98	1.57		1
Total Hexa-Furans	**85.6**		0.0515	1.98	1.25		1
Total Hepta-Furans	**182**		0.132	1.98	1.05		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
Sample Name:	SPD0138RE	**Units:**	ng/Kg
Lab Code:	K0807873-037	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 03:29:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	29.912g	**Instrument Name:**	E-HRMS-70
Percent Solids:	84.3	**GC Column:**	DB-225
Data File Name:	C15326#17	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**0.803**		0.0800	0.397	0.82	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	912.973	46		24-169	0.78	1.053
37Cl-2,3,7,8-TCDD	800	712.444	89		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
Sample Name:	SPD0143	**Units:**	ng/Kg
Lab Code:	K0807873-025	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/6/08 05:29:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	31.434g	**Instrument Name:**	E-HRMS-02
Percent Solids:	91.4	**GC Column:**	DB-5
Data File Name:	U217423	**Blank File Name:**	U217412
ICAL Name:	04/13/07	**Cal Ver. File Name:**	U217409

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**1.04**		0.0356	0.348	0.75	1.001	1
1,2,3,7,8-PeCDD	**4.16**		0.0203	1.74	1.58	1.000	1
1,2,3,4,7,8-HxCDD	**4.53**		0.0484	1.74	1.26	1.000	1
1,2,3,6,7,8-HxCDD	**15.7**		0.0654	1.74	1.25	1.000	1
1,2,3,7,8,9-HxCDD	**11.4**		0.0527	1.74	1.25	1.008	1
1,2,3,4,6,7,8-HpCDD	**226**	B	0.260	1.74	1.05	1.000	1
OCDD	**1700**	BE	0.791	3.48	0.91	1.000	1
2,3,7,8-TCDF	**21.4**	C	0.0228	0.348	0.76	1.001	1
1,2,3,7,8-PeCDF	**4.76**		0.106	1.74	1.50	1.001	1
2,3,4,7,8-PeCDF	**13.8**		0.100	1.74	1.49	1.001	1
1,2,3,4,7,8-HxCDF	**14.0**		0.0552	1.74	1.24	1.000	1
1,2,3,6,7,8-HxCDF	**14.4**	K	0.0533	1.74	1.22	1.000	1
1,2,3,7,8,9-HxCDF	**0.191**	J	0.0705	1.74	1.07	1.000	1
2,3,4,6,7,8-HxCDF	**19.6**		0.0592	1.74	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	**130**	B	0.185	1.74	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**4.17**		0.239	1.74	1.00	1.000	1
OCDF	**178**	B	0.218	3.48	0.90	1.004	1
Total Tetra-Dioxins	**40.5**		0.0356	0.348	0.78		1
Total Penta-Dioxins	**45.9**		0.0203	1.74	1.50		1
Total Hexa-Dioxins	**133**		0.0484	1.74	1.27		1
Total Hepta-Dioxins	**437**		0.260	1.74	1.04		1
Total Tetra-Furans	**272**		0.0228	0.348	0.78		1
Total Penta-Furans	**729**		0.100	1.74	1.53		1
Total Hexa-Furans	**317**		0.0552	1.74	1.20		1
Total Hepta-Furans	**260**		0.185	1.74	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
Sample Name:	SPD0143RE	**Units:**	ng/Kg
Lab Code:	K0807873-025	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 16:49:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	31.434g	**Instrument Name:**	E-HRMS-70
Percent Solids:	91.4	**GC Column:**	DB-225
Data File Name:	C15322#20	**Blank File Name:**	C15322#3
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15322#2

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**10.8**		0.248	0.348	0.76	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1074.829	54		24-169	0.79	1.054
37Cl-2,3,7,8-TCDD	800	587.292	73		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0145	**Units:**	ng/Kg
Lab Code:	K0807873-031	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 13:19:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.475g	**Instrument Name:**	E-HRMS-01
Percent Solids:	86.5	**GC Column:**	DB-5
Data File Name:	U129738	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129734

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**4.84**		0.0122	0.379	0.78	1.001	1
1,2,3,7,8-PeCDD	**5.38**		0.0228	1.90	1.50	1.000	1
1,2,3,4,7,8-HxCDD	**5.78**		0.0399	1.90	1.27	1.000	1
1,2,3,6,7,8-HxCDD	**21.2**		0.0512	1.90	1.24	1.000	1
1,2,3,7,8,9-HxCDD	**16.4**		0.0427	1.90	1.24	1.008	1
1,2,3,4,6,7,8-HpCDD	**322**	B	0.0230	1.90	1.03	1.000	1
OCDD	**2450**	BE	0.0601	3.79	0.88	1.000	1
2,3,7,8-TCDF	**19.2**	C	0.0509	0.379	0.79	1.001	1
1,2,3,7,8-PeCDF	**3.90**	K	0.157	1.90	1.52	1.001	1
2,3,4,7,8-PeCDF	**11.6**		0.165	1.90	1.60	1.000	1
1,2,3,4,7,8-HxCDF	**13.8**	K	0.188	1.90	1.25	1.000	1
1,2,3,6,7,8-HxCDF	**13.8**		0.194	1.90	1.27	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.215	1.90			1
2,3,4,6,7,8-HxCDF	**16.6**	K	0.198	1.90	1.11	1.000	1
1,2,3,4,6,7,8-HpCDF	**102**	B	0.157	1.90	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	**3.95**		0.189	1.90	0.98	1.000	1
OCDF	**211**	B	0.0585	3.79	0.89	1.004	1
Total Tetra-Dioxins	**52.5**		0.0122	0.379	0.78		1
Total Penta-Dioxins	**50.0**		0.0228	1.90	1.63		1
Total Hexa-Dioxins	**164**		0.0399	1.90	1.24		1
Total Hepta-Dioxins	**616**		0.0230	1.90	1.03		1
Total Tetra-Furans	**341**		0.0509	0.379	0.78		1
Total Penta-Furans	**705**		0.165	1.90	1.59		1
Total Hexa-Furans	**266**		0.188	1.90	1.26		1
Total Hepta-Furans	**238**		0.157	1.90	1.06		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0145RE	**Units:**	ng/Kg
Lab Code:	K0807873-031	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 01:18:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.475g	**Instrument Name:**	E-HRMS-70
Percent Solids:	86.5	**GC Column:**	DB-225
Data File Name:	C15326#13	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**8.89**		0.223	0.379	0.84	1.000	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	567.375	28		24-169	0.78	1.054
37Cl-2,3,7,8-TCDD	800	670.457	84		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Sediment	**Date Received:**	08/26/2008
Sample Name:	SPD0154	**Units:**	ng/Kg
Lab Code:	K0807873-032	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 14:08:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.557g	**Instrument Name:**	E-HRMS-01
Percent Solids:	33.5	**GC Column:**	DB-5
Data File Name:	U129739	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129734

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.918**	J	0.0604	0.977	0.81	1.001	1
1,2,3,7,8-PeCDD	**4.00**	J	0.121	4.88	1.48	1.000	1
1,2,3,4,7,8-HxCDD	**5.02**		0.164	4.88	1.30	1.000	1
1,2,3,6,7,8-HxCDD	**17.0**		0.217	4.88	1.17	1.000	1
1,2,3,7,8,9-HxCDD	**14.8**		0.178	4.88	1.32	1.008	1
1,2,3,4,6,7,8-HpCDD	**495**	B	0.238	4.88	1.05	1.000	1
OCDD	**6060**	BE	0.676	9.77	0.88	1.000	1
2,3,7,8-TCDF	**19.4**	C	0.142	0.977	0.80	1.002	1
1,2,3,7,8-PeCDF	**3.90**	J	0.221	4.88	1.62	1.001	1
2,3,4,7,8-PeCDF	**15.2**		0.240	4.88	1.60	1.000	1
1,2,3,4,7,8-HxCDF	**18.4**		0.111	4.88	1.25	1.000	1
1,2,3,6,7,8-HxCDF	**6.86**		0.115	4.88	1.27	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.145	4.88			1
2,3,4,6,7,8-HxCDF	**10.2**		0.130	4.88	1.29	1.000	1
1,2,3,4,6,7,8-HpCDF	**78.5**	B	0.344	4.88	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	**7.59**		0.493	4.88	1.10	1.000	1
OCDF	**280**	B	0.478	9.77	0.89	1.003	1
Total Tetra-Dioxins	**12.7**		0.0604	0.977	0.76		1
Total Penta-Dioxins	**23.5**		0.121	4.88	1.39		1
Total Hexa-Dioxins	**200**		0.164	4.88	1.26		1
Total Hepta-Dioxins	**1990**		0.238	4.88	1.04		1
Total Tetra-Furans	**166**		0.142	0.977	0.68		1
Total Penta-Furans	**244**		0.240	4.88	1.59		1
Total Hexa-Furans	**187**		0.111	4.88	1.23		1
Total Hepta-Furans	**235**		0.344	4.88	1.04		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Sediment	**Date Received:**	08/26/2008
Sample Name:	SPD0154RE	**Units:**	ng/Kg
Lab Code:	K0807873-032	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 01:51:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.557g	**Instrument Name:**	E-HRMS-70
Percent Solids:	33.5	**GC Column:**	DB-225
Data File Name:	C15326#14	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**11.1**		0.725	0.977	0.76	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	404.162	20	Y	24-169	0.77	1.053
37Cl-2,3,7,8-TCDD	800	563.318	70		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Sediment	**Date Received:**	08/26/2008
Sample Name:	SPD0155	**Units:**	ng/Kg
Lab Code:	K0807873-033	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 14:56:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	31.581g	**Instrument Name:**	E-HRMS-01
Percent Solids:	37.6	**GC Column:**	DB-5
Data File Name:	U129740	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129734

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.878**		0.0755	0.842	0.83	1.001	1
1,2,3,7,8-PeCDD	**4.27**		0.167	4.21	1.50	1.000	1
1,2,3,4,7,8-HxCDD	**6.33**		0.229	4.21	1.36	1.000	1
1,2,3,6,7,8-HxCDD	**23.7**		0.317	4.21	1.22	1.000	1
1,2,3,7,8,9-HxCDD	**12.4**		0.255	4.21	1.27	1.008	1
1,2,3,4,6,7,8-HpCDD	**918**	B	0.327	4.21	1.02	1.000	1
OCDD	**13700**	BE	0.996	8.42	0.88	1.000	1
2,3,7,8-TCDF	**23.0**	C	0.156	0.842	0.77	1.001	1
1,2,3,7,8-PeCDF	**4.58**		0.257	4.21	1.45	1.000	1
2,3,4,7,8-PeCDF	**21.3**		0.305	4.21	1.58	1.000	1
1,2,3,4,7,8-HxCDF	**25.5**		0.206	4.21	1.26	1.000	1
1,2,3,6,7,8-HxCDF	**7.72**		0.221	4.21	1.22	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.342	4.21			1
2,3,4,6,7,8-HxCDF	**7.90**	K	0.276	4.21	1.59	1.000	1
1,2,3,4,6,7,8-HpCDF	**104**	B	0.602	4.21	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	**11.6**		0.856	4.21	1.08	1.000	1
OCDF	**437**	B	0.792	8.42	0.88	1.003	1
Total Tetra-Dioxins	**14.9**		0.0755	0.842	0.69		1
Total Penta-Dioxins	**23.4**		0.167	4.21	1.60		1
Total Hexa-Dioxins	**328**		0.229	4.21	1.27		1
Total Hepta-Dioxins	**4360**		0.327	4.21	1.03		1
Total Tetra-Furans	**263**		0.156	0.842	0.80		1
Total Penta-Furans	**369**		0.305	4.21	1.60		1
Total Hexa-Furans	**269**		0.206	4.21	1.26		1
Total Hepta-Furans	**379**		0.602	4.21	1.04		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Sediment	**Date Received:**	08/26/2008
Sample Name:	SPD0155RE	**Units:**	ng/Kg
Lab Code:	K0807873-033	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 02:24:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	31.581g	**Instrument Name:**	E-HRMS-70
Percent Solids:	37.6	**GC Column:**	DB-225
Data File Name:	C15326#15	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**13.4**		0.498	0.842	0.85	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	416.668	21	Y	24-169	0.77	1.053
37Cl-2,3,7,8-TCDD	800	515.941	64		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
Sample Name:	SPD0156	**Units:**	ng/Kg
Lab Code:	K0807873-034	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/7/08 15:38:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.434g	**Instrument Name:**	E-HRMS-04
Percent Solids:	93.0	**GC Column:**	DB-5
Data File Name:	P200245	**Blank File Name:**	U129725
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200236

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**1.09**		0.00332	0.353	0.79	1.001	1
1,2,3,7,8-PeCDD	**2.74**		0.0130	1.77	1.53	1.000	1
1,2,3,4,7,8-HxCDD	**3.39**		0.00982	1.77	1.23	1.000	1
1,2,3,6,7,8-HxCDD	**13.5**		0.0132	1.77	1.25	1.000	1
1,2,3,7,8,9-HxCDD	**9.57**		0.0110	1.77	1.24	1.008	1
1,2,3,4,6,7,8-HpCDD	**197**	B	0.0418	1.77	1.04	1.000	1
OCDD	**1510**	BE	0.0285	3.53	0.90	1.000	1
2,3,7,8-TCDF	**12.9**	C	0.0206	0.353	0.76	1.001	1
1,2,3,7,8-PeCDF	**3.04**	K	0.0439	1.77	1.59	1.001	1
2,3,4,7,8-PeCDF	**5.37**	K	0.0452	1.77	1.56	1.000	1
1,2,3,4,7,8-HxCDF	**8.54**		0.0369	1.77	1.23	1.000	1
1,2,3,6,7,8-HxCDF	**4.61**		0.0376	1.77	1.22	1.000	1
1,2,3,7,8,9-HxCDF	**0.143**	J	0.0440	1.77	1.13	1.000	1
2,3,4,6,7,8-HxCDF	**7.84**	K	0.0405	1.77	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	**39.8**	B	0.0294	1.77	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	**2.64**		0.0299	1.77	1.01	1.000	1
OCDF	**80.6**	B	0.0269	3.53	0.88	1.004	1
Total Tetra-Dioxins	**33.1**		0.00332	0.353	0.77		1
Total Penta-Dioxins	**31.6**		0.0130	1.77	1.52		1
Total Hexa-Dioxins	**103**		0.00982	1.77	1.24		1
Total Hepta-Dioxins	**367**		0.0418	1.77	1.04		1
Total Tetra-Furans	**113**		0.0206	0.353	0.76		1
Total Penta-Furans	**143**		0.0452	1.77	1.54		1
Total Hexa-Furans	**82.5**		0.0369	1.77	1.22		1
Total Hepta-Furans	**89.1**		0.0294	1.77	1.02		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
Sample Name:	SPD0156RE	**Units:**	ng/Kg
Lab Code:	K0807873-034	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofuraus by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 23:40:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.434g	**Instrument Name:**	E-HRMS-70
Percent Solids:	93.0	**GC Column:**	DB-225
Data File Name:	C15326#10	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**5.94**		0.161	0.353	0.78	1.000	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	659.327	33		24-169	0.79	1.054
37Cl-2,3,7,8-TCDD	800	708.044	89		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
Sample Name:	SPD0164	**Units:**	ng/Kg
Lab Code:	K0807873-022	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/7/08 12:28:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	31.137g	**Instrument Name:**	E-HRMS-04
Percent Solids:	89.3	**GC Column:**	DB-5
Data File Name:	P200241	**Blank File Name:**	U129725
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200236

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.788**		0.00468	0.360	0.73	1.001	1
1,2,3,7,8-PeCDD	**2.94**		0.0143	1.80	1.48	1.000	1
1,2,3,4,7,8-HxCDD	**3.67**		0.0107	1.80	1.23	1.000	1
1,2,3,6,7,8-HxCDD	**10.8**		0.0151	1.80	1.26	1.000	1
1,2,3,7,8,9-HxCDD	**10.3**		0.0122	1.80	1.26	1.008	1
1,2,3,4,6,7,8-HpCDD	**173**	B	0.00820	1.80	1.03	1.000	1
OCDD	**1370**	B	0.0145	3.60	0.89	1.000	1
2,3,7,8-TCDF	**17.4**	C	0.0241	0.360	0.76	1.001	1
1,2,3,7,8-PeCDF	**3.86**	K	0.0678	1.80	1.56	1.000	1
2,3,4,7,8-PeCDF	**7.38**	K	0.0662	1.80	1.58	1.000	1
1,2,3,4,7,8-HxCDF	**14.5**	K	0.0573	1.80	1.22	1.000	1
1,2,3,6,7,8-HxCDF	**6.77**		0.0586	1.80	1.22	1.000	1
1,2,3,7,8,9-HxCDF	**0.219**	J	0.0611	1.80	1.20	1.000	1
2,3,4,6,7,8-HxCDF	**10.5**		0.0615	1.80	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	**55.6**	B	0.0464	1.80	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	**5.89**		0.0497	1.80	1.02	1.000	1
OCDF	**138**	BK	0.0199	3.60	0.88	1.004	1
Total Tetra-Dioxins	**41.3**		0.00468	0.360	0.77		1
Total Penta-Dioxins	**37.8**		0.0143	1.80	1.55		1
Total Hexa-Dioxins	**102**		0.0107	1.80	1.24		1
Total Hepta-Dioxins	**337**		0.00820	1.80	1.04		1
Total Tetra-Furans	**150**		0.0241	0.360	0.76		1
Total Penta-Furans	**198**		0.0662	1.80	1.55		1
Total Hexa-Furans	**108**		0.0573	1.80	1.23		1
Total Hepta-Furans	**126**		0.0464	1.80	1.02		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
Sample Name:	SPD0164RE	**Units:**	ng/Kg
Lab Code:	K0807873-022	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 21:29:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	31.137g	**Instrument Name:**	E-HRMS-70
Percent Solids:	89.3	**GC Column:**	DB-225
Data File Name:	C15326#6	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**7.34**		0.145	0.360	0.78	1.002	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	679.772	34		24-169	0.78	1.052
37Cl-2,3,7,8-TCDD	800	697.214	87		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0184	**Units:**	ng/Kg
Lab Code:	K0807873-026	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/7/08 13:15:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	32.204g	**Instrument Name:**	E-HRMS-04
Percent Solids:	82.3	**GC Column:**	DB-5
Data File Name:	P200242	**Blank File Name:**	U129725
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200236

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**2.18**		0.00426	0.377	0.75	1.001	1
1,2,3,7,8-PeCDD	**1.71**	J	0.00781	1.89	1.54	1.000	1
1,2,3,4,7,8-HxCDD	**2.13**		0.00838	1.89	1.23	1.000	1
1,2,3,6,7,8-HxCDD	**6.23**		0.0115	1.89	1.25	1.000	1
1,2,3,7,8,9-HxCDD	**5.97**		0.00943	1.89	1.25	1.008	1
1,2,3,4,6,7,8-HpCDD	**101**	B	0.0335	1.89	1.04	1.000	1
OCDD	**761**	B	0.0197	3.77	0.90	1.000	1
2,3,7,8-TCDF	**9.61**	C	0.00951	0.377	0.77	1.002	1
1,2,3,7,8-PeCDF	**1.98**	K	0.0234	1.89	1.55	1.001	1
2,3,4,7,8-PeCDF	**3.49**	K	0.0227	1.89	1.57	1.000	1
1,2,3,4,7,8-HxCDF	**4.91**	K	0.00830	1.89	1.22	1.000	1
1,2,3,6,7,8-HxCDF	**2.67**		0.00834	1.89	1.24	1.000	1
1,2,3,7,8,9-HxCDF	**0.0860**	JK	0.00932	1.89	1.14	1.000	1
2,3,4,6,7,8-HxCDF	**4.00**	K	0.00841	1.89	1.24	1.000	1
1,2,3,4,6,7,8-HpCDF	**27.6**	B	0.0156	1.89	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**1.51**	J	0.0161	1.89	1.00	1.000	1
OCDF	**67.6**	B	0.0144	3.77	0.88	1.004	1
Total Tetra-Dioxins	**21.4**		0.00426	0.377	0.77		1
Total Penta-Dioxins	**19.5**		0.00781	1.89	1.50		1
Total Hexa-Dioxins	**60.6**		0.00838	1.89	1.24		1
Total Hepta-Dioxins	**197**		0.0335	1.89	1.04		1
Total Tetra-Furans	**69.2**		0.00951	0.377	0.76		1
Total Penta-Furans	**76.3**		0.0227	1.89	1.56		1
Total Hexa-Furans	**42.8**		0.00830	1.89	1.22		1
Total Hepta-Furans	**63.2**		0.0156	1.89	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0184RE	**Units:**	ng/Kg
Lab Code:	K0807873-026	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 22:02:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	32.204g	**Instrument Name:**	E-HRMS-70
Percent Solids:	82.3	**GC Column:**	DB-225
Data File Name:	C15326#7	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**3.98**		0.144	0.377	0.76	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	790.893	40		24-169	0.77	1.053
37Cl-2,3,7,8-TCDD	800	762.426	95		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0186	**Units:**	ng/Kg
Lab Code:	K0807873-027	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/7/08 14:03:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.333g	**Instrument Name:**	E-HRMS-04
Percent Solids:	83.3	**GC Column:**	DB-5
Data File Name:	P200243	**Blank File Name:**	U129725
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200236

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.684**		0.00483	0.396	0.72	1.000	1
1,2,3,7,8-PeCDD	**2.63**		0.00950	1.98	1.51	1.000	1
1,2,3,4,7,8-HxCDD	**2.92**		0.00748	1.98	1.25	1.000	1
1,2,3,6,7,8-HxCDD	**9.71**		0.0103	1.98	1.24	1.000	1
1,2,3,7,8,9-HxCDD	**9.01**		0.00839	1.98	1.26	1.008	1
1,2,3,4,6,7,8-HpCDD	**140**	B	0.0490	1.98	1.05	1.000	1
OCDD	**1110**	B	0.0215	3.96	0.89	1.000	1
2,3,7,8-TCDF	**20.1**	C	0.00942	0.396	0.76	1.001	1
1,2,3,7,8-PeCDF	**5.06**	K	0.0395	1.98	1.56	1.001	1
2,3,4,7,8-PeCDF	**8.30**	K	0.0405	1.98	1.54	1.000	1
1,2,3,4,7,8-HxCDF	**10.8**	K	0.0249	1.98	1.20	1.000	1
1,2,3,6,7,8-HxCDF	**5.84**		0.0248	1.98	1.23	1.000	1
1,2,3,7,8,9-HxCDF	**0.225**	J	0.0279	1.98	1.32	1.001	1
2,3,4,6,7,8-HxCDF	**8.79**	K	0.0269	1.98	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	**37.6**	B	0.0146	1.98	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**2.44**		0.0149	1.98	1.02	1.000	1
OCDF	**73.5**	B	0.0296	3.96	0.87	1.004	1
Total Tetra-Dioxins	**25.8**		0.00483	0.396	0.78		1
Total Penta-Dioxins	**27.7**		0.00950	1.98	1.53		1
Total Hexa-Dioxins	**88.9**		0.00748	1.98	1.25		1
Total Hepta-Dioxins	**271**		0.0490	1.98	1.04		1
Total Tetra-Furans	**138**		0.00942	0.396	0.78		1
Total Penta-Furans	**153**		0.0405	1.98	1.54		1
Total Hexa-Furans	**112**		0.0249	1.98	1.24		1
Total Hepta-Furans	**79.6**		0.0146	1.98	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0186RE	**Units:**	ng/Kg
Lab Code:	K0807873-027	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 22:35:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.333g	**Instrument Name:**	E-HRMS-70
Percent Solids:	83.3	**GC Column:**	DB-225
Data File Name:	C15326#8	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**9.49**		0.130	0.396	0.80	1.002	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	649.398	32		24-169	0.78	1.052
37Cl-2,3,7,8-TCDD	800	715.274	89		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0194	**Units:**	ng/Kg
Lab Code:	K0807873-029	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 11:45:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.642g	**Instrument Name:**	E-HRMS-01
Percent Solids:	90.7	**GC Column:**	DB-5
Data File Name:	U129736	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129734

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.941**		0.0134	0.360	0.76	1.001	1
1,2,3,7,8-PeCDD	**3.50**		0.0264	1.80	1.53	1.000	1
1,2,3,4,7,8-HxCDD	**3.80**		0.0331	1.80	1.23	1.000	1
1,2,3,6,7,8-HxCDD	**13.3**		0.0437	1.80	1.23	1.000	1
1,2,3,7,8,9-HxCDD	**11.1**		0.0359	1.80	1.25	1.008	1
1,2,3,4,6,7,8-HpCDD	**201**	B	0.139	1.80	1.04	1.000	1
OCDD	**1560**	BE	0.0539	3.60	0.88	1.000	1
2,3,7,8-TCDF	**14.6**	C	0.0544	0.360	0.78	1.001	1
1,2,3,7,8-PeCDF	**3.30**	K	0.124	1.80	1.61	1.001	1
2,3,4,7,8-PeCDF	**8.05**		0.117	1.80	1.59	1.000	1
1,2,3,4,7,8-HxCDF	**12.2**	K	0.0756	1.80	1.28	1.000	1
1,2,3,6,7,8-HxCDF	**8.57**		0.0784	1.80	1.25	1.000	1
1,2,3,7,8,9-HxCDF	**0.152**	J	0.0828	1.80	1.41	1.000	1
2,3,4,6,7,8-HxCDF	**8.78**	K	0.0755	1.80	1.30	1.000	1
1,2,3,4,6,7,8-HpCDF	**68.4**	B	0.149	1.80	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	**3.75**		0.162	1.80	1.03	1.000	1
OCDF	**162**	B	0.0533	3.60	0.89	1.003	1
Total Tetra-Dioxins	**41.6**		0.0134	0.360	0.77		1
Total Penta-Dioxins	**38.3**		0.0264	1.80	1.62		1
Total Hexa-Dioxins	**121**		0.0331	1.80	1.23		1
Total Hepta-Dioxins	**393**		0.139	1.80	1.03		1
Total Tetra-Furans	**176**		0.0544	0.360	0.84		1
Total Penta-Furans	**370**		0.117	1.80	1.59		1
Total Hexa-Furans	**155**		0.0756	1.80	1.25		1
Total Hepta-Furans	**170**		0.149	1.80	1.06		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0194RE	**Units:**	ng/Kg
Lab Code:	K0807873-029	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 00:13:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.642g	**Instrument Name:**	E-HRMS-70
Percent Solids:	90.7	**GC Column:**	DB-225
Data File Name:	C15326#11	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**6.90**		0.238	0.360	0.80	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	579.844	29		24-169	0.78	1.053
37Cl-2,3,7,8-TCDD	800	639.060	80		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0204	**Units:**	ng/Kg
Lab Code:	K0807873-030	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 12:31:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	29.997g	**Instrument Name:**	E-HRMS-01
Percent Solids:	86.0	**GC Column:**	DB-5
Data File Name:	U129737	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129734

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**1.32**		0.0223	0.388	0.74	1.001	1
1,2,3,7,8-PeCDD	**6.76**		0.0709	1.94	1.56	1.000	1
1,2,3,4,7,8-HxCDD	**4.96**		0.0742	1.94	1.25	1.000	1
1,2,3,6,7,8-HxCDD	**21.1**		0.102	1.94	1.26	1.000	1
1,2,3,7,8,9-HxCDD	**13.3**		0.0820	1.94	1.25	1.008	1
1,2,3,4,6,7,8-HpCDD	**258**	B	0.204	1.94	1.04	1.000	1
OCDD	**2040**	BE	0.0856	3.88	0.88	1.000	1
2,3,7,8-TCDF	**33.1**	C	0.129	0.388	0.79	1.001	1
1,2,3,7,8-PeCDF	**6.72**		0.505	1.94	1.73	1.001	1
2,3,4,7,8-PeCDF	**46.7**		0.511	1.94	1.58	1.000	1
1,2,3,4,7,8-HxCDF	**22.2**		0.172	1.94	1.32	1.000	1
1,2,3,6,7,8-HxCDF	**63.3**		0.173	1.94	1.25	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.194	1.94			1
2,3,4,6,7,8-HxCDF	**84.3**		0.183	1.94	1.25	1.000	1
1,2,3,4,6,7,8-HpCDF	**168**	B	0.212	1.94	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	**6.36**		0.255	1.94	1.04	1.000	1
OCDF	**250**	B	0.0820	3.88	0.90	1.003	1
Total Tetra-Dioxins	**47.5**		0.0223	0.388	0.79		1
Total Penta-Dioxins	**43.9**		0.0709	1.94	1.63		1
Total Hexa-Dioxins	**171**		0.0742	1.94	1.24		1
Total Hepta-Dioxins	**494**		0.204	1.94	1.04		1
Total Tetra-Furans	**1990**		0.129	0.388	0.79		1
Total Penta-Furans	**4450**		0.511	1.94	1.58		1
Total Hexa-Furans	**1260**		0.172	1.94	1.27		1
Total Hepta-Furans	**363**		0.212	1.94	1.05		1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0204RE	**Units:**	ng/Kg
Lab Code:	K0807873-030	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 00:46:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	29.997g	**Instrument Name:**	E-HRMS-70
Percent Solids:	86.0	**GC Column:**	DB-225
Data File Name:	C15326#12	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**16.4**		12.5	0.388	0.88	1.000	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	642.253	32		24-169	0.78	1.053
37Cl-2,3,7,8-TCDD	800	701.814	88		35-197	NA	0.989

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0212	**Units:**	ng/Kg
Lab Code:	K0807873-028	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/7/08 14:50:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	31.804g	**Instrument Name:**	E-HRMS-04
Percent Solids:	85.0	**GC Column:**	DB-5
Data File Name:	P200244	**Blank File Name:**	U129725
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200236

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.415**		0.00363	0.370	0.71	1.000	1
1,2,3,7,8-PeCDD	**1.16**	J	0.00666	1.85	1.54	1.000	1
1,2,3,4,7,8-HxCDD	**1.33**	J	0.00921	1.85	1.23	1.000	1
1,2,3,6,7,8-HxCDD	**4.98**		0.0125	1.85	1.26	1.000	1
1,2,3,7,8,9-HxCDD	**3.95**		0.0103	1.85	1.24	1.008	1
1,2,3,4,6,7,8-HpCDD	**77.8**	B	0.0253	1.85	1.04	1.000	1
OCDD	**651**	B	0.0187	3.70	0.89	1.000	1
2,3,7,8-TCDF	**6.19**	C	0.0108	0.370	0.77	1.002	1
1,2,3,7,8-PeCDF	**1.28**	JK	0.0310	1.85	1.54	1.001	1
2,3,4,7,8-PeCDF	**3.20**		0.0315	1.85	1.57	1.000	1
1,2,3,4,7,8-HxCDF	**4.92**		0.0203	1.85	1.24	1.000	1
1,2,3,6,7,8-HxCDF	**3.52**		0.0210	1.85	1.22	1.000	1
1,2,3,7,8,9-HxCDF	**0.0661**	JK	0.0237	1.85	1.12	1.001	1
2,3,4,6,7,8-HxCDF	**5.60**	K	0.0217	1.85	1.25	1.000	1
1,2,3,4,6,7,8-HpCDF	**19.2**	B	0.0225	1.85	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**1.30**	J	0.0219	1.85	0.96	1.000	1
OCDF	**46.2**	B	0.0198	3.70	0.87	1.003	1
Total Tetra-Dioxins	**12.5**		0.00363	0.370	0.79		1
Total Penta-Dioxins	**13.1**		0.00666	1.85	1.61		1
Total Hexa-Dioxins	**45.5**		0.00921	1.85	1.24		1
Total Hepta-Dioxins	**152**		0.0253	1.85	1.04		1
Total Tetra-Furans	**63.2**		0.0108	0.370	0.78		1
Total Penta-Furans	**123**		0.0315	1.85	1.57		1
Total Hexa-Furans	**55.3**		0.0203	1.85	1.25		1
Total Hepta-Furans	**44.4**		0.0225	1.85	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
Sample Name:	SPD0212RE	**Units:**	ng/Kg
Lab Code:	K0807873-028	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 23:07:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	31.804g	**Instrument Name:**	E-HRMS-70
Percent Solids:	85.0	**GC Column:**	DB-225
Data File Name:	C15326#9	**Blank File Name:**	C15326#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15324#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**3.23**		0.125	0.370	0.86	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	806.697	40		24-169	0.79	1.053
37Cl-2,3,7,8-TCDD	800	770.612	96		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008
Sample Name:	SPD0220	**Units:**	ng/Kg
Lab Code:	K0807873-039	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 22:06:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	29.995g	**Instrument Name:**	E-HRMS-01
Percent Solids:	83.4	**GC Column:**	DB-5
Data File Name:	U129747	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129743

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**1.30**		0.0105	0.400	0.82	1.001	1
1,2,3,7,8-PeCDD	**24.6**		0.0305	2.00	1.56	1.000	1
1,2,3,4,7,8-HxCDD	**58.0**		0.0303	2.00	1.23	1.000	1
1,2,3,6,7,8-HxCDD	**1380**	E	0.0431	2.00	1.25	1.000	1
1,2,3,7,8,9-HxCDD	**149**		0.0340	2.00	1.25	1.008	1
1,2,3,4,6,7,8-HpCDD	**13600**	BE	0.0732	2.00	1.03	1.000	1
OCDD	**53500**	BE	0.0825	4.00	0.97	0.999	1
2,3,7,8-TCDF	**27.0**	C	0.0164	0.400	0.78	1.001	1
1,2,3,7,8-PeCDF	**49.5**	K	0.249	2.00	1.58	1.001	1
2,3,4,7,8-PeCDF	**43.6**		0.249	2.00	1.58	1.000	1
1,2,3,4,7,8-HxCDF	**132**	K	0.234	2.00	1.29	1.000	1
1,2,3,6,7,8-HxCDF	**72.6**		0.240	2.00	1.26	1.000	1
1,2,3,7,8,9-HxCDF	**7.26**		0.278	2.00	1.27	1.001	1
2,3,4,6,7,8-HxCDF	**99.7**	K	0.251	2.00	1.26	1.000	1
1,2,3,4,6,7,8-HpCDF	**1110**	BE	0.216	2.00	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	**34.4**		0.276	2.00	0.88	1.000	1
OCDF	**2410**	BE	0.0634	4.00	0.90	1.003	1
Total Tetra-Dioxins	**25.7**		0.0105	0.400	0.78		1
Total Penta-Dioxins	**64.7**		0.0305	2.00	1.59		1
Total Hexa-Dioxins	**3360**		0.0303	2.00	1.25		1
Total Hepta-Dioxins	**25400**		0.0732	2.00	1.02		1
Total Tetra-Furans	**155**		0.0164	0.400	0.74		1
Total Penta-Furans	**1250**		0.249	2.00	1.57		1
Total Hexa-Furans	**2290**		0.234	2.00	1.24		1
Total Hepta-Furans	**3510**		0.216	2.00	1.05		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008
Sample Name:	SPD0220DL	**Units:**	ng/Kg
Lab Code:	K0807873-039	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 15:40:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	29.995g	**Instrument Name:**	E-HRMS-01
Percent Solids:	83.4	**GC Column:**	DB-5
Data File Name:	U129754	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129750

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.48	20.0			50
1,2,3,7,8-PeCDD	**16.8**	JK	2.28	99.9	1.87	1.000	50
1,2,3,4,7,8-HxCDD	**86.1**	J	10.1	99.9	1.25	1.000	50
1,2,3,6,7,8-HxCDD	**936**		7.23	99.9	1.24	1.000	50
1,2,3,7,8,9-HxCDD	**161**		8.47	99.9	1.24	1.008	50
1,2,3,4,6,7,8-HpCDD	**15700**	B	25.6	99.9	1.01	1.000	50
OCDD	**175000**	BE	13.0	200	0.89	1.000	50
2,3,7,8-TCDF	**18.4**	CJ	3.64	20.0	0.71	1.001	50
1,2,3,7,8-PeCDF	**31.4**	J	4.10	99.9	1.49	1.001	50
2,3,4,7,8-PeCDF	**32.2**	J	4.04	99.9	1.57	1.000	50
1,2,3,4,7,8-HxCDF	**97.3**	J	9.89	99.9	1.29	1.000	50
1,2,3,6,7,8-HxCDF	**46.4**	J	10.6	99.9	1.11	1.000	50
1,2,3,7,8,9-HxCDF	ND	U	12.7	99.9			50
2,3,4,6,7,8-HxCDF	**95.7**	J	10.5	99.9	1.24	1.000	50
1,2,3,4,6,7,8-HpCDF	**881**	B	10.8	99.9	1.02	1.000	50
1,2,3,4,7,8,9-HpCDF	**33.2**	J	11.5	99.9	0.88	1.000	50
OCDF	**2740**	B	9.79	200	0.91	1.004	50
Total Tetra-Dioxins	**7.75**	J	1.48	20.0	0.82		50
Total Penta-Dioxins	**16.4**	J	2.28	99.9	1.57		50
Total Hexa-Dioxins	**3170**		10.1	99.9	1.25		50
Total Hepta-Dioxins	**28200**		25.6	99.9	1.03		50
Total Tetra-Furans	**88.9**		3.64	20.0	0.74		50
Total Penta-Furans	**957**		4.04	99.9	1.57		50
Total Hexa-Furans	**2940**		9.89	99.9	1.27		50
Total Hepta-Furans	**2810**		10.8	99.9	1.02		50

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008
Sample Name:	SPD0220RE	**Units:**	ng/Kg
Lab Code:	K0807873-039	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 11:45:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	29.995g	**Instrument Name:**	E-HRMS-70
Percent Solids:	83.4	**GC Column:**	DB-225
Data File Name:	C15331#6	**Blank File Name:**	C15331#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15331#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**19.0**		0.111	0.400	0.78	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	991.499	50		24-169	0.76	1.054
37Cl-2,3,7,8-TCDD	800	662.819	83		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	E0801082
Project:	T117 EAA Soils Investigation/A0006-15-F	**Date Collected:**	8/26/08
Sample Matrix:	Soil	**Date Received:**	9/20/08
Sample Name:	SPD0221	**Units:**	ng/Kg
Lab Code:	E0801082-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	11/7/08 1233
Prep Method:	Method	**Date Extracted:**	11/4/08
Sample Amount:	3.151g	**Instrument Name:**	E-HRMS-04
Percent Solids:	75.2	**GC Column:**	DB-5
Data File Name:	P200586	**Blank File Name:**	P200585
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200583

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.799**	JK	0.0405	4.22	0.53	1.001	1
1,2,3,7,8-PeCDD	**0.442**	J	0.0663	21.1	1.40	1.000	1
1,2,3,4,7,8-HxCDD	**0.350**	JK	0.0743	21.1	0.90	1.000	1
1,2,3,6,7,8-HxCDD	**1.30**	JK	0.163	21.1	1.00	1.000	1
1,2,3,7,8,9-HxCDD	**0.695**	JK	0.103	21.1	1.59	1.008	1
1,2,3,4,6,7,8-HpCDD	**20.8**	BJ	0.0654	21.1	1.04	1.000	1
OCDD	**151**	B	0.171	42.2	0.89	1.000	1
2,3,7,8-TCDF	**1.84**	CJ	0.0506	4.22	0.76	1.001	1
1,2,3,7,8-PeCDF	**0.503**	JK	0.0367	21.1	1.26	1.001	1
2,3,4,7,8-PeCDF	**0.723**	JK	0.0371	21.1	1.90	1.000	1
1,2,3,4,7,8-HxCDF	**0.939**	J	0.0506	21.1	1.34	1.000	1
1,2,3,6,7,8-HxCDF	**0.541**	J	0.0561	21.1	1.40	1.000	1
1,2,3,7,8,9-HxCDF	**0.0696**	BJ	0.0578	21.1	1.23	1.000	1
2,3,4,6,7,8-HxCDF	**0.744**	J	0.0506	21.1	1.19	1.000	1
1,2,3,4,6,7,8-HpCDF	**4.14**	BJ	0.0781	21.1	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	**0.225**	JK	0.0785	21.1	1.30	1.000	1
OCDF	**5.66**	BJ	0.117	42.2	0.80	1.005	1
Total Tetra-Dioxins	**2.35**	J	0.0405	4.22	0.70		1
Total Penta-Dioxins	**4.59**	J	0.0663	21.1	1.53		1
Total Hexa-Dioxins	**8.68**	J	0.0743	21.1	1.32		1
Total Hepta-Dioxins	**39.6**		0.0654	21.1	1.05		1
Total Tetra-Furans	**5.50**		0.0506	4.22	0.71		1
Total Penta-Furans	**10.0**	J	0.0371	21.1	1.46		1
Total Hexa-Furans	**6.87**	J	0.0506	21.1	1.41		1
Total Hepta-Furans	**8.63**	J	0.0781	21.1	1.05		1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E0801082
Project:	T117 EAA Soils Investigation/A0006-15-F	**Date Collected:**	8/26/08
Sample Matrix:	Soil	**Date Received:**	9/20/08
Sample Name:	SPD0221RE	**Units:**	ng/Kg
Lab Code:	E0801082-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	11/7/08 1623
Prep Method:	Method	**Date Extracted:**	11/4/08
Sample Amount:	3.151g	**Instrument Name:**	E-HRMS-70
Percent Solids:	75.2	**GC Column:**	DB-225
Data File Name:	C15490#13	**Blank File Name:**	C15490#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15490#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	ND	U	0.618	4.22			1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1738.294	87		24-169	0.77	1.054
37Cl-2,3,7,8-TCDD	800	767.562	96		35-197	NA	0.990

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E0801082
Project:	T117 EAA Soils Investigation/A0006-15-F	**Date Collected:**	8/26/08
Sample Matrix:	Soil	**Date Received:**	9/20/08
Sample Name:	SPD0222	**Units:**	ng/Kg
Lab Code:	E0801082-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	11/7/08 1321
Prep Method:	Method	**Date Extracted:**	11/4/08
Sample Amount:	3.586g	**Instrument Name:**	E-HRMS-04
Percent Solids:	74.6	**GC Column:**	DB-5
Data File Name:	P200587	**Blank File Name:**	P200585
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200583

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.899**	JK	0.0295	3.74	0.60	1.001	1
1,2,3,7,8-PeCDD	**0.354**	JK	0.0478	18.7	1.79	1.001	1
1,2,3,4,7,8-HxCDD	**0.357**	JK	0.0430	18.7	0.85	1.000	1
1,2,3,6,7,8-HxCDD	**1.86**	J	0.102	18.7	1.29	1.001	1
1,2,3,7,8,9-HxCDD	**1.66**	J	0.0609	18.7	1.25	1.008	1
1,2,3,4,6,7,8-HpCDD	**23.3**	B	0.0718	18.7	1.04	1.000	1
OCDD	**177**	B	0.0781	37.4	0.91	1.000	1
2,3,7,8-TCDF	**2.60**	CJ	0.0314	3.74	0.69	1.001	1
1,2,3,7,8-PeCDF	**0.604**	J	0.0336	18.7	1.52	1.001	1
2,3,4,7,8-PeCDF	**0.948**	J	0.0329	18.7	1.43	1.000	1
1,2,3,4,7,8-HxCDF	**1.17**	J	0.0699	18.7	1.40	1.000	1
1,2,3,6,7,8-HxCDF	**0.524**	JK	0.0759	18.7	1.63	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.0778	18.7			1
2,3,4,6,7,8-HxCDF	**0.863**	J	0.0699	18.7	1.31	1.000	1
1,2,3,4,6,7,8-HpCDF	**4.52**	BJ	0.0557	18.7	1.10	1.000	1
1,2,3,4,7,8,9-HpCDF	**0.246**	J	0.0568	18.7	1.08	1.000	1
OCDF	**6.62**	BJ	0.0725	37.4	0.79	1.004	1
Total Tetra-Dioxins	**1.86**	J	0.0295	3.74	0.85		1
Total Penta-Dioxins	**3.75**	J	0.0478	18.7	1.47		1
Total Hexa-Dioxins	**14.1**	J	0.0430	18.7	1.34		1
Total Hepta-Dioxins	**45.1**		0.0718	18.7	1.03		1
Total Tetra-Furans	**3.79**		0.0314	3.74	0.76		1
Total Penta-Furans	**13.7**	J	0.0329	18.7	1.54		1
Total Hexa-Furans	**9.69**	J	0.0699	18.7	1.08		1
Total Hepta-Furans	**9.86**	J	0.0557	18.7	1.10		1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E0801082
Project:	T117 EAA Soils Investigation/A0006-15-F	**Date Collected:**	8/26/08
Sample Matrix:	Soil	**Date Received:**	9/20/08
Sample Name:	SPD0222RE	**Units:**	ng/Kg
Lab Code:	E0801082-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	11/7/08 1656
Prep Method:	Method	**Date Extracted:**	11/4/08
Sample Amount:	3.586g	**Instrument Name:**	E-HRMS-70
Percent Solids:	74.6	**GC Column:**	DB-225
Data File Name:	C15490#14	**Blank File Name:**	C15490#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15490#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	ND	U	1.24	3.74			1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1899.307	95		24-169	0.78	1.054
37Cl-2,3,7,8-TCDD	800	802.040	100		35-197	NA	0.989

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E0801082
Project:	T117 EAA Soils Investigation/A0006-15-F	**Date Collected:**	8/26/08
Sample Matrix:	Soil	**Date Received:**	9/20/08
Sample Name:	SPD0223	**Units:**	ng/Kg
Lab Code:	E0801082-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	11/7/08 1408
Prep Method:	Method	**Date Extracted:**	11/4/08
Sample Amount:	3.166g	**Instrument Name:**	E-HRMS-04
Percent Solids:	82.6	**GC Column:**	DB-5
Data File Name:	P200588	**Blank File Name:**	P200585
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200583

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.780**	JK	0.0337	3.82	0.54	1.001	1
1,2,3,7,8-PeCDD	**2.70**	J	0.0543	19.1	1.44	1.000	1
1,2,3,4,7,8-HxCDD	**3.40**	J	0.0512	19.1	1.15	1.000	1
1,2,3,6,7,8-HxCDD	**15.2**	J	0.107	19.1	1.19	1.000	1
1,2,3,7,8,9-HxCDD	**11.1**	J	0.0696	19.1	1.23	1.008	1
1,2,3,4,6,7,8-HpCDD	**210**	B	0.172	19.1	1.05	1.000	1
OCDD	**1430**	B	0.0619	38.2	0.89	1.000	1
2,3,7,8-TCDF	**13.7**	C	0.0509	3.82	0.74	1.001	1
1,2,3,7,8-PeCDF	**3.64**	JK	0.0654	19.1	1.52	1.001	1
2,3,4,7,8-PeCDF	**7.80**	J	0.0684	19.1	1.48	1.001	1
1,2,3,4,7,8-HxCDF	**11.9**	J	0.130	19.1	1.24	1.000	1
1,2,3,6,7,8-HxCDF	**5.37**	J	0.137	19.1	1.32	1.000	1
1,2,3,7,8,9-HxCDF	**0.238**	BJK	0.128	19.1	0.95	1.000	1
2,3,4,6,7,8-HxCDF	**7.60**	J	0.121	19.1	1.17	1.000	1
1,2,3,4,6,7,8-HpCDF	**50.4**	B	0.108	19.1	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	**4.01**	J	0.103	19.1	1.05	1.000	1
OCDF	**95.7**	B	0.0834	38.2	0.87	1.004	1
Total Tetra-Dioxins	**23.1**		0.0337	3.82	0.83		1
Total Penta-Dioxins	**23.9**		0.0543	19.1	1.50		1
Total Hexa-Dioxins	**108**		0.0512	19.1	1.22		1
Total Hepta-Dioxins	**397**		0.172	19.1	1.04		1
Total Tetra-Furans	**92.5**		0.0509	3.82	0.66		1
Total Penta-Furans	**126**		0.0684	19.1	1.54		1
Total Hexa-Furans	**84.5**		0.130	19.1	1.23		1
Total Hepta-Furans	**113**		0.108	19.1	1.01		1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E0801082
Project:	T117 EAA Soils Investigation/A0006-15-F	**Date Collected:**	8/26/08
Sample Matrix:	Soil	**Date Received:**	9/20/08
Sample Name:	SPD0223RE	**Units:**	ng/Kg
Lab Code:	E0801082-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	11/7/08 1728
Prep Method:	Method	**Date Extracted:**	11/4/08
Sample Amount:	3.166g	**Instrument Name:**	E-HRMS-70
Percent Solids:	82.6	**GC Column:**	DB-225
Data File Name:	C15490#15	**Blank File Name:**	C15490#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15490#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**6.38**	K	2.56	3.82	0.92	1.000	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	1652.582	83		24-169	0.77	1.054
37Cl-2,3,7,8-TCDD	800	742.003	93		35-197	NA	0.990

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E0801082
Project:	T117 EAA Soils Investigation/A0006-15-F	**Date Collected:**	8/26/08
Sample Matrix:	Soil	**Date Received:**	9/20/08
Sample Name:	SPD0224	**Units:**	ng/Kg
Lab Code:	E0801082-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	11/7/08 1456
Prep Method:	Method	**Date Extracted:**	11/4/08
Sample Amount:	3.239g	**Instrument Name:**	E-HRMS-04
Percent Solids:	93.1	**GC Column:**	DB-5
Data File Name:	P200589	**Blank File Name:**	P200585
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200583

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.695**	JK	0.0255	3.32	0.50	1.001	1
1,2,3,7,8-PeCDD	**3.33**	J	0.0567	16.6	1.41	1.000	1
1,2,3,4,7,8-HxCDD	**4.51**	J	0.0554	16.6	1.23	1.000	1
1,2,3,6,7,8-HxCDD	**30.7**		0.116	16.6	1.26	1.000	1
1,2,3,7,8,9-HxCDD	**14.8**	J	0.0743	16.6	1.24	1.008	1
1,2,3,4,6,7,8-HpCDD	**380**	B	0.238	16.6	1.05	1.000	1
OCDD	**2680**	B	0.0872	33.2	0.89	1.000	1
2,3,7,8-TCDF	**12.9**	C	0.0272	3.32	0.79	1.001	1
1,2,3,7,8-PeCDF	**4.34**	J	0.163	16.6	1.58	1.001	1
2,3,4,7,8-PeCDF	**10.4**	J	0.169	16.6	1.52	1.000	1
1,2,3,4,7,8-HxCDF	**18.3**	K	0.198	16.6	1.24	1.000	1
1,2,3,6,7,8-HxCDF	**9.01**	J	0.217	16.6	1.29	1.000	1
1,2,3,7,8,9-HxCDF	**0.255**	BJK	0.201	16.6	1.79	1.000	1
2,3,4,6,7,8-HxCDF	**13.2**	J	0.186	16.6	1.26	1.000	1
1,2,3,4,6,7,8-HpCDF	**103**	B	0.112	16.6	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	**6.91**	J	0.109	16.6	1.03	1.000	1
OCDF	**155**	B	0.0796	33.2	0.86	1.004	1
Total Tetra-Dioxins	**22.5**		0.0255	3.32	0.70		1
Total Penta-Dioxins	**20.7**		0.0567	16.6	1.39		1
Total Hexa-Dioxins	**157**		0.0554	16.6	1.28		1
Total Hepta-Dioxins	**711**		0.238	16.6	1.05		1
Total Tetra-Furans	**94.1**		0.0272	3.32	0.78		1
Total Penta-Furans	**234**		0.169	16.6	1.55		1
Total Hexa-Furans	**132**		0.198	16.6	1.25		1
Total Hepta-Furans	**220**		0.112	16.6	1.03		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	E0801082
Project:	T117 EAA Soils Investigation/A0006-15-F	**Date Collected:**	8/26/08
Sample Matrix:	Soil	**Date Received:**	9/20/08
Sample Name:	SPD0224RE	**Units:**	ng/Kg
Lab Code:	E0801082-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	11/7/08 1801
Prep Method:	Method	**Date Extracted:**	11/4/08
Sample Amount:	3.239g	**Instrument Name:**	E-HRMS-70
Percent Solids:	93.1	**GC Column:**	DB-225
Data File Name:	C15490#16	**Blank File Name:**	C15490#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15490#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**7.48**		3.09	3.32	0.78	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	4000	1566.080	39		24-169	0.77	1.054
37Cl-2,3,7,8-TCDD	800	724.290	91		35-197	NA	0.990

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008
Sample Name:	SPD0229	**Units:**	ng/Kg
Lab Code:	K0807873-040	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/8/08 22:54:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.232g	**Instrument Name:**	E-HRMS-01
Percent Solids:	89.2	**GC Column:**	DB-5
Data File Name:	U129748	**Blank File Name:**	U129725
ICAL Name:	05/02/08	**Cal Ver. File Name:**	U129743

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**0.839**		0.107	0.371	0.71	1.001	1
1,2,3,7,8-PeCDD	**3.62**		0.0528	1.85	1.51	1.001	1
1,2,3,4,7,8-HxCDD	**4.11**		0.0600	1.85	1.20	1.000	1
1,2,3,6,7,8-HxCDD	**13.9**		0.0821	1.85	1.28	1.000	1
1,2,3,7,8,9-HxCDD	**11.3**		0.0663	1.85	1.25	1.008	1
1,2,3,4,6,7,8-HpCDD	**225**	B	0.169	1.85	1.05	1.001	1
OCDD	**1780**	BE	0.244	3.71	0.89	1.000	1
2,3,7,8-TCDF	**12.5**	C	0.0602	0.371	0.80	1.001	1
1,2,3,7,8-PeCDF	**2.67**	K	0.267	1.85	1.62	1.000	1
2,3,4,7,8-PeCDF	**8.00**		0.281	1.85	1.60	1.000	1
1,2,3,4,7,8-HxCDF	**11.0**	K	0.108	1.85	1.30	1.000	1
1,2,3,6,7,8-HxCDF	**9.89**		0.111	1.85	1.26	1.000	1
1,2,3,7,8,9-HxCDF	**0.184**	J	0.141	1.85	1.07	1.000	1
2,3,4,6,7,8-HxCDF	**12.9**	K	0.118	1.85	1.25	1.000	1
1,2,3,4,6,7,8-HpCDF	**60.2**	B	0.0753	1.85	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	**3.11**		0.102	1.85	1.05	1.000	1
OCDF	**129**	B	0.116	3.71	0.88	1.003	1
Total Tetra-Dioxins	**34.8**		0.107	0.371	0.79		1
Total Penta-Dioxins	**38.5**		0.0528	1.85	1.47		1
Total Hexa-Dioxins	**139**		0.0600	1.85	1.24		1
Total Hepta-Dioxins	**454**		0.169	1.85	1.04		1
Total Tetra-Furans	**182**		0.0602	0.371	0.80		1
Total Penta-Furans	**479**		0.281	1.85	1.58		1
Total Hexa-Furans	**204**		0.108	1.85	1.24		1
Total Hepta-Furans	**152**		0.0753	1.85	1.05		1

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008
Sample Name:	SPD0229RE	**Units:**	ng/Kg
Lab Code:	K0807873-040	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/9/08 12:17:00
Prep Method:	Method	**Date Extracted:**	9/3/08
Sample Amount:	30.232g	**Instrument Name:**	E-HRMS-70
Percent Solids:	89.2	**GC Column:**	DB-225
Data File Name:	C15331#7	**Blank File Name:**	C15331#2
ICAL Name:	05/30/08	**Cal Ver. File Name:**	C15331#1

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDF	**6.33**		0.0844	0.371	0.77	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDF	2000	830.157	42		24-169	0.76	1.054
37Cl-2,3,7,8-TCDD	800	623.383	78		35-197	NA	0.988

Comments:

Client:	Integral Consulting, Incorporated	**Service Request:**	E0800855
Project:	T117 EAA Soils Investigation/A0006-15-F	**Date Collected:**	08/27/2008
Sample Matrix:	Wipe	**Date Received:**	08/28/2008
Sample Name:	SPD0239	**Units:**	ng/Kg
Lab Code:	E0800855-001	**Basis:**	Wet

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	9/6/08 01:56:00
Prep Method:	Method	**Date Extracted:**	9/2/08
Sample Amount:	3.886g	**Instrument Name:**	E-HRMS-04
		GC Column:	DB-5
Data File Name:	P200232	**Blank File Name:**	U217412
ICAL Name:	08/20/08	**Cal Ver. File Name:**	P200221

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.0178	2.57			1
1,2,3,7,8-PeCDD	ND	U	0.0172	12.9			1
1,2,3,4,7,8-HxCDD	ND	U	0.0283	12.9			1
1,2,3,6,7,8-HxCDD	ND	U	0.0363	12.9			1
1,2,3,7,8,9-HxCDD	ND	U	0.0309	12.9			1
1,2,3,4,6,7,8-HpCDD	**1.75**	BJ	0.0183	12.9	1.14	1.000	1
OCDD	**20.1**	BJ	0.0394	25.7	0.92	1.000	1
2,3,7,8-TCDF	ND	U	0.0134	2.57			1
1,2,3,7,8-PeCDF	ND	U	0.0198	12.9			1
2,3,4,7,8-PeCDF	ND	U	0.0190	12.9			1
1,2,3,4,7,8-HxCDF	**0.175**	J	0.0188	12.9	1.15	1.000	1
1,2,3,6,7,8-HxCDF	**0.0937**	JK	0.0190	12.9	1.02	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.0229	12.9			1
2,3,4,6,7,8-HxCDF	ND	U	0.0193	12.9			1
1,2,3,4,6,7,8-HpCDF	**0.760**	BJ	0.0412	12.9	1.11	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0471	12.9			1
OCDF	**3.19**	BJ	0.0749	25.7	0.88	1.004	1
Total Tetra-Dioxins	ND	U	0.0178	2.57			1
Total Penta-Dioxins	ND	U	0.0172	12.9			1
Total Hexa-Dioxins	ND	U	0.0283	12.9			1
Total Hepta-Dioxins	**4.29**	J	0.0183	12.9	1.10		1
Total Tetra-Furans	ND	U	0.0134	2.57			1
Total Penta-Furans	ND	U	0.0190	12.9			1
Total Hexa-Furans	**0.800**	J	0.0188	12.9	1.40		1
Total Hepta-Furans	**1.56**	J	0.0412	12.9	1.11		1

Comments:

PCBs

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/18/2008
Sample Matrix:	Filter	**Date Received:**	08/20/2008

Polychlorinated Biphenyls(PCBs)

Sample Name:	SPD0002	**Units:**	ug/WIPE
Lab Code:	K0807873-008	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.28	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1221	ND	U	0.55	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1232	ND	U	0.28	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1242	ND	U	0.28	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1248	ND	U	0.28	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1254	ND	U	0.28	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1260	ND	U	0.28	0.26	1	09/04/08	09/09/08	KWG0809026	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	104	70-130	09/09/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0015	**Units:**	ug/Kg
Lab Code:	K0807873-001	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	980	130	100	08/31/08	09/05/08	KWG0808812	
Aroclor 1221	ND	U	2000	130	100	08/31/08	09/05/08	KWG0808812	
Aroclor 1232	ND	U	980	130	100	08/31/08	09/05/08	KWG0808812	
Aroclor 1242	ND	U	980	130	100	08/31/08	09/05/08	KWG0808812	
Aroclor 1248	ND	U	980	130	100	08/31/08	09/05/08	KWG0808812	
Aroclor 1254	ND	U	980	130	100	08/31/08	09/05/08	KWG0808812	
Aroclor 1260	**57000**	D	980	130	100	08/31/08	09/05/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	150	38-144	09/05/08	Outside Control Limits

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0020	**Units:**	ug/Kg
Lab Code:	K0807873-002	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	99	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1221	ND	U	200	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1232	ND	U	99	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1242	ND	U	99	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1248	ND	U	99	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1254	ND	U	99	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1260	**7400**	D	99	13	10	08/31/08	09/05/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	85	38-144	09/05/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0024	**Units:**	ug/Kg
Lab Code:	K0807873-003	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	9.9	1.3	1	08/31/08	09/05/08	KWG0808812	
Aroclor 1221	ND	U	20	1.3	1	08/31/08	09/05/08	KWG0808812	
Aroclor 1232	ND	U	9.9	1.3	1	08/31/08	09/05/08	KWG0808812	
Aroclor 1242	ND	U	9.9	1.3	1	08/31/08	09/05/08	KWG0808812	
Aroclor 1248	ND	U	9.9	1.3	1	08/31/08	09/05/08	KWG0808812	
Aroclor 1254	ND	U	9.9	1.3	1	08/31/08	09/05/08	KWG0808812	
Aroclor 1260	**730**		9.9	1.3	1	08/31/08	09/05/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	63	38-144	09/05/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0027	**Units:**	ug/Kg
Lab Code:	K0807873-004	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	97	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1221	ND	U	200	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1232	ND	U	97	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1242	ND	U	97	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1248	ND	U	97	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1254	ND	U	97	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1260	**1600**	D	97	13	10	08/31/08	09/05/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	50	38-144	09/05/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0030	**Units:**	ug/Kg
Lab Code:	K0807873-005	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	100	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1221	ND	U	200	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1232	ND	U	100	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1242	ND	U	100	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1248	ND	U	100	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1254	ND	U	100	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1260	**2000**	D	100	13	10	08/31/08	09/05/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	109	38-144	09/05/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0033	**Units:**	ug/Kg
Lab Code:	K0807873-006	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	94	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1221	ND	U	190	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1232	ND	U	94	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1242	ND	U	94	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1248	ND	U	94	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1254	ND	U	94	13	10	08/31/08	09/05/08	KWG0808812	
Aroclor 1260	**1500**	D	94	13	10	08/31/08	09/05/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	91	38-144	09/05/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0036	**Units:**	ug/Kg
Lab Code:	K0807873-009	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	8.1	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1221	ND	U	17	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1232	ND	U	8.1	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1242	ND	U	8.1	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1248	ND	U	8.1	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1254	ND	U	8.1	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1260	**27**		8.1	1.3	1	08/31/08	09/06/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	84	38-144	09/06/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0040	**Units:**	ug/Kg
Lab Code:	K0807873-010	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	8.4	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1221	ND	U	17	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1232	ND	U	8.4	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1242	ND	U	8.4	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1248	ND	U	8.4	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1254	ND	U	8.4	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1260	ND	U	8.4	1.3	1	08/31/08	09/06/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	85	38-144	09/06/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0043	**Units:**	ug/Kg
Lab Code:	K0807873-011	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	8.5	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1221	ND	U	17	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1232	ND	U	8.5	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1242	ND	U	8.5	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1248	ND	U	8.5	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1254	ND	U	8.5	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1260	**57**		8.5	1.3	1	08/31/08	09/06/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	85	38-144	09/06/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0046	**Units:**	ug/Kg
Lab Code:	K0807873-013	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	81	13	10	08/31/08	09/06/08	KWG0808812	
Aroclor 1221	ND	U	170	13	10	08/31/08	09/06/08	KWG0808812	
Aroclor 1232	ND	U	81	13	10	08/31/08	09/06/08	KWG0808812	
Aroclor 1242	ND	U	81	13	10	08/31/08	09/06/08	KWG0808812	
Aroclor 1248	ND	U	81	13	10	08/31/08	09/06/08	KWG0808812	
Aroclor 1254	ND	U	81	13	10	08/31/08	09/06/08	KWG0808812	
Aroclor 1260	**1600**	D	81	13	10	08/31/08	09/06/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	54	38-144	09/06/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0049	**Units:**	ug/Kg
Lab Code:	K0807873-012	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	8.5	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1221	ND	U	17	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1232	ND	U	8.5	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1242	ND	U	8.5	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1248	ND	U	8.5	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1254	ND	U	8.5	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1260	**140**		8.5	1.3	1	08/31/08	09/06/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	86	38-144	09/06/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0054	**Units:**	ug/Kg
Lab Code:	K0807873-014	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	870	130	100	08/31/08	09/06/08	KWG0808812	
Aroclor 1221	ND	U	1800	130	100	08/31/08	09/06/08	KWG0808812	
Aroclor 1232	ND	U	870	130	100	08/31/08	09/06/08	KWG0808812	
Aroclor 1242	ND	U	870	130	100	08/31/08	09/06/08	KWG0808812	
Aroclor 1248	ND	U	870	130	100	08/31/08	09/06/08	KWG0808812	
Aroclor 1254	ND	U	870	130	100	08/31/08	09/06/08	KWG0808812	
Aroclor 1260	**21000**	D	870	130	100	08/31/08	09/06/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	121	38-144	09/06/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0055	**Units:**	ug/Kg
Lab Code:	K0807873-035	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	7500	1300	1000	08/31/08	09/08/08	KWG0808813	
Aroclor 1221	ND	U	15000	1300	1000	08/31/08	09/08/08	KWG0808813	
Aroclor 1232	ND	U	7500	1300	1000	08/31/08	09/08/08	KWG0808813	
Aroclor 1242	ND	U	7500	1300	1000	08/31/08	09/08/08	KWG0808813	
Aroclor 1248	ND	U	7500	1300	1000	08/31/08	09/08/08	KWG0808813	
Aroclor 1254	ND	U	7500	1300	1000	08/31/08	09/08/08	KWG0808813	
Aroclor 1260	**98000**	D	7500	1300	1000	08/31/08	09/08/08	KWG0808813	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	284	38-144	09/08/08	Outside Control Limits

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0056	**Units:**	ug/Kg
Lab Code:	K0807873-015	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	8.9	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1221	ND	U	18	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1232	ND	U	8.9	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1242	ND	U	8.9	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1248	ND	U	8.9	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1254	ND	Ui	24	24	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1260	**160**		8.9	1.3	1	08/31/08	09/06/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	90	38-144	09/06/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0059	**Units:**	ug/Kg
Lab Code:	K0807873-016	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	8.2	8.2	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1221	ND	Ui	17	17	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1232	ND	U	8.2	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1242	ND	Ui	8.2	8.2	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1248	**100**		8.2	1.3	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1254	ND	Ui	8.2	8.2	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1260	**92**		8.2	1.3	1	08/31/08	09/06/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	35	38-144	09/06/08	Outside Control Limits

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Filter	**Date Received:**	08/22/2008

Polychlorinated Biphenyls(PCBs)

Sample Name:	SPD0064	**Units:**	ug/WIPE
Lab Code:	K0807873-018	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.31	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1221	ND	U	0.62	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1232	ND	U	0.31	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1242	ND	U	0.31	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1248	ND	U	0.31	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1254	ND	U	0.31	0.26	1	09/04/08	09/09/08	KWG0809026	
Aroclor 1260	ND	U	0.31	0.26	1	09/04/08	09/09/08	KWG0809026	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	94	70-130	09/09/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0066	**Units:**	ug/Kg
Lab Code:	K0807873-017	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	11	2.9	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1221	ND	U	22	12	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1232	ND	Ui	11	11	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1242	ND	U	11	5.1	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1248	ND	Ui	11	11	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1254	ND	U	26	26	1	08/31/08	09/06/08	KWG0808812	
Aroclor 1260	**180**		11	1.4	1	08/31/08	09/06/08	KWG0808812	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	77	38-144	09/06/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808028
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0079	**Units:**	ug/Kg
Lab Code:	K0808028-012	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	58	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1221	ND	U	120	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1232	ND	U	58	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1242	ND	U	58	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1248	ND	Ui	150	150	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1254	ND	Ui	610	610	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1260	ND	Ui	440	440	10	09/30/08	10/03/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	92	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808028
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0080	**Units:**	ug/Kg
Lab Code:	K0808028-010	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	57	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1221	ND	U	120	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1232	ND	U	57	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1242	ND	U	57	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1248	ND	Ui	260	260	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1254	ND	Ui	390	390	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1260	ND	Ui	590	590	10	09/30/08	10/03/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	118	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808028
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0082	**Units:**	ug/Kg
Lab Code:	K0808028-013	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	56	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1221	ND	U	120	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1232	ND	U	56	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1242	ND	U	56	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1248	ND	U	56	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1254	ND	U	56	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1260	**2400**	D	56	13	10	09/30/08	10/03/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	116	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808028
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0084	**Units:**	ug/Kg
Lab Code:	K0808028-015	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	56	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1221	ND	U	120	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1232	ND	U	56	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1242	ND	U	56	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1248	ND	Ui	140	140	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1254	ND	Ui	310	310	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1260	ND	Ui	640	640	10	09/30/08	10/03/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	102	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808043
Project:	T-117 EAA Soils Inv./A0006-I5F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0088	**Units:**	ug/Kg
Lab Code:	K0808043-001	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1221	ND	U	20	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1232	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1242	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1248	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1254	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1260	**200**		10	1.3	1	10/02/08	10/03/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	78	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808043
Project:	T-117 EAA Soils Inv./A0006-I5F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0090	**Units:**	ug/Kg
Lab Code:	K0808043-003	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	100	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1221	ND	U	200	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1232	ND	U	100	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1242	ND	U	100	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1248	ND	U	100	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1254	ND	U	100	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1260	**1300**	D	100	13	10	10/02/08	10/04/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	109	38-144	10/04/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808043
Project:	T-117 EAA Soils Inv./A0006-I5F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0093	**Units:**	ug/Kg
Lab Code:	K0808043-006	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	10	7.9	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1221	ND	Ui	20	20	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1232	ND	Ui	21	21	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1242	ND	Ui	10	3.7	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1248	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1254	ND	Ui	40	40	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1260	**270**		10	1.3	1	10/02/08	10/04/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	80	38-144	10/04/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808015
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0116	**Units:**	ug/Kg
Lab Code:	K0808015-013	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	5.2	1.8	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1221	ND	U	11	1.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1232	ND	Ui	5.2	5.2	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1242	ND	Ui	5.2	5.2	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1248	ND	U	5.2	1.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1254	ND	Ui	24	24	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1260	**120**		5.2	1.3	1	09/30/08	10/02/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	74	38-144	10/02/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808015
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0117	**Units:**	ug/Kg
Lab Code:	K0808015-011	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	13	13	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1221	ND	Ui	15	15	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1232	ND	Ui	17	17	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1242	ND	Ui	9.9	9.9	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1248	ND	U	5.7	1.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1254	ND	Ui	34	34	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1260	**170**		5.7	1.3	1	09/30/08	10/02/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	84	38-144	10/02/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808015
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0118	**Units:**	ug/Kg
Lab Code:	K0808015-009	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	14	14	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1221	ND	Ui	13	3.0	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1232	ND	Ui	6.2	6.2	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1242	ND	Ui	6.2	6.2	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1248	ND	U	6.2	1.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1254	**68**		6.2	1.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1260	77		6.2	1.3	1	09/30/08	10/02/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	78	38-144	10/02/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808015
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0122	**Units:**	ug/Kg
Lab Code:	K0808015-019	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	5.3	2.8	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1221	ND	Ui	11	11	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1232	ND	Ui	6.8	6.8	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1242	ND	Ui	5.3	5.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1248	ND	U	5.3	1.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1254	ND	Ui	34	34	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1260	**260**		5.3	1.3	1	09/30/08	10/02/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	74	38-144	10/02/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808015
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0123	**Units:**	ug/Kg
Lab Code:	K0808015-015	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	5.6	2.6	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1221	ND	Ui	12	12	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1232	ND	Ui	7.8	7.8	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1242	ND	Ui	5.6	3.5	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1248	ND	U	5.6	1.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1254	ND	Ui	16	16	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1260	**140**		5.6	1.3	1	09/30/08	10/02/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	50	38-144	10/02/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808015
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0124	**Units:**	ug/Kg
Lab Code:	K0808015-016	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	6.5	1.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1221	ND	Ui	13	13	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1232	ND	Ui	9.5	9.5	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1242	ND	Ui	6.5	3.7	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1248	ND	U	6.5	1.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1254	ND	Ui	15	15	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1260	**120**		6.5	1.3	1	09/30/08	10/02/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	60	38-144	10/02/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808015
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0128	**Units:**	ug/Kg
Lab Code:	K0808015-002	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	6.1	4.3	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1221	ND	Ui	13	12	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1232	ND	Ui	13	13	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1242	ND	Ui	7.1	7.1	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1248	ND	Ui	8.1	8.1	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1254	ND	Ui	21	21	1	09/30/08	10/02/08	KWG0810203	
Aroclor 1260	**110**		6.1	1.3	1	09/30/08	10/02/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	85	38-144	10/02/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808015
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0130	**Units:**	ug/Kg
Lab Code:	K0808015-005	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	55	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1221	ND	U	110	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1232	ND	U	55	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1242	ND	U	55	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1248	ND	Ui	320	320	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1254	ND	Ui	430	430	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1260	ND	Ui	260	260	10	09/30/08	10/03/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	96	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808015
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0134	**Units:**	ug/Kg
Lab Code:	K0808015-006	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	60	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1221	ND	U	120	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1232	ND	U	60	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1242	ND	U	60	13	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1248	ND	Ui	71	71	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1254	ND	Ui	120	120	10	09/30/08	10/03/08	KWG0810203	
Aroclor 1260	ND	Ui	130	130	10	09/30/08	10/03/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	74	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808041
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Sediment	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0154	**Units:**	ug/Kg
Lab Code:	K0808041-010	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	340	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1221	ND	U	680	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1232	ND	U	340	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1242	ND	U	340	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1248	ND	U	340	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1254	ND	U	340	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1260	**5800**	D	340	44	10	10/03/08	10/08/08	KWG0810402	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	88	38-144	10/08/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808041
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Sediment	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0155	**Units:**	ug/Kg
Lab Code:	K0808041-011	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	340	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1221	ND	U	670	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1232	ND	U	340	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1242	ND	U	340	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1248	ND	U	340	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1254	ND	U	340	44	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1260	**7000**	D	340	44	10	10/03/08	10/08/08	KWG0810402	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	90	38-144	10/08/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808041
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0157	**Units:**	ug/Kg
Lab Code:	K0808041-012	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	5.3	1.8	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1221	ND	Ui	11	2.5	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1232	ND	Ui	9.0	9.0	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1242	ND	Ui	5.3	4.5	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1248	ND	U	5.3	1.3	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1254	ND	Ui	24	24	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1260	**130**		5.3	1.3	1	09/30/08	10/03/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	63	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808041
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0158	**Units:**	ug/Kg
Lab Code:	K0808041-015	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	5.6	3.4	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1221	ND	Ui	12	7.0	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1232	ND	Ui	12	12	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1242	ND	Ui	5.8	5.8	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1248	ND	U	5.6	1.3	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1254	ND	Ui	34	34	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1260	**190**		5.6	1.3	1	09/30/08	10/03/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	69	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808041
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0159	**Units:**	ug/Kg
Lab Code:	K0808041-016	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	100	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1221	ND	U	200	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1232	ND	U	100	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1242	ND	U	100	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1248	ND	U	100	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1254	ND	U	100	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1260	**1600**	D	100	13	10	10/03/08	10/08/08	KWG0810402	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	103	38-144	10/08/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808040
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0165	**Units:**	ug/Kg
Lab Code:	K0808040-009	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/03/08	10/07/08	KWG0810402	
Aroclor 1221	ND	U	20	1.3	1	10/03/08	10/07/08	KWG0810402	
Aroclor 1232	ND	U	10	1.3	1	10/03/08	10/07/08	KWG0810402	
Aroclor 1242	ND	U	10	1.3	1	10/03/08	10/07/08	KWG0810402	
Aroclor 1248	ND	U	10	1.3	1	10/03/08	10/07/08	KWG0810402	
Aroclor 1254	ND	U	10	1.3	1	10/03/08	10/07/08	KWG0810402	
Aroclor 1260	**200**		10	1.3	1	10/03/08	10/07/08	KWG0810402	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	67	38-144	10/07/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808040
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0166	**Units:**	ug/Kg
Lab Code:	K0808040-008	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	37	37	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1221	ND	Ui	36	36	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1232	ND	Ui	22	22	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1242	ND	Ui	12	12	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1248	ND	U	5.4	1.3	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1254	**180**		5.4	1.3	1	09/30/08	10/03/08	KWG0810203	
Aroclor 1260	**260**		5.4	1.3	1	09/30/08	10/03/08	KWG0810203	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	73	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808040
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0167	**Units:**	ug/Kg
Lab Code:	K0808040-011	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	100	13	10	10/03/08	10/07/08	KWG0810402	
Aroclor 1221	ND	U	200	13	10	10/03/08	10/07/08	KWG0810402	
Aroclor 1232	ND	U	100	13	10	10/03/08	10/07/08	KWG0810402	
Aroclor 1242	ND	U	100	13	10	10/03/08	10/07/08	KWG0810402	
Aroclor 1248	ND	U	100	13	10	10/03/08	10/07/08	KWG0810402	
Aroclor 1254	ND	U	100	13	10	10/03/08	10/07/08	KWG0810402	
Aroclor 1260	**1200**	D	100	13	10	10/03/08	10/07/08	KWG0810402	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	94	38-144	10/07/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808092
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0178	**Units:**	ug/Kg
Lab Code:	K0808092-007	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1221	ND	U	20	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1232	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1242	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1248	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1254	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1260	**420**		10	1.3	1	10/02/08	10/03/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	80	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808092
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0179	**Units:**	ug/Kg
Lab Code:	K0808092-009	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1221	ND	U	21	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1232	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1242	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1248	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1254	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1260	**190**		11	1.4	1	10/02/08	10/03/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	75	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808092
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0180	**Units:**	ug/Kg
Lab Code:	K0808092-005	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/03/08	10/08/08	KWG0810402	
Aroclor 1221	ND	U	20	1.3	1	10/03/08	10/08/08	KWG0810402	
Aroclor 1232	ND	U	10	1.3	1	10/03/08	10/08/08	KWG0810402	
Aroclor 1242	ND	U	10	1.3	1	10/03/08	10/08/08	KWG0810402	
Aroclor 1248	ND	U	10	1.3	1	10/03/08	10/08/08	KWG0810402	
Aroclor 1254	ND	U	10	1.3	1	10/03/08	10/08/08	KWG0810402	
Aroclor 1260	**190**		10	1.3	1	10/03/08	10/08/08	KWG0810402	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	83	38-144	10/08/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808092
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0187	**Units:**	ug/Kg
Lab Code:	K0808092-014	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1221	ND	U	20	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1232	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1242	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1248	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1254	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1260	**160**		10	1.3	1	10/02/08	10/03/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	78	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808092
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0188	**Units:**	ug/Kg
Lab Code:	K0808092-015	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1221	ND	U	21	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1232	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1242	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1248	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1254	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1260	**170**		11	1.4	1	10/02/08	10/03/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	83	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808092
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0189	**Units:**	ug/Kg
Lab Code:	K0808092-012	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1221	ND	U	20	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1232	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1242	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1248	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1254	ND	U	10	1.3	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1260	**670**		10	1.3	1	10/02/08	10/03/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	74	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808098
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0196	**Units:**	ug/Kg
Lab Code:	K0808098-002	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1221	ND	U	20	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1232	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1242	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1248	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1254	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1260	**340**		10	1.3	1	10/02/08	10/04/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	87	38-144	10/04/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808098
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0197	**Units:**	ug/Kg
Lab Code:	K0808098-003	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1221	ND	U	20	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1232	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1242	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1248	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1254	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1260	**330**		10	1.3	1	10/02/08	10/04/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	80	38-144	10/04/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808098
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0198	**Units:**	ug/Kg
Lab Code:	K0808098-004	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	11	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1221	ND	U	21	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1232	ND	U	11	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1242	ND	U	11	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1248	ND	U	11	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1254	ND	U	11	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1260	**190**		11	1.4	1	10/02/08	10/04/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	62	38-144	10/04/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808098
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0199	**Units:**	ug/Kg
Lab Code:	K0808098-006	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	100	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1221	ND	U	200	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1232	ND	U	100	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1242	ND	U	100	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1248	ND	U	100	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1254	ND	U	100	13	10	10/02/08	10/04/08	KWG0810354	
Aroclor 1260	**1700**	D	100	13	10	10/02/08	10/04/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	86	38-144	10/04/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808096
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0213	**Units:**	ug/Kg
Lab Code:	K0808096-004	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	100	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1221	ND	U	200	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1232	ND	U	100	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1242	ND	U	100	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1248	ND	U	100	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1254	**1500**	D	100	13	10	10/03/08	10/08/08	KWG0810402	
Aroclor 1260	ND	U	100	13	10	10/03/08	10/08/08	KWG0810402	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	83	38-144	10/08/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808096
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0214	**Units:**	ug/Kg
Lab Code:	K0808096-005	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1221	ND	U	21	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1232	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1242	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1248	ND	U	11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1254	**270**		11	1.4	1	10/02/08	10/03/08	KWG0810354	
Aroclor 1260	**190**		11	1.4	1	10/02/08	10/03/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	107	38-144	10/03/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808096
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0215	**Units:**	ug/Kg
Lab Code:	K0808096-007	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1221	ND	U	20	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1232	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1242	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1248	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1254	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1260	**540**		10	1.3	1	10/02/08	10/04/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	91	38-144	10/04/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0221	**Units:**	ug/Kg
Lab Code:	K0808138-001	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1221	ND	Ui	15	1.9	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1232	ND	Ui	11	11	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1242	ND	Ui	7.4	7.4	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1248	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1254	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1260	**18**		7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1262	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1268	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	81	38-144	09/20/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0222	**Units:**	ug/Kg
Lab Code:	K0808138-002	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1221	ND	Ui	15	8.0	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1232	ND	Ui	7.4	7.0	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1242	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1248	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1254	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1260	**20**		7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1262	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1268	ND	U	7.4	1.3	1	09/15/08	09/20/08	KWG0809417	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	78	38-144	09/20/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0223	**Units:**	ug/Kg
Lab Code:	K0808138-004	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	68	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1221	ND	U	140	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1232	ND	U	68	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1242	ND	U	68	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1248	ND	U	68	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1254	ND	U	68	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1260	**2900**	D	68	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1262	ND	U	68	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1268	ND	U	68	13	10	09/15/08	09/20/08	KWG0809417	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	108	38-144	09/20/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0224	**Units:**	ug/Kg
Lab Code:	K0808138-006	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1221	ND	U	130	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1232	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1242	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1248	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1254	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1260	**4700**	D	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1262	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1268	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	90	38-144	09/20/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0226	**Units:**	ug/Kg
Lab Code:	K0808138-003	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	6.8	2.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1221	ND	Ui	14	9.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1232	ND	Ui	24	24	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1242	ND	Ui	6.8	6.8	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1248	ND	U	6.8	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1254	ND	U	6.8	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1260	**120**		6.8	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1262	ND	U	6.8	1.3	1	09/15/08	09/20/08	KWG0809417	*
Aroclor 1268	ND	U	6.8	1.3	1	09/15/08	09/20/08	KWG0809417	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	70	38-144	09/20/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0227	**Units:**	ug/Kg
Lab Code:	K0808138-005	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	70	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1221	ND	U	140	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1232	ND	Ui	70	60	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1242	ND	U	70	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1248	ND	U	70	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1254	ND	U	70	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1260	**1100**	D	70	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1262	ND	U	70	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1268	ND	U	70	13	10	09/15/08	09/20/08	KWG0809417	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	101	38-144	09/20/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0228	**Units:**	ug/Kg
Lab Code:	K0808138-007	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1221	ND	U	130	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1232	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1242	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1248	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1254	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1260	**1900**	D	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1262	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*
Aroclor 1268	ND	U	61	13	10	09/15/08	09/20/08	KWG0809417	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	104	38-144	09/20/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils Inv./A0006-15-F
Sample Matrix: Soil

Service Request: K0808138
Date Collected: 08/26/2008
Date Received: 08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SPD0230
Lab Code: K0808138-012

Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	11	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1221	ND	U	21	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1232	ND	U	11	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1242	ND	U	11	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1248	ND	U	11	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1254	ND	U	11	1.4	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1260	**130**		11	1.4	1	10/02/08	10/04/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	67	38-144	10/04/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0231	**Units:**	ug/Kg
Lab Code:	K0808138-013	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1221	ND	U	20	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1232	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1242	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1248	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1254	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1260	**110**		10	1.3	1	10/02/08	10/04/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	64	38-144	10/04/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0232	**Units:**	ug/Kg
Lab Code:	K0808138-009	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1221	ND	U	20	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1232	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1242	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1248	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1254	ND	U	10	1.3	1	10/02/08	10/04/08	KWG0810354	
Aroclor 1260	**580**		10	1.3	1	10/02/08	10/04/08	KWG0810354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	69	38-144	10/04/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008

Polychlorinated Biphenyls (PCBs)

Sample Name:	SPD0233	**Units:**	ug/Kg
Lab Code:	K0808138-010	**Basis:**	Dry
Extraction Method:	EPA 3540C	**Level:**	Low
Analysis Method:	8082		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	50	6.5	5	10/03/08	10/08/08	KWG0810402	
Aroclor 1221	ND	U	100	6.5	5	10/03/08	10/08/08	KWG0810402	
Aroclor 1232	ND	U	50	6.5	5	10/03/08	10/08/08	KWG0810402	
Aroclor 1242	ND	U	50	6.5	5	10/03/08	10/08/08	KWG0810402	
Aroclor 1248	ND	U	50	6.5	5	10/03/08	10/08/08	KWG0810402	
Aroclor 1254	ND	U	50	6.5	5	10/03/08	10/08/08	KWG0810402	
Aroclor 1260	**640**	D	50	6.5	5	10/03/08	10/08/08	KWG0810402	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	83	38-144	10/08/08	Acceptable

Comments:

TOTAL SOLIDS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils Inv./A0006-15F
Sample Matrix: Filter

Service Request: K0807873

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0002	K0807873-008	08/18/2008	08/20/2008	08/29/2008	73.6	
SPD0036	K0807873-009	08/19/2008	08/21/2008	08/29/2008	96.6	
SPD0040	K0807873-010	08/19/2008	08/21/2008	08/29/2008	95.6	
SPD0043	K0807873-011	08/19/2008	08/21/2008	08/29/2008	91.9	
SPD0049	K0807873-012	08/20/2008	08/21/2008	08/29/2008	92.6	
SPD0046	K0807873-013	08/20/2008	08/21/2008	08/29/2008	96.8	
SPD0054	K0807873-014	08/20/2008	08/21/2008	08/29/2008	92.3	
SPD0056	K0807873-015	08/20/2008	08/21/2008	08/29/2008	88.0	
SPD0059	K0807873-016	08/20/2008	08/21/2008	08/29/2008	94.8	
SPD0066	K0807873-017	08/21/2008	08/22/2008	08/29/2008	73.3	
SPD0064	K0807873-018	08/21/2008	08/22/2008	08/29/2008	65.5	
SPD0077	K0807873-019	08/21/2008	08/22/2008	08/29/2008	79.2	
SPD0086	K0807873-020	08/21/2008	08/22/2008	08/29/2008	87.6	
SPD0160	K0807873-021	08/22/2008	08/23/2008	08/29/2008	94.1	
SPD0164	K0807873-022	08/22/2008	08/23/2008	08/29/2008	89.3	
SPD0168	K0807873-023	08/22/2008	08/23/2008	08/29/2008	90.2	
SPD0094	K0807873-024	08/21/2008	08/23/2008	08/29/2008	91.1	
SPD0143	K0807873-025	08/21/2008	08/23/2008	08/29/2008	91.4	
SPD0184	K0807873-026	08/25/2008	08/26/2008	08/29/2008	82.3	
SPD0186	K0807873-027	08/25/2008	08/26/2008	08/29/2008	83.3	
SPD0212	K0807873-028	08/25/2008	08/26/2008	08/29/2008	85.0	
SPD0194	K0807873-029	08/25/2008	08/26/2008	08/29/2008	90.7	
SPD0204	K0807873-030	08/25/2008	08/26/2008	08/29/2008	86.0	
SPD0145	K0807873-031	08/22/2008	08/26/2008	08/29/2008	86.5	
SPD0154	K0807873-032	08/22/2008	08/26/2008	08/29/2008	33.5	
SPD0155	K0807873-033	08/22/2008	08/26/2008	08/29/2008	37.6	
SPD0156	K0807873-034	08/22/2008	08/23/2008	08/29/2008	93.0	
SPD0055	K0807873-035	08/20/2008	08/21/2008	08/29/2008	87.8	
SPD0136	K0807873-036	08/20/2008	08/22/2008	08/29/2008	86.2	
SPD0138	K0807873-037	08/20/2008	08/22/2008	08/29/2008	84.3	
SPD0132	K0807873-038	08/20/2008	08/22/2008	08/29/2008	84.9	
SPD0220	K0807873-039	08/26/2008	08/27/2008	08/29/2008	83.4	
SPD0229	K0807873-040	08/26/2008	08/27/2008	08/29/2008	89.2	
SPD0229	K0807873-041	08/26/2008	08/27/2008	08/29/2008	89.1	

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/21/2008
		Date Analyzed:	08/29/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0043	K0807873-011	91.9	91.2	91.6	<1	

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
		Date Analyzed:	08/29/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0160	K0807873-021	94.1	94.1	94.1	<1	

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
		Date Analyzed:	08/29/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0145	K0807873-031	86.5	86.7	86.6	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporatcd
Project: T-117 EAA Soils Inv./A0006-15F
Sample Matrix: Soil

Service Request: K0807873

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0015	K0807873-001	08/19/2008	08/20/2008	08/27/2008	92.9	
SPD0020	K0807873-002	08/19/2008	08/20/2008	08/27/2008	85.5	
SPD0024	K0807873-003	08/19/2008	08/20/2008	08/27/2008	95.6	
SPD0027	K0807873-004	08/19/2008	08/20/2008	08/27/2008	91.7	
SPD0030	K0807873-005	08/19/2008	08/20/2008	08/27/2008	92.4	
SPD0033	K0807873-006	08/19/2008	08/20/2008	08/27/2008	94.9	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807873
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/19/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
		Date Analyzed:	08/27/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0033	K0807873-006	94.9	94.5	94.7	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils Inv./A0006-15F
Sample Matrix: Soil

Service Request: K0808028

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0080	K0808028-010	08/21/2008	08/22/2008	09/30/2008	88.0	
SPD0079	K0808028-012	08/21/2008	08/22/2008	09/30/2008	86.8	
SPD0082	K0808028-013	08/21/2008	08/22/2008	09/30/2008	88.9	
SPD0084	K0808028-015	08/21/2008	08/22/2008	09/30/2008	90.2	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808028
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/21/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
		Date Analyzed:	09/30/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0084	K0808028-015	90.2	90.6	90.4	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils Inv./A0006-I5F
Sample Matrix: Soil

Service Request: K0808043

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0088	K0808043-001	08/21/2008	08/23/2008	09/30/2008	86.2	
SPD0090	K0808043-003	08/21/2008	08/23/2008	09/30/2008	93.9	
SPD0093	K0808043-006	08/21/2008	08/23/2008	09/30/2008	90.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils INV./A0006-15F
Sample Matrix: Soil

Service Request: K0807836

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0106	K0807836-015	08/18/2008	08/20/2008	08/29/2008	88.8	
SPD0114	K0807836-016	08/18/2008	08/20/2008	08/29/2008	90.6	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0807836
Project:	T-117 EAA Soils INV./A0006-15F	**Date Collected:**	08/18/2008
Sample Matrix:	Soil	**Date Received:**	08/20/2008
		Date Analyzed:	08/29/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0114	K0807836-016	90.6	90.9	90.8	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils Inv./A0006-15F
Sample Matrix: Soil

Service Request: K0808015

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0128	K0808015-002	08/20/2008	08/22/2008	09/30/2008	82.8	
SPD0130	K0808015-005	08/20/2008	08/22/2008	09/30/2008	89.9	
SPD0134	K0808015-006	08/20/2008	08/22/2008	09/30/2008	84.2	
SPD0118	K0808015-009	08/20/2008	08/22/2008	09/30/2008	81.1	
SPD0117	K0808015-011	08/20/2008	08/22/2008	09/30/2008	87.4	
SPD0116	K0808015-013	08/20/2008	08/22/2008	09/30/2008	95.1	
SPD0123	K0808015-015	08/20/2008	08/22/2008	09/30/2008	90.1	
SPD0124	K0808015-016	08/20/2008	08/22/2008	09/30/2008	77.2	
SPD0122	K0808015-019	08/20/2008	08/22/2008	09/30/2008	94.6	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808015
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/20/2008
Sample Matrix:	Soil	**Date Received:**	08/22/2008
		Date Analyzed:	09/30/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0128	K0808015-002	82.8	82.6	82.7	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils Inv./A0006-15F
Sample Matrix: Sediment

Service Request: K0808041

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0154	K0808041-010	08/22/2008	08/23/2008	09/25/2008	37.2	
SPD0155	K0808041-011	08/22/2008	08/23/2008	09/25/2008	37.4	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808041
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
		Date Analyzed:	09/25/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0155	K0808041-011	37.4	34.5	36.0	8	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils Inv./A0006-15F
Sample Matrix: Soil

Service Request: K0808041

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0157	K0808041-012	08/22/2008	08/23/2008	09/30/2008	93.8	
SPD0158	K0808041-015	08/22/2008	08/23/2008	09/30/2008	89.8	
SPD0159	K0808041-016	08/22/2008	08/23/2008	09/30/2008	92.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils Inv./A0006-15F
Sample Matrix: Soil

Service Request: K0808040

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0166	K0808040-008	08/22/2008	08/23/2008	09/30/2008	92.0	
SPD0165	K0808040-009	08/22/2008	08/23/2008	09/30/2008	82.3	
SPD0167	K0808040-011	08/22/2008	08/23/2008	09/30/2008	91.7	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808040
Project:	T-117 EAA Soils Inv./A0006-15F	**Date Collected:**	08/22/2008
Sample Matrix:	Soil	**Date Received:**	08/23/2008
		Date Analyzed:	09/30/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0167	K0808040-011	91.7	91.3	91.5	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils NW/A0006-15F
Sample Matrix: Soil

Service Request: K0808092

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0180	K0808092-005	08/25/2008	08/26/2008	09/30/2008	80.1	
SPD0178	K0808092-007	08/25/2008	08/26/2008	09/30/2008	86.1	
SPD0179	K0808092-009	08/25/2008	08/26/2008	09/30/2008	81.9	
SPD0189	K0808092-012	08/25/2008	08/26/2008	09/30/2008	89.2	
SPD0187	K0808092-014	08/25/2008	08/26/2008	09/30/2008	81.8	
SPD0188	K0808092-015	08/25/2008	08/26/2008	09/30/2008	80.5	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808092
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
		Date Analyzed:	09/30/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0180	K0808092-005	80.1	79.2	79.7	1	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils NW/A0006-15F
Sample Matrix: Soil

Service Request: K0808098

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0196	K0808098-002	08/25/2008	08/26/2008	09/30/2008	89.3	
SPD0197	K0808098-003	08/25/2008	08/26/2008	09/30/2008	89.4	
SPD0198	K0808098-004	08/25/2008	08/26/2008	09/30/2008	91.7	
SPD0199	K0808098-006	08/25/2008	08/26/2008	09/30/2008	92.8	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808098
Project:	T-117 EAA Soils NW/A0006-15F	**Date Collected:**	08/25/2008
Sample Matrix:	Soil	**Date Received:**	08/26/2008
		Date Analyzed:	09/30/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0199	K0808098-006	92.8	92.5	92.7	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils NW/A0006-15F
Sample Matrix: Soil

Service Request: K0808096

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0213	K0808096-004	08/25/2008	08/26/2008	09/30/2008	90.9	
SPD0214	K0808096-005	08/25/2008	08/26/2008	09/30/2008	81.5	
SPD0215	K0808096-007	08/25/2008	08/26/2008	09/30/2008	83.3	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Integral Consulting, Incorporated
Project: T-117 EAA Soils Inv./A0006-15-F
Sample Matrix: Soil

Service Request: K0808138

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SPD0221	K0808138-001	08/26/2008	08/27/2008	09/16/2008	77.4	
SPD0222	K0808138-002	08/26/2008	08/27/2008	09/16/2008	76.7	
SPD0226	K0808138-003	08/26/2008	08/27/2008	09/16/2008	84.3	
SPD0223	K0808138-004	08/26/2008	08/27/2008	09/16/2008	83.9	
SPD0227	K0808138-005	08/26/2008	08/27/2008	09/16/2008	82.4	
SPD0224	K0808138-006	08/26/2008	08/27/2008	09/16/2008	94.0	
SPD0228	K0808138-007	08/26/2008	08/27/2008	09/16/2008	94.0	
SPD0232	K0808138-009	08/26/2008	08/27/2008	10/01/2008	89.9	
SPD0233	K0808138-010	08/26/2008	08/27/2008	10/01/2008	92.9	
SPD0230	K0808138-012	08/26/2008	08/27/2008	10/01/2008	83.5	
SPD0231	K0808138-013	08/26/2008	08/27/2008	10/01/2008	83.0	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	K0808138
Project:	T-117 EAA Soils Inv./A0006-15-F	**Date Collected:**	08/26/2008
Sample Matrix:	Soil	**Date Received:**	08/27/2008
		Date Analyzed:	10/01/2008

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SPD0228	K0808138-007	94.0	93.5	93.8	<1	

APPENDIX G

Data Management Rules

Appendix G Data Management Rules

G.1 Laboratory Replicate Samples

Chemical concentrations obtained from the analysis of laboratory duplicate or replicate samples (two or more analyses on the same sample) are averaged for a closer representation of the "true" concentration as compared to the results of a single analysis. Averaging rules are dependent on whether the individual results are detected concentrations or reporting limits (RLs) for undetected analytes. If all concentrations are detects for a given parameter, the values are simply averaged arithmetically. If all concentrations are undetected for a given parameter, the minimum RL is reported. If the concentrations are a mixture of detected concentrations and RLs, any two or more detected concentrations are averaged arithmetically and RLs are ignored. If there is a single detected concentration and one or more RLs, the detected concentration is reported. The latter two rules are applied regardless of whether the RLs are higher or lower than the detected concentration.

G.2 Significant Figures and Rounding

The laboratories report results with different numbers of significant figures depending on the instrument, parameter, and the concentration relative to the reporting limit (RL). The reported (or assessed) precision of each observation is explicitly stored in the project database as a record of the number of significant figures assigned by the laboratory. The tracking of significant figures becomes important when calculating averages and performing other data summaries.

When a calculation involves addition, such as totaling polychlorinated biphenyls (PCBs) or polycyclic aromatic hydrocarbons (PAHs), the calculation can only be as precise as the least precise number that went into the calculation. For example (assuming two significant figures):

> 210 + 19 = 229, but this would be reported as 230 because the trailing zero in the number 210 is not significant.

When a calculation involves multiplication or division, such as when organic carbon normalizing is used, all significant figures are carried through the calculation, and then the total result is rounded at the end of the calculation to reflect the value used in the calculation with the fewest significant figures. For example:

> 59.9 x 1.2 = 71.88, to be reported as 72 because there are two significant figures in the number 1.2.

When rounding, if the number following the last significant figure is less than 5, the digit is left unchanged. If the number following the last significant figure is equal to or greater than 5, the digit is increased by 1.

Many of the Washington State Sediment Management Standards (SMS) chemical criteria are in units normalized to the total organic carbon (TOC) content in the sediment sample (mg/kg OC). Only samples with TOC concentrations ≥0.5% or ≤4.0% are considered appropriate for organic carbon normalization. Samples with TOC concentrations <0.5% or >4.0% are compared to dry weight chemical criteria. Chemical concentrations originally in units of µg/kg dry weight were converted to mg/kg OC using the following equation:

$$\frac{(C_{\mu g/kg\ dry\ weight}) \times (0.001\ mg/\mu g)}{TOC}$$

Where*:*

C = the chemical concentration

TOC = the percent total organic carbon on a dry weight basis, expressed as a decimal (e.g., 1% = 0.01)]

G.3 DILUTIONS

All analyte concentrations within the calibration range of the instrument in the lowest analytical dilution are selected as the final result. Any analyte concentrations that exceed the calibration range and are qualified as estimated by the laboratory as an exceedance (E-qualified) are rejected by the data validator. The values for these analytes are selected from the analysis of the sample dilution in which the analyte concentration is within the calibration range of the instrument. In cases where the result from the lowest analytical dilution is qualified by the laboratory or the validator, the validator uses best professional judgment to determine whether or not the qualification warrants the selection of the result from another analytical dilution as the final result.

G.4 MULTIPLE RESULTS FOR THE SAME ANALYTE USING ONE ANALYTICAL METHOD

Multiple analyses of a sample for a group of analytes can occur as a result of laboratory quality assurance (QA) issues that may only affect a subset of the analyte group. In these cases, there may be multiple results for certain analytes. The data validator uses the following rules to select a single value when multiple results are reported by the laboratory for a single analyte in a single sample using the same method.

- If all results are detected without qualification as an estimated value (i.e., J- or E-qualifier), then the result from the lowest analytical dilution is selected. If multiple, unqualified results from the same analytical dilution are available the highest concentration is selected as a health-protective approach.
- If a mixture of estimated (i.e., J-qualified) and unqualified detected results are reported, then the unqualified detected result is selected.

- If all results are reported as detected with estimated qualification, the "best result" is selected using best professional, technical judgment.
- If both undetected and detected results are reported, then the detected result is selected.
- If all results are reported as undetected, then the lowest RL is selected.

G.5 Multiple Results for an Analyte Determined by Different Analytical Methods

In cases where a single analyte is reported by more than one method, the preferred method is identified in the quality assurance project plan (QAPP). The results of this method are selected as the final value by the data validator unless the validator identifies a QA issue that warrants the selection of the results from an alternative method. These instances and the justification for decisions are documented in the data validation report. In cases where the results are generated in two separate analytical groups that are not submitted to the validator together, the QA manager is responsible for evaluating the results and determining the most appropriate final result.

G.6 Calculating Totals

Concentrations for analyte sums are calculated as follows:

- **Total PCBs** are calculated, in accordance with the methods of the Washington State Sediment Management Standards (SMS), using only detected values for seven Aroclor mixtures.[1] For individual samples in which none of the seven Aroclor mixtures is detected, total PCBs are given a value equal to the highest RL of the seven Aroclors and assigned a U-qualifier indicating the lack of detected concentrations.
- **Total low-molecular-weight PAHs (LPAHs), high-molecular-weight PAHs (HPAHs), PAHs, and benzofluoranthenes** are also calculated in accordance with the methods of the SMS. Total LPAHs are the sum of detected concentrations for naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, and anthracene. Total HPAHs are the sum of detected concentrations for fluoranthene, pyrene, benzo(a)anthracene, chrysene, total benzofluoranthenes, benzo(a)pyrene, indeno(1,2,3,-c,d)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene. Total benzofluoranthenes are the sum of the b (i.e., benzo(b)fluoranthene), j, and k isomers. Because the j isomer is rarely quantified, this sum is typically calculated with only the b and k isomers. For samples in which all individual compounds within any of the three groups described above are undetected, the single highest RL for that sample represents the sum.

[1] Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

- **Total DDTs** are calculated using only detected values for the six DDT isomers: 2,4'-DDD; 4,4'-DDD; 2,4'-DDE; 4,4'-DDE; 2,4'-DDT; and 4,4'-DDT. For individual samples in which none of the isomers are detected, total DDTs are given a value equal to the highest RL of the six isomers and assigned a U-qualifier, indicating the lack of detected concentrations.
- **Total chlordane** is calculated using only detected values for the following compounds: alpha-chlordane, gamma-chlordane, oxychlordane, cis-nonachlor, and trans-nonachlor. For individual samples in which none of these compounds is detected, total chlordane is given a value equal to the highest RL of the five compounds listed above and assigned a U-qualifier, indicating the lack of detected concentrations.
- **Total petroleum hydrocarbon (TPH)** is calculated as the sum of the detected concentrations of the diesel and oil fractions. For individual samples in which neither diesel nor oil is detected, TPH is given a value equal to the highest RL of the individual fractions and assigned a U-qualifier indicating the lack of detected concentrations. Results generated using the Northwest total petroleum hydrocarbon – hydrocarbon identification (NWTPH-HCID) or Northwest total petroleum hydrocarbon – gasoline (NWTPH-G) methods are not calculated in this total.

G.7 CALCULATION OF DIOXIN/FURAN CONGENER TEQS

Dioxin/furan congener TEQs are calculated using the WHO consensus TEF values (Van den Berg et al. 2006) for mammals as presented in Table G-2. The TEQ is calculated as the sum of each congener concentration multiplied by the corresponding TEF value. When the congener concentration is reported as undetected, then the TEF is multiplied by half the RL.

Table G-2. Dioxin/furan congener TEF values for mammals

DIOXIN/FURAN CONGENER	TEF VALUE (UNITLESS)
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.01
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1
1,2,3,7,8-Pentachlorodibenzofuran	0.03
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1
2,3,4,7,8-Pentachlorodibenzofuran	0.3
2,3,7,8-Tetrachlorodibenzofuran	0.1
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1
Octachlorodibenzofuran	0.0003
Octachlorodibenzo-p-dioxin	0.0003

G.8 CALCULATION OF CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS

Carcinogenic polycyclic aromatic hydrocarbons (cPAH) values were calculated using TEF values (California EPA 1994; Ecology 2001) based on the individual PAH component's relative toxicity to benzo(a)pyrene. TEF values are presented in Table G-3. The cPAH was calculated as the sum of each individual PAH concentration multiplied by the corresponding TEF value. When the individual PAH component concentration was reported as non-detected, then the TEF was multiplied by half the RL.

Table G-3. cPAH TEF values

cPAH	TEF VALUE (UNITLESS)
Benzo(a)pyrene	1
Benzo(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.1
Dibenz(a,h)anthracene	0.4
Indeno(1,2,3-cd)pyrene	0.1
Chrysene	0.01

cPAH – carcinogenic polycyclic aromatic hydrocarbon

TEF – toxic equivalency factor

G.9 DATA QUALITY

Data used in the T117 Engineering Evaluation / Cost Assessment (EE/CA) must be relevant and of sufficient data quality. Data may be excluded from the T117 EE/CA for the following reasons:

- If the sample has been removed from the site after the sample was collected (e.g., upland soil that has been excavated, and sediment samples that have been dredged)
- If data quality is determined to be insufficient (e.g., the data have not been validated and/or supportive documentation is not available so the accuracy of the data can not be verified)
- If the data is too old to be considered reflective of current site conditions (i.e., the samples were collected prior to 1990)

G.10 REFERENCES

PSEP. 1997. Recommended guidelines for sampling marine sediment, water column, and tissue in Puget Sound. Final report. Prepared for the US Environmental Protection Agency, Seattle, WA. Puget Sound Water Quality Action Team, Olympia, WA.

Van den Berg M, Birnbaum LS, Denison M, De Vito M, Farland W, Feeley M, Fiedler H, Hakansson H, Hanberg A, Haws L, Rose M, Safe S, Schrenk D, Tohyama C, Tritscher A, Tuomisto J, Tysklind M, Walker N, Peterson RE. 2006. The 2005 World Health Organization reevaluation of human and mammalian toxic equivalency factors for dioxins and dioxin-like compounds. Tox Sci 93(2):223-241.