Final Fifth Operational Phase Non-Air Media Monitoring June 2014

Montgomery County, Maryland Solid Waste Resource Recovery Facility Dickerson, Maryland

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EXECUTIVE SUMMARY

The Maryland Solid Waste Resource Recovery Facility (RRF) in Dickerson, Montgomery County, Maryland became operational in the spring of 1995. During the planning process for this facility, nearby residents voiced concerns regarding the potential effect(s) of the facility's emissions (primarily dioxins/furans and trace metals) on human health and the environment. In response to these concerns, the County initiated a multi-media monitoring program both before and after the facility became operational. The programs were conducted in both air media and non-air environmental media. This report presents the results obtained in the most recent non-air media monitoring program conducted in 2014 and compares these results with the previous results obtained in the 1994-95, 96-98, 2001, 2004, and 2007 programs. The primary objective of the non-air environmental media sampling program and this report is to determine whether or not there are measurable changes in the concentrations of dioxins/furans and trace metals in selected non-air media in the actual environment over time.

This monitoring program, and this report, are not intended to provide a health risk assessment. The County conducted a human health risk assessment under USEPA protocols and reported those results in a separate report, entitled "2014 Update of the Montgomery County Resource Recovery Facility Health Risk Assessment" (HRA). However, a secondary objective of this is non-air environmental media monitoring report is to assess, to the extent possible, the consistency (or lack of consistency) of non-air environmental media field observations with the results of the air dispersion modeling and other technical protocols performed by TRC in preparation of that HRA that was recently updated in 2014 (TRC, 2014a).

The following is a summary of non-air environmental media sampling program events conducted by the County to date:

- Pre-operational phase sampling conducted over a period of twelve months in 1994-95 before the facility was operational,
- First operational phase sampling conducted over a period of eighteen months in 1996-98 after full operations commenced in 1995,
- Second operational phase sampling conducted in the fall of 2001 approximately six years after the RRF became operational,
- Third operational phase sampling conducted in July-October 2004 approximately nine years after the RRF became operational, and
- Fourth operational phase sampling conducted in June 2007 approximately 12 years after the RRF became operational, and

• Fifth operation phase – sampling conducted in June 2014 approximately 19 years after the RRF became operational.

During the 2014 monitoring program, data were collected to determine the presence of various organic and inorganic chemicals in several media. Media evaluated in the 2014 sampling effort include hay and cow's milk as well as surface water, sediment, and fish from three farm ponds located in the vicinity of the RRF. The chemicals analyzed in non-air environmental media samples included polychlorinated dioxins and furans (PCDDs/PCDFs) and selected metals (arsenic, beryllium, cadmium, chromium, lead, mercury, and nickel).

Dioxins and furans consist of a class of 210 chlorinated organic compounds (i.e., PCDDs and PCDFs). Of these, 17 specific PCDD/PCDF compounds, called congeners, are considered to be toxic and have been assigned relative toxicity factors known as Toxic Equivalency Factors (TEFs). A TEF reflects the relative toxicity of an individual PCDD or PCDF compound compared to 2,3,7,8-TCDD, the most toxic and well-studied congener among the PCDDs/PCDFs. The overall concentration of a sample is calculated by multiplying the concentration values for each of the 17 PCDDs/PCDFs by its TEF. The sum of the products of the TEFs and associated congener concentrations then becomes the 2,3,7,8-TCDD toxic equivalent (TEQ), a value which can be used to evaluate a sample containing a mixture of PCDDs/PCDFs. Many of the dioxin/furan results discussed in this report are expressed as TEQ values.

This report evaluates the 2014 5th operational-phase data relative to earlier 1994-95 preoperational and 1996-98, 2001, 2004 and 2007 operational phase sampling events for the chemicals in non-air media samples to determine whether evidence exists that facility operations may have measurably influenced the levels of the sampled chemicals in the terrestrial or aquatic environment. The 2014 data are evaluated relative to historical measurements, and statistical trend analyses are also conducted where sufficient data were available. In addition, the data collected during the 2014 monitoring program are also compared to media-specific benchmark levels. These benchmarks levels are derived from a variety of sources and represent benchmarks pertinent to human health or the environment.

Over the many years of these sampling programs, the ability of laboratory methods to detect chemical concentrations have improved, resulting in the ability to detect lower concentrations recently compared to in the past. These changing detection limits complicate evaluation of sampling data over time. For the second operational (2001), third operational (2004), fourth operational (2007) and the fifth operational (2014) phase monitoring programs, detection limits were lower than the pre-operational (1994) and first operational (1996) phase monitoring programs. Due to lower detection limits, several chemicals that had been previously

undetected were detected in 2001, 2004, 2007, and 2014. Therefore, the presence of these chemicals in more recent (i.e., 2001, 2004, 2007 or 2014) data does not suggest that there has been an increase in concentration of such chemicals; rather it indicates that the more sensitive and precise methods used for analysis allowed the laboratory to detect and quantify concentrations which may be lower than the detection limits from previous years monitoring programs.

Undetected congeners are a source of considerable uncertainty in this study, particularly for PCDDs/PCDFs for which many results were non-detects. An undetected compound may exist at any level between zero and its laboratory detection limit. When interpreting the results, the actual concentration of the compound may be assumed to be zero, or it may be assumed to exist at the detection limit. Other than stating the assumptions used, there is no "standard" way to handle non-detects in the calculation of TEQ values. In order to take into account this uncertainty, non-detected chemical concentrations were evaluated in two ways: assuming zero values for all non-detects and assuming non-detects are present at a concentration equal to the detection limit. This provides a bounding range for the reported concentrations. The potential uncertainty associated with non-detect sampling results is amplified when calculating TEQ concentrations for all 17 congeners – any number of which may be non-detects.

The 2014 data presented in this report do not indicate measurable facility impacts upon the presence or concentration of chemicals in the various sample types. The media evaluated in this program contain various metals and organic compounds that are either part of their natural composition or may be associated with numerous anthropogenic sources that include coal-fired electric power generating stations, municipal waste combustion facilities, home wood burning and vehicle emissions. Reports from the Centers for Disease Control and Prevention (2005) and U.S. EPA (2005) indicate that dioxin emissions and resulting ambient levels of dioxins have been on a downward trend in the U.S. since the 1980's. Although dioxin/furan concentrations have significantly decreased in surface water/sediment samples collected from several of the nearby ponds, these declines may be attributed to decreasing detection limits. Dioxin/furan levels appear to be declining in the remaining environmental media sampled, however, significant statistical decreases are not present.

The following is a summary of findings based on review of the data collected in the 2014 monitoring program.

Surface Water

• Water quality measurements of pH and dissolved oxygen content were found to be in the normal range at all three ponds with the two deeper ponds exhibiting

- thermal stratification with very low dissolved oxygen levels near the pond bottoms;
- Mercury was not detected in any of the surface water samples;
- Surface water concentrations of metals detected in all three ponds were generally consistent with, or lower than, historical data collected in previous monitoring programs. Significantly decreasing concentrations of cadmium and nickel were noted at Pond 3 and for cadmium, chromium and nickel at Pond 5. However, these decreases are likely attributable to lowered detection limits in latter sampling events;
- Assuming that non-detected PCDD/PCDF congeners are equal to zero, no statistical trends in TEQ concentrations are present for the three ponds for the 2014 and historical sampling results. Although a statistically decreasing trend is present for TEQs for Pond 4 assuming that non-detected congeners are equal to their detection limits, this is due to decreasing detection limits;
- For those PCDD/PCDF congeners detected in one or more samples collected during each operational phase, a statistically significant decrease in OCDD concentrations was noted at Pond 3;
- A comparison of the dioxin/furan distribution (by number of chlorines) in surface water samples with the RRF air emission profile indicates little similarity which is consistent with the circumstance of other contributing dioxin/furan sources.

Sediment

- All seven metals were detected in the sediment samples collected from the three ponds. The concentrations of the metals were generally consistent among the three ponds;
- Pond 4 has results from only three years of sampling. However, concentrations
 of all metals detected in 2014 in Pond 4 sediments are comparable or lower to
 previous sampling events;
- A statistical trends analysis was conducted for Ponds 3 and 5. Pond 3 sediment concentrations of cadmium have significantly decreased when evaluating the 2014 and historic data collected in previous monitoring programs. Mercury levels in Pond 5 sediment have also declined significantly although this is attributable to lower detection limits;
- When assuming a zero value for all non-detected PCDD/PCDF congeners, sediment TEQ concentrations in 2014 are comparable to TEQs noted in the 1990's and lower than TEQs noted in 2007. The statistical trend analysis concluded that no significant increasing/decreasing trends are present for dioxin/furan TEQs

- when non-detects are assumed to equal zero. If assuming non-detects are equal to detection limits, a significantly decreasing trend was noted in Pond 3 TEQs. No significant trends were noted in Pond 5 when non-detects were assumed to be equal to the detection limits;
- No statistically significant increasing or decreasing trends were noted in PCDD/PCDF congeners detected in one or more sediment samples collected during each operational phase;
- Little similarity was noted when comparing sediment dioxin/furan profiles with the RRF air emission profile. A comparison of HxCDF congeners detected in sediment samples from Ponds 3 and 4 with RRF air emission data of these congeners indicates that the source of the HxCDFs within the sediment is likely from open refuse burning, wood combustion or other undetermined sources.

Fish

- Each of the seven metals were detected in one or more of the fish tissue samples collected from the three ponds;
- Bluegill and largemouth bass fillet and whole body samples have detected concentrations of metals in 2014 that are comparable or lower than data collected in previous programs. Due to lower detection limits in latter sampling events, the bluegill whole-body concentrations of cadmium and mercury at Pond 3 and lead at Pond 5 exhibit significantly decreasing concentrations;
- Bluegill whole-body concentrations of chromium at Pond 4 have significantly
 increased if assuming all non-detects are equal to the detection limit although no
 significant trend is evident for chromium if assuming non-detects are equal to
 zero;
- TEQ concentrations in bluegill and largemouth bass fillet and whole body samples detected in 2014 at all three ponds are comparable or lower than data collected in previous sampling events. The trend analysis concluded that no significant increasing or decreasing trends are present for dioxin/furan TEQs for bluegill/largemouth bass whole-body samples or fillet samples when non-detects are assumed to equal zero or if non-detects were assumed to be equal to the detection limits;
- No statistically significant increasing or decreasing trends were noted in PCDD/PCDF congeners detected in one or more fish tissue samples collected during each operational phase;
- The dioxin/furan distribution profile (by number of chlorines) in fish tissue (whole-body and fillet) samples is not consistent with the RRF air emission profile which is suggestive of other contributing dioxin/furan sources.

<u>Hay</u>

- Metals concentrations in hay collected in 2014 from the Johnson Dairy Farm are generally consistent with concentrations detected in previous sampling events and the 2014 background results. Statistical trends analyses were conducted for hay samples collected from the Lermond Farm and the reference location in Lucketts, Virginia. No significant increasing/decreasing trends were noted in the Lermond Farm or background hay samples.
- For the 2014 hay sampling results, the TEQs are comparable to or lower than TEQs noted in 2001, 2004 and 2007. The trend analysis concluded that no significant increasing or decreasing trends are present for dioxin/furan TEQs for hay samples from either the Lermond Farm or the background location in Lucketts, Virginia when non-detects are assumed to equal zero or if non-detects were assumed to equal the detection limits;
- No statistically significant increasing or decreasing trends were noted in PCDD/PCDF congeners detected in one or more hay samples collected during each operational phase;
- Little similarity was noted when comparing hay dioxin/furan profiles with the RRF air emission profile. As dioxins/furans are expected to be present on vegetation from air deposition and direct air-to-plant transfer, this suggests a lack of impact of the RRF on the surrounding community.

Cow's Milk

- Beryllium, lead, and mercury were not detected in the 2014 milk samples.

 Arsenic and cadmium were each detected in one milk sample while chromium and nickel were detected in both samples;
- Metals concentrations in milk from 2014 are consistent with, or lower than, historic metals concentrations from previous monitoring programs. The trend analysis concluded that no significant increasing/decreasing trends are present for arsenic, cadmium, chromium and nickel;
- Two dioxin congeners (1,2,3,4,6,7,8-HpCDD and OCDD) and one furan congener (1,2,3,7,8-PeCDF) were detected in one of the two milk samples. No dioxin/furan congeners were detected in the other milk sample;
- The 2014 milk TEQs are comparable to earlier results when including the detection limits in the calculation of TEQs (i.e. ND = DL). The trend analysis concluded that no significant increasing or decreasing trends are present for dioxin/furan TEQs for milk samples from the Johnson Dairy Farm when non-detects are assumed to equal zero or if non-detects were assumed to equal the detection limits. Including all milk samples from both the Kingsbury and

- Johnson Dairy Farms in the trend analyses also showed that there are no significant increasing/ decreasing trends present for dioxin/furan TEQs;
- No statistically significant increasing or decreasing trends were noted in PCDD/PCDF congeners detected in one or more milk samples collected during each operational phase;
- Little similarity was noted when comparing milk dioxin/furan profiles with the RRF air emission profile. The dioxins/furans present in the cow's milk samples differ from the hay profiles and may be attributed to other sources or transformation/elimination due to metabolic processes after ingestion by the cow.

Recommendations for further non-air environmental media monitoring include:

- Monitor surface water, sediment and fish from Ponds 3, 4 and 5 during the 6th operational phase monitoring program. Pond 2 should also be included for sampling if it has been restored and contains fish populations at the time of the next sampling event;
- Fish tissue sampling for both whole-body and fillet samples using largemouth bass and sunfish (bluegill preferred) at all of the ponds where these species are present;
- Hay samples to be collected at the Lermond Farm and Johnson Dairy Farm as well as the background location;
- Cow's milk samples collected from the Johnson Dairy Farm;
- All media monitored for dioxins/furans as well as the same seven metals of potential concern;
- A reference location similar to the hay background location should be considered for collecting surface water, sediment and fish tissue samples from an area not located within the deposition area of the RRF. Background samples would provide context for the detected concentrations of metals and dioxin/furans within these media in RRF depositional areas; and,
- The results of the RRF air emission testing for metals (XRF analysis) should be reviewed to determine if there are specific metals being emitted that may assist with determining a potential source of metals within the non-air media samples. Such an indicator should ideally be identified in the RRF emissions but not be ubiquitously present in the environment.

Section 1 Introduction

1.1 Background

The Division of Solid Waste Services, in the Montgomery County Department of Environmental Protection, is responsible for the County's solid waste facilities which include a municipal waste Resource Recovery Facility (RRF) located in Dickerson, Maryland. During the planning process for this facility, which became operational in the spring of 1995, the County made commitments to conduct human health risk assessments relative to RRF emissions and conduct ambient environmental monitoring during both pre-operational and post-operational phases of the RRF in response to concerns from the local community.

The pre-operational phase of the non-air media monitoring was conducted between May 1994 and April 1995 (i.e., time zero monitoring). The pre-operational program was designed to provide baseline data for dioxins/furans and various metals (arsenic, beryllium, cadmium, chromium, lead, mercury and nickel) in herbaceous crops (hay), farm pond surface water, sediment, fish tissue, and dairy cow milk. Subsequent to the facility becoming operational, an operational phase non-air media monitoring was conducted in 1996 with limited supplemental data collected in 1998. The County's Dickerson Area Facilities Implementation Group (DAFIG) Air Quality Subcommittee subsequently recommended that the program be conducted with a focused scope once every three years. Since then, three more non-air media monitoring programs have been conducted (2001, 2004 and 2007).

1.2 Purpose

The primary objective of this ambient monitoring work is to determine whether or not there are measurable changes in the concentrations of certain constituents in the actual environment, and a secondary objective was to assess, to the extent possible, the consistency of field observations with the air dispersion modeling results presented in TRC's "2014 Health Risk Assessment Update for the Montgomery County Resource Recovery Facility (RRF)."

This report has been prepared to be consistent with the previous post-operational sampling and reports to the extent possible and is intended to support the monitoring program by providing concentrations of the same target chemicals in the same environmental media that are representative of aquatic and terrestrial food chains. In this 2014 program, samples were collected from several farm ponds which represent the aquatic food chain and include surface

water and sediment as well as fillet and whole-body fish samples from sunfish (e.g., bluegills) and largemouth bass. Terrestrial food chain samples were collected from herbaceous crop vegetation (hay) and dairy cow's milk. The sampling was intended to be consistent to the extent possible with previous sampling in order to facilitate conducting statistical trend analyses relative to existing pre-operational and operational phase data.

1.3 Historical Sampling

The pre-operational phase of the non-air media monitoring was conducted between May 1994 and April 1995 (i.e., time zero monitoring). The pre-operational program was designed to provide baseline data for dioxins/furans and various metals in herbaceous crops (hay) and cow's milk from a nearby dairy farm (Kingsbury Dairy Farm) as well as surface water, sediment, and fish tissue samples from five farm ponds located in the vicinity of the RRF that were named as follows: Pond 1 (Kephart Pond); Pond 2 (Evans Pond); Pond 3 (Lermond Pond); Pond 4 (Yates Pond); and Pond 5 (County Pond). The locations of the historic sampling locations are depicted in Figure 1-1.

Non-air media sampling was subsequently conducted by Roy F. Weston in 1996 after the RRF became operational with limited supplemental sampling also performed in 1998. This 1st post-operational phase of the monitoring program provided data for the target chemicals in the same environmental media as the pre-operational monitoring. The County's Facilities Implementation Group Air Quality (DAFIG) Subcommittee subsequently recommended that the monitoring program for non-air media be conducted once every three years. The 2nd, 3rd, and 4th post-operational sampling events were subsequently conducted by ENSR in 2001, 2004 and 2007, respectively. The locations, numbers and types of samples collected during the pre-operational and 1st through 4th operational phase monitoring are presented in Table 1-1.

The 2nd and 3rd operational phase sampling events were conducted in 2001 and 2004, approximately 6 and 9 years after the RRF became operational, respectively. These sampling events focused on the same target chemicals (dioxins/furans and seven metals) within surface water samples collected from four ponds (Ponds 2 through 5) while hay samples were collected from the Lermond Farm (where Pond 3 is located) and a reference hayfield in Lucketts, Virginia. Cow's milk samples were also collected from a nearby dairy farm (Johnson Dairy Farm as the Kingsbury Dairy Farm ceased dairying operations prior to 2001). In 2004, hay samples were also collected from the Johnson Dairy Farm. Sediment samples were not collected during the 2nd and 3rd operational phase sampling events. Fish tissues consisting of sunfish fillet and whole-body samples were collected from Ponds 2 and 3 during the 2001 sampling event and from Ponds 2, 3, 4 and 5 during the 2004 sampling event. Largemouth bass fillet and whole-body tissue samples were collected from Ponds 4 and 5 in 2004 only.

The 4th operational phase sampling event was conducted in 2007, approximately 12 years after the RRF became operational. Surface water samples were collected from three ponds (Ponds 2, 3 and 5) and fillet and whole-body fish tissue samples were collected from Pond 2 (sunfish only) and Ponds 3 and 5 (sunfish and largemouth bass). Farm pond sediment sampling was reintroduced to the program in the 4th operational phase monitoring program at the recommendation of the DAFIG Air Quality Sub-Committee and samples were collected from Ponds 2, 3 and 5. No non-air environmental media samples were collected from Pond 4 at the recommendation of the DAFIG Air Quality Sub-Committee. In addition, hay and cow's milk samples were collected from the same locations as sampled in 2004. All samples were analyzed for the same target chemicals.

This report summarizes the results of the 5th operational phase sampling effort which was conducted from June 17 – 19, 2014 (details provided in Section 2) approximately 19 years after the RRF became operational. The 5th operational phase sampling was conducted to provide analytical data for statistical trend analysis relative to existing pre-operational and operational phase data. The locations, numbers and types of samples collected in the 5th operational phase event are shown in Table 1-1. Additional details regarding the 2014 sampling are also provided in Table 1-2.

Section 2 Sampling Methods

The 2014 sampling program included a pre-sampling site reconnaissance to inspect the proposed sampling locations which was conducted by TRC in May 2014. Although the sampling was proposed to duplicate the last operational sampling conducted in 2007, Pond 2 was inexplicably drained (and thus not available) shortly before the site reconnaissance. Therefore, it was decided to collect samples from Pond 4 as a replacement for Pond 2. Otherwise, all of the non-air environmental samples were subsequently collected in accordance with the Work Plan for Conducting the 5th Operational Phase Non-Air Media Sampling Program (TRC, 2014b) on June 17 – 19, 2014.

The aquatic food chain monitoring program focused on the collection of sediment, surface water, and fish tissue samples from three farm ponds (Ponds 3, 4 and 5). The locations of these farm ponds are depicted in Figure 2-1. The terrestrial food chain sampling involved the collection of cow's milk and forage items for dairy cows (hay). The locations of the farms where the forage (hay) samples were collected are presented on Figure 2-2. These include the Lermond Farm (location of Pond 3), the Johnson Dairy Farm, and a reference hayfield in Lucketts, Virginia (background). Cow's milk was only collected from the Johnson Dairy Farm. Historically, hay and cow's milk samples were also collected at the Kingsbury Dairy Farm which ceased dairying operations in 2001.

Sampling locations are situated within areas associated with primary air emission deposition associated with the RRF based on recent air modeling conducted by TRC (see Appendix A). Based on the modeled deposition, Pond 5 would receive greater deposition associated with the RRF compared to Ponds 3 and 4 while Pond 4 would appear to receive slightly greater deposition than Pond 3. Hay samples collected from the Lermond Farm would be located within an area of greater deposition associated with the RRF than the Johnson Dairy Farm.

All of the samples were analyzed for dioxin/furan congeners and the following metals: arsenic, beryllium, cadmium, chromium, lead, mercury and nickel. In addition, factors that affect the bioavailability or toxicity within specific environmental media such as total organic carbon (TOC), water hardness and lipids were analyzed as appropriate for each matrix. Alpha Analytical Laboratory in Westborough, Massachusetts prepared all samples for metals, TOC, water hardness and lipid analyses of sediment, surface water, fish tissue, hay, and cow's milk

while dioxins and furans were analyzed in all media by Cape Fear Laboratory in Wilmington, North Carolina.

Specific details regarding the sampling locations are presented in the following sections.

2.1 Surface Water Sampling

Surface water sampling was conducted within three farm ponds with two surface water samples collected from each pond. One duplicate surface water sample was also collected from one of the ponds. Each of the farm ponds (Ponds 3, 4 and 5 as depicted on Figure 2-1) represent aquatic habitats that were previously sampled during one or more of the post-operational sampling events. Ponds 3 and 4 were sampled on June 17, 2014 while Pond 5 was sampled the following day.

Prior to collection of the surface water samples, water quality parameters including temperature, pH, dissolved oxygen and specific conductivity were measured using a calibrated water quality meter. Results of the water quality parameters are discussed in Section 3. Water quality readings were collected at a depth of 1.0 foot below the surface and approximately 0.5 feet above the bottom using boats that were available at Pond 3 and Pond 5. Measurements at Pond 4 were conducted from shore and were only taken at a depth of 1.0 foot due to the shallow water present at this pond.

Each surface water sample was collected by submerging the capped sampling bottle below the water surface, removing the cap, and allowing the bottle to fill before slowly lifting the full bottle from the water. Sample bottles containing preservative (HNO₃ for metals and hardness analyses) were not immersed in the surface water but were filled by decanting water from unpreserved bottles. All filtering for dissolved metals analysis was conducted at the laboratory.

Each surface water sample was submitted to the laboratories for dioxins/furans, total and dissolved (or filtered) the seven metals of concern (arsenic, beryllium, cadmium, chromium, lead, mercury and nickel), and water hardness analysis. The sample volume and containers were presented in the Work Plan (TRC, 2014b).

2.2 Sediment Sampling

Sediment sampling was conducted within the three farm ponds with two sediment samples collected from each pond as well as one duplicate sample from one of the ponds. Each of the

farm ponds (Ponds 3, 4 and 5 as depicted on Figure 2-1) represent aquatic habitats that were previously sampled during one or more of the post-operational sampling events. Ponds 3 and 4 were sampled on June 17, 2014 while Pond 5 was sampled on June 18, 2014.

At each sediment sample location, sediment core(s) were collected following surface water sample collection and prior to collecting fish tissue samples. Sediment was sampled from the upper four inches of the soft pond sediment using a coring device pushed by hand into the sediment. This is based on the assumption that chemical contamination from the RRF is not present at depth in the vicinity of these samples. Several cores were collected from each sample location to provide sufficient volume for the target chemical analyses.

Sediment samples collected from the upper 4-inch interval at each location were analyzed for dioxins/furans, target metals (same seven metals as discussed above for surface water) and TOC. The sample volumes, containers, and analytical methods were presented in the Work Plan (TRC, 2014b).

2.3 Fish Sampling

Fish sampling was conducted within the same three farm ponds as shown on Figure 2-1. A scientific collection permit was obtained from the Maryland Department of Natural Resources – Fisheries Service prior to fish sample collection (see Appendix B). Fish sampling was initiated following the collection of surface water and sediment samples.

Trend analyses for the fish tissue evaluations have assumed that the fish collected are comparable across all sampling events. However, fish may accumulate chemicals at different rates, depending on factors such as age, size, trophic level or feeding guild (e.g., insectivorous or piscivorous), temperature, population density, and amount of food available to the fish. This variability and uncertainty is inherent in field tissue collection, and not all factors can be accounted for in any sampling program. The non-air monitoring sampling program has been designed, however, to help control some of this variability. Fish have been generally collected from the same ponds throughout the sampling program. One lower trophic level species and one higher trophic level species have been targeted from each pond to demonstrate potential differences in accumulation of chemicals in the fish based on feeding guild and size. Although fish age has not been determined for each fish caught, size has been measured. Finally, fish tissue data for dioxins have been adjusted to reflect the fat content of each fish (the lipid-normalization of the data), which helps control for the changing nutritional status in the ponds.

The target species included largemouth bass (*Micropterus salmoides*) and bluegill (*Lepomis macrochirus*) which were the primary target species collected during the previous non-air environmental monitoring programs. Bluegills represent omnivorous lower trophic level fish while largemouth bass represent a higher trophic level predator fish that forages on invertebrates and vertebrates such as frogs and fish (including bluegills). Both bluegills and largemouth bass may be caught and consumed by recreational fishermen.

Fish were collected using hook and line (i.e., angling) only at Pond 5 while fish were collected at Pond 4 through seining only. Pond 3 fish were collected using both angling (largemouth bass and one bluegill sample) and seining (one bluegill sample). One bluegill and pumpkinseed (*Lepomis gibbosus*) sample were each collected at Pond 5. Fish samples were collected from Pond 4 on June 17, 2014 while samples at Pond 5 were collected on June 18, 2014. Three of the four fish samples from Pond 3 were collected on June 17, 2014 while one largemouth bass sample was also collected on June 19, 2014.

The sizes of the fish retained for chemical analyses varied by pond although the lengths are generally consistent with previous sampling. Although one largemouth bass usually provided sufficient volume for preparing both fillet and whole-body samples, bluegill samples were typically comprised of a composite sample consisting of three individual fish. The following number and sizes (inches) comprised the fish tissue samples during the 5th operational sampling event conducted in 2014.

Species/Sample	Pond 3		Pond 4		Pond 5	
	No.	Size	No.	Size	No.	Size
Bluegill-1	3	5", 5", 5.25"	3	4.25", 4.25", 4.75"	3	6.75", 7", 7"
Bluegill-2	3	5.5", 5.5", 5.75"	3	4.5", 4.75", 4.75"	3	6.5", 7", 7"
Largemouth Bass-1	1	12"	0	Not Applicable	1	13.5"
Largemouth Bass-2	2	8.75", 9"	0	Not Applicable	1	17.5″

Each fish retained was euthanized, wrapped in aluminum foil (rinsed in hexane and air dried), placed in a plastic sealable bag (i.e., Ziploc) and placed in coolers containing ice where they were shipped overnight to Alpha Analytical Laboratory for sample preparation. Each sample was analyzed by Alpha Analytical Laboratory for target metals (same seven metals as discussed

above) and lipid content. Alpha Analytical Laboratory prepared aliquots of the fish samples which were subsequently shipped (under chain of custody) to Cape Fear Analytical for dioxins/furans analyses.

Fish tissue samples included both fillet and whole-body analyses for the two target species. Previous operational sampling programs used the right side of the fish for the fillet sample while the remainder of the fish comprised the "whole-body" sample. The goal of the fish tissue sampling was to collect two fillet and two whole-body samples of bluegills and largemouth bass from each pond. All fish filleting was done at the analytical laboratory under controlled laboratory conditions. If sufficient mass was available from a single fish then compositing of fish tissue was unnecessary. Although largemouth bass samples usually were of sufficient body mass that each fish was analyzed as an individual for both the fillet sample and whole-body sample, the smaller bass comprising the second sample at Pond 3 were composited into a single sample. The bluegill samples needed to be comprised of a composite sample consisting of three fish in order to provide sufficient mass for analysis. For all fish samples, the right fillet was first removed with the remaining portion of the fish representing the whole-body sample. However, if sufficient mass was not available for the fillet sample, the left fillet was also removed and composited with the right fillet. This was required for the bluegill samples collected from Pond 3 and Pond 4 and for one of the largemouth bass samples collected from Pond 3. In order to be consistent with the previous operational sampling programs, it was necessary to account for the left fillet portion of the fish that is typically included with the whole-body sample. This was done by factoring in the respective weights of the whole-body and left fillet samples as follows:

Whole-Body Concentration = [(Concentration in Whole-Body x Whole-Body Weight) + (Concentration in Fillet Sample x Left Fillet Weight)] / Total Weight of Whole-Body and Left Fillet

2.4 Forage (Hay) Sampling

Forage that is grown in the vicinity of the RRF and is potentially fed to dairy cows was sampled from three farms. Although bioaccumulation of dioxins/furans and metals from soil to vegetation is likely to be low, deposition associated with the RRF may result in these constituents adhering to the surfaces of plants. Therefore, five forage samples in the form of herbaceous crop vegetation (hay) were collected from three farms as depicted on Figure 2-2. Two hay samples were each collected from the Johnson Dairy Farm and the Lermond Farm on June 17, 2014. One hay sample was collected on June 18, 2014 from the McKenny Farm in Lucketts, Virginia which represents the reference area for the RRF. Samples were collected by

hand using disposable gloves and scissors. Samples of hay were previously collected from these farms in the earlier monitoring programs.

Each hay sample was analyzed for dioxins/furans, metals (the same seven metals) and lipids. The sampling volumes, containers and additional details are summarized in the Work Plan (TRC, 2014b).

2.5 Cow's Milk Sampling

Two dairy cow's milk samples were collected from the Johnson Dairy Farm which represents the closest dairy farm to the RRF (see Figure 2-2). The milk samples were collected directly from the milk collection/mixer tank and placed into clean laboratory-supplied sample bottles.

The milk samples were collected on June 17, 2014, placed into coolers containing ice and shipped overnight to the analytical laboratories. Each sample was analyzed for dioxins/furans, select metals (same seven as discussed previously) and lipids. The sampling volumes and containers are summarized in the Work Plan (TRC, 2014b).

Specifics regarding the age of milk cows, how long each milking cow has been at the Johnson Dairy Farm, and what proportion of the forage provided to the cows during the period prior to the sampling event are unknown from each operational phase sampling event.¹ However, based on an earlier discussion with Mr. Johnson during the pre-sampling site reconnaissance, local hay is provided to the dairy herd for approximately nine to ten months of the year with the remaining hay coming from non-local sources. All silage is reported to be from the Johnson Farm or another local source.

The actual age of the cows present within the herd at the time of the milk sampling during each of the operational phases is unlikely to be a contributing factor when evaluating differences in dioxins/furans between different sampling events. This is due to the fact that dioxin/furan congeners have a half-life time of 35 to 80 days (European Commission, 2000; Firestone et al., 1979; Huwe and Smith, 2005). Therefore, assuming that the diet sources and milk lipid content are similar between younger and older cows, the steady-state dioxin/furan congener concentrations would be similar between all cows at the time of the milk sample collection.

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¹ Attempts to obtain detailed information on dairy herd from Mr. Johnson were unsuccessful.

2.6 Analytical Methods

Alpha Analytical Laboratory, Mansfield, Massachusetts conducted analyses for metals, lipids, TOC and water hardness while laboratory services for dioxins/furans were provided by Cape Fear Analytical, Wilmington, North Carolina. Filleting and tissue preparation for all fish samples was undertaken by Alpha Analytical Laboratory which subsequently sent sub-samples to Cape Fear Analytical for the dioxin/furan analysis.

Laboratory duplicate samples for each medium were analyzed for metals and dioxins/furans. Matrix spike/matrix spike duplicate (MS/MSD) samples were collected for each medium sampled. A summary of duplicates and MS/MSD samples is provided in Table 1-2.

All of the collected samples were analyzed for dioxins/furans using EPA Method 1613B by Cape Fear Analytical. Alpha Analytical Laboratory analyzed arsenic, beryllium, cadmium, chromium, lead, nickel and water hardness via EPA Method 6020A while mercury was analyzed using EPA Method 7470A. Total organic carbon (TOC) within sediment samples was analyzed using USEPA (1988). Lipids (fish tissues, hay and cow's milk) were determined using the methodology provided in NOAA (1998).

Data validation was conducted by TRC on the dioxin/furan sampling results using the USEPA Contract Laboratory Program National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (USEPA, 2011). The inorganic and wet chemistry sampling data were also validated by TRC using the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2010). In general, although several minor issues were noted by TRC, the data appeared valid as reported and can be used for decision-making purposes. The data validation memorandums prepared by TRC are presented in Appendix C.

The actual detection limit achieved by each of the analytical laboratories is dependent on a number of factors, including potential matrix interferences. The estimated detection limit (EDL) for dioxins/furans or method detection limit (MDL) for inorganics was calculated for each analyte measured in each sample. EDLs are adjusted for the amount of sample prepared and may vary by sample. A summary of EDLs or MDLs for each medium and target analyte achieved for previous sampling events and the recent 2014 sampling is presented in Table 2-1.

Section 3 2014 Monitoring Results

Results of the 2014 5th operational phase sampling are presented below for surface water, sediment, fish tissue (fillet and whole-body), hay and cow's milk samples. All samples were analyzed for dioxins/furans and the following metals: arsenic, beryllium, cadmium, chromium, lead, mercury and nickel. The summary tables for analytical results as well as the complete laboratory reports for all analyses are presented in Appendix D. In this section, the 2014 data are summarized and evaluated relative to media-specific screening levels. These screening levels were derived from a variety of sources and represent benchmarks pertinent to human health or the environment.

Dioxins and furans (i.e., PCDDs/PCDFs [polychlorinated dibenzodioxins and polychlorinated dibenzofurans]) is the abbreviated or short name for a family of substances that all share a similar chemical structure. These chemicals contain one to eight chlorine atoms attached to the carbon atoms of the parent chemical (dibenzodioxin and dibenzofuran). The most widely studied of these compounds, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), is one of the most toxic and has received the most attention. Often referred to as "dioxin", 2,3,7,8-TCDD serves as a reference compound for this class of compounds. The chlorinated dibenzo-p-dioxins (CDDs) include 75 individual compounds and the chlorinated dibenzofurans (CDFs) include 135 compounds. These individual compounds are referred to as congeners. Of these 210 individual chemicals, 7 PCDDs and 10 PCDFs with 4 to 8 chloride atoms are considered to be toxic and have been assigned relative toxicity factors by USEPA. These toxicity factors, known as Toxic Equivalency Factors (TEFs), are based upon the relative toxicity of an individual PCDD or PCDF compared to 2,3,7,8-TCDD. The overall toxicity of a sample is calculated by multiplying the concentration values for each of the 17 PCDDs/PCDFs by its TEF. The summed products of the TEFs and associated congener concentrations for the sample then becomes a toxic equivalent concentration (TEQ) value which can be used to evaluate a sample containing a mixture of PCDDs/PCDFs.

To facilitate interpretation of the data, the dioxin/furan data presented in this section are expressed as concentrations of the homologues (i.e., the sum of individual congeners with the same number of chlorine atoms such as all penta-chlorinated dioxins; PCDD) and as TEQs. TEQs were calculated using TEFs updated in 2005 (Van den Berg et al., 2006) which differ than the TEFs presented for several PCDDs/PCDFs in the earlier monitoring reports (i.e., pre-2006). TEFs relate the toxic potency of each congener to 2,3,7,8-TCDD. TEFs are presented in Table 3-1. Consistent with prior sampling program reports, TEQs presented in this Section were

calculated assuming that non-detected concentrations are equal to zero. In Section 4, where historical results are reviewed and trends over time explored, non-detected congeners are treated in this manner, representing a base assumption, but also assuming that non-detected congeners were present at laboratory detection limits. Before presenting that trend analysis, this Section of the report presents, in tabular form, the laboratory results from the 2014, 5th operational phase monitoring of non-air environmental media.

3.1 Benchmark Values

In order to add context, the 2014 5th operational phase program monitoring results data are presented alongside medium-specific benchmark levels. Benchmark levels represent conservative reference threshold concentrations that are medium-specific and that were derived to be protective of human health and/or the environment. These values include Maximum Contaminant Levels (i.e., MCLs and U.S. EPA drinking water standards) and water quality criteria (i.e., levels published by USEPA that indicate a concentration of water considered nonharmful to human health or the environment). However, since such initial benchmarks are not available for all constituents in all media, other types of benchmark levels were also used to lend context to the sample results. These include values derived from studies that documented "typical" concentrations of certain contaminants in non-air media, and values from the literature that were associated with concentrations where adverse effects were first noted in laboratory or field studies. Exceeding a benchmark level does not necessarily indicate a potential risk to human health or the environment, and benchmarks presented here are not intended to trigger warning of a potential problem. The benchmark values listed are only intended to provide meaningful reference for presentation alongside the actual results observed during the 2014 monitoring.

Table 3-2 summarizes the benchmark levels used in this report and reflects updated values to reflect current regulatory guidance. The following sources of information are included in the medium-specific benchmark level summary (see Table 3-2):

Surface Water

- National Recommended Ambient Water Quality Criteria (AWQC) for Protection of Aquatic Life (freshwater chronic criteria were selected);
- Maryland Toxic Substances Criteria for Ambient Surface Waters (both human health fish consumption values and aquatic life freshwater chronic values were selected); and,
- Ecotox Thresholds (freshwater chronic values selected) issued by USEPA.

Sediment

- Consensus-Based Threshold Effects Concentrations (TECs) developed by MacDonald et al. (2000); and,
- U.S. EPA Region 3 Freshwater Benchmarks (2006a).

Fish Tissue

- National Recommended AWQC for Human Ingestion of Aquatic Organisms; (mercury only);
- U.S. EPA (2003) values from Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin and Related Compounds (2,3,4,8-TCDD TEQ only); and,
- Virginia Department of Environmental Quality Fish Benchmark Values (proposed values that are protective of human health).

Hay

 Various literature values for typical levels of constituents in agricultural crops, Kabata-Pendias and Pendias, 1984.

Milk

- Various literature values for typical levels of constituents in cow's milk (nickel);
- Commission of the European Communities, July 1, 2002, Limits on Presence of Dioxin in Food, IP/02/959; and,
- USEPA/MD TSC Maximum Contaminant Levels (MCLs) or action limit (lead only) for drinking water.

3.2 Surface Water

The water quality measurements taken at each of the three farm ponds are presented in Table 3-3. The results of the chemical analyses are presented in Table 3-4. As presented in Table 3-2, chronic surface water benchmark levels for protection of aquatic life were available for all detected metals, and surface water benchmark levels protective of human consumption of fish were available for TCDD, arsenic, and nickel. Aquatic life benchmarks for cadmium, chromium, lead and nickel are expressed as a function of the hardness (mg/L) in the water column. The site-specific water hardness at each pond was used to calculate the benchmarks for these metals.

3.2.1 Conventional Water Quality Parameters

Water quality measurements at Pond 3 indicated that the shallow pond (approximately 5 feet deep) was stratified (Table 3-3) at the time of the 2014 sampling. Ambient daily temperatures were above 90° F during the 2014 sampling and may have resulted in above normal surface water temperatures compared to previous sampling events. Water temperatures were approximately 5° Celsius (40° F) warmer at the surface than at the bottom of Pond 3. Specific conductivity was higher at the lower sample depths while pH and dissolved oxygen were lower. The dissolved oxygen levels at the bottom of Pond 3 were very low (less than 1 mg/L) while levels at the surface were within normal range.

At Pond 4, water quality measurements in the shallow pond (approximately 2 feet deep) were fairly similar between the two sampling locations. Although the surface water temperature was rather elevated (28° Celsius or 82° F) at Pond 4, the dissolved oxygen level was high and typical of dissolved oxygen levels at the interface with the air.

Surface water quality at Pond 5 at both sampling locations at one foot depth were similar and within the range expected for lotic systems in this geographic region. Temperature did not differ significantly among the strata for the shallower sampling location (1 and 3 foot sampling interval) although stratification was observed at the deeper sampling location 1 and 7 foot sampling depths). Water temperature ranged from 30.5° Celsius at the surface to 24.2° Celsius at a depth of seven feet. Specific conductivity, pH and dissolved oxygen were fairly even through the shallower strata, ranging from 106 to 126 μ S/cm and 6.27 to 7.51 at depths of three feet or less. However, an increase in specific conductivity and sharp decreases in pH and dissolved oxygen were evident at the deeper depth of seven feet. Dissolved oxygen at Pond #5 was depleted in the deepest part of the water column (0.5 mg/L).

3.2.2 Inorganics

Table 3-4 presents the inorganic surface water data collected in the 5th operational program sampling. Duplicate surface water samples were collected at Pond 3. Results described in this section reflect the average concentration of the sample and its duplicate, where applicable. The average hardness in Pond 5 samples (22 mg/L as CaCO3) is lower than the hardness in the other ponds where hardness measurements were 56 mg/L as CaCO3 (Pond 3) and 78.5 mg/L as CaCO3 (Pond 4) in 2014. The water hardness affects the water quality criteria (based on aquatic life) for cadmium, chromium, lead and nickel.

Previously (1994 through 1998), metals in the non-air media sampling program for surface waters have been analyzed and reported as total metals. However, both the total and the dissolved fractions of the metals have been reported since 2004 (3rd operational program). Water quality criteria for aquatic life for the metals of concern are presented for both the total concentration and the dissolved concentration. However, the dissolved fraction (i.e., what remains in the water after the water is filtered) is the fraction that is bioavailable to aquatic life, and potentially toxic. Therefore, a metal that exceeds its benchmark based on the total concentration is unlikely to be a concern as long as the dissolved concentration of that metal does not exceed its dissolved water quality criterion.

3.2.2.1 Total Metals

Several constituents (arsenic, beryllium and cadmium) in Table 3-4 have concentrations flagged with a "J" qualifier. These concentrations are lower than the laboratory's estimated or method detection limit, but were measured by the instrument. The concentrations flagged by "J" are detected values, but the actual concentrations are considered "estimated" because they are below the concentrations considered to be statistically definite.

Arsenic: Arsenic was detected in all six surface water samples collected from the three ponds at concentrations that exceeded the federal water quality criterion (0.14 ppb) for human consumption of organisms. The highest arsenic concentrations were noted in Pond 3. The state water quality criterion (1.4 ppb) was only exceeded in one surface water sample collected from Pond 3. In addition, it should be noted that arsenic was not detected in fish fillet samples collected from the three farm ponds nor did the detected arsenic levels exceed the chronic water quality criterion for aquatic life at any of the samples collected from the three ponds.

Beryllium: Total beryllium was detected in the two samples collected from Pond 3 and in one of two samples each from Ponds 4 and 5. In Pond 3 and Pond 5, total beryllium was detected in samples at low concentrations (approximately 0.1 ppb). In Pond 4, the maximum concentration of total beryllium detected (0.23 ppb) was higher but was still well below its water quality criterion for aquatic life.

Cadmium: Cadmium was detected in the two samples collected from Pond 3 and in one of two samples each collected from Ponds 4 and 5. At all three ponds, the total cadmium concentrations detected were similar (ranged from 0.01 to 0.03 ppb) and well below its water quality criterion for aquatic life.

Chromium: Total chromium was detected in all six surface water samples collected from the three ponds. In Pond 4, the maximum concentration of total chromium (2.22 ppb) appears higher in one sample from this pond than in the other Pond 4 sample and samples from the other ponds. However, concentrations of total chromium detected in all samples are well below its water quality criterion for aquatic life.

Lead: Total lead was not detected in the two surface water samples collected from Pond 3 nor in the two samples from Pond 5. Total lead was detected in one of the two samples collected from Pond 4 at an elevated concentration (3.36 ppb). The lead concentration in this Pond 4 sample exceeds the chronic water quality criteria for aquatic life (although the dissolved lead concentration is a better indicator of potential risk to aquatic life). The elevated lead concentration noted at the Pond 4 sample may have been due to some sediment that may have been suspended in the water column for the sample.

Mercury: Total mercury was not detected in any of the surface water samples collected from the three ponds. The detection limit for mercury in surface water was 0.07 ppb.

Nickel: Total nickel was detected in all six surface water samples collected from the three ponds. Although concentrations were greatest in samples collected from Pond 3, the detected concentrations at all three ponds were well below their respective water quality criteria for aquatic life.

In summary, the detected concentrations of arsenic and nickel were highest at Pond 3 samples while Pond 4 surface water samples contained the highest chromium and lead concentrations. The total lead concentration measured in one of the Pond 4 samples exceeded the state and federal lead aquatic life chronic benchmark value. This sample's concentration was higher than all other samples including a second sample from Pond 4, and may reflect the presence of sediment in the water column sample. One surface water sample collected from Pond 3 exceeded the Maryland state water quality criterion for human consumption of fish for arsenic. This criterion was not exceeded at the second sample from Pond 3 nor at the four samples collected from Ponds 4 and 5. All other metals were either not detected or were detected below the federal and state aquatic life chronic benchmark values.

3.2.2.2 Dissolved Metals

Arsenic: Dissolved arsenic was detected in the four samples collected from Ponds 3 and 5 and in one of the two surface water samples collected from Pond 4. All of the detected arsenic

concentrations were qualified as "J" indicating that these concentrations were estimated. The detected concentrations of dissolved arsenic were well below its benchmark value.

Beryllium: Dissolved beryllium was not detected in any of the surface water samples collected from the three ponds. The detection limit for beryllium in surface water was 0.08 ppb.

Cadmium: Dissolved cadmium was not detected in any of the surface water samples collected from the three ponds. The detection limit for cadmium in surface water was 0.08 ppb.

Chromium: Dissolved chromium was not detected in any of the surface water samples collected from the three ponds. The detection limit for cadmium in surface water was 0.29 ppb.

Lead: Dissolved lead was detected in all surface water samples collected from the three ponds although the concentrations were qualified as "J" indicating that these concentrations were estimated. Dissolved lead in one of the two samples collected from Pond 5 (0.86 ppb) exceeds the federal and state ambient water quality criteria for aquatic life. The second surface water sample from Pond 5 detected dissolved lead at a much lower concentration (0.20 ppb). With the exception of lead at one sample from Pond 5, none of the concentrations of dissolved lead detected at Pond 3, Pond 4, or the other sample at Pond 5 exceeded the federal or state aquatic life chronic benchmark value for lead.

Mercury: Mercury (dissolved) was not detected in any of the surface water samples collected from the three ponds. The detection limit for dissolved mercury in surface water was 0.07 ppb.

Nickel: Dissolved nickel was detected in all six surface water samples collected from the three ponds although the nickel concentrations detected at Pond 5 were qualified as "J" indicating that these concentrations were estimated. The detected concentrations of dissolved nickel were greatest at Pond 3 but the detected concentrations at all sampling locations were lower than the nickel federal or state aquatic life chronic benchmark value.

In summary, dissolved concentrations of beryllium, cadmium, chromium and mercury were not detected in any of the samples collected from Ponds 3, 4 and 5. The dissolved lead concentration measured in one of the Pond 5 samples exceeded the state and federal lead aquatic life chronic benchmark value. With the exception of lead at one of the two samples collected from Pond 5, none of the concentrations of any of the dissolved metals (i.e., arsenic and nickel) from Ponds 3, 4, or 5 exceeded federal or state aquatic life chronic benchmark values (Table 3-4).

3.2.2 Dioxins/Furans

The majority of the 17 dioxin and furan congeners were not detected in surface water from the three farm ponds (Table 3-4). The highest detected concentrations were measured for OCDD which was detected in all six surface water samples at concentrations that ranged from 18.6 parts per quadrillion (ppq) to 173 ppq. The highest OCDD concentration was measured in Pond 4 while Pond 5 noted the lowest OCDD concentrations. The only other detected congener was 1,2,3,4,6,7,8-HpCDD which was detected in both samples from Pond 3, one of two samples from Pond 4 and was not detected in the two samples from Pond 5. The dioxin/furan congeners are likely associated with particles suspended in the water column rather than being present as the dissolved fraction.

TEQs were calculated for each surface water sample using two methods; non-detects equal to zero (ND = 0) and non-detects equal to the estimated detection limit (ND = DL). In Pond 3 samples, TEQs (ND = 0) were 0.069 and 0.065 ppq, and TEQs (ND = DL) were 2.434 and 2.849 ppq. In Pond 4, TEQs (ND = 0) were 0.177 and 0.014 ppq, and TEQs (ND = DL) were 3.137 and 4.041 ppq. In Pond 5 surface water samples, TEQs (ND = 0) were 0.006 and 0.009 ppq, and TEQs (ND = DL) were 3.392 and 4.401 ppq. All concentrations of TEQ calculated using the DL (ND = DL) exceed the federal and state criteria for fish consumption (Table 3-4), however, none of the concentrations (at ND = 0) exceeded the state criterion for fish consumption. In general, the lowest concentrations of TEQs were detected in Pond 5 samples (ND = 0) and in Pond 3 samples (ND = DL).

3.3 Sediment

Two sediment samples were collected from each of the three ponds. Each sample was analyzed for selected metals, PCDDs/PCDFs, and total organic carbon. The results of the chemical analyses are presented in Table 3-5. As presented in Table 3-2, sediment benchmarks for protection of wildlife and benthic organisms (i.e., organisms that live in sediment) were available for the metals. A sediment screening benchmark for PCDDs/PCDFs (as TEQs) is based on fish health which applies fish TEFs to the sediment concentrations in order to determine a fish TEQ.

3.3.1 Inorganics

All metals were detected in the sediment samples collected from the three ponds. The concentrations of the metals were generally consistent among the three ponds and none of the detected concentrations of metals exceeded their respective sediment benchmark values.

3.3.2 Dioxins/Furans

Most of the dioxin and furan congeners were detected at least once in sediments from the three ponds. Consistent with the surface water congeners, OCDD was present at the highest concentrations, ranging from 541 to 2,440 ppt. The lowest OCDD concentrations were found in sediment from Pond 4 while the highest concentrations were noted in Pond 3. TEQs were calculated using two methods; non-detects equal to zero (ND = 0) and non-detects equal to the estimated detection limit (ND = DL). For the comparison with the sediment benchmark, fish TEFs were used in the calculation of TEQs for non-detects equal to zero and non-detects equal to the DL. The calculated fish TEQs (ND = 0) exceeded the benchmark of 0.85 ppt at one sediment sample from Pond 3 (1.391 ppt). Calculated fish TEQs (ND = DL) also exceeded the benchmark at both of the Pond 3 sediment samples and one of the two samples from Pond 5. The remaining sample from Pond 5 and both sediment samples from Pond 4 had calculated fish TEQs below the fish health benchmark.

Non-polar organic constituents such as PCDDs/PCDFs bind readily to organic carbon in sediment. This binding generally renders them unavailable to aquatic organisms. When constituents are not bioavailable, they are not as toxic or bioaccumulative due to direct contact (i.e., not including ingestion) as when they are freely dissolved in the pore-water of the sediment (i.e., when they are bioavailable). The benchmark value for TCDD from USEPA Region 3 is normalized to an organic carbon content of 1 percent. Higher organic carbon would have the effect of increasing the benchmark value for a system (i.e., a pond), as the organic constituent present is modified by (bound to) the organic carbon. Organic carbon concentrations were moderate; 1.5% in Pond 3, 2.1% in Pond 4 and 0.6% in Pond 5. At these levels, the PCDDs/ PCDFs present in the sediment would be less bioavailable or potentially toxic in Ponds 3 and 4 but potentially be more bioavailable in Pond 5 as indicated by the benchmark value exceedences.

3.4 Fish Tissue

Whole body and fish fillet samples from two types of fish (bluegill and largemouth bass) were collected from the three ponds. All fish samples were analyzed for the selected metals, PCDDs/PCDFs, and lipid concentrations. PCDD/PCDF data are presented in wet weight concentrations for individual congeners and also as lipid normalized concentrations for TEQs (Table 3-6a). Metals data are presented on a wet weight basis only. Fish tissue benchmark levels were available for TCDD, arsenic, cadmium, chromium and mercury (Table 3-2).

3.4.1 Inorganics

All of the seven inorganics were detected in at least one sample although arsenic and beryllium were only detected in whole-body samples and not in any of the fillet samples. Cadmium, chromium, lead, mercury, and nickel concentrations were detected in at least one fish whole-body and fillet sample from the three ponds.

Arsenic: All arsenic concentrations in fish were below the detection limit with the exception of one whole-body bluegill sample in Pond 4 and the two whole-body bluegill samples from Pond 3. The highest arsenic concentration (0.194 ppm) was detected in one of the whole-body bluegill samples obtained at Pond 3. All of the detected arsenic concentrations in the whole-body bluegill samples were less than the benchmark value protective of human health. Arsenic was not detected in the bluegill fillet samples collected from all three ponds nor was arsenic detected in the largemouth bass whole-body and fillet samples collected from Ponds 3 and 5.

Beryllium: Beryllium concentrations in fish were all below its detection limits with the exception of one whole-body bluegill sample in Pond 4 and the two whole-body bluegill samples from Pond 3. The detected beryllium concentrations within these three samples was very similar (0.014 to 0.015 ppm). Beryllium was not detected in the bluegill fillet samples collected from all three ponds nor was it detected in the largemouth bass whole-body and fillet samples collected from Ponds 3 and 5. A benchmark value is unavailable for beryllium.

Cadmium: Cadmium was detected in one whole-body bluegill sample in Pond 4 and in one whole-body and fillet sample from Pond 3. The highest cadmium concentration detected was in the whole-body bluegill sample collected from Pond 4. The detected concentrations of cadmium were all below the benchmark value protective of human health. Cadmium was not detected in the remaining bluegill whole-body and fillet samples nor was it detected in the largemouth bass whole-body and fillet samples collected from Ponds 3 and 5.

Chromium: Chromium was detected in all of the bluegill and largemouth bass whole-body and fillet samples collected from the three ponds. The highest concentration of chromium in fish was 13.5 ppm in a whole-body bluegill sample from Pond 3. The fillet sample from this same composite of bluegills was 5.85 ppm which was also the highest result for the fillet samples. Although the whole-body concentration of chromium exceeds its 12 ppm benchmark value for protection of human health (based on hexavalent chromium), the edible fillet sample was below this benchmark value. The remaining five bluegill whole-body samples from Ponds 3, 4, and 5 ranged from 0.71 to 4.55 ppm, all below the benchmark value. Chromium concentrations detected in largemouth bass whole-body and fillet samples were fairly similar at Ponds 3 and 5 and were all below the benchmark value.

Lead: Lead was detected in all of the whole-body bluegill samples collected from all three ponds. Lead was detected in the one bluegill fillet sample collected from Pond 4 and in one of the two bluegill fillet samples collected from Pond 3. Lead was not detected in the two bluegill fillet samples collected from Pond 5. One of the two largemouth bass fillet samples each collected from Ponds 3 and 5 detected lead while only one largemouth bass whole-body sample (from Pond 3) detected lead. The highest lead concentration (0.269 ppm) was detected in a whole-body bluegill sample from Pond 4 while Pond 5 generally contained the lowest detected lead concentrations. A fish tissue benchmark value is unavailable for lead.

Mercury: Mercury was detected in all of the bluegill and largemouth bass whole-body and fillet samples collected from the three ponds. The highest concentrations of mercury were detected in the largemouth bass whole-body and fillet samples collected from Pond 5. However, the mercury concentrations detected in all fish tissue samples were below the fish tissue benchmark (0.3 ppm). Mercury concentrations from Ponds 3 and 4 were less than one-half the levels noted in the largemouth bass samples collected from Pond 5.

Nickel: Nickel was detected in nearly all bluegill and largemouth bass whole-body and fillet samples. The only samples where nickel was undetected included one bluegill fillet sample and one largemouth bass fillet sample collected from Pond 5. The highest nickel concentration (8.86 ppm) was detected in a whole-body bluegill sample from Pond 3. All of the detected nickel concentrations in the fish whole-body and fillet samples were less than the nickel benchmark value protective of human health.

3.4.2 Dioxins/Furans

A total of 5 of the 17 dioxin/furan congeners (2,3,7,8-TCDD, 1,2,3,4,6,7,8-HpCDD, OCDD, 2,3,7,8-TCDF, and 1,2,3,4,6,7,8-HpCDF) were detected in at least one of the fillet or whole-body

fish tissue samples from the three ponds. Amongst these 5 compounds, however, many of the results were also non-detects (e.g., 2,3,7,8-TCDD was detected in only 2 of the 17 total fish tissue samples analyzed.) The remaining 12 PCDD/PCDF congeners were not detected in any of the fish tissue samples. The high prevalence of non-detect results among the PCDD/PCDF congeners makes it difficult to robustly evaluate trends in concentrations, as detection limits themselves rather than detectable concentrations may significantly affect comparisons. Reporting limits for these undetected congeners ranged from 0.0611 to 0.961 ppt. As noted earlier, TEQs were calculated using two methods; non-detects equal to zero (ND = 0) and non-detects equal to the estimated detection limit (ND = DL).

Lipid concentrations for largemouth bass fillet (0.29% - 0.77%) and bluegill fillet (0.24% - 0.74%) were similar. Lipid concentrations in whole-body largemouth bass (2.48% - 3.29%) were consistent with the whole-body bluegill lipid concentrations (1.83% - 3.17%) from Ponds 3 and 5. The lipid content of whole-body bluegill from Pond 4 were notably lower (0.74% - 0.99%).

At the recommendation of the DAFIG, the five PCDD/PCDF congeners that were detected in fish tissues were also compared to their predicted concentrations based on their sediment concentrations and a range of Biota:Sediment Accumulation Factors (BSAFs) presented in the literature. This comparison is presented in Table 3-6b.

TEQs (ND = 0)

Wet weight TEQs (i.e., the amount of dioxin, as TEQs, present per weight of the fish whole-body or fillet) varied among the fish collected from the ponds, but was highest in whole-body largemouth bass from Pond 5. Whole-body wet weight TEQs concentrations were: 0.032 - 0.035 ppt (bluegill) and 0.042 - 0.030 ppt (largemouth bass) in Pond 3; 0.034 - 0.034 ppt (bluegill) in Pond 4; and 0.030 - 0.031 ppt (bluegill) and 0.289 - 0.490 ppt (largemouth bass) in Pond 5 (see Table 3-6). Fillet wet weight TEQs for bluegill were similar in Ponds 3, 4 and 5, ranging from 0.0004 ppt (Pond 3) to 0.0288 ppt (Pond 5). The highest largemouth bass fillet TEQ was from Pond 3 (0.034 ppt) which was slightly higher than the largemouth bass fillets collected from Pond 5 (0.0225 and 0.0248 ppt).

Bluegill fillet lipid-normalized TEQs (i.e., the amount of dioxin, as TEQs, present per amount of fat in the fish whole-body or fillet) ranged from a low of 0.047 ppt (Pond 3) to 11.06 ppt (Pond 3) while bluegill whole-body lipid-normalized TEQs were highest in the fish collected from Pond 4 (3.44 and 4.66 ppt). Largemouth bass lipid-normalized TEQs for whole-body samples were higher in Pond 5 while the highest lipid-normalized TEQ for fillet samples was noted at Pond 3 (see Table 3-6).

$\underline{\text{TEQs}}$ (ND = DL)

Similar to the results discussed above, TEQs (i.e., the amount of dioxin, as TEQs, present per wet weight of the fish whole-body or fillet) varied among the fish collected from the ponds, but was highest in whole-body largemouth bass from Pond 5.

Whole-body TEQ concentrations were: 0.394 - 0.483 ppt (bluegill) and 0.50 - 0.707 ppt (largemouth bass) in Pond 3; 0.432 - 0.434 ppt (bluegill) in Pond 4; and 0.375 - 0.403 ppt (bluegill) and 0.495 - 0.693 ppt (largemouth bass) in Pond 5 (see Table 3-6). Fillet TEQs for bluegill were similar in Ponds 3, 4 and 5, ranging from 0.344 ppt (bluegill at Pond 3) to 0.452 ppt (second bluegill sample at Pond 3). The largemouth bass fillet samples from Ponds 3 and 5 were also fairly similar and ranged from 0.381 to 0.662 ppt.

Bluegill fillet lipid-normalized TEQs (i.e., the amount of dioxin, as TEQs, present per amount of fat in the fish whole-body or fillet) ranged from a low of 57.3 ppt (Pond 5) to 140.3 ppt (Pond 3) while bluegill whole-body lipid-normalized TEQs were highest in the fish collected from Pond 4 (43.9 and 58.6 ppt). Largemouth bass lipid-normalized TEQs for whole-body samples were very similar in Ponds 3 and 5 while much higher lipid-normalized TEQs for fillet samples were noted at Pond 3 (see Table 3-6).

None of the samples exceeded the benchmark level for TEQ, regardless of the treatment of non-detects in the calculation of TEQs. This value, as noted in Table 3-2, is the average concentration from freshwater fish collected in North America from areas deemed "background" by USEPA, and as such does not directly relate to toxicity or potential risk.

A comparison of detected PCDD/PCDF concentrations in whole-body fish tissue samples collected from the three ponds with their predicted concentrations based on site-specific sediment PCDD/PCDF and TOC concentrations as well as fish lipid concentrations is presented in Table 3-6b. In general, the actual detected concentrations of the PCDD/PCDF congeners were within the predicted range of concentrations based on the site-specific data for each pond. The maximum detected concentrations of PCDD/PCDF congeners detected at Pond 4 slightly exceeded the predicted concentrations. This is likely the result of very low lipid concentrations present within the fish sampled from Pond 4 which resulted in much lower predicted PCDD/PCDF congener concentrations at this pond compared to Ponds 3 and 5. Overall, the detected congener concentrations within whole-body fish tissues are in agreement with the predicted levels based on the concentrations of these congeners present within the sediment of each pond.

3.5 Hay

Hay samples were collected from Lermond Farm (two samples), Johnson Dairy Farm (two samples), and from a reference location in Lucketts, Virginia ("background" sample). Based on the deposition modeling for the RRF facility (see Appendix A), amongst the farm locations, Lermond Farm would be expected to have higher deposition impacts than the Johnson Dairy Farm, while the Lucketts site is outside the influence of deposition from RRF emissions. All samples were analyzed for PCDDs/PCDFs, lipids, and the seven metals of concern. One of the two hay samples from Lermond Farm was split for duplicate analysis. PCDD/PCDF data are presented in wet weight and lipid normalized concentrations for individual congeners and TEQs. Metals data are presented on a wet weight basis.

3.5.1 Inorganics

Arsenic: Arsenic was not detected in any of the hay samples (Table 3-7). The detection limit for arsenic ranged from 0.029 - 0.033 ppm.

Beryllium: Beryllium was also not detected in any of the hay samples (Table 3-7). The detection limit for beryllium ranged from 0.020 - 0.023 ppm.

Cadmium: Cadmium was detected at very low levels (0.016 – 0.058 ppm "J" qualified) from all locations, including the background sample. The concentrations of cadmium detected in hay samples from the Johnson Dairy Farm are slightly higher than detected concentrations at the Lermond Farm and the background location in Lucketts, Virginia. Although the lower range of the cadmium benchmark is exceeded by the detected cadmium concentrations in all hay samples, the upper range of the cadmium benchmark is not exceeded by any sample.

Chromium: Chromium was detected in all five hay samples. The highest chromium concentration was noted in a hay sample collected from the Lermond Farm (0.99 ppm). The concentrations of chromium detected in the two Lermond Farm hay samples were the highest while lower and similar chromium concentrations were noted from the samples collected from the Johnson Dairy Farm and the background location. However, the concentrations of chromium in hay samples collected from all three locations were higher than the upper range of its benchmark level.

Lead: Lead was detected in all five of the hay samples. The highest lead concentrations were noted in a hay sample collected from the Lermond Farm (0.355 ppm). Although the lower

range of the lead benchmark is only exceeded by the maximum detected lead concentration, the upper range of the lead benchmark is not exceeded by any of the hay samples.

Mercury: Mercury was only detected in one hay sample collected from the Johnson Dairy Farm at an estimated concentration of 0.005 ppm. The concentration of mercury detected in this hay sampled was slightly higher than the benchmark level for mercury (0.003 ppm).

Nickel: Nickel was detected in all five samples with all samples except one sample from the Lermond Farm detected above the upper range of the nickel benchmark. However, the highest nickel concentration was noted in the background hay sample (0.72 ppm).

In summary, the concentrations of chromium and nickel in hay samples collected from all three locations were higher than the upper range of available benchmark levels. The concentration of mercury in hay sampled from the Johnson Dairy Farm (0005 ppm) was also higher than the benchmark level for mercury. The Lermond Farm contained higher concentrations of chromium and lead while the Johnson Dairy Farm contained greater concentrations of cadmium and mercury. The highest concentration of nickel was detected at the background hay sampling location.

3.5.2 Dioxins/Furans

Only two dioxin congeners (1,2,3,4,6,7,8-HpCDD and OCDD) and two furan congeners (2,3,7,8-TCDF and 1,2,3,4,6,7,8-HpCDF) were detected in one or more of the hay samples. Levels of the detected congeners appear to be similar in samples collected from all three locations. TEQs were calculated using two methods; non-detects equal to zero (ND = 0) and non-detects equal to the estimated detection limit (ND = DL).

Lipid concentrations were 0.80 - 0.86% in Pond 3 Farm hay, 2.6 - 2.7% in Johnson Dairy Farm hay, and 1.6% in the background hay sample.

TEQs (ND = 0) were higher in hay samples from the Lermond Farm (0.018 - 0.028 ppt and 38.8 - 45.4 ppt lipid-normalized) than in background hay (0.011 ppt and 20.4 ppt lipid-normalized) or Johnson Dairy Farm hay (0.009 - 0.012 ppt and 13.9 - 16.0 ppt lipid-normalized) (Table 3-7). When lipid-normalized TEQs were calculated using detection limits to represent non-detects, the same pattern emerged. However, the TEQs (not accounting for lipids) are similar for all three sampling sites. There is no benchmark level for dioxin/furans in hay.

3.6 Cow's Milk

Milk samples were collected from the Johnson Dairy Farm. All samples were analyzed for PCDDs/PCDFs, lipids, and the seven inorganic constituents of concern. One of the two milk samples was split for duplicate analysis of PCDDs/PCDFs and metals. PCDD/PCDF data are presented in wet weight concentrations for individual congeners and also as lipid normalized TEQ concentrations. Metals data are presented on a wet weight basis.

3.6.1 Inorganics

Arsenic: Arsenic was detected at an estimated concentration of 5.96 ppb in one of the two milk samples. The detected concentration of arsenic was below its benchmark value.

Beryllium: Beryllium was not detected in either of the milk samples (Table 3-8). The detection limit for beryllium was 0.86 ppb.

Cadmium: Cadmium was detected at an estimated concentration of 0.27 ppb in one of the two milk samples. The detected concentration of cadmium was below its benchmark value.

Chromium: Chromium was detected in both milk samples at concentrations of 181 and 185 ppb, respectively. The detected chromium concentrations in milk exceed its benchmark level of 100 ppb which is based on a drinking water MCL (Table 3-8).

Lead: This metal was not detected in either of the milk samples (Table 3-8). The detection limit for lead was 0.65 ppb.

Mercury: Mercury was also not detected in the milk samples (Table 3-8). The detection limit for mercury was 0.14 ppb.

Nickel: Nickel was detected in both of the milk samples. The maximum concentration of nickel was 16.8 ppb which is below its benchmark value (Table 3-8).

3.6.2 Dioxins/Furans

Two dioxin congeners (1,2,3,4,6,7,8-HpCDD and OCDD) and one furan congener (1,2,3,7,8-PeCDF) were detected in one of the two milk samples. No PCDD/PCDF congeners were detected in the other milk sample. Lipid concentrations were 3.25 – 3.37%.

TEQs were calculated using two methods; non-detects equal to zero (ND = 0) and non-detects equal to the estimated detection limit (ND = DL). Wet weight and lipid-normalized dioxin TEQs are presented in Table 3-8. The calculated TEQs (ND = 0) were 0.641 ppq and 0.00 wet weight, and 19.7 and 0.00 ppq lipid-normalized. The calculated TEQs (ND = DL) were 41.33 and 158.2 ppq wet weight, and 1,272 and 4,695 ppq on a lipid-normalized basis. None of the lipid-normalized TEQs (ND = 0) in sampled milk exceeded the benchmark level of 3,000 ppq (lipid-normalized) although one of the two milk samples TEQs (ND = DL) results in a lipid-normalized TEQ of 4,695 that exceeds the benchmark value. It should be noted, however, that no PCDD/PCDF congeners were actually detected in this milk sample.

Section 4 Data Analysis

The primary objective of this ambient monitoring work is to determine whether or not there are measurable changes in the concentrations of certain constituents in the actual environment. The following subsections evaluate the 5th operational phase sampling results from 2014 relative to data obtained in five prior sampling events (i.e., pre-operational and 1st through 4th operational phases). Data from the 1994, 1996, and 1998 sampling events were obtained from Weston (2000). Data from 2001, 2004, and 2007 were obtained from ENSR (2002, 2006, 2009). Section 2 and Table 2-1 describe the method detection limits that have been achieved in each of the sampling programs.

In this section, the 2014 data are evaluated relative to historical measurements, and statistical trend analyses were also conducted where sufficient data were available. This section also compares the profile of PCDD/PCDF concentrations in sampled media to the RRF emissions profile.

It must be noted that lower detection limits were achieved beginning in 2001. As such, inorganic and dioxin/furan compounds not previously detected in the earlier non-air media were detected in 2001 through 2014. This does not imply that levels of these compounds have increased; rather that the more recent analytical methods provide higher resolution data with lower analytical detection limits. Lower detection limits were achieved in 2001 through 2014 due to improved sample preparation methods (to minimize matrix interferences) and better laboratory instrumentation. This higher resolution enhances the possibility of detecting trends when concentrations are very low. Only constituents detected in 2014 samples are presented in the graphs for this section. For those constituents detected in 2014 but not detected in previous monitoring phases, the graphs depict the detection limits for non-detects.

For this 5th operational phase of the County's non-air environmental media monitoring, the scope of work was expanded to include statistical analysis when appropriate (i.e., sufficient statistical data available to conduct a trend analysis). Those media and constituents where four or more sampling events were available were analyzed for trends. Trends were analyzed using the non-parametric Mann-Kendall Test. The Mann-Kendall test is particularly useful because missing values are allowed and the data do not need to conform to any distribution type. The non-parametric Mann-Kendall test for trend (Gilbert, 1987) is denoted by the Mann-Kendall statistic (S), where S is calculated:

$$S = \sum_{k=1}^{n-1} \sum_{j=k+1}^{n} sign\left(x_{j} - x_{k}\right)$$

In this equation, the result from the very first sampling event (i.e., pre-operational phase) is compared against each of the subsequent results. Then the second event (i.e., 1^{st} operational phase) is compared with each of the sampling results collected after this event (i.e., the third event, fourth event, and so on...). For a sample of size n, there will be n(n-1)/2 distinct pairs, (k, j) with j > k.

The critical value for $Z_{0.95}$, as obtained from a cumulative normal distribution table is 1.645 (-1.645). Positive z values larger than the critical value and negative z values smaller than the critical value indicate increasing and decreasing trends, respectively. The mean concentration detected during each sampling event was used to evaluate the presence or absence of a statistically significant trend using the software program ProUCL (vers. 5.0). The statistical trend analyses were calculated using two methods; non-detects equal to zero (ND = 0) and non-detects equal to the reporting limit (ND = DL).

As discussed earlier, many of the sampling results had non-detectable concentrations of the target compounds. Moreover, over time, the ability of laboratory methods to detect chemical concentrations have improved, resulting in the ability to detect lower concentrations recently compared to in the past. These changing detection limits add uncertainty to the Mann-Kendall trend tests. In order to take into account this uncertainty, non-detected chemical concentrations were evaluated in two ways: assuming zero values for all non-detects (ND = 0) and assuming non-detects are present at a concentration equal to the detection limit (ND = DL). This provides a bounding range for the reported concentrations. If both methods of analysis indicate a significantly decreasing or an increasing trend, then it can be concluded that the concentrations of a particular constituent are declining or increasing over the course of the entire monitoring program. Similarly, if both trend analyses methods conclude no significant trend (either decreasing or increasing) is present, then levels of that constituent have remained consistent (or at least have not changed significantly) throughout the entire monitoring program. If a significant decreasing trend is identified with non-detects equal to the detection limit but not when non-detects are equal to zero, then it is likely that the higher detection limits present in the earlier phases of the monitoring program are responsible for the apparent decline in the concentrations of a constituent.

Several PCDD/PCDF congeners were detected in certain environmental media and locations during each year of the monitoring program. This provides a means of evaluating trends

within these specific congeners without the complicating factors associated with elevated detection limits during the early operational phases of the monitoring program. For example, OCDD was consistently detected in at least one surface water, sediment, fish tissue, hay and milk sample collected from the same location during each operational phase where this location was sampled. A trend analysis was subsequently conducted for OCDD for these media at each location where OCDD was detected during all of the sampling events. Other than OCDD, OCDF, 2,3,7,8-TCDF, and 1,2,3,4,6,7,8-HpCDD were also detected in at least one sample analyzed from surface water, sediment, fish tissue, hay and/or milk media at a specific location during each operational phase monitoring event.

The results are presented below by compound group (inorganics and then PCDD/PCDF TEQs followed by PCDD/PCDF congeners). Within each compound group, results are then evaluated by sampled environmental medium (surface water, sediment, fish, hay and cow's milk).

4.1 Inorganics

Inorganic compounds selected for monitoring in the non-air media program include arsenic, beryllium, cadmium, chromium, lead, mercury, and nickel. When evaluating the non-air media results, it can also be informative to also consider the distribution of compounds in RRF emissions. Figure 4-1 presents the metals fingerprint for average stack emissions from the RRF (all units) from November 2008 through August 2013. Mercury is known to be emitted partially in a gaseous state, but the other metals will be predominantly associated with particulates and therefore be expected to be found in wet and dry deposition in the same relative amounts as in the emissions.

As illustrated by this graph, lead emissions are the highest of the metals – 1.5 times higher than mercury emissions which are the next highest. Potential impacts from the RRF, if reflected in abiotic environmental media would parallel this fingerprint; that is, deposition should result in relatively higher levels of lead, followed by mercury and nickel, and then relatively lesser reflections of chromium, arsenic, cadmium and beryllium in abiotic media. It is also noted that, of these metals, mercury is the most bioaccumulative (at least in an aquatic environment); so, if emissions from the RRF were impacting the surrounding area, mercury would therefore be expected to increase in biotic media (i.e., fish tissues) at a faster rate than other metals.

4.1.1 Surface Water

Pond 3 was sampled for inorganics during each of the six monitoring events while Ponds 4 and 5 were sampled during four and five sampling events, respectively. As illustrated in Figures 4-2 through 4-4, the detected total recoverable metals concentrations in 2014 at all three ponds were consistent with, or lower than, concentrations from previous sampling events.

Assuming the non-detected results are equal to their detection limits, the Mann-Kendall trend analysis concluded that statistically significantly decreasing trends are present for cadmium (S = -12; p = 0.018) and nickel (S = -10; p = 0.043) at Pond 3 and a significantly decreasing trend is also present for cadmium (S = -9; p = 0.022), nickel (S = -8; p = 0.043), and chromium (S = -8; p = 0.043) at Pond 5. However, these decreasing trends are likely attributable to the higher detection limits during the early operational phases (pre-operational and 1^{st} operational phase). The Mann-Kendall trend analysis concluded that no significant trends are present for these constituents if ND = 0.

4.1.2 Sediment

Sediment was sampled from Ponds 3, 4 and 5 during the pre-operational phase (1994-95) and 1st operational phase (1996) while in 2007 Ponds 3 and 5 (but not Pond 4) were sampled for the first time since 1996. All three of these farm ponds were sampled in 2014. The sediment inorganic data from the three farm ponds are presented in Figures 4-5 through 4-7. Inorganic constituents in sediment have generally been detected in all sampling events. A statistical trends analysis was conducted for Ponds 3 and 5. Pond 4 only has results from three different years of sampling. However, concentrations of all metals detected in 2014 in Pond 4 sediments are comparable or lower than previous sampling events (see Figure 4-6).

In Pond 3 (Figure 4-5), concentrations of all constituents but cadmium are comparable to the historic data collected in previous programs conducted in 1994, 1996, and 2007. However, cadmium concentrations have significantly decreased (S = -6; p = 0.045) during the four years where this metal was analyzed in sediment from Pond 3. Cadmium was detected at Pond 3 in all four sampling events. No other metal shows a significant increasing or decreasing trend in Pond 3.

In Pond 5 (Figure 4-7), concentrations of mercury exhibit a significantly decreasing trend from the first sampling event to the 2014 sampling event (S = -6; p = 0.045). No other metal shows a significant increasing or decreasing trend in Pond 5. The highest detected concentration of

mercury was detected during the pre-operational phase (1994-95). Although mercury was not detected in the 1st operational phase sampling in 1996 the detection limit at that time was 0.05 ppm, which was above the subsequently detected levels of mercury in the 2007 and 2014 sampling events. If the non-detect mercury result from 1996 is assumed to be 0, then no significant trend is present.

4.1.3 Fish Tissue

The fish tissue (both whole-body and fillet samples) inorganic data from the three farm ponds sampled in 2014 are presented in Figures 4-8 through 4-10. Statistical trends analyses were conducted for bluegill and largemouth bass whole-body and fillet samples for all three ponds. Results are discussed below for Ponds 3, 4 and 5.

Pond 3

In Pond 3, data for whole-body bluegill are available for all six sampling events while four years of data for bluegill fillet are available. Four years of data (2001, 2004, 2007 and 2014) are available for largemouth bass whole-body and fillet samples. Concentrations of metals in whole body and fillet bluegill are generally comparable to or lower than the concentrations detected in previous sampling events with the exception of chromium and nickel which increased in 2014 (Figures 4-8a and 4-8b). Arsenic and beryllium were not detected in any bluegill fillet samples. The concentrations of cadmium and mercury within bluegill whole-body samples exhibit significantly decreasing trends from the first sampling event to the 2014 sampling event (S = -12 and -11; p = 0.018 and 0.03, respectively). However, neither of these metals were detected in the pre-operational phase sampling while only mercury was detected in the 1996 1st operational phase. Assuming ND = 0 for all operational phases results in no significant trends for cadmium and mercury indicating that the lower detection limits in the later sampling events may be responsible for the significantly decreasing trends noted for these two metals in whole-body bluegill at Pond 3. No statistically significant trends were noted for bluegill fillets regardless of the treatment of non-detected values.

Concentrations of lead and mercury detected in 2014 in largemouth bass whole-body and fillet samples at Pond 3 either declined or were comparable to previous sampling (see Figures 4-8c and 4-8d). The detected concentrations of chromium and nickel in largemouth bass samples in 2014 increased from the previous sampling events. However, the Mann-Kendall trend analysis concluded that no significant trends are present for metals in largemouth bass samples (whole-body or fillet) for Pond 3.

Pond 4

Pond 4 has four years of bluegill whole-body sampling data (1994-95, 1996, 2004 and 2014) and two years of fillet sampling data (2004 and 2014) available. Largemouth bass were not collected in Pond 4. Concentrations of metals detected in bluegill tissues in 2014 were generally comparable or lower than previous sampling results (Figure 4-9a). All seven metals were detected in at least one of the 2014 bluegill whole-body samples collected from Pond 4 (Figure 4-9a) while only chromium, lead, mercury and nickel were detected in the 2014 bluegill fillet sample (Figure 4-9b). Statistical trend analyses were conducted only on bluegill whole-body sampling results. The concentrations of chromium within bluegill whole-body samples exhibit a significantly increasing trend from the first sampling event to the 2014 sampling event (S = +6; p = 0.047). Chromium was detected in three of the four sampling events (not detected in the one bluegill sample collected in 1996). Assuming that the concentration of this 1996 non-detect = 0 would indicate no significant trend. The elevated detection limit in the 1st operational phase sampling event conducted in 1996 confound the conclusion regarding chromium trend at this time. It should be noted that sediment samples collected from Pond 4 detected similar or lower chromium concentrations than Ponds 3 or 5. In addition, the concentrations of chromium detected in bluegill whole-body samples from Pond 4 are much lower than detected in bluegill whole-body samples collected from either Pond 3 or Pond 5. Future monitoring may clarify any trend, but the pattern of metals is not consistent with attribution to RRF emissions.

Pond 5

Pond 5 has five years of sampling data available for whole-body bluegill and largemouth bass while three and four years of data, respectively, are available for fillet samples for these two species. Arsenic, beryllium and cadmium were not detected in either bluegill or largemouth bass whole-body and fillet samples in 2014. Lead was not detected in largemouth bass whole-body samples collected in 2014.

Concentrations of lead and mercury in whole body and fillet bluegill from Pond 5 in 2014 are generally comparable or lower than the concentrations detected in previous sampling events while the concentrations of chromium and nickel increased in 2014 (Figures 4-10a). Statistical trend analyses could only be conducted on bluegill whole-body sampling results. A significantly decreasing trend is present for lead (S = -8; p = 0.043), however, this could be attributed to the higher detection limits in the earlier sampling events. If all non-detected results are assumed to be 0 then no significant trend is present. No other statistically significant trends were noted in the bluegill whole-body sampling results.

Concentrations of mercury and nickel in whole body and fillet largemouth bass and lead in fillet samples in 2014 at Pond 5 are generally comparable or lower than the concentrations detected in previous sampling events while the concentrations of chromium increased in 2014 (Figures 4-10c and 4-10d). Statistical trend analyses were conducted on both largemouth bass whole-body and fillet sampling results. No significant trends were noted in the largemouth bass whole-body or fillet sampling results using non-detects as the reporting limits or as zero.

4.1.4 Hay

Hay was first collected from the Lermond Farm and the background location in Lucketts, Virginia beginning in 2001 while hay collection at the Johnson Dairy Farm was initiated in 2004. The pre-operational and 1st operational phases collected hay samples from the Kingsbury Dairy Farm although no hay samples have been collected from this farm since.

Arsenic and beryllium were not detected in the hay samples. The concentrations of cadmium, chromium, lead, mercury and nickel in hay collected in 2014 from Lermond Farm and the background location are consistent or lower than concentrations detected in previous sampling events (2001, 2004 and 2007) for Lermond Farm and Kingsbury Dairy Farm (Figure 4-11). Hay has now been collected at the Johnson Dairy Farm for three sampling events (2004, 2007 and 2014). The metals data for Johnson Dairy Farm indicate that the 2014 data are comparable or lower than 2004 and 2007 results. In addition, the concentrations of metals in hay from the Johnson Dairy Farm are consistent with the metal concentrations in hay from Kingsbury Dairy Farm and the Lermond Farm.

Statistical trends analyses were conducted for hay samples collected from both the Lermond Farm and the reference location in Lucketts, Virginia where four years of sampling data are currently available. No significant increasing/decreasing trends were noted in the Lermond Farm or background hay samples.

4.1.5 Cow's Milk

Milk was collected from the Kingsbury Dairy Farm in the pre-operational and 1st operational phase in 1994 and 1996, and from the Johnson Dairy Farm starting in 2001 and continuing in 2004, 2007 and 2014. Beryllium, lead and mercury were not detected in the milk samples collected in 2014. The concentrations of arsenic, cadmium, chromium and nickel in cow's milk from 2014 at the Johnson Dairy Farm are consistent with, or lower than, metals concentrations from previous monitoring programs conducted at the Kingsbury Dairy Farm (Figure 4-12).

Statistical trends analyses were conducted for milk samples collected from the Johnson Dairy Farm where four years of sampling data were available. The Mann-Kendall trend analysis concluded that no significant increasing/decreasing trends are present for arsenic, cadmium, chromium and nickel.

4.2 Dioxin/Furan TEQs

Sampling in environmental media for PCDDs/PCDFs was conducted as a component of the 5th operational phase program (see Table 1-2). Over the years, different laboratories were used and detection limits also varied (generally decreasing as laboratory methods improve). These analytical factors can make it difficult to ascertain trends in sampling results over time. For example, one laboratory was used to analyze samples collected for the 1994 pre-operational and 1996 1st operational phase programs. A different laboratory was used for the 1998 operational phase samples, which achieved lower detection limits in most media. The laboratory used in 2001 and 2004 achieved lower limits than were achieved in 1998. This same laboratory was used in 2007 as in 2001 and 2004, but detection limits for all media (i.e., fish, hay, milk) except surface water (where they were similar to 2001 and 2004 data) are an order of magnitude, or more, lower than the detection limits achieved in 2001 and 2004 (Table 2-1). Detection limits in 2014 using a new laboratory were similar to detection limits reported in 2007 although matrix interference resulted in some higher detection limits for some samples. Since detection limits were generally lower in 2007 and 2014, more congeners were detected. It is necessary to recognize the effects of these changes in detection limits, in a meaningful way, as they can strongly affect direct comparison of results (as TEQs) over time.

Undetected congeners are a source of considerable uncertainty when evaluating sample data; the undetected congener may exist at any level between zero and its laboratory detection limit. When interpreting the results, the actual concentration of the congener may be assumed to be zero, or it may be assumed to exist at the detection limit. In the appendix tables of this report, when reporting instances of undetected congeners, the sample-specific numerical detection limit achieved by the laboratory is given and the symbol "U" appears.

In the calculation of a TEQ, the congener-specific uncertainty discussed above is compounded by combining (summing) laboratory results for all seventeen congeners with TEFs—any number of which may be non-detects. Other than stating the assumptions used, there is no "standard" way to handle non-detects in the calculation of TEQ values. When combining the congener values to calculate a TEQ, one may assume the zero value for all non-detected congeners, or one may assume that the non-detected congeners are present at their sample-specific laboratory detection limits. When using only the *detected* congeners and assuming the

underected congeners have a concentration of zero, the TEQ reported is potentially underestimated. If, on the other hand, it is assumed that the non-detected congeners are present, not at zero but at their respective detection limits, then the reported TEQ is at risk of being overestimated. Neither assumption has better claim than the other of being more reflective of the actual condition of the environment. Simply stated, the actual value lies somewhere in between. Thus, the dual assumption approach bounds the range of interpretation without prejudice. This is especially important when the objective of the analysis is to detect trends over time periods during which laboratory detection limits have changed.

Laboratory detection limits have been improving since the first non-air media monitoring in 1994-1995. With improvement of detection limits (i.e., ability to detect lower concentrations), more congeners have been detected recently (2007 and 2014), and fewer congeners have been undetected, compared to prior sampling programs. Since the actual TEQ values lie somewhere in between those calculated assuming zero for non-detects, and those calculated assuming that the congeners are present at their detection limits, those changes in detection limits, over time, must be taken into account in order to make meaningful any time-series presentation of TEQ results. Therefore, in this report, all time-series presentations of TEQs are presented in paired graphs reflecting both assumptions. In this way, the otherwise confounding role in uncertainty played by changing laboratory detection limits is isolated. The general effect of improved (i.e., lower) laboratory detection limits over time is, of course, a reduction in the uncertainty of monitored values over time. Isolating that source of uncertainty allows more accurate interpretations to be made regarding actual changes in sampled environmental media.

In order to make notations compact, when TEQ values are calculated under the assumption that laboratory non-detects represent zero concentration, the simple notation use is: (ND = 0). Conversely, when TEQ values are calculated under the alternate assumption, that laboratory non-detects represent actual concentration corresponding to the non-detected congener's laboratory limits of detection, the compact notation use is: (ND = DL).

4.2.1 Surface Water

Surface water sampling data for dioxins/furans are available for all six sampling events for Pond 3 while four and five years of sampling data exist for Pond 4 and Pond 5, respectively. The dioxin/furan concentrations in surface water, represented as TCDD TEQs, from all three ponds are presented in Figure 4-13. The 2014 TEQ (ND = 0) concentrations in surface water were comparable or lower than concentrations in surface water from previous sampling events (Figure 4-13). The 2014 TEQ (ND = DL) values are lower than previous years in Ponds 3 and 4

while the 2014 TEQ (ND = DL) value in Pond 5 is lower than those for 1994 and 1996 but marginally higher than the results from 2004 and 2007.

Statistical trends analyses were conducted for surface water samples collected from all three farm ponds since four or more years of sampling data are currently available from each pond. The statistical trend analyses were calculated using two methods; non-detects equal to zero (ND = 0) and non-detects equal to the detection limit (ND = DL). The Mann-Kendall trend analysis concluded that no significant increasing/decreasing trends are present for dioxin/furan TEQs (ND = 0). However, a statistically significant (S = -6; p = 0.045) decreasing trend was noted in Pond 4 TEQs (ND = DL). No significant trends were noted in Ponds 3 or 5 for TEQ (ND = DL). Regardless of the treatment of non-detects, there was no evidence of any upward trend.

4.2.2 Sediment

Sediment was sampled from Ponds 3, 4 and 5 in 2014. Sediment was sampled from Ponds 3 and 5 (but not Pond 4) in 2007 while sediment data is available for all three ponds during the pre-operational phase (1994) and $1^{\rm st}$ operational phase (1996). Statistical trend analyses were conducted only for Ponds 3 and 5 where four sampling events exist. Dioxin/furan detection limits in the early program data from the 1990's were much higher than in 2007and 2014. As shown in Figure 4-14, the TEQ (ND = 0) sediment concentrations in 2014 are comparable to those noted in the 1990's and lower than those noted in 2007. The 2014 TEQ (ND = DL) concentrations are lower than all previous years and this is the case for all three ponds.

The Mann-Kendall trend analysis concluded that no significant increasing/decreasing trends are present for dioxin/furan TEQs (ND = 0). However, a statistically significant (S = -6; p = 0.045) decreasing trend was noted in Pond 3 TEQs (ND = DL). No significant trends were noted in Pond 5 (ND = DL).

4.2.3 Fish Tissue

The fish tissue (both whole-body and fillet samples) dioxin/furan TEQs from the three farm ponds sampled in 2014 are presented in Figures 4-15 through 4-17. TEQ results presented in this section illustrate the lipid-normalized concentrations only. Lipid-normalized concentrations are relevant for trend analysis because dioxins/furans accumulate in fatty tissues which may vary during the different sampling events. Statistical trends analyses were conducted for bluegill and largemouth bass whole-body and fillet samples for all three ponds. Results are discussed below for Ponds 3, 4 and 5.

Pond 3

Four sampling events are available for bluegill fillet and largemouth bass whole-body and fillet samples while six years of data are available for bluegill whole-body samples. Pond 3 bluegill and largemouth bass fish tissue data are presented in Figure 4-15. TEQ (ND = 0) concentrations in bluegill and largemouth bass (both fillet and whole-body) in 2014 are comparable or lower than the data collected in previous years. The 2014 TEQs (ND = DL) are also consistent with or lower than the previous years. The Mann-Kendall trend analysis concluded that no statistically significant increasing/decreasing trends are present for dioxin/furan TEQs for bluegill/ largemouth bass fillet and whole-body samples when ND = 0 or ND = DL.

Pond 4

Four sampling events are available for bluegill whole-body samples collected at Pond 4 while only two years are available for bluegill fillet samples. No largemouth bass were sampled from Pond 4. Pond 4 bluegill tissue data are presented in Figure 4-16. TEQ concentrations detected in bluegill whole-body samples in 2014 are comparable to the data collected in previous years. Fillet TEQ concentrations noted in 2014 are higher than noted in 2004 which is the only other year bluegill fillet samples were collected from Pond 4. The Mann-Kendall trend analysis for the bluegill whole-body samples concluded that no statistically significant increasing/ decreasing trends are present for dioxin/furan TEQs, neither for TEQ (ND = 0), nor for TEQ (ND = DL).

Pond 5

Five sampling events are available for bluegill and largemouth bass whole-body samples collected at Pond 5 while three and four years of data are available, respectively, for bluegill and largemouth bass fillet samples. Pond 5 bluegill and largemouth bass fish tissue data are presented in Figure 4-17. TEQ (ND = 0) concentrations in bluegill and largemouth bass (both fillet and whole-body) actually detected in 2014 are comparable or lower than the data collected in previous years. The 2014 TEQs (ND = DL) are also consistent with or lower than the previous years. Again, the Mann-Kendall trend analysis concluded that no statistically significant increasing/decreasing trends are present for dioxin/furan TEQs for bluegill/largemouth bass whole-body samples or largemouth bass fillet samples regardless of the treatment of non-detects.

4.2.4 Hay

Figure 4-18 presents the wet weight TEQ concentrations in hay collected at all of the farms during each of the sampling periods. These data were not normalized to lipid content. In the case of the Kingsbury Farm which is no longer sampled as part of the monitoring program, post-operational phase TEQ values were either consistent with or lower than pre-operational monitoring regardless of whether or not detection limits were included in the calculation of the TEQ. For the 2014 hay sampling results from the Lermond Farm, Johnson Dairy Farm and the background location in Lucketts, Virginia, all TEQs are comparable or lower than TEQs noted in 2001, 2004 and 2007.

The Mann-Kendall trend analysis concluded that no statistically significant increasing or decreasing trends are present for dioxin/furan TEQs for hay samples from either the Lermond Farm or the background location in Lucketts, Virginia regardless of the treatment of non-detects. No trend analysis was conducted on the Kingsbury or Johnson Dairy Farms as only three sampling events are available for these locations.

4.2.5 Cow's Milk

Pre-operational and 1st operational phase milk data are available from the Kingsbury Dairy Farm while cow's milk was collected from the Johnson Dairy Farm in 2001, 2004, 2007 and 2014. The pre-operational and 1st operational phase data sets for the milk sampling program are not directly comparable with respect to TEQ values obtained more recently due to analytical improvements and significant lowering of detection limits. Detection limits for milk were approximately 10 times higher for individual toxic PCDDs/PCDFs in 1994 and 1996 than those for the 2001, 2004, 2007 and 2014 samples.

As reflected in Figure 4-19, the lipid-normalized TEQs (ND = 0) in 2014 milk samples from the Johnson Dairy Farm are comparable or lower than previous sampling results. The 2014 milk TEQs (ND = DL) from the Johnson Dairy Farm are comparable to earlier results. The Mann-Kendall trend analysis concluded that no statistically significant increasing or decreasing trends are present for dioxin/furan TEQs for milk samples from the Johnson Dairy Farm regardless of the treatment of non-detects. Including all milk samples from both the Kingsbury and Johnson Dairy Farms in the trend analyses also concluded that there is no statistically significant increasing or decreasing trend present for dioxin/furan TEQs.

4.3 Dioxin/Furan Congeners

Sampling in environmental media for PCDD/PCDF congeners was also conducted as a component of the 5th operational phase program. As previously discussed above, different laboratories were used and detection limits varied but generally decreased as laboratory methods improved. These analytical factors can make it difficult to ascertain trends in sampling results over time. However, several PCDD/PCDF congeners were detected during each operational phase of the monitoring within certain environmental media at several of the sampling locations. For these consistently detected congeners, a trend analysis was conducted using the actual detected results. The results of these analyses are presented below.

4.3.1 Surface Water

Surface water sampling data for dioxins/furans are available for all six sampling events for Pond 3 while four and five years of sampling data exist for Pond 4 and Pond 5, respectively. OCDD was detected in at least one sample collected from Ponds 3 and 5 during each year these ponds were sampled. In addition, 1,2,3,4,6,7,8-HpCDD was detected in all six years that surface water sampling was conducted at Pond 3. The OCDD/HpCDD concentrations in surface water from Ponds 3 and 5 are presented in Figure 4-20. The 2014 concentrations of these congeners in surface water were generally comparable or lower than concentrations in surface water from previous sampling events (Figure 4-20).

Statistical trends analyses were conducted for OCDD and HpCD detected in surface water samples collected from Pond 3 and/or Pond 5. The Mann-Kendall trend analysis concluded that a significantly decreasing trend is present for OCDD at Pond 3. No significant trends were noted in Pond 3 for HpCDD or at Pond 5 for OCDD.

4.3.2 Sediment

Sediment sampling data for dioxins/furans are available for four sampling events for Ponds 3 and 5 while only three years of sampling data exist for Pond 4. OCDD was detected in at least one sample collected from Ponds 3 and 5 during each year these ponds were sampled. In addition, OCDF and 1,2,3,4,6,7,8-HpCDD were detected in all four years that sediment sampling was conducted at Pond 3 and 5, respectively. The OCDD/OCDF/HpCDD concentrations in sediment from Ponds 3 and 5 are presented in Figure 4-21. The 2014 concentrations of these congeners in sediment were generally comparable or lower than concentrations in sediment from previous sampling events (Figure 4-21).

The Mann-Kendall trend analysis concluded that no significant increasing/decreasing trends are present for OCDD, OCDF and HpCDD at Pond 3 and/or Pond 5.

4.3.3 Fish Tissue

Dioxin/furan congeners detected during each sampling event within the fish tissue (either whole-body or fillet samples) include OCDD within largemouth bass fillet samples from Pond 3, OCDD and 2,3,7,8-TCDF within largemouth bass whole-body samples from Ponds 3 and 5. Sampling results are presented for lipid-normalized concentrations. Lipid-normalized concentrations are relevant for trend analysis because dioxins/furans accumulate in fatty tissues which may vary during the different sampling events. Statistical trends analyses were conducted for largemouth bass whole-body samples at Ponds 3 and 5 and largemouth bass fillet samples for Pond 3. Results are discussed below for Ponds 3 and 5.

Pond 3

Four sampling events are available for largemouth bass whole-body and fillet samples. Pond 3 largemouth bass fish tissue data are presented in Figure 4-22. Concentrations of OCDD and 2,3,7,8-TCDF in largemouth bass whole-body samples in 2014 are comparable or lower than the data collected in previous years. The OCDD concentrations in largemouth bass fillet samples are generally greater than observed in the previous years. However, the Mann-Kendall trend analysis concluded that no statistically significant increasing/decreasing trends are present for OCDDs/TCDF for largemouth bass fillet and whole-body samples.

Pond 5

Five sampling events are available for largemouth bass whole-body samples collected at Pond 5. Pond 5 largemouth bass fish tissue data are presented in Figure 4-23. OCDD and 2,3,7,8-TCDF concentrations in largemouth bass whole-body samples in 2014 are comparable or lower than the data collected in previous years. The Mann-Kendall trend analysis concluded that no statistically significant increasing/decreasing trends are present for OCDD/TCDF for largemouth bass whole-body samples.

4.3.4 Hay

Figure 4-24 presents the wet weight OCDD and 1,2,3,4,6,7,8-HpCDD concentrations in hay collected at the Lermond Farm and the background location in Lucketts, Virginia during each of

the sampling periods. These data were not normalized to lipid content. For the 2014 hay sampling results from the Lermond Farm and the background location in Lucketts, Virginia, the concentrations of OCDD and HpCDD are comparable or lower than concentrations noted in 2001, 2004 and 2007.

The Mann-Kendall trend analysis concluded that no statistically significant increasing or decreasing trends are present for either OCDD or HpCDD for hay samples from either the Lermond Farm or the background location in Lucketts, Virginia.

4.3.5 Cow's Milk

Cow's milk was collected from the Johnson Dairy Farm in 2001, 2004, 2007 and 2014 where OCDD and 1,2,3,4,6,7,8-HpCDD were detected in at least one sample during each operational phase. As reflected in Figure 4-25, the lipid-normalized OCDD and HpCDD concentrations in 2014 milk samples from the Johnson Dairy Farm are comparable or lower than previous sampling results. The Mann-Kendall trend analysis concluded that no statistically significant increasing or decreasing trends are present for either OCDD or 1,2,3,4,6,7,8-HpCDD for milk samples collected from the Johnson Dairy Farm during 2001 through 2014.

4.4 Summary of Trend Analysis Results

The primary objective of this ambient monitoring work was to determine whether or not there have been measurable changes in the concentrations of monitored constituents in the actual environment, and for this 5th operational phase of the County's non-air environmental media monitoring, the work was expanded to include statistical analysis where sufficient historical data are now available. Table 4-1 presents a summary of all statistical trend analysis performed. The historical database now created allowed for significance testing in a total of 213 cases. Generally, very few significant increasing or decreasing trends are evident. In 13 cases decreasing trends were evident, but most of these were generally in association with declining limits of detection. Exceptions were noted for OCDD and cadmium in Pond 3 surface water and sediment, respectively, where significant decreases were noted that are not attributed to detection limits. In only one case, chromium in whole-body bluegill in Pond 4, was any statistically significant increase detected.

4.5 Sampling Comparison with Dioxin/Furan RRF Emissions & 2014 HRA Update

The secondary objective of this monitoring study was "to assess, to the extent possible, the consistency of field observations with the air dispersion modeling results presented in TRC's 2014 Health Risk Assessment (HRA) Update for the Montgomery County Resource Recovery Facility (RRF)." If RRF emissions were impacting the environment, one might expect to see some indication reflected in environmental media especially with respect to increasing concentrations over time. The preceding subsection has examined any evidence of trends over time in the occurrence of constituents of potential concern in environmental media since before RRF operation. In order to further address this secondary objective, this subsection of the report employs a fingerprinting approach whereby the PCDD/PCDF congener pattern of RRF emission is compared to the congener profiles observed in the environmental media sampled. Closely matching patterns between those found in the RRF emissions fingerprint and environmental media profile could suggest a potential inconsistency between the observed environment and the modeling results of the HRA Update for the RRF (TRC 2014a).

Conversely, if patterns between the emissions fingerprint and environmental media are substantially different, then other source contributions of PCDD/ PCDF congeners may likely be responsible for the observed concentrations in the samples. In addition, substantial differences (i.e., orders of magnitude) between environmental media concentrations noted in this monitoring study and those predicted in the HRA Update would be indicative of sources other than the RRF. Directly comparable results from this study include fish tissue concentrations of dioxin/furan TEQs detected at Pond 3 with predicted dioxin/furan TEQs at Pond 3 as well as forage (hay) and cow's milk concentrations that were presented in the HRA Update (TRC, 2014a).

For inorganics, a similar fingerprinting technique will be employed in a companion upcoming study being prepared by TRC, where the County monitors ambient air and compares those patterns with the RRF emissions trace metals fingerprint.

Figure 4-26 presents the profile for the pattern of tetra- through octa-chlorinated PCDDs/PCDFs homologues as emitted from the RRF stack based on actual emissions testing conducted from 2008 through 2013. This timeframe would represent the period of RRF emissions since the last operational phase monitoring was conducted in 2007. The dominant homologues include TCDFs, HxCDD, penta-CDDs, and pendta-CDFs. The profile of PCDDs/PCDFs from these RRF emissions were compared to the profiles of PCDDs/PCDFs detected in the non-air environmental media samples using both the actual average detected values (ND = 0) and detection limits (ND = DL). Patterns of PCDDs/PCDFs noted within the environmental media

samples that do not closely resemble the RRF emission pattern suggest that RRF emissions are not associated with the observed PCDD/PCDF environmental concentrations. However, a pattern match could also be influenced by the fact that individual species of PCDDs and PCDFs as released to the environment may subsequently undergo transformation. For example, highly chlorinated PCDDs/PCDFs may undergo reductive dechlorination under anaerobic conditions. In addition, following uptake into biota, the pattern of relative abundance of PCDDs/PCDFs may undergo transformation and/or elimination due to metabolism by the organism (Opperhuizen and Sum, 1990).

An additional method to evaluate the potential for the RRF to influence PCDDs/PCDFs detected in non-air environmental media would be to evaluate the relative pattern of the four HxCDF congeners actually measured as present in the RRF emissions in comparison with their relative distribution in the non-air media. However, HxCDF congeners were detected only in sediment samples collected from two of the three farm ponds and not in any other media. For sediment samples from the two farm ponds (Ponds 3 and 4) where these congeners were detected, the relative pattern of abundance of the four HxCDF congeners detected were compared to the relative pattern of abundance of these congeners as emitted from the RRF.

4.5.1 Surface Water

Figure 4-27 presents the PCDD/PCDF RRF emission profile data alongside the results of the surface water sampling for each of the three ponds sampled during the 2014 program. The only PCDDs detected were OCDD and Hp-CDDs while no PCDFs were detected in the surface water samples collected from the ponds. At all three ponds, approximately 90% of the PCDDs/PCDFs detected in the surface water samples was OCDD. Regardless of whether non-detects taken as equal zero (ND=0) or non-detects are taken as at their detection limits (ND=DL), the surface water PCDD/PCDF profiles for the three ponds are similar to each other but do not resemble the RRF emission profile.

4.5.2 Sediment

Figure 4-28a presents the PCDD/PCDF congener profile of RRF emissions alongside the PCDD/PCDF congener profile of the sediment sampled at the three ponds for both the detected PCDDs/PCDFs (ND = 0) and with non-detects equal to the detection limit (ND = DL). As most PCDDs/ PCDFs were detected in the sediment samples, these two figures are very similar. The predominant PCDDs detected at all three ponds were OCDD and Hp-CDDs while Hx-CDDs were detected at higher concentrations at Pond 5. Although PCDFs were detected in the sediment samples collected from all three ponds, the concentrations were low compared to the

various PCDDs and generally represented less than 1% of the profile. At all three ponds, approximately 80 - 90% of the PCDDs/PCDFs detected in the sediment samples was OCDD. Thus, although the sediment PCDD/PCDF profiles for the three ponds vary somewhat from pond to pond, none of these profiles resemble the RRF emission profile.

Three of the four HxCDF congeners were detected in one of the two samples that were each collected from Ponds 3 and 4. Figure 4-28b presents the relative amounts of these HxCDF congeners detected in stack testing from 2008 through 2013 at the RRF with the relative amount of these congeners detected in the samples collected from Ponds 3 and 4 (none of these congeners were detected in Pond 5). Based on the distribution of the four HxCDF congeners within the pond sediment samples, the source of these HxCDF congeners is likely a combustion source. However, as depicted in Figure 4-28b, although the relative amounts of the HxCDF congeners at Pond 3 are more similar to the RRF emission distribution than the Pond 4 congeners, neither of the profiles closely resemble the RRF emission profile for the HxCDF congeners. It should be noted that other combustion sources are known to exist in the area, and according to Dwyer and Themelis (in press), in 2012, waste-to-energy sources represented 0.84% of all controlled combustion sources of dioxin emissions in the U.S. The primary air sources of PCDDs/PCDFs include emissions associated with the backyard barrel burning of refuse as well as coal combustion emissions (USEPA, 2006b).

4.5.3 Fish Tissues

Figure 4-29a presents the PCDD/PCDF profiles for the bluegill whole-body sampling results from each of the three ponds assuming non-detects equal zero and the detection limits, respectively. The profiles for Pond 3 and Pond 5 were similar while the Pond 4 profile was comprised of less OCDD but higher concentrations of Hp-CDD and PCDFs (particularly TCDFs and Hp-CDFs). Pond 3 and Pond 5 profiles are not similar to the RRF emission profile. Although the Pond 4 profiles are more similar to the air emission profile (with respect to OCDD and TCDFs), there are dissimilarities with other congeners (Hx-CDD, OCDF, PCDD, PCDF), indicating no correlation with the RRF emission pattern. This is corroborated by the bluegill fillet PCDD/PCDF profiles (Figures 4-29b) which indicate no close resemblance with the RRF emission profile.

Largemouth bass whole-body (Figure 4-30a) and fillet (Figures 4-30b) profiles are comprised of a much greater percentage of OCDD (whole-body samples and Pond 3 fillet samples) or TCDF (Pond 5 fillet samples only) than the emission profiles. Overall, little similarity exists between the largemouth bass samples and the RRF emission profiles.

In addition to the fingerprint analysis discussed above, the predicted fish tissue concentrations of dioxin/furan TEQs (as well as most metals) within Pond 3 that were presented in the 2014 HRA update (TRC, 2014a) are generally seven to nine orders of magnitude below the actual dioxin/furan TEQs detected in fish from Pond 3. The comparison of predicted and actual PCDD/PCDF congener concentrations in whole-body fish tissues at Pond 3 (see Table 3-6b) concluded that there was generally good correlation within these concentrations based on actual sediment PCDD/PCDF concentrations. The significantly greater concentrations noted in Pond 3 sediments and fish tissues provide an additional indication that other combustion sources are likely responsible for the detected concentrations of PCDDs/PCDFs detected at Pond 3. If RRF emissions were a major contributor to these concentrations, then it would be expected that levels would be increasing within the sediment and fish tissue. Increasing trends are not occurring within either sediments or fish tissues collected from Pond 3 (or any of the ponds studied).

4.5.4 Hay

Dioxin/furans present within hay samples are expected to be present from air deposition and direct air-to-plant transfer onto the surfaces of the plants. Figure 4-31 presents the PCDD/PCDF profiles for the hay samples from each of the three farms assuming non-detects equal zero and the detection limits. Although a variety of PCDDs/PCDFs were detected in the hay samples collected from three sampling locations, OCDDs comprised a much greater percentage of the PCDDs/PCDFs in the hay samples while other congeners comprise a lower percentage (e.g., HxCDF, PCDF) than are present in the RRF emission profile. In addition, the background hay sample has a similar profile with the hay samples collected from the Lermond Farm and Johnson Dairy Farm suggesting PCDDs/PCDFs are likely attributable to similar sources but not the RRF. Finally, the predicted dioxin/furan TEQ concentrations in forage presented in the HRA Update (TRC, 2014a) are several orders of magnitude below the levels noted in this monitoring study. This difference would indicate that other dioxin/furan sources are likely responsible for the concentrations of dioxin/furans that were observed in this study.

4.5.5 Cow's Milk

Figure 4-32 presents PCDD/PCDF air emission profile data alongside the results of the cow's milk sampled during the 2014 program for only the detected PCDDs/PCDFs (ND = 0) and for the results with non-detects equal to the detection limit (ND = DL). The primary PCDDs/PCDFs detected were OCDD and Hp-CDDs which were also the main PCDDs/ PCDFs detected in the hay samples. The milk PCDD/PCDF profiles (either assuming non-detects equal zero or the detection limit) for the 2014 samples do not resemble the air emission profile.

The RRF dioxin/furan emission profile (see Figure 4-26) shows the highest emitted congener is TCDF, but all congeners are present. The lower chlorinated congeners are generally more bioaccumulative than the higher chlorinated congeners (USEPA 2005). Bioconcentration factors represent uptake/biotransfer rate of the congeners from environmental media (e.g., food) into cow's milk (Ba Milk). Any tissues potentially impacted by the RRF emissions would be expected to have levels of TCDD, TCDF, PeCDF and HxCDF reflective of this fact. This is not the case for either milk or hay from Arthur Johnson Farm. The milk samples (see Figure 4-32) have very low concentrations for HpCDD, OCDD and Pe-CDF with no other dioxin/furan congeners detected. Hay samples (Figure 4-31) from the Johnson Dairy Farm show a similar distribution with OCDD and HpCDD representing the highest concentrations of congeners detected although Hx-CDD, Pe-CDF, HxCDF and Hp-CDF were also detected at low concentrations. Neither the cow's milk nor the hay samples had any detects of TCDD or TCDF which are more bioaccumulative than OCDD and HpCDD. Finally, the predicted dioxin/furan TEQ concentrations in cow's milk that were presented in the HRA Update (TRC, 2014a) are several orders of magnitude below the levels noted in this monitoring study (assuming NDs = 0 or DL). This difference would indicate that other dioxin/furan sources are likely responsible for the concentrations of dioxin/furans that were observed in this study. Therefore, there is no evidence indicating that the very low PCDD/PCDF concentrations in milk and hay are linked to the RRF.

4.5.6 Other Potential PCDD/PCDF Sources

Figure 4-33 presents profiles for tetra- through octa-chlorinated PCDD/PCDF homologues that are emitted from a variety of other potential combustion sources including unleaded gasoline (vehicles with catalytic converter), household waste via barrel burning, coal from utility boilers and wood (industrial sources). These profiles were derived from emission data presented in USEPA (2001b) and are based on detected values only (i.e., ND = 0).

The homologue profiles for all of these sources other than barrel burning of household waste are dominated by OCDDs. Barrel burning of household waste results in tetra-CDFs being the most dominant homologues followed by penta-CDFs. Unleaded gasoline combustion is comprised primarily of OCDDs and tetra-CDFs while coal combustion is dominated by OCDDs and then tetra-CDDs, penta-CDFs and OCDFs. Wood combustion is also comprised primarily of OCDDs followed by nearly equal amounts of tetra-CDFs and penta-CDFs.

The profile of PCDDs/PCDFs from these other potential sources of PCDDs/PCDFs can be compared to the profiles of PCDDs/PCDFs detected in the non-air environmental media samples using the actual average detected values (ND = 0). A comparison of the profiles

presented in Figure 4-33 with the profiles detected in the non-air environmental media (Figures 4-27 through 4-32) do not readily identify a likely sole source that is responsible for the PCDDs/PCDFs detected in the environmental samples although combustion of unleaded gasoline provides the closest match of these four additional emission sources. As there may be many contributing PCDD/PCDF sources, the comingling of these emission sources presents difficulties in identifying a single primary source of PCDDs/PCDFs. Background concentrations of PCDDs/PCDFs in ambient air and hence atmospheric deposition into other environmental media are most often attributed to an aggregate of emissions from a variety of combustion sources.

An additional factor that makes source identification difficult; particularly for samples that are primarily comprised of OCDDs; is that OCDDs may be produced photochemically from precursor pentachlorophenol (PCP). PCP was formerly widely used primarily as a wood preservative but also in various pesticides. In addition to PCDDs/PCDFs being directly contained within technical grade PCP products, OCDD can be produced from PCP via a photochemical reaction within soils. Its use as a wood preservative along with aromatic hydrocarbons resulted in subsequent dispersion into the environment including deposition of PCP onto soils where OCDD could readily be formed and subsequently transported to downgradient environments including aquatic habitats.

Section 5 Summary and Conclusions

The 5th operational phase non-air environmental media sampling event was conducted in June, 2014. The 2014 data provides an update to the earlier sampling and continues the long-term monitoring program for the Montgomery County RRF.

As part of 2014 sampling, three farm ponds (Ponds 3, 4, and 5) were sampled for surface water and sediment (two samples from each pond), a lower trophic level fish (whole body and fillet), and a higher trophic level fish (whole body and fillet). Although samples for these media were proposed to be collected from the same three ponds that were sampled in 2007 (last sampling event of the monitoring program), one of the private farm ponds (Pond 2) had recently been drained so an alternative pond (Pond 4) was sampled. This pond had previously been sampled with the latest sampling event conducted in 2004. Surface water was analyzed for water quality parameters (pH, specific conductance, dissolved oxygen, and temperature) and total hardness (as CaCO3), sediment was analyzed for total organic carbon and the biotic media were analyzed for percent lipid (i.e., percent fat).

One nearby dairy farm (Johnson Dairy Farm) was sampled for cow's milk and hay while hay was also collected from a farm located within the RRF emissions maximum deposition zone (Lermond Farm) and a location outside the influence of RRF emissions ("background" site in Lucketts, Virginia).

All samples were analyzed for the seventeen PCDD/PCDF congeners and combined to calculate the TEQ values in accordance with World Health Organization TEFs and for the same select group of seven trace metals (arsenic, beryllium, cadmium, chromium, lead, mercury, and nickel) that had been studied in previous phases of the monitoring program. In order to isolate and bound the uncertainty inherently introduced by laboratory detection limits when calculating TEQ values, especially important for examining changes over time, TEQ values were calculated both by assuming zero value for non-detected congeners, and alternately assuming that non-detected congeners actually existed at concentrations equal to the laboratory method detection limits for each non-detected congener. As in Section 4, for the purpose of compact notation, the zero assumption is indicated by TEQ (ND = 0) and the alternate assumption by TEQ (ND = DL).

The concentrations of compounds analyzed for in 2014 samples were generally compared to the existing set of historic data collected in previous monitoring programs for PCDDs/PCDFs and inorganics and compared to available benchmarks that were identified for Federal and Maryland regulatory agencies and the published literature. In addition, a statistical Mann-Kendall trend analysis for data sets containing four or more sampling events. The historic data include pre-operational baseline data (1994-1995), and data from the first four operational phase events (1996 –1998, 2001, 2004, and 2007).

The primary objective of this ambient monitoring work is to determine whether or not there are measurable changes in the concentrations of certain constituents in the actual environment. A secondary objective is to assess, to the extent possible, the consistency of field observations with the results of the air dispersion modeling and health risk assessment protocols earlier performed (TRC, 2014a). Based on a review of the historic and recent 2014 data, the following is a summary of findings for each environmental media:

5.1 Surface Water

- Water quality measurements of pH and dissolved oxygen content were found to be in the normal range at all three ponds with the two deeper ponds exhibiting thermal stratification with very low dissolved oxygen levels near the pond bottoms;
- Mercury was not detected in any of the surface water samples;
- Surface water concentrations of metals detected in all three ponds were generally consistent with, or lower than, historical data collected in previous monitoring programs. Significantly decreasing concentrations of cadmium and nickel were noted at Pond 3 and for cadmium, chromium and nickel at Pond 5. However, these decreases may be attributable to lowered detection limits in latter sampling events; and,
- No statistically significant trends in TEQ values (ND = 0) are evident for any of the three ponds. Although a statistically significant decreasing trend is present for TEQs (ND = DL) for Pond 4, this is due, at least in part, to decreasing detection limits. A statistically significant decreasing trend is present for OCDD in surface water at Pond 3 which is unaffected by detection limits as OCDD was detected in each operational phase sampling event.

5.2 Sediment

- All seven metals were detected in the sediment samples collected from the three ponds. The concentrations of the metals were generally consistent among the three ponds;
- Pond 4 has results from only three years of sampling so statistical trend analysis
 could not be performed. However, it can be seen that concentrations of all
 metals detected in 2014 in Pond 4 sediments are comparable or lower to previous
 sampling events;
- A statistical trends analysis was able to be conducted for Ponds 3 and 5. It indicated that Pond 3 sediment concentrations of cadmium have significantly decreased over time. Mercury levels in Pond 5 sediment have also declined significantly although this may be attributable to lower detection limits; and,
- Sediment concentrations in 2014 are comparable to TEQ (ND = 0) noted in the 1990's and lower than TEQs noted in 2007. Mann-Kendall analysis concluded that no significant increasing/decreasing trends are present for dioxin/furan TEQ (ND = 0). A significantly decreasing trend was noted in Pond 3 for TEQ (ND = DL). No significant trends were noted in Pond 5 for TEQ (ND = DL).

5.3 Fish

- Each of the seven metals were detected in one or more of the fish tissue samples collected from the three ponds and bluegill and largemouth bass fillet and whole body samples have detected concentrations of metals in 2014 that are comparable or lower than data collected in previous programs. Due to lower detection limits in latter sampling events, the bluegill whole-body concentrations of cadmium and mercury at Pond 3 and lead at Pond 5 exhibited significantly decreasing concentrations over time;
- Bluegill whole-body concentrations of chromium at Pond 4 have significantly
 increased if assuming all non-detects are equal to the detection limit, and no
 significant trend is evident for chromium when assuming non-detects are equal
 to zero. Future monitoring may clarify whether a trend exists; and,
- TEQ concentrations in bluegill and largemouth bass fillet and whole body samples detected in 2014 at all three ponds are comparable or lower than data collected in previous sampling events. The trend analysis concluded that no significant increasing or decreasing trends are present for dioxin/furan TEQs for bluegill/largemouth bass whole-body samples or fillet samples when non-detects

are assumed to equal zero or if non-detects were assumed to be equal to the detection limits.

5.4 Hay

- Metals concentrations in hay collected in 2014 from the Johnson Dairy Farm are generally consistent with concentrations detected in previous sampling events and the 2014 background results. Statistical trends analyses were conducted for hay samples collected from the Lermond Farm and the reference location in Lucketts, Virginia. No significant increasing/decreasing trends were noted in the Lermond Farm or background hay samples; and,
- For the 2014 hay sampling results, the TEQs are comparable or lower than TEQs noted in 2001, 2004 and 2007. The trend analysis concluded that no significant increasing or decreasing trends are present for dioxin/furan TEQs for hay samples from either the Lermond Farm or the background location in Lucketts, Virginia when non-detects are assumed to equal zero or if non-detects were assumed to be equal to the detection limits.

5.5 Cow's Milk

- Beryllium, lead, and mercury were not detected in the 2014 milk samples.
 Arsenic and cadmium were each detected in one milk sample while chromium, and nickel were detected in both samples;
- Metals concentrations in milk from 2014 are consistent with, or lower than, historic metals concentrations from previous monitoring programs. The trend analysis concluded that no significant increasing/decreasing trends are present for arsenic, cadmium, chromium and nickel;
- Two dioxin congeners (1,2,3,4,6,7,8-HpCDD and OCDD) and one furan congener (1,2,3,7,8-PeCDF) were detected in one of the two milk samples. No dioxin/furan congeners were detected in the other milk sample; and,
- The 2014 milk TEQs are comparable to earlier results when including the detection limits in the calculation of TEQs. The trend analysis concluded that no significant increasing or decreasing trends are present for dioxin/furan TEQs for milk samples from the Johnson Dairy Farm when non-detects are assumed to equal zero or if non-detects were assumed to be equal to the detection limits. Including all milk samples from both the Kingsbury and Johnson Dairy Farms in the trend analyses also concluded that there are no significant increasing/ decreasing trends present for dioxin/furan TEQs.

5.6 Conclusions

In general, metal concentrations in non-air environmental media collected during the 5th operational sampling program are consistent with concentrations from previous sampling events. Significant decreases were noted for some metals over time although these declines are generally attributable to lowered detection limits from latter sampling events compared to the earlier sampling programs. Cadmium concentrations, however, have significantly decreased in Pond 3 sediments. Chromium concentrations have significantly increased in bluegill wholebody samples from Pond 4 if non-detects are assumed to equal the detection limits. However, Pond 4 has a limited fish data set (seven total whole-body samples) and was last sampled in 2004 prior to the recent 2014 sampling event. Future monitoring may clarify if any trend exists.

Concentrations of PCDDs/PCDFs detected in the non-air environmental media in 2014 were generally comparable to or lower than previous sampling events. Better detection limits were achieved in latter sampling events which result in TEQ concentrations that are statistically declining although this is an artifact of the elevated detection limits in the earlier sampling programs. However, a statistically significant decline in OCDD concentrations in Pond 3 surface water is noteworthy as this contaminant was detected in each operational phase sampling event and is unaffected by detection limits. TEQ concentrations calculated using only detected congeners (that is, assuming zero for non-detected congeners), do not indicate any significant increasing or decreasing trends in any of the environmental media sampled.

The pattern of PCDD/PCDF congeners in the non-air environmental media samples do not, in general, reflect the pattern of PCDD/PCDF emissions from the RRF. More detailed analyses were conducted of hexa-chlorinated furans for sediment samples in order to ascertain if any correlations are present between these samples and the RRF emissions. This analysis concluded that, although the source of the HxCDFs may be due to combustion, there do not appear to be similarities between the RRF emission and the 2014 environmental media sample profiles. Other combustion sources may include backyard barrel burning of refuse, waste wood burning, residential/industrial wood combustion, combustion of unleaded gasoline, and industrial coal-fired utilities and boilers (USEPA, 2006b). Therefore, it is concluded that other sources of dioxins/furans are present in the study area and contributing to the dioxin/furan concentrations present in the 2014 samples.

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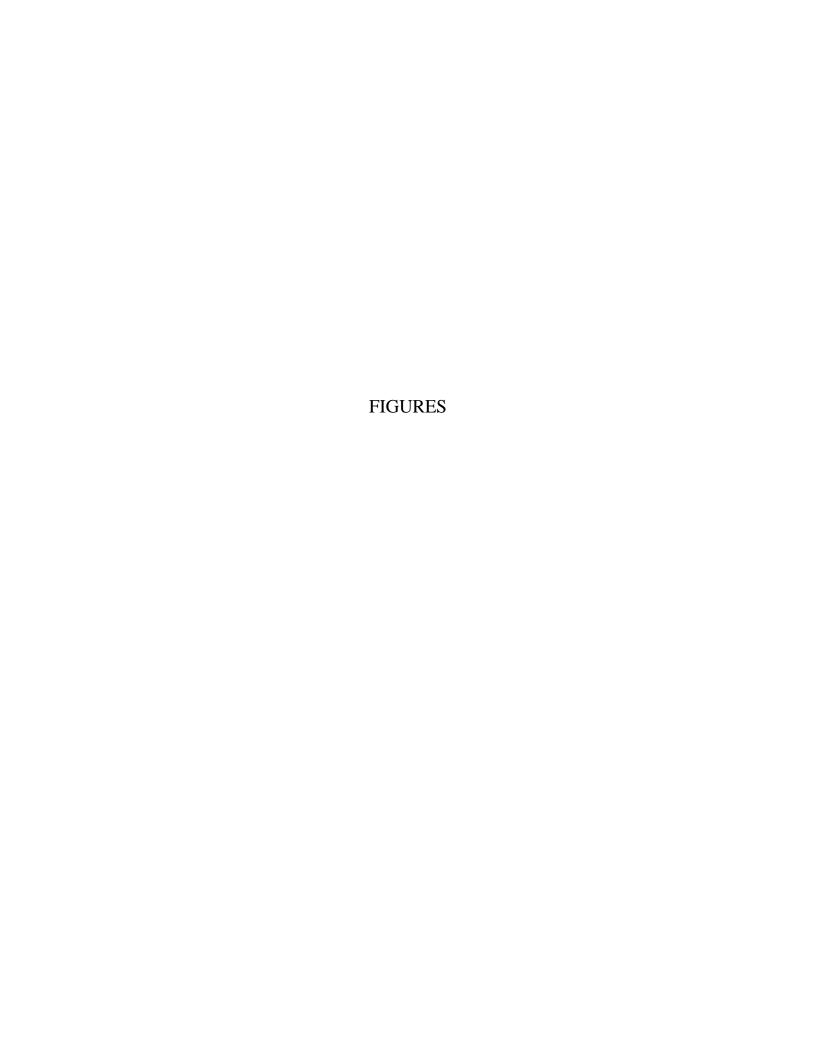
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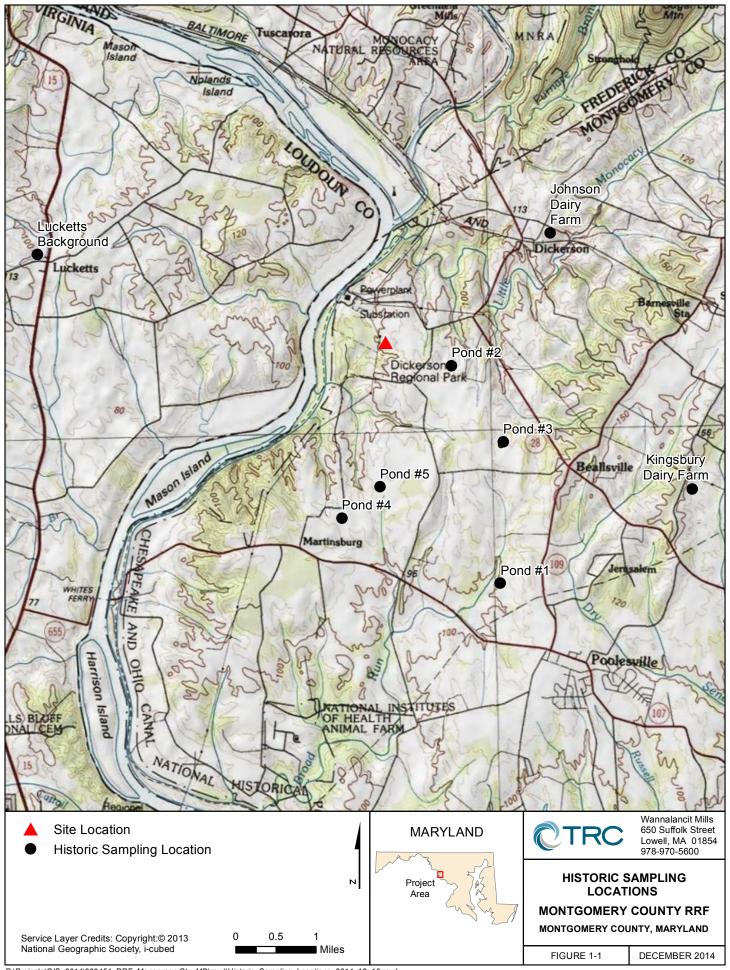
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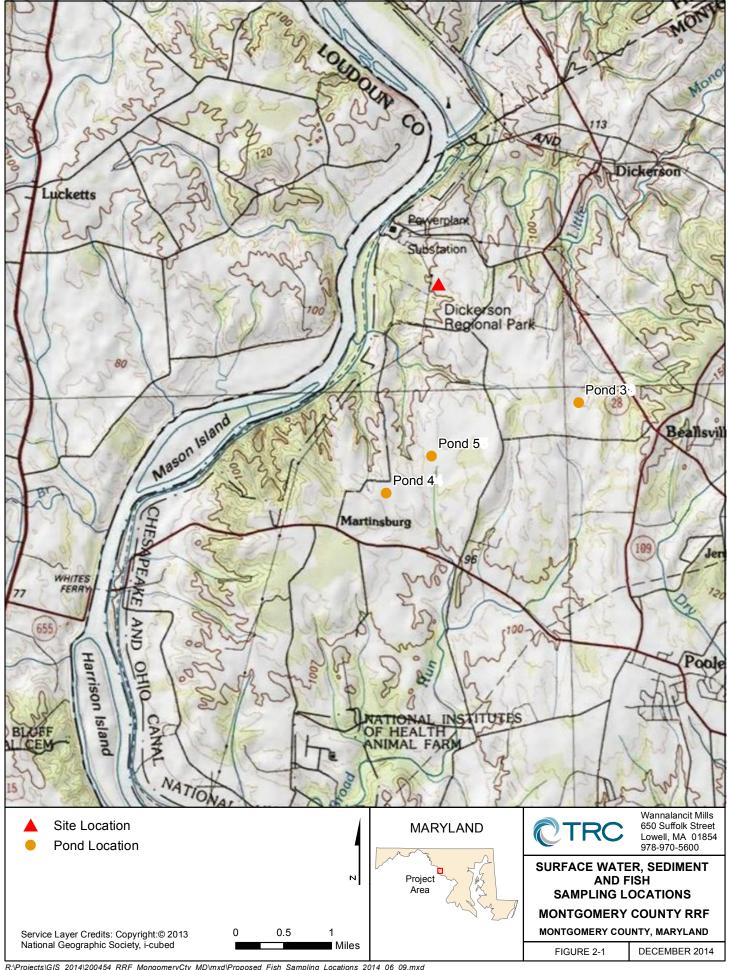
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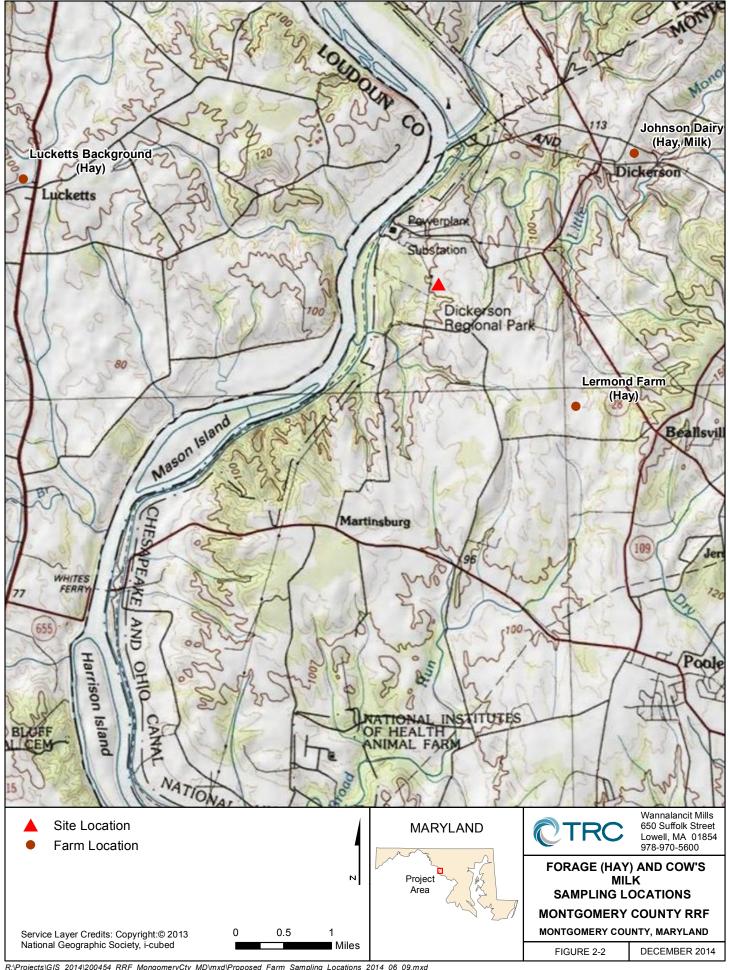
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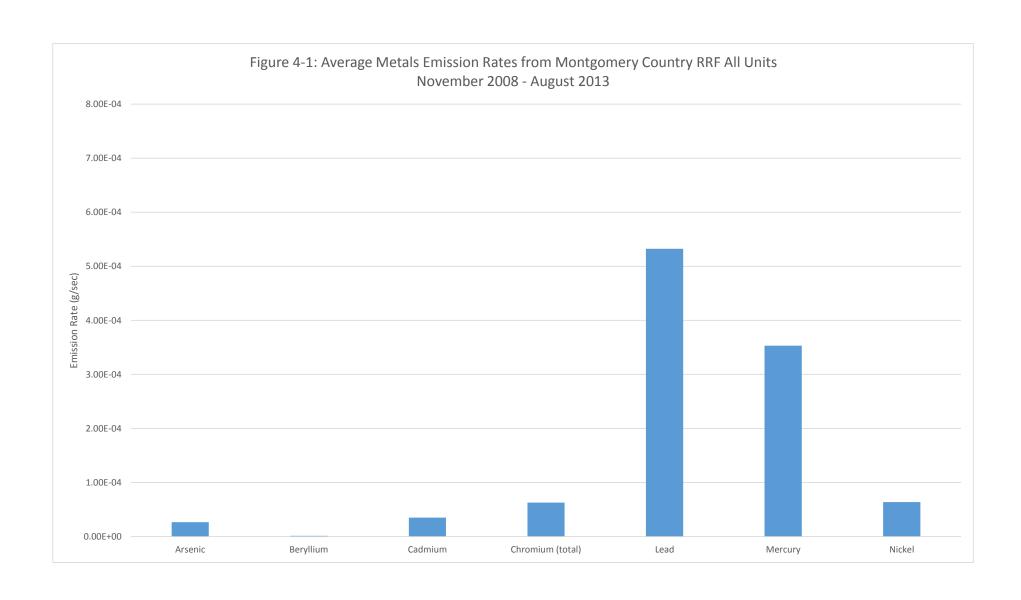
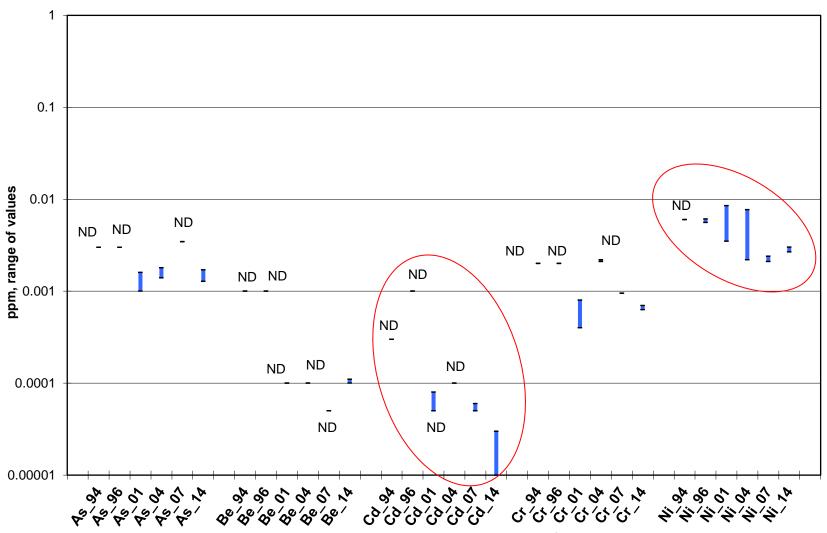


Figure 4-2.

Total Metals Detected in Surface Water - Pond 3

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



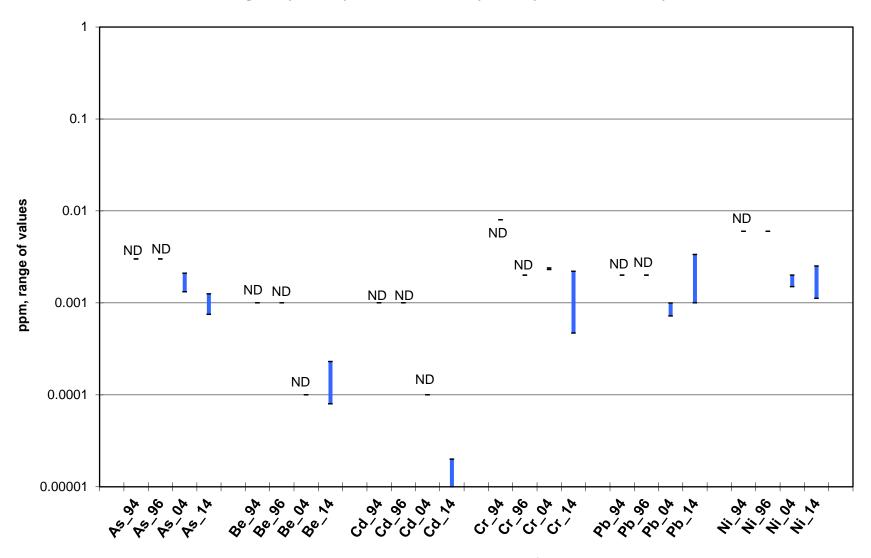
Notes: No mercury or lead detected in Pond 3 surface water in 2014 Red oval indicates statistically significant decreasing concentrations

Figure 4-3.

Total Metals Detected in Surface Water - Pond 4

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



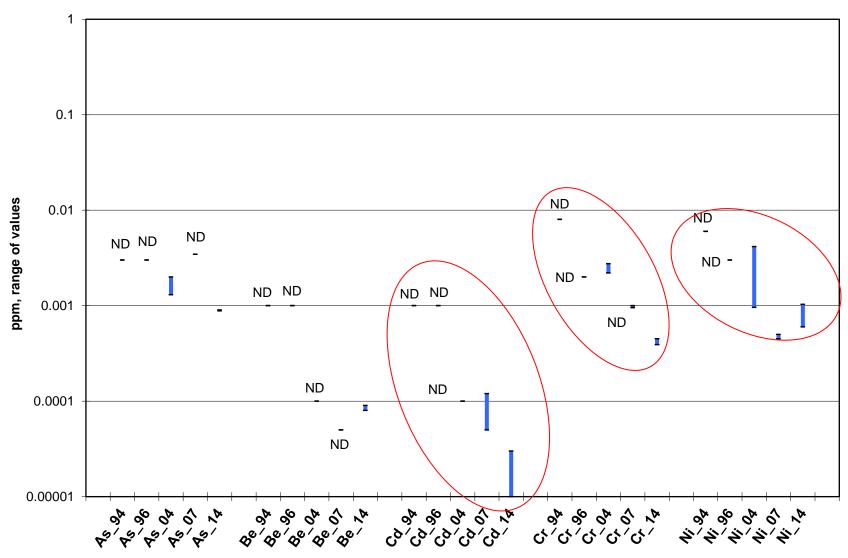
Note: No mercury detected in Pond 4 surface water in 2014

Figure 4-4.

Total Metals Detected in Surface Water - Pond 5

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



Notes: No lead or mercury detected in Pond 5 surface water in 2014 Red oval indicates statistically significant decreasing concentrations

Figure 4-5.

Metals Detected in Sediment - Pond 3

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

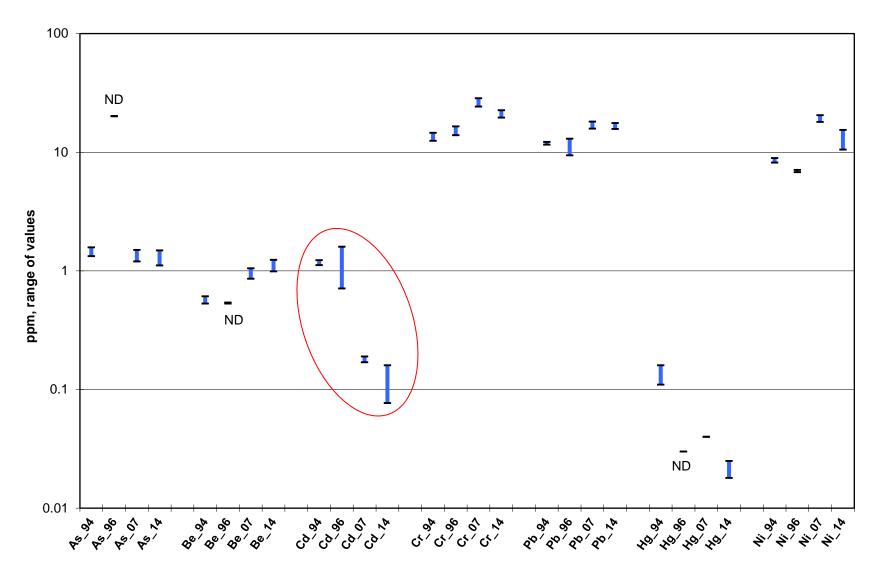


Figure 4-6.

Metals Detected in Sediment - Pond 4

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

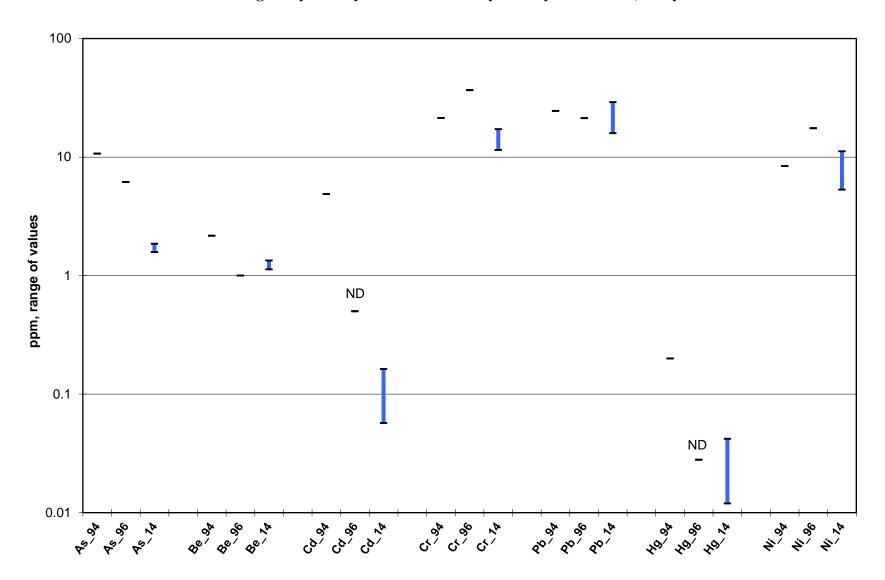


Figure 4-7.

Metals Detected in Sediment - Pond 5

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

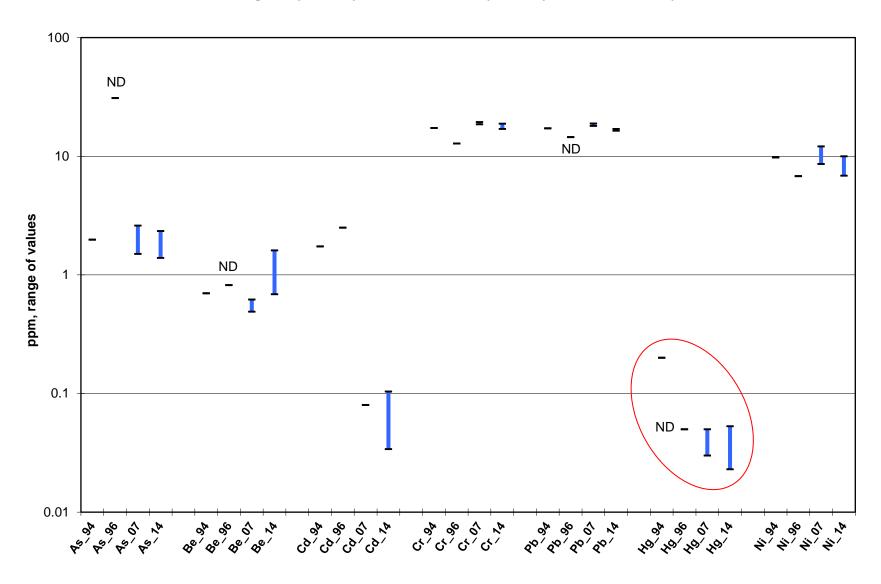


Figure 4-8a.

Metals Detected in Bluegill Whole-Body - Pond 3

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

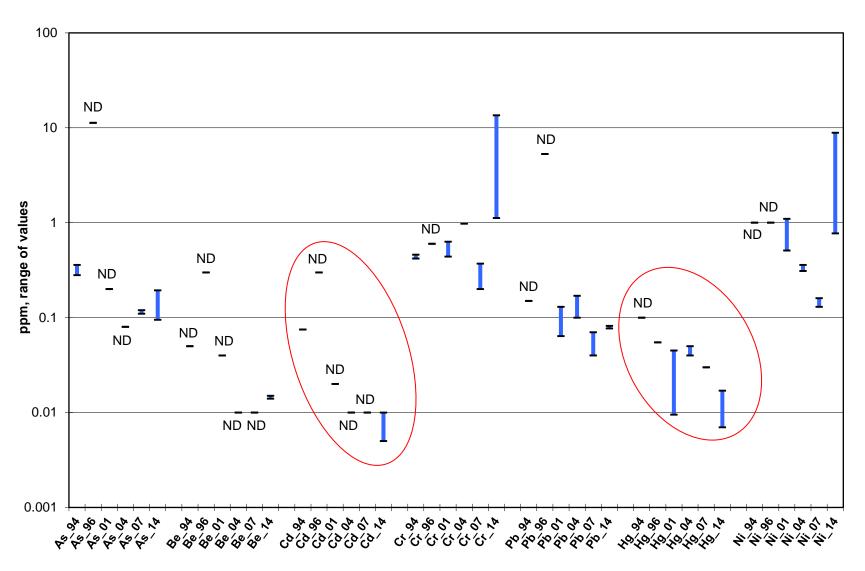
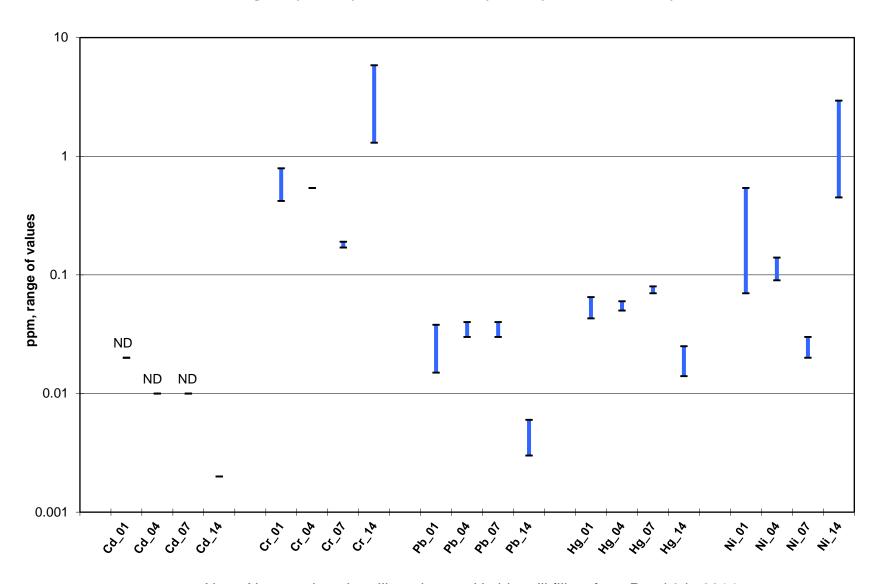


Figure 4-8b.

Metals Detected in Bluegill Fillets - Pond 3

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



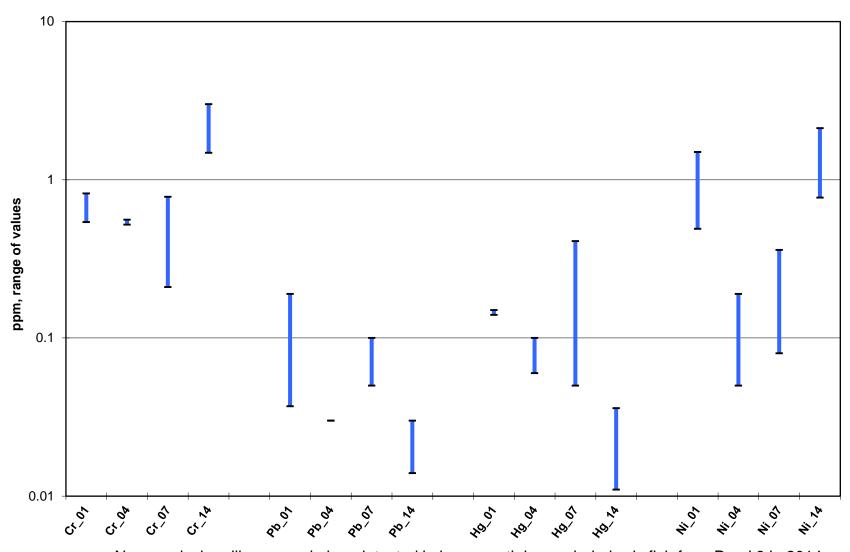
Note: No arsenic or beryllium detected in bluegill fillets from Pond 3 in 2014

Figure 4-8c.

Metals Detected in Largemouth Bass Whole-Body - Pond 3

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



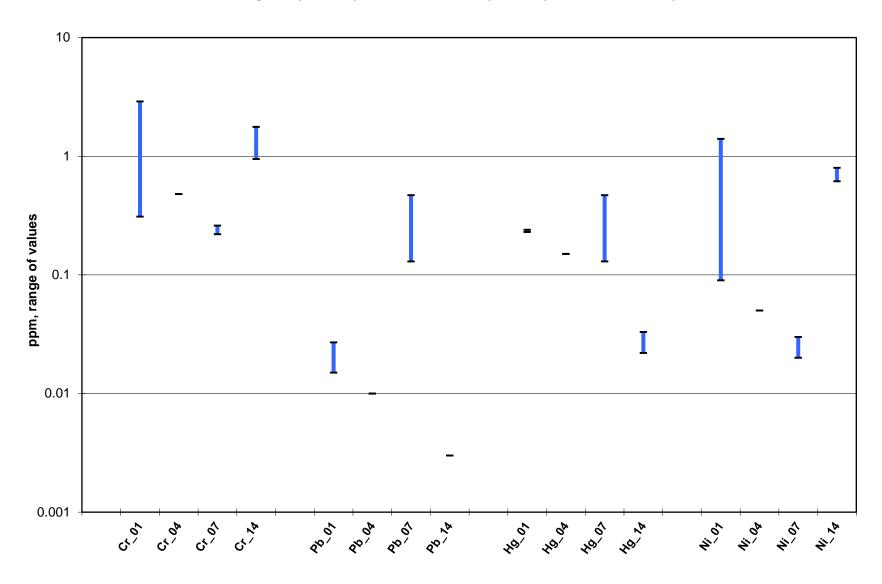
No arsenic, beryllium or cadmium detected in largemouth bass whole-body fish from Pond 3 in 2014

Figure 4-8d.

Metals Detected in Largemouth Bass Fillets - Pond 3

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



Note: No arsenic, beryllium or cadmium detected in largemouth bass fillets from Pond 3 in 2014

Figure 4-9a.

Metals Detected in Bluegill Whole-Body - Pond 4

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

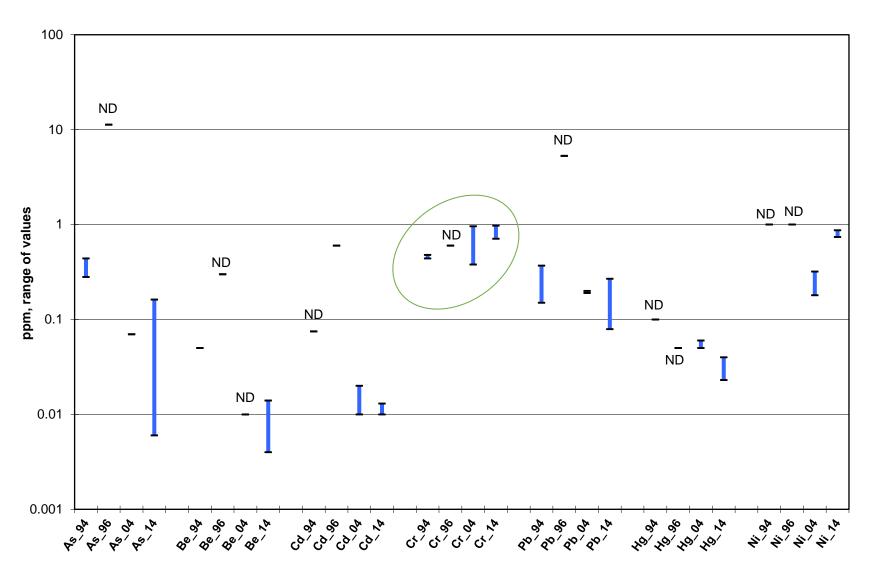
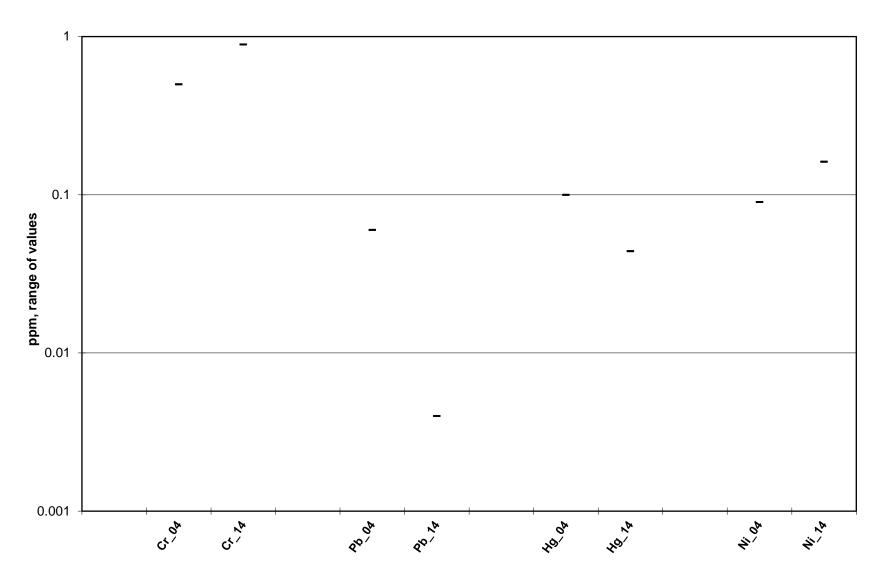


Figure 4-9b.

Metals Detected in Bluegill Fillets - Pond 4

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



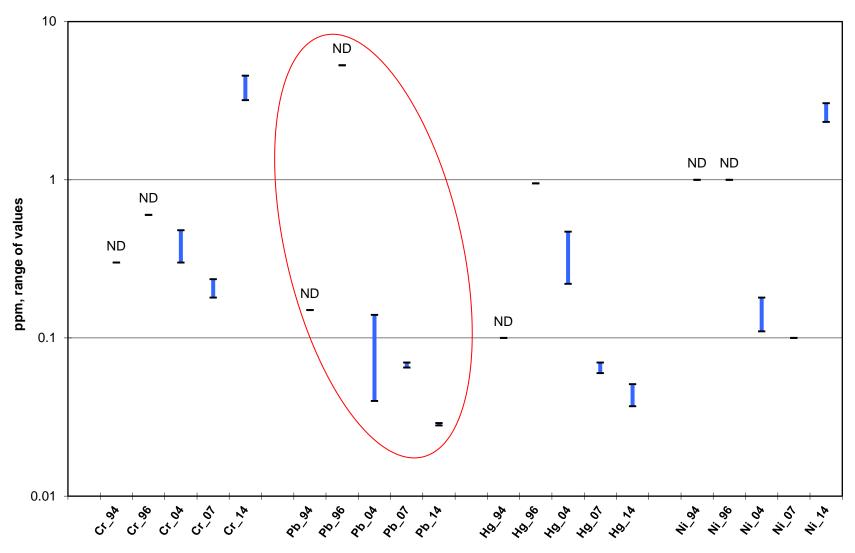
Note: No arsenic, beryllium and cadmium detected in bluegill fillets from Pond 4 in 2014

Figure 4-10a.

Metals Detected in Bluegill Whole-Body - Pond 5

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



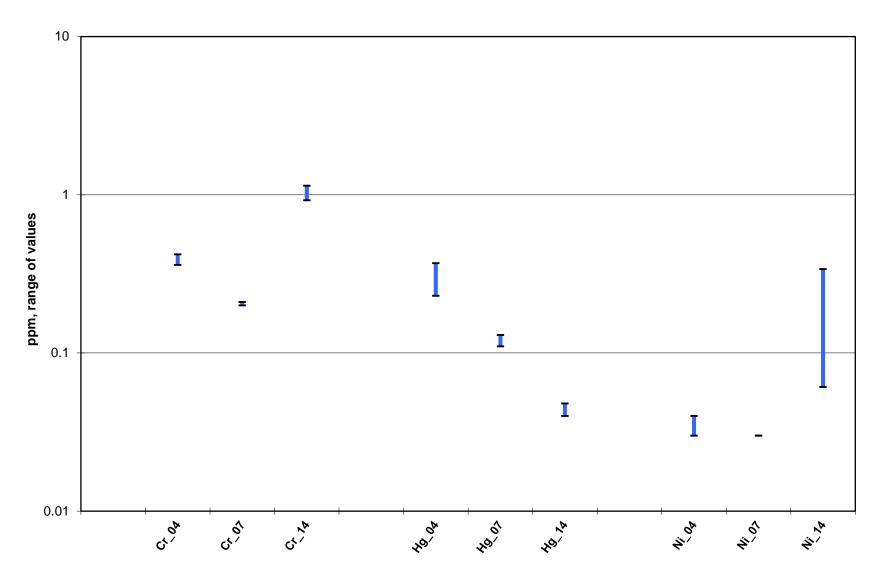
Notes: No arsenic, beryllium or cadmium detected in bluegill whole-body fish from Pond 5 in 2014 Red oval indicates statistically significant decreasing concentrations

Figure 4-10b.

Metals Detected in Bluegill Fillets - Pond 5

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



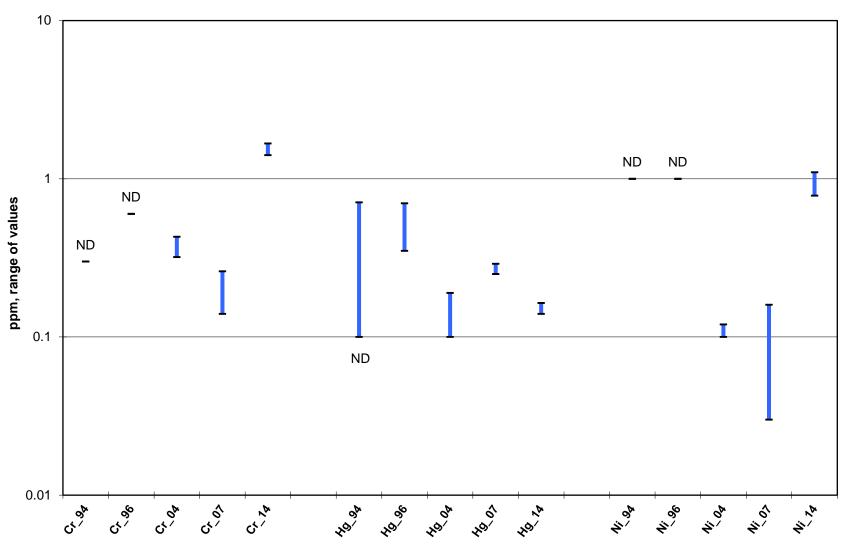
Note: No arsenic, beryllium, cadmium or lead detected in bluegill fillets from Pond 5 in 2014

Figure 4-10c.

Metals Detected in Largemouth Bass Whole-Body - Pond 5

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



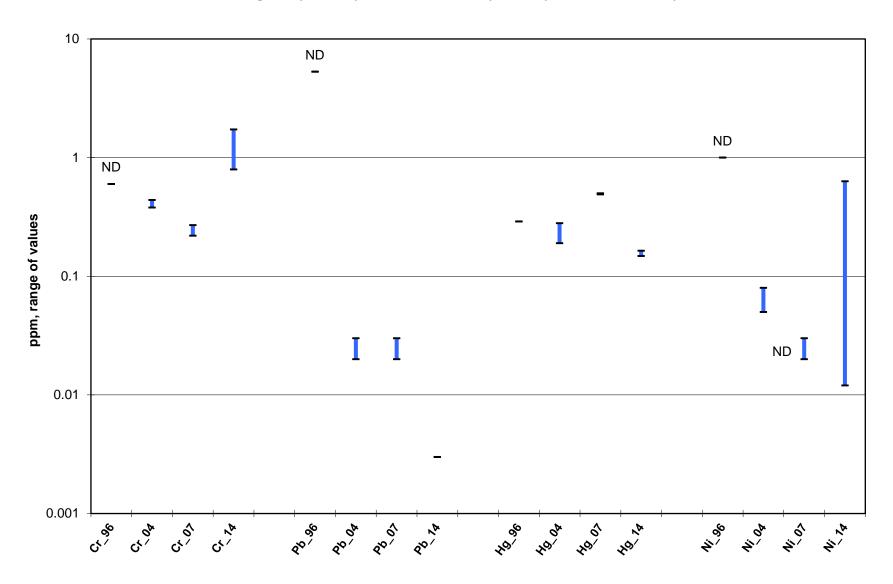
Note: No arsenic, beryllium, cadmium or lead detected in largemouth bass whole-body fish from Pond 5 in 2014

Figure 4-10d.

Metals Detected in Largemouth Bass Fillets - Pond 5

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



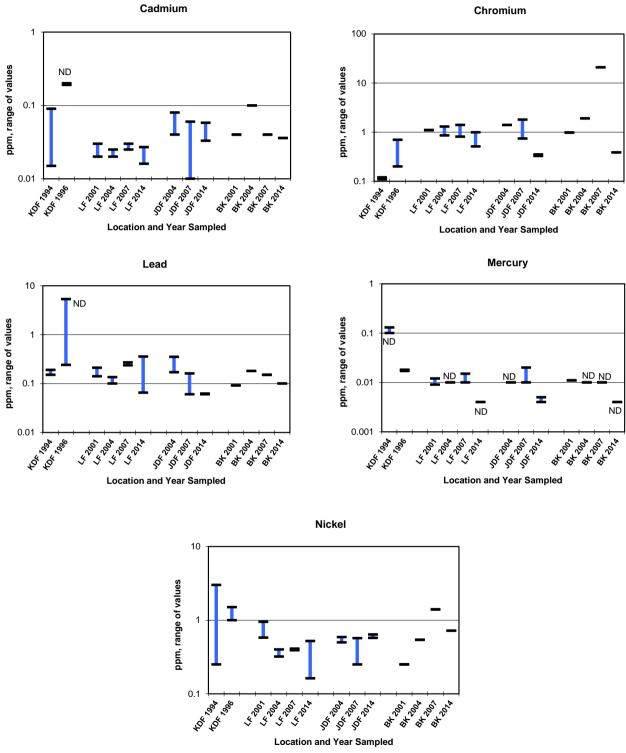
Note: No arsenic, berylliium or cadmium detected in largemouth bass fillets from Pond 5 in 2014

Figure 4-11.

Metals Detected in Hay

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



Notes:

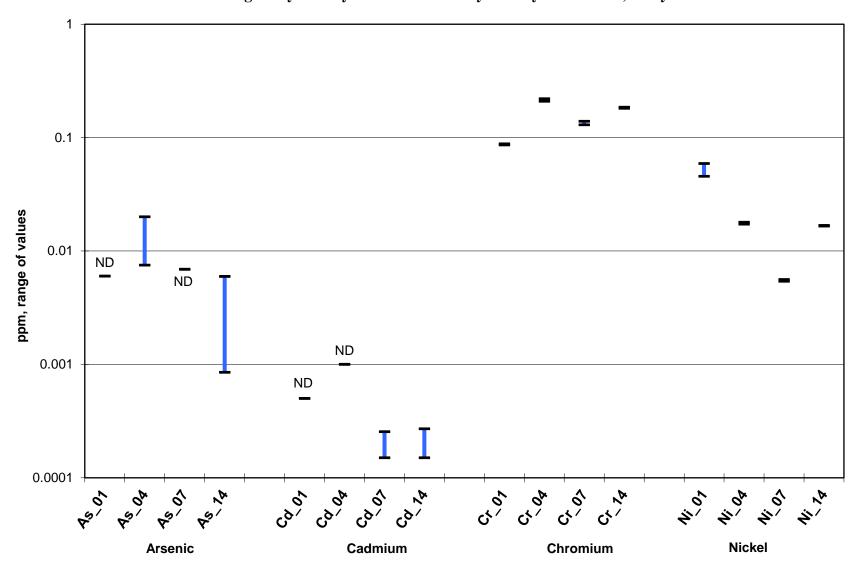
No arsenic or beryllium detected in hay samples in 2014

Figure 4-12.

Metals Detected in Cow's Milk

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



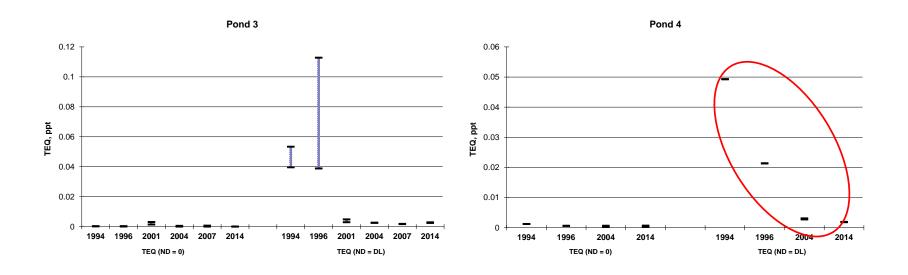
Note: No beryllium, lead or mercury detected in cow's milk in 2014

Figure 4-13.

Dioxins/Furans (TEQs) in Surface Water -Ponds 3, 4 and 5

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



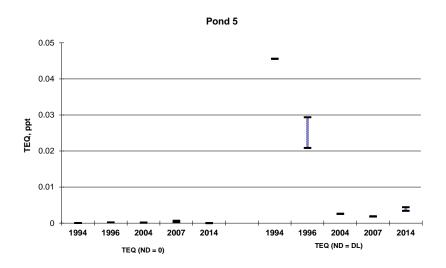
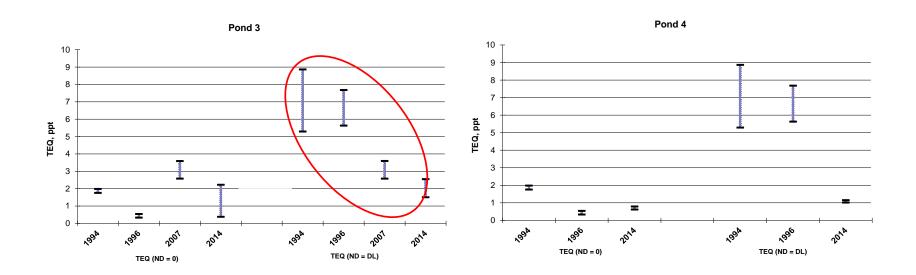


Figure 4-14.

Dioxins/Furans (TEQs) in Sediment - Ponds 3, 4 and 5

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



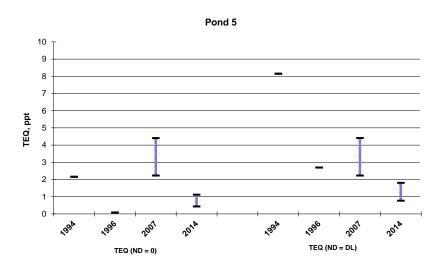
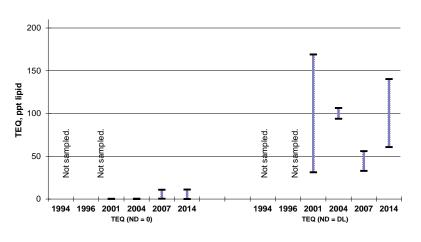
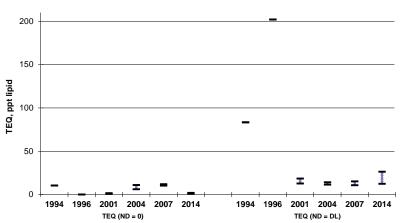


Figure 4-15.
Dioxins/Furans (TEQs) in Fish Tissue - Pond 3
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - DIckerson, Maryland

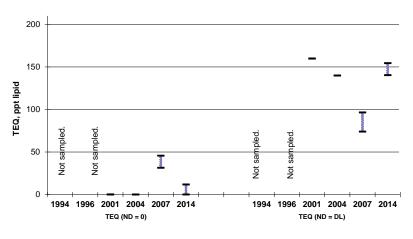
Lipid-Normalized Dioxin/Furan TEQs in Sunfish Fillet



Lipid-Normalized Dioxin/Furan TEQs in Whole-Body Sunfish



Lipid-Normalized Dioxin/Furan TEQs in Largemouth Bass Fillet



Lipid-Normalized Dioxin/Furan TEQs in Whole-Body Largemouth Bass

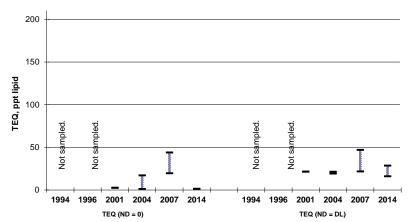
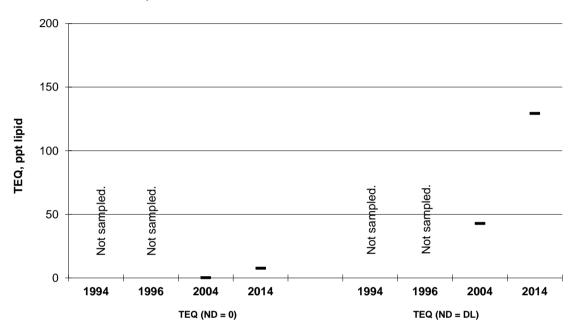


Figure 4-16.
Dioxins/Furans (TEQs) in Fish Tissue - Pond 4
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland

Lipid-Normalized Dioxin/Furan TEQs in Sunfish Fillet



Lipid-Normalized Dioxin/Furan TEQs in Whole Body Sunfish

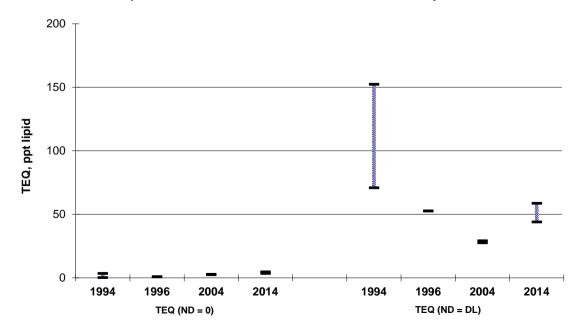
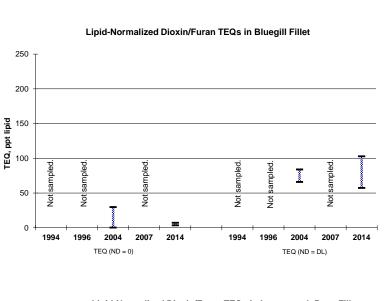
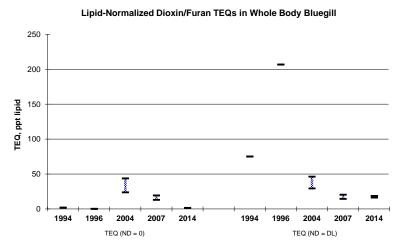
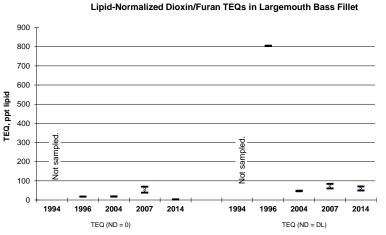


Figure 4-17.
Dioxins/Furans (TEQs) in Fish Tissue - Pond 5
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland







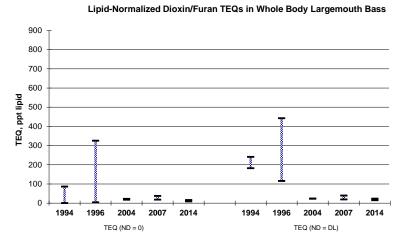


Table 4-18.
Dioxins/Furans (TEQs) in Hay
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland

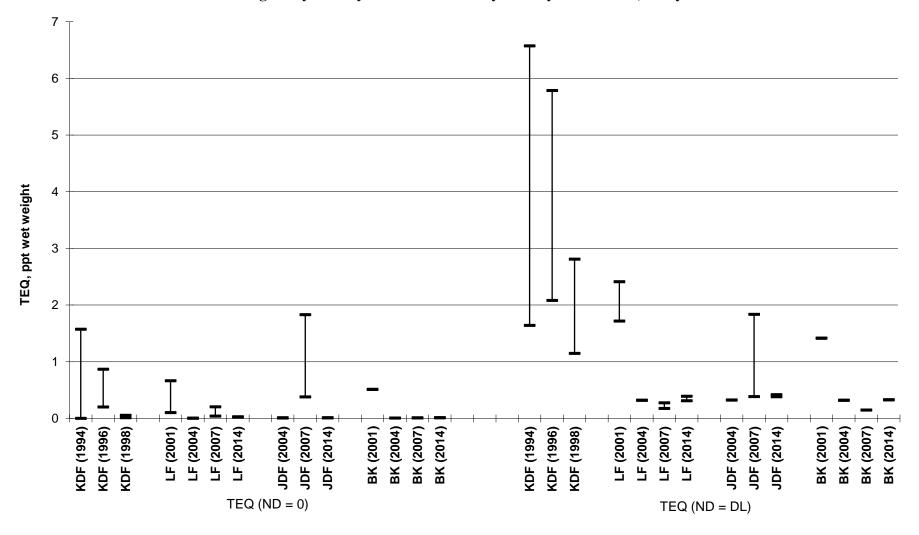


Table 4-19.
Dioxins/Furans (TEQs) in Cow's Milk
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland

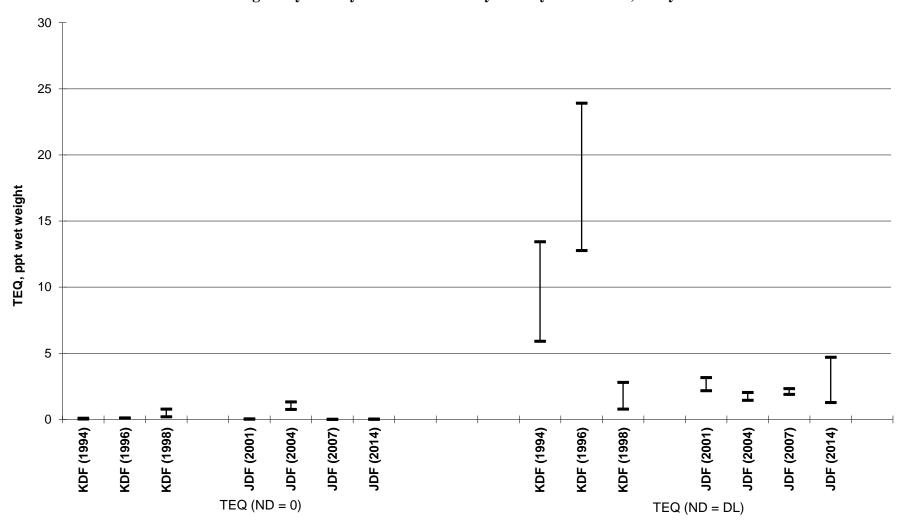
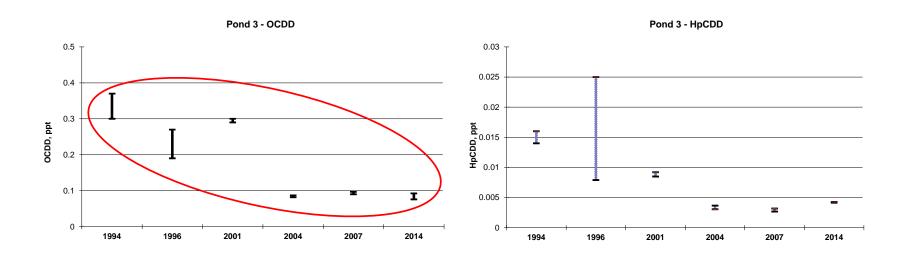


Figure 4-20.

Dioxin/Furan Congeners in Surface Water -Ponds 3 and 5

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland



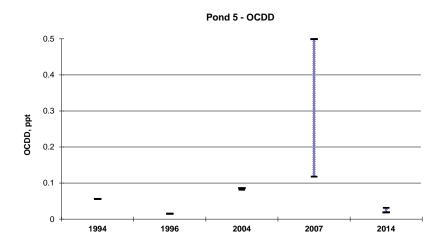


Figure 4-21.
Dioxin/Furan Congeners in Sediment - Ponds 3 and 5
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland

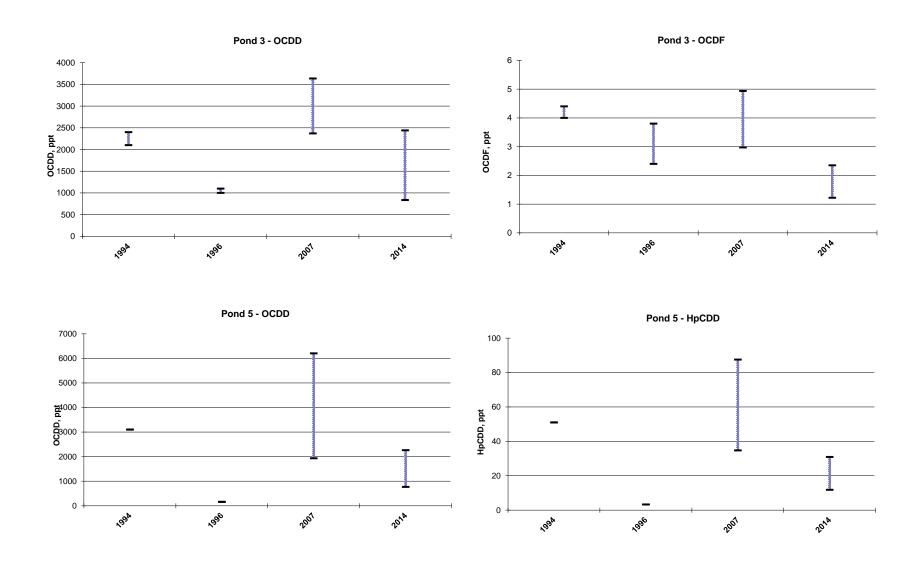
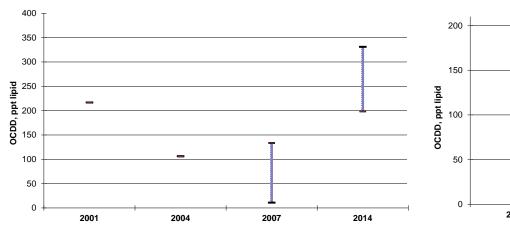
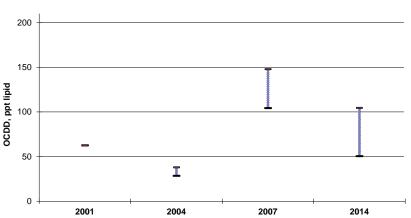


Figure 4-22.
Dioxin/Furan Congeners in Fish Tissue - Pond 3
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - DIckerson, Maryland

Lipid-Normalized OCDD in Largemouth Bass Fillet

Lipid-Normalized OCDD in Whole-Body Largemouth Bass





Lipid-Normalized TCDF in Whole-Body Largemouth Bass

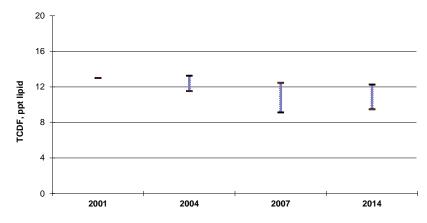


Figure 4-23.

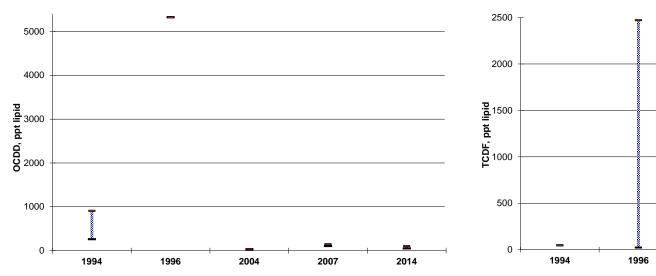
Dioxin/Furan Congeners in Fish Tissue - Pond 5

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - DIckerson, Maryland

Lipid-Normalized OCDD in Whole-Body Largemouth Bass - Pond 5

Lipid-Normalized TCDF in Whole-Body Largemouth Bass - Pond 5



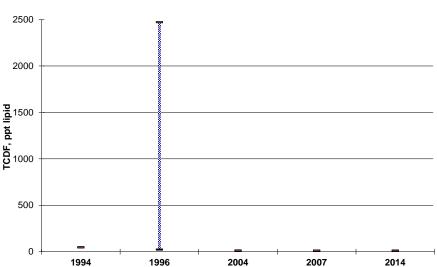


Figure 4-24.

Dioxin/Furan Congeners in Hay - Lermond Farm and Background

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - DIckerson, Maryland

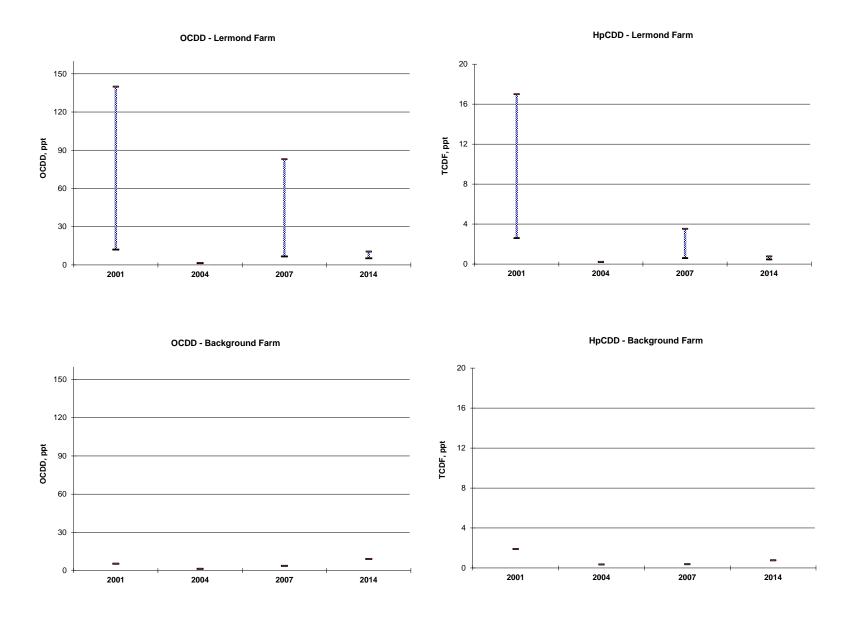


Figure 4-25.
Dioxin/Furan Congeners in Milk
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - DIckerson, Maryland

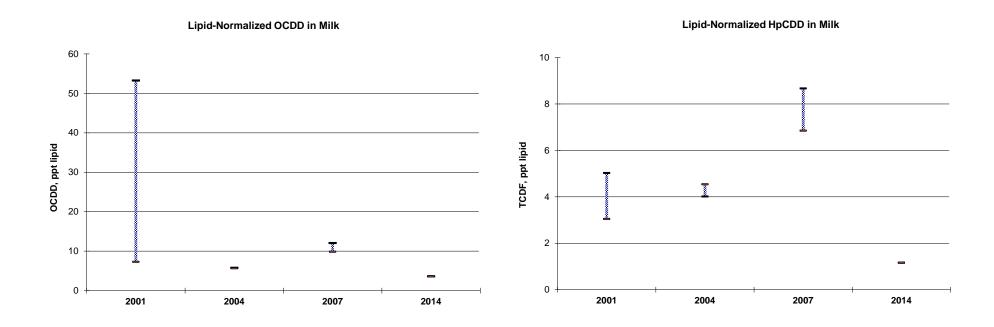


Figure 4-26.

Typical Pattern of PCDD/PCDF Emissions from Montgomery County RRF (Basis: Average of All Stack Tests 2008 - 2013)

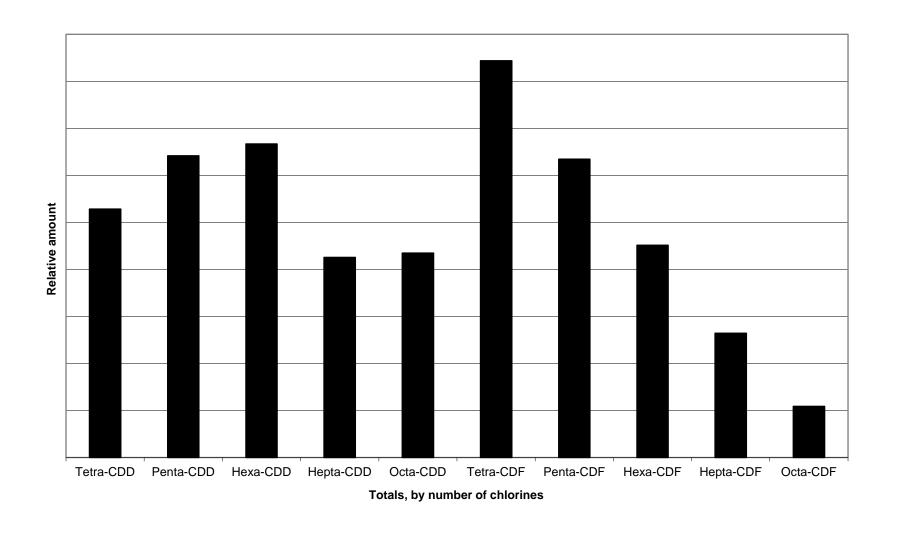
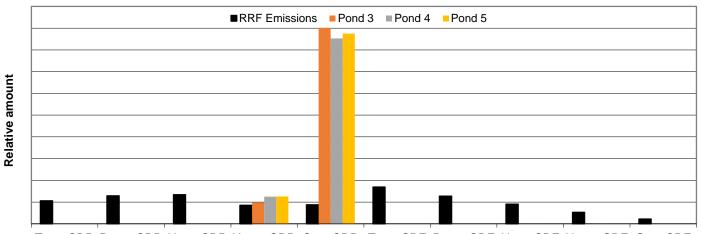
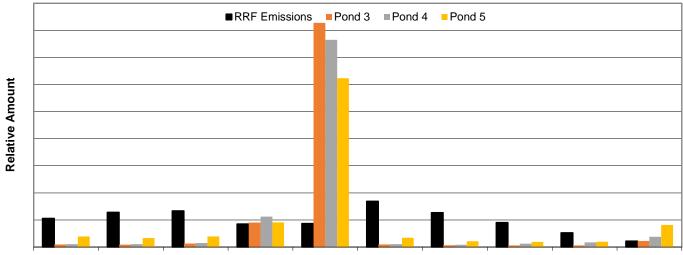


Figure 4-27.
Pattern of PCDD/PCDF Emissions from Montgomery County RRF
Compared to Surface Water Results



Tetra-CDD Penta-CDD Hexa-CDD Hepta-CDD Octa-CDD Tetra-CDF Penta-CDF Hexa-CDF Hepta-CDF Octa-CDF

Totals, by number of chlorines (ND = 0)



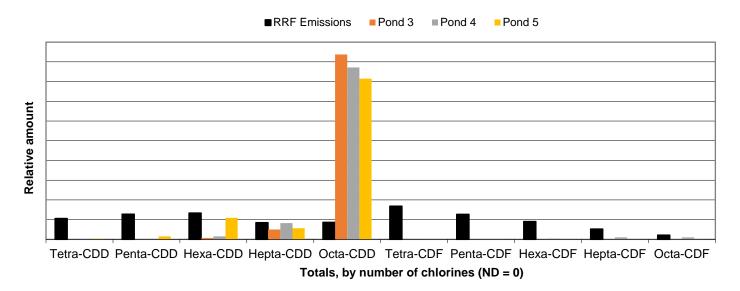
Tetra-CDD Penta-CDD Hexa-CDD Hepta-CDD Octa-CDD Tetra-CDF Penta-CDF Hexa-CDF Hepta-CDF Octa-CDF

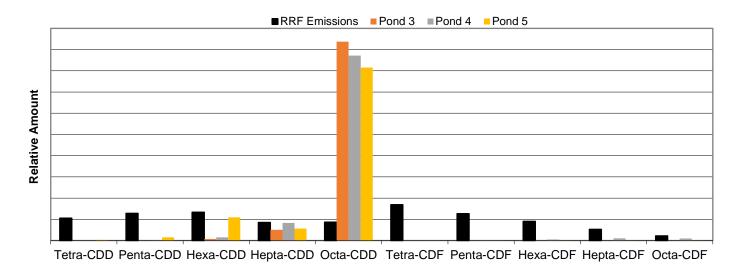
Totals, by number of chlorines (ND = DL)

Figure 4-28a.

Pattern of PCDD/PCDF Emissions from Montgomery County RRF

Compared to Sediment Results





Totals, by number of chlorines (ND = DL)

 $\label{eq:Figure 4-28b.} Figure \ 4-28b.$ Pattern of HxCDF Emissions from Montgomery County RRF Compared to Sediment Results (ND = 0)

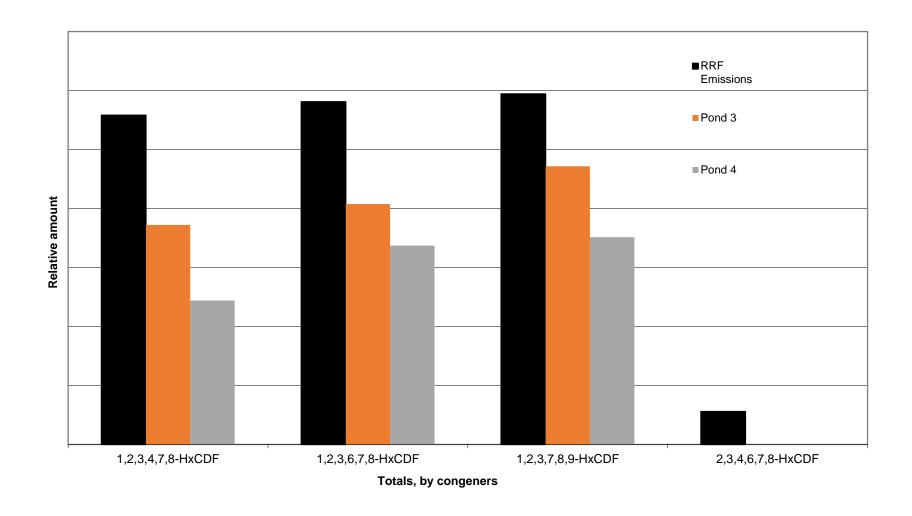
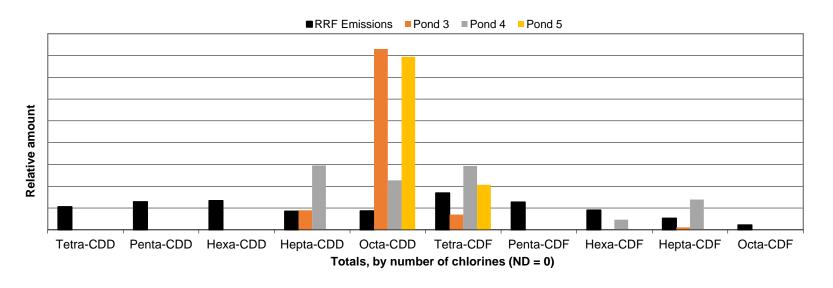


Figure 4-29a.

Pattern of PCDD/PCDF Air Emissions from Montgomery County RRF

Compared to Bluegill Whole-Body Results



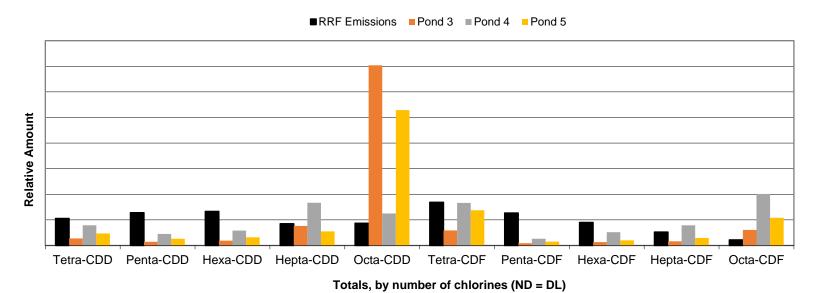
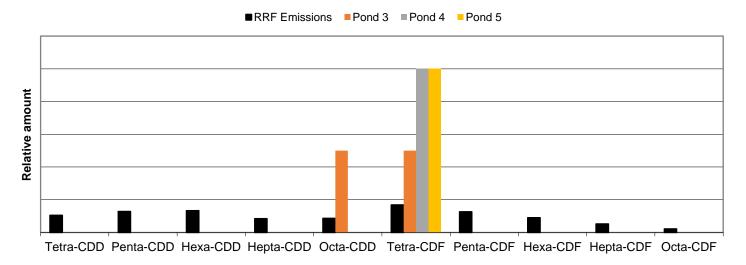


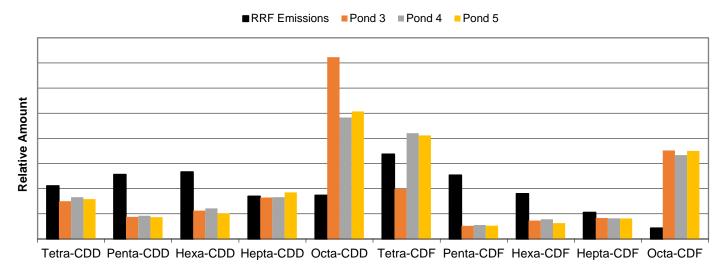
Figure 4-29b.

Pattern of PCDD/PCDF RRF Emissions from Montgomery County RRF

Compared to Bluegill Fillet Results



Totals, by number of chlorines (ND = 0)

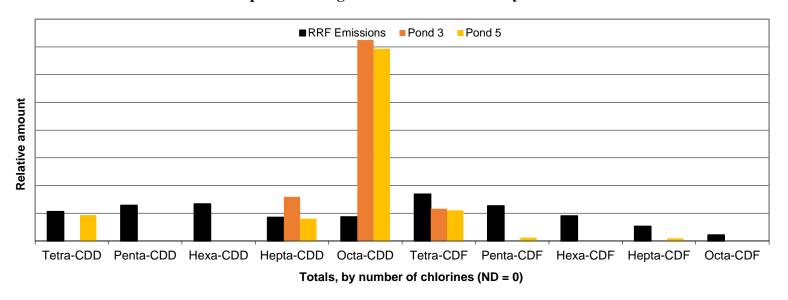


Totals, by number of chlorines (ND = DL)

Figure 4-30a.

Pattern of PCDD/PCDF Emissions from Montgomery County RRF

Compared to Largemouth Bass Whole-Body Results



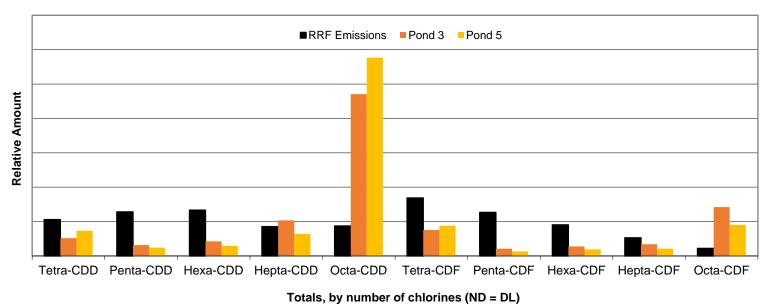
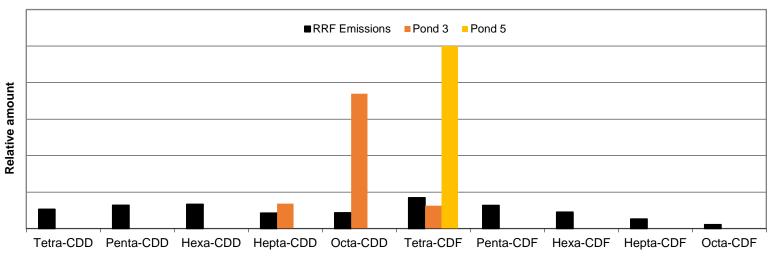


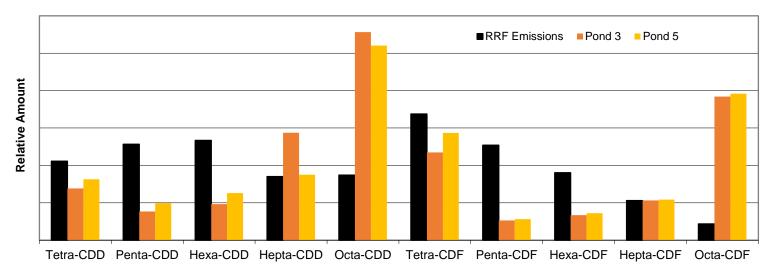
Figure 4-30b.

Pattern of PCDD/PCDF Emissions from Montgomery County RRF

Compared to Largemouth Bass Fillet Results



Totals, by number of chlorines (ND = 0)

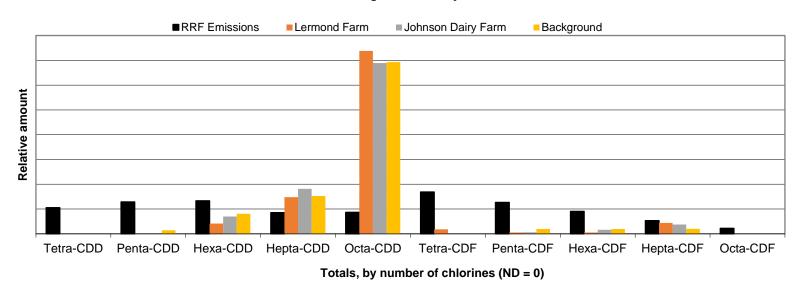


Totals, by number of chlorines (ND = DL)

Figure 4-31.

Pattern of PCDD/PCDF Emissions from Montgomery County RRF

Compared to Hay Results



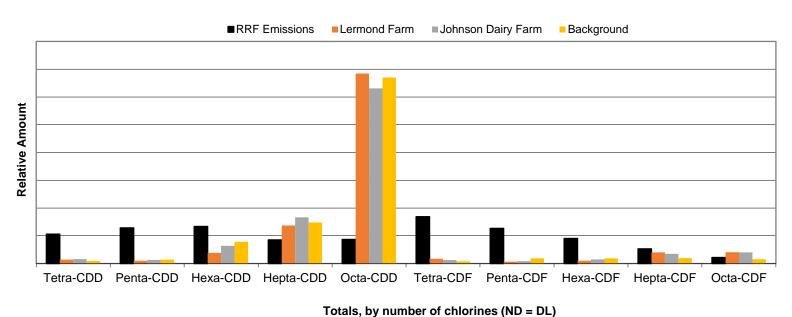
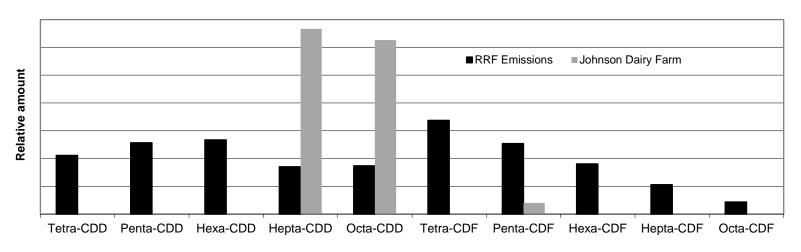
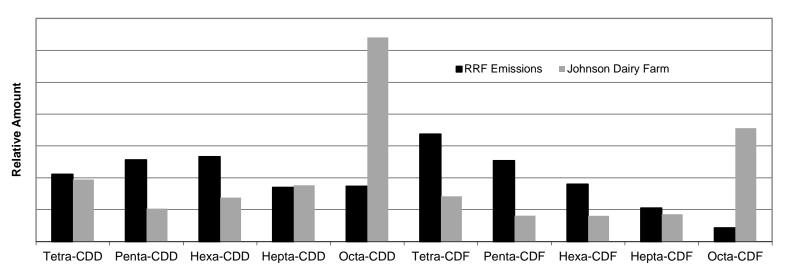


Figure 4-32.
Pattern of PCDD/PCDF Emissions from Montgomery County RRF
Compared to Milk Results



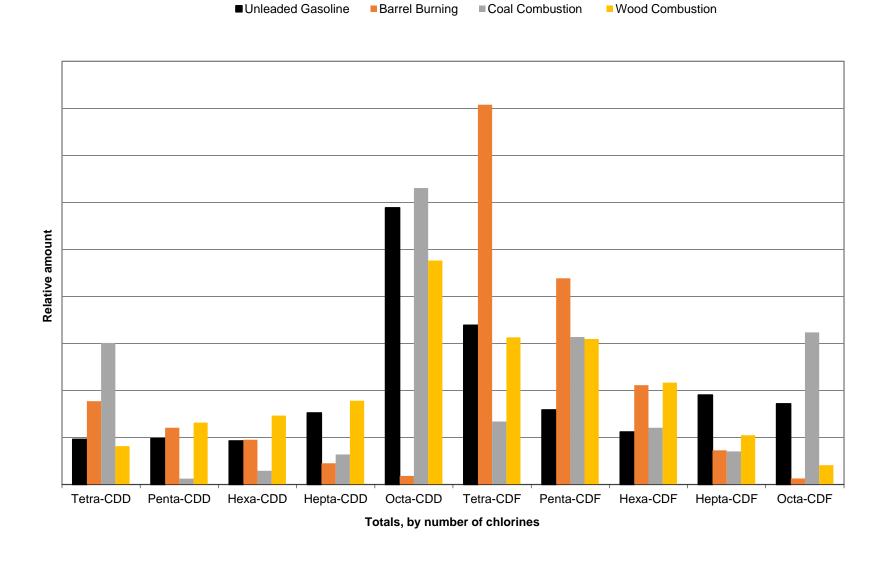
Totals, by number of chlorines (ND = 0)



Totals, by number of chlorines (ND = DL)

Figure 4-33.

Typical Pattern of PCDD/PCDF Emissions from Other Potential Sources



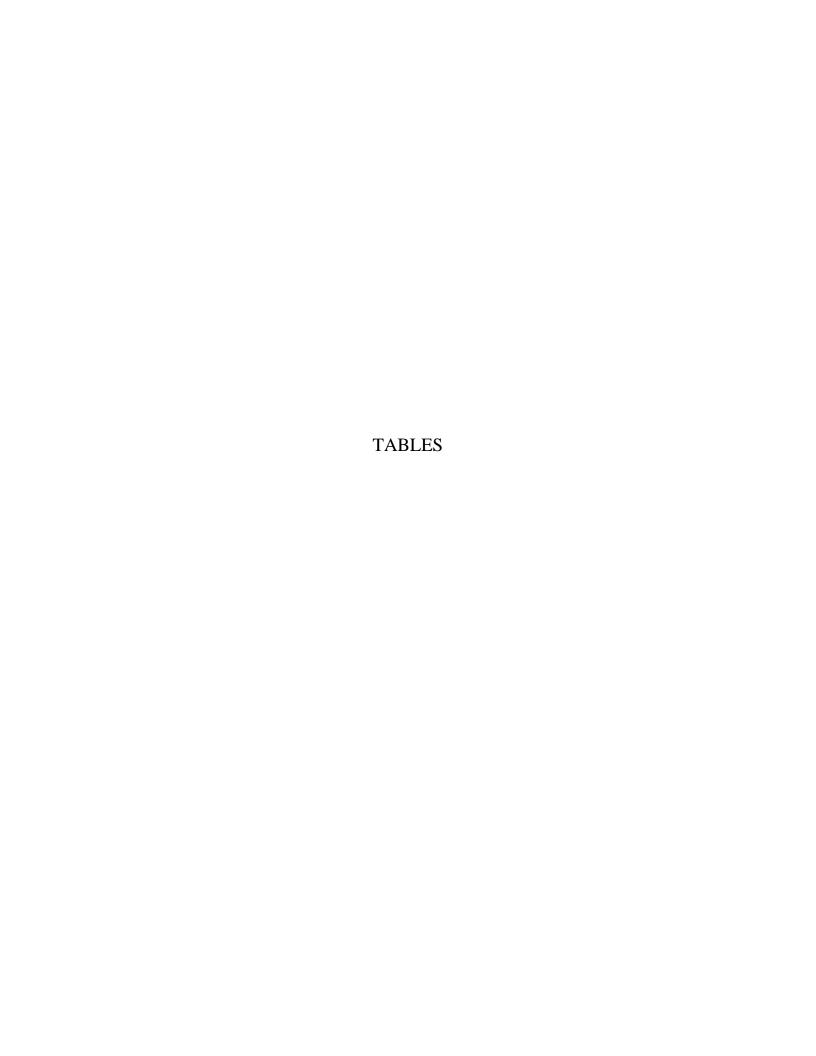


Table 1-1.
Number of Location/Media/Analyte Samples
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland

	Sampling				Locatio	n		
Medium	Event	Pond 2	Pond 3	Pond 4	Pond 5	Kingsbury Dairy Farm	Johnson Dairy Farm	Lucketts, VA Background
Dioxins/Furans								
Surface Water								
Pre-Operational	1994-1995	2	2	1	2	NA	NA	NA
	1996	3	5	2	NS	NA	NA	NA
	2001	2	2	NS	NS	NA	NA	NA
Operational	2004	2	2	2 [a]	2 [a]	NA	NA	NA
	2007	2	2	NS	2	NA	NA	NA
	2014	NS	2	2	2	NA	NA	NA
Sediment								
Pre-Operational	1994-1995	2	2	1	2	NA	NA	NA
-	1996	2	2	2	2	NA	NA	NA
	2001	NS	NS	NS	NS	NA	NA	NA
Operational	2004	NS	NS	NS	NS	NA	NA	NA
•	2007	2	2	NS	2	NA	NA	NA
	2014	NS	2	2	2	NA	NA	NA
Bluegills - Fillet			_	_	_			
Pre-Operational	1994-1995	2	0	2 [b]	NS	NA	NA	NA
The Operational	1994-1993	3	0	2 [b] 1 [b]	NS NS	NA NA	NA NA	NA NA
	2001	2	2	NS	NS	NA NA	NA NA	NA NA
Operational		0	3	1	2	NA NA	NA NA	NA NA
Operational	2004	2	2			NA NA	NA NA	NA NA
	2007 2014	NS	2	NS 1	2 2	NA NA	NA NA	NA NA
n	2014	INS	2	1	2	NA	NA	NA
Bluegills - Whole-Body								
Pre-Operational	1994-1995	1	1 [b]	2 [b]	1	NA	NA	NA
	1996	3	1 [b]	1 [b]	1	NA	NA	NA
	2001	2	2	NS	NS	NA	NA	NA
Operational	2004	1	2	2	2	NA	NA	NA
	2007	2	2	NS	2	NA	NA	NA
	2014	NS	2	2	2	NA	NA	NA
Largemouth Bass - Fillet								
Pre-Operational	1994-1995	NS	NS	NS	2	NA	NA	NA
	1996	NS	NS	NS	3	NA	NA	NA
	2001	NS	NS	NS	NS	NA	NA	NA
Operational	2004	0	1	NS	2	NA	NA	NA
	2007	0	2	NS	2	NA	NA	NA
	2014	NS	2	0	2	NA	NA	NA
Largemouth Bass - Whole-Bo	dy							
Pre-Operational	1994-1995	1	NS	NS	2	NA	NA	NA
	1996	NS	NS	NS	3	NA	NA	NA
	2001	NS	NS	NS	NS	NA	NA	NA
Operational	2004	0	2	NS	2	NA	NA	NA
	2007	0	2	NS	2	NA	NA	NA
	2014	NS	2	0	2	NA	NA	NA
Hay								
Pre-Operational	1994-1995	NA	NS	NA	NA	5	NS	NS
. r	1996	NA	NS	NA	NA	3	NS	NS
	1998	NA	NS	NA	NA	5	NS	NS
		4 14 1	. 10	1 1/11	. 1// 1	1	.10	
			2	NΔ	NΔ	NS	NS	1 1
Operational	2001	NA	2	NA NA	NA NA	NS NS	NS 2	1
Operational			2 2 2	NA NA NA	NA NA NA	NS NS NS	NS 2 2	1 1 1

Table 1-1.
Number of Location/Media/Analyte Samples
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland

	Sampling				Locatio	n		
Medium	Event	Pond 2	Pond 3	Pond 4	Pond 5	Kingsbury Dairy Farm	Johnson Dairy Farm	Lucketts, VA Background
Cow's Milk								
Pre-Operational	1994-1995	NA	NA	NA	NA	4	NS	NA
	1996	NA	NA	NA	NA	2	NS	NA
	1998	NA	NA	NA	NA	4	NS	NA
Operational	2001	NA	NA	NA	NA	NS	2	NA
орегинопия	2004	NA	NA	NA	NA	NS	2	NA
	2007	NA	NA	NA	NA	NS	2	NA
	2014	NA	NA	NA	NA	NS	2	NA
Metals								
Surface Water								
Pre-Operational	1994-1995	2	2	1	2	NA	NA	NA
	1996	2	2	1	2	NA	NA	NA
	2001	2	2	NS	NS	NA	NA	NA
Operational	2004	2	4 [a]	2 [a]	2 [a]	NA	NA	NA
	2007	2	2	NS	2	NA	NA	NA
	2014	NS	2	2	2	NA	NA	NA
Sediment								
Pre-Operational	1994-1995	2	2	1	2	NA	NA	NA
	1996	2	2	1	2	NA	NA	NA
	2001	NS	NS	NS	NS	NA	NA	NA
Operational	2004	NS	NS	NS	NS	NA	NA	NA
	2007	2	2	NS	2	NA	NA	NA
	2014	NS	2	2	2	NA	NA	NA
Bluegills - Fillet								
Pre-Operational	1994-1995	2	0	2 [b]	NS	NA	NA	NA
	1996	3	0	1 [b]	NS	NA	NA	NA
	2001	2	2	NS	NS	NA	NA	NA
Operational	2004	0	3	1	2	NA	NA	NA
	2007	2	2	NS	2	NA	NA	NA
	2014	NS	2	1	2	NA	NA	NA
Bluegills - Whole-Body								
Pre-Operational	1994-1995	1	1 [b]	2 [b]	1	NA	NA	NA
	1996	3	1 [b]	1 [b]	1	NA	NA	NA
	2001	2	2	NS	NS	NA	NA	NA
Operational	2004	1	2	2	2	NA	NA	NA
	2007	2	2	NS	2	NA	NA	NA
	2014	NS	2	2	2	NA	NA	NA
Largemouth Bass - Fillet					_			
Pre-Operational	1994-1995	NS	NS	NS	2	NA	NA	NA
	1996	NS	NS	NS	3	NA	NA	NA
0 4 1	2001	2	1	NS	NS	NA	NA	NA
Operational	2004	0	1	NS	2	NA	NA	NA
	2007	0	2	NS	2	NA NA	NA NA	NA NA
y ,, sa	2014	NS	2	0	2	NA	NA	NA
Largemouth Bass - Whole-Bo			270	NG		27.1	27.1	371
Pre-Operational	1994-1995	1	NS	NS	2	NA NA	NA NA	NA NA
	1996	NS	NS	NS	3	NA	NA	NA
0	2001	2	1	NS	NS	NA	NA	NA
Operational	2004	0	2	NS	2	NA	NA	NA
	2007	0	2	NS	2	NA	NA	NA
	2014	NS	2	0	2	NA	NA	NA

Table 1-1.

Number of Location/Media/Analyte Samples

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

	G 11				Locatio	n		
Medium	Sampling Event	Pond 2	Pond 3	Pond 4	Pond 5	Kingsbury Dairy Farm	Johnson Dairy Farm	Lucketts, VA Background
Hay								
Pre-Operational	1994-1995	NA	NS	NA	NA	5	NS	NS
	1996	NA	NS	NA	NA	5	NS	NS
	2001	NA	2	NA	NA	NS	NS	NS
Operational	2004	NA	2	NA	NA	NS	1	1
	2007	NA	2	NA	NA	NS	2	1
	2014	NA	2	NA	NA	NS	2	1
Cow's Milk								
Pre-Operational	1994-1995	NA	NA	NA	NA	4	NS	NA
	1996	NA	NA	NA	NA	4	NS	NA
	2001	NA	NA	NA	NA	NS	2	NA
Operational	2004	NA	NA	NA	NA	NS	2	NA
	2007	NA	NA	NA	NA	NS	2	NA
	2014	NA	NA	NA	NA	NS	2	NA

- [a] Two samples collected in October
- [b] Green Sunfish collected

 $NA = \ Not \ applicable; \ location \ not \ a \ target \ for \ this \ medium.$

NS = Not sampled; no data available

Table 1-2. Number of Samples from 2014 Monitoring Program Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

		Duplicate and			N	umber of Sa	nples per An	alyte	
Non-Air Medium	2014 Samples	MS/MSD Samples	Location of Sample	Dioxins/ Furans	Total Metals	Dissolved Metals	Lipid	Hardness	Total Organic Carbon
	LFSW01		Pond 3 - Lermond	1	1	1	NA	1	NA
	LFSW02		Pond 3 - Lermond	1	1	1	NA	1	NA
	LFSW03	LFSW02 DUP	Pond 3 - Lermond	1	1	1	NA	0	NA
Surface Water	YFSW01		Pond 4 - Yates	1	1	1	NA	1	NA
	YFSW02		Pond 4 - Yates	1	1	1	NA	1	NA
	CPSW01	MS/MSD	Pond 5 - County	1	1	1	NA	1	NA
	CPSW02		Pond 5 - County	1	1	1	NA	1	NA
	LFSD01		Pond 3 - Lermond	1	1	NA	NA	NA	1
	LFSD02		Pond 3 - Lermond	1	1	NA	NA	NA	1
	LFSD03	LFSD02 DUP	Pond 3 - Lermond	1	1	NA	NA	NA	0
Sediment	YFSD01		Pond 4 - Yates	1	1	NA	NA	NA	1
	YFSD02		Pond 4 - Yates	1	1	NA	NA	NA	1
	CPSD01	MS/MSD	Pond 5 - County	1	1	NA	NA	NA	1
	CPSD02		Pond 5 - County	1	1	NA	NA	NA	1
	LFBG01-F		Pond 3 - Lermond	1	1	NA	1	NA	NA
	LFBG02-F		Pond 3 - Lermond	1	1	NA	1	NA	NA
51 531	LFBG02-F DUP	LFBG02-F DUP	Pond 3 - Lermond	1	1	NA	0	NA	NA
Bluegill - Fillet	YFBG01/BG02-F		Pond 4 - Yates	1	1	NA	1	NA	NA
	CPBG01-F		Pond 5 - County	1	1	NA	1	NA	NA
	CPBG02-F		Pond 5 - County	1	1	NA	1	NA	NA
	LFBG01		Pond 3 - Lermond	1	1	NA	1	NA	NA
	LFBG02		Pond 3 - Lermond	1	1	NA	1	NA	NA
	LFBG02 DUP	LGBG02 DUP	Pond 3 - Lermond	1	1	NA	0	NA	NA
Bluegill - Whole Body	YFBG01		Pond 4 - Yates	1	1	NA	1	NA	NA
Боду	YFBG02		Pond 4 - Yates	1	1	NA	1	NA	NA
	CPBG01		Pond 5 - County	1	1	NA	1	NA	NA
	CPBG02		Pond 5 - County	1	1	NA	1	NA	NA
	LFLMB01-F		Pond 3 - Lermond	1	1	NA	1	NA	NA
	LFLMB02-F		Pond 3 - Lermond	1	1	NA	1	NA	NA
Largemouth Bass - Fillet	CPLMB01-F		Pond 5 - County	1	1	NA	1	NA	NA
Fillet	CPLMB02-F		Pond 5 - County	1	1	NA	1	NA	NA
	CPLMB02-F DUP	CPLMB02-F DUP	Pond 5 - County	1	1	NA	0	NA	NA
	LFLMB01		Pond 3 - Lermond	1	1	NA	1	NA	NA
	LFLMB02		Pond 3 - Lermond	1	1	NA	1	NA	NA
Largemouth Bass - Whole Body	CPLMB01		Pond 5 - County	1	1	NA	1	NA	NA
whole body	CPLMB02	MS/MSD	Pond 5 - County	1	1	NA	1	NA	NA
	CPLMB02 DUP	CPLMB02 DUP	Pond 5 - County	1	1	NA	0	NA	NA
	MFH01		Lucketts, VA	1	1	NA	1	NA	NA
	LFH01		Lermond Farm	1	1	NA	1	NA	NA
	LFH02		Lermond Farm	1	1	NA	1	NA	NA
Hay	LFH03	LFH01 DUP	Lermond Farm	1	1	NA	0	NA	NA
	JFH01	-	Johnson Dairy Farm	1	1	NA	1	NA	NA
	JFH02	MS/MSD	Johnson Dairy Farm	1	1	NA	1	NA	NA
	JFM01	MS/MSD	Johnson Dairy Farm	1	1	NA	1	NA	NA
Cow's Milk	JFM02		Johnson Dairy Farm	1	1	NA	1	NA	NA
	JFM03	JFM01 DUP	Johnson Dairy Farm	1	1	NA	0	NA	NA
	91 IVIUJ	21 1/101 DOI	compon Dany Faill	1	1	14/1	Ū	11/1	1447

Notes: NA = Not Applicable for analysis in this medium

Table 2-1. Summary of Achieved Detection Limits Non-Air Environmental Media Sampling Montgomery County Resource Recovery Facility - Dickerson, Maryland

Countition and (conita)	Sampling			Sample Matrix		
Constituent (units)	Event	Surface Water	Sediment	Fish	Hay	Cow's Milk
Dioxins/Furans (ppt)						
Pre-Operational	1994-1995	0.001600 - 0.15000	0.2200 - 7.8000	0.1000 - 79.0	0.2200 - 9.00	0.02000 - 2.10
	1996	0.003000 - 0.15000	0.4600 - 25.000	0.2700 - 27.0	0.1900 - 9.10	0.06600 - 1.30
	1998	NS	NS	NS	0.1000 - 1.300	0.00400 - 0.02000
Operational	2001	0.000560 - 0.000920	NS	0.0680 - 3.30	0.3000 - 0.7700	0.01100 - 0.08600
Operational	2004	0.000400 - 0.001000	NS	0.1000	0.1000	0.01250
	2007	0.000508 - 0.000541	0.0376 - 0.1350	0.0471 - 0.0520	0.0449 - 0.050	0.00991 - 0.00998
	2014	0.000543 - 0.003820	0.0852 - 0.7060	0.0611 - 0.9610	0.0489 - 0.422	0.00604 - 0.11400
Arsenic (ppm)						
Pre-Operational	1994-1995	0.00300		0.15	0.150	0.015 - 0.150
	1996	0.00300	20.1 - 30.9	11.3	0.490 - 11.3	0.015
	2001		NS	0.20	0.200	0.006
Operational	2004		NS	0.04 - 0.07	0.070 - 0.080	0.0075
	2007	0.00345		0.09	0.140	0.0069
	2014			0.006 - 0.032	0.029 - 0.033	
Beryllium (ppm)						
Pre-Operational	1994-1995	0.00100		0.050	0.050 - 1.00	0.00005 - 0.0050
1	1996	0.00100	0.46 - 0.62	0.300	0.290	0.00500 - 0.0150
Operational	2001	0.00040	NS	0.040	0.040	0.00400
	2004	0.00010	NS	0.010	0.010	0.00100
	2007	0.00005		0.010	0.010	0.00100
	2014	0.00008		0.004 - 0.023	0.020 - 0.023	0.00086
Cadmium (ppm)	201.	0.00000		0.001 0.025	0.020 0.020	0.00000
Pre-Operational	1994-1995	0.00030 - 0.0010		0.015 - 0.075	0.015	0.00150
Tie-Operational	1996	0.00100	0.46 - 0.62	0.200 - 0.300	0.190 - 0.200	0.0100 - 0.0150
	2001	0.00005	NS	0.020		0.00050
Operational	2004	0.00003	NS NS	0.020		0.00100
Operational	2004	0.00010		0.010	0.010	0.00100
	2014	0.00003		0.002 - 0.010	0.010	0.00015
Chromium (ppm)	2014	0.00001 - 0.00008		0.002 - 0.010		0.00013
Pre-Operational	1994-1995	0.00200 - 0.0080		0.11 - 0.30	0.11	0.006
r ie-Operational	1994-1993	0.00200 - 0.0080		0.20 - 0.60	0.20	0.000
	2001	0.00200	NS	0.20 - 0.00	0.20	0.013
Operational	2004	0.00040	NS NS			
Operational	2004	0.00095	110			
	2007	0.00093				
Lead (ppm)	2014	0.00029				
Pre-Operational	1994-1995	0.00200 - 0.00300		0.150	0.15	0.01500
rie-Operational	1994-1993	0.00200 - 0.00300	9.4 - 14.5	5.30	5.30	0.01300
	2001	0.00200	9.4 - 14.5 NS	0.015		0.00300
Operational	2004	0.00015	NS NS	0.013		
Operational	2004	0.00013	NS	0.020		
Moroury (ppm)	2014	0.00060		0.002 - 0.014		0.00065
Mercury (ppm)	1994-1995	0.00010 0.00020	0.16 0.20	0.10	0.100	0.00020
Pre-Operational		0.00010 - 0.00020	0.16 - 0.20	0.10		0.00020
	1996	0.00010 - 0.00013	0.028 - 0.05	0.05	0.017	0.00050 - 0.0020
Operational	2001	0.00005	NS	0.01	0.010	0.00010
Ореганонаг	2004	0.00001	NS	0.01	0.010	0.00008
	2007	0.00001			0.010	0.00025
Nielrol (nnrs)	2014	0.00007			0.004	0.00014
Nickel (ppm)	1004 1007	0.0020 0.0060		0.10 1.00		0.006
Pre-Operational	1994-1995	0.0020 - 0.0060		0.10 - 1.00	1.00	0.006
	1996	0.0030 - 0.0050	NG	1.00	1.00	0.025
0	2001		NS			
Operational	2004		NS			
	2007			0.02		
	2014			0.012 - 0.061		

ppt = parts per trillion

ppm = parts per million

The achieved detection limita are the sample-specific Practical Quantitation Limits (PQL) achieved by the laboratory

"---" = Not applicable; detected in every sample NS = Not sampled; no data available

Table 3-1.
Dioxin/Furan Toxic Equivalency Factors (TEFs)
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, MD

Congener	Mammalian Toxic Equivalency Factor (TEF) ¹	Fish Toxic Equivalency Factor (TEF) ²
Dioxins		` /
2,3,7,8-TCDD	1.0	1.0
1,2,3,7,8-PeCDD	1.0	1.0
1,2,3,4,7,8-HxCDD	0.1	0.5
1,2,3,6,7,8-HxCDD	0.1	0.01
1,2,3,7,8,9-HxCDD	0.1	0.01
1,2,3,4,6,7,8-HpCDD	0.01	0.001
OCDD	0.0003	< 0.0001
Furans		
2,3,7,8-TCDF	0.1	0.05
1,2,3,7,8-PeCDF	0.03	0.05
2,3,4,7,8-PeCDF	0.3	0.5
1,2,3,4,7,8-HxCDF	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1
1,2,3,4,6,7,8-HpCDF	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01
OCDF	0.0003	< 0.0001

¹from Van den Berg et al., 2006

²from Van den Berg et al., 1998

Table 3-2 Benchmarks Levels

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

	MD TSC Human	Aquatic L	ife Ber	chmark Val Chronic A		ederal/MD	TSC	Milk		Hay[d]	Fish		Sedim	ent
	Health Criteria for Fish Consumption	Pond 3		Pond 4		Pond 5							Consensus TEC [1]	USEPA Region 3
Dioxins/Furans (ppq)														
TCDD TEQ	0.51										1200	[e]		850 [m]
TCDD TEQ (lipid basis)								3000	[j]					
Total Recoverable Metals (ppm)														
Arsenic	0.0014	0.15		0.15		0.15		0.01	[k]	0.0027 - 0.45	0.27	[f]	9.79	
Beryllium		0.0051	[c]	0.0051	[c]	0.0051	[c]	0.004	[k]	0.0003 - 0.12				
Cadmium		0.00018	[a]	0.00021	[a]	0.00009	[a]	0.005	[k]	0.009 - 0.09	4.0	[f]	0.99	
Chromium		0.0537	[a,b]	0.0665	[a,b]	0.0248	[a,b]	0.10	[k]	0.006 - 0.06	12.0	[c,f]		
Lead		0.0015	[a]	0.0021	[a]	0.0005	[a]	0.015	[i,k]	0.24 - 1.68			35.8	
Mercury		0.00077		0.00077		0.00077		0.002	[k]	0.003	0.3	[f,g]	0.18	
Nickel	4.6	0.0319	[a]	0.0399	[a]	0.0144	[a]	0.05	[h]	0.021 - 0.201	220	[f]	22.7	
Hardness (mg/L as CaCO ₃)		56.13		72.85		21.85								
Dissolved Metals (ppm)														
Arsenic (dissolved)		0.15		0.15		0.15								
Beryllium (dissolved)		0.0051	[c]	0.0051	[c]	0.0051	[c]							
Cadmium (dissolved)		0.00016	[a]	0.0002	[a]	0.00009	[a]							
Chromium (dissolved)		0.0462	[a,b]	0.0572	[a,b]	0.0213	[a,b]							
Lead (dissolved)		0.0013	[a]	0.0018	[a]	0.0005	[a]							
Mercury (dissolved)		0.00077		0.00077		0.00077								
Nickel (dissolved)		0.032	[a]	0.0398	[a]	0.0144	[a]							
Hardness (mg/L as CaCO ₃)		56.13		72.85		21.85								

Notes:

ppq = parts per quadrillion; pg/L for liquid, pg/kg for solids

ppm = parts per million; mg/L for liquid, mg/kg for solids

MD TSC = MD Toxic Substances Chronic Level Criteria; 26.08.02.03-2 Numerical Criteria for Toxic Substances in Surface Waters. September 12, 2012

Federal AWQC = Ambient Water Quality Criteria, USEPA (2013).

MCL = Maximum Contaminant Level; EPA 816-F-02-013, July 2002

USEPA Region 3 - Freshwater Sediment Benchmarks [http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fwsed/screenbench.htm]

- [a] Values presented are for total metals and are normalized to site-specific hardness values for each Farm Pond.
- [b] Criteria for total chromium
- [c] USEPA Ecotox Threshold (1996)
- [d] Values for hay are common concentrations measured in vegetation from Kabata-Pendias and Pendias, 1984
- [e] TCDD TEQ of background fish samples collected in North America as reported in USEPA (2003) assuming non-detects equal to one-half detection limit.
- [f] Virginia Department of Environmental Quality Fish Screening Value (proposed)
- [g] U.S. EPA and MD TSC fish flesh criterion for mercury.
- [h] Typical level in cow's milk. Univeristy of Guelph, Canada
- [i] Value is the action limit posted in the MCLs.
- [j] Value range is the European Commission (2002, 2005) maximum permissible level for dioxin in milk. Concentrations are lipid-normalized.
- [k] Benchmark levels for milk are USEPA/MD TSC MCLs, which are protective of human exposure to groundwater (as tap water)
- [1] Consensus-Based Threshold Effect Concentrations developed by MacDonald et al. (2000).
- [m] Values expressed as TEQ based on TEF values for fish.

Table 3-3.
2014 Water Quality Data for Study Ponds
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland

Location/Measurement Depth	Temperature	-	Dissolved Oxygen	pН
•	(C)	uS/cm	(mg/L)	F
Pond 3 (water depth: 5 - 6 ft)				
Measurements Taken June 17, 2014				
A Measurement depth: 1.0 ft	26.0	202	11.40	7.25
A Measurement depth: 5.5 ft	21.3	332	0.66	6.67
B Measurement depth: 1.0 ft	25.0	203	15.50	8.06
B Measurement depth: 5.0 ft	20.3	295	0.45	6.57
Pond 4 (water depth: 2 ft) Measurements Taken June 17, 2014				
A Measurement depth: 1.0 ft	27.5	276	19.17	8.76
B Measurement depth: 1.0 ft	28.0	284	13.09	6.84
Pond 5 (water depth 3.5 - 7.5 ft) Measurements Taken June 18, 2014				
A Measurement depth: 1.0 ft	29.9	107	10.20	7.51
A Measurement depth: 7.0 ft	24.2	154	0.50	5.82
B Measurement depth: 1.0 ft	30.5	106	9.21	6.91
B Measurement depth: 3.0 ft	28.2	126	8.56	6.27

C = Celsius

uS/cm = micro Siemens per centimeter mg/L = milligrams per liter; parts per million

Table 3-4.

Comparison of Surface Water Concentrations to Benchmarks

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

	Benchmarl	k Values [a]		Por	nd 3			Por	nd 4			Por	nd 5	
	MD TSC Human Health Criteria for Fish	Aquatic Life Screening Values Federal/	LFSW0 6/17/201)1	LFSW02 6/17/20		YFSW0 6/17/201)1	YFSW(6/17/20	-	CPSW0 6/18/20	01	CPSW 6/18/20	-
	Consumption	MD TSC												
Dioxins/Furans (ppq)														
2,3,7,8-TCDD			0.913	U	0.774	U	1.03	U	1.05	U	1.64	U	1.26	U
1,2,3,7,8-PeCDD			0.887	U	0.713	U	1.21	U	0.962	U	1.49	U	0.915	U
1,2,3,4,7,8-HxCDD			1.29	U	1.13	U	1.93	U	1.30	U	1.53	U	1.5	U
1,2,3,6,7,8-HxCDD			1.24	U	1.11	U	1.97	U	1.34	U	1.49	U	1.5	U
1,2,3,7,8,9-HxCDD			1.34	U	1.19	U	2.07	U	1.40	U	1.60	U	1.59	U
1,2,3,4,6,7,8-HpCDD			4.15	J	4.26	J	12.5	J	2.08	U	1.75	U	1.81	U
OCDD			92.4	J	76.0	J	173		46.8	J	18.6	J	31.5	J
2,3,7,8-TCDF			0.815	U	0.810	U	1.14	U	1.03	U	1.31	U	1.3	U
1,2,3,7,8-PeCDF			0.744	U	0.610	U	0.897	U	0.879	U	0.836	U	0.826	U
2,3,4,7,8-PeCDF			0.725	U	0.598	U	0.899	U	0.841	U	0.840	U	0.816	U
1,2,3,4,7,8-HxCDF			0.548	U	0.569	U	1.34	U	0.657	U	0.789	U	0.687	U
1,2,3,6,7,8-HxCDF			0.543	U	0.551	U	1.25	U	0.625	U	0.740	U	0.687	U
1,2,3,7,8,9-HxCDF			0.580	U	0.563	U	1.34	U	0.633	U	0.821	U	0.719	U
2,3,4,6,7,8-HxCDF			0.881	U	0.810	U	1.91	U	0.917	U	1.24	U	0.98	U
1,2,3,4,6,7,8-HpCDF			0.635	U	0.401	U	1.21	U	0.803	U	0.669	U	0.869	U
1,2,3,4,7,8,9-HpCDF			0.930	U	0.598	U	1.94	U	1.24	U	1.11	U	1.43	U
OCDF			2.19	U	1.80	U	3.82	U	2.62	U	3.23	U	2.93	U
TCDD TEQ[c]	0.51		0.069		0.065		0.177		0.014		0.006		0.009	
TCDD TEQ[d]	0.51		2.849		2.434		4.041		3.137		4.401		3.392	
Total Metals (ppb)														
Arsenic	1.4	150	1.71	J	1.28	J	1.25	J	0.75	J	0.90	J	0.88	J
Beryllium		5.1	0.11	J	0.10	J	0.23	J	0.08	U	0.09	J	0.08	U
Cadmium		0.09 [b]	0.03	J	0.01	J	0.02	J	0.01	U	0.01	U	0.03	J
Chromium		24.8 [b]	0.70		0.63	J	2.22		0.47	J	0.39	J	0.45	J
Lead		0.50 [b]	1.00	UJ	1.00	UJ	3.36		1.00	U	1.00	U	1.00	UJ
Mercury		0.77	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U
Nickel	4600	14.4 [b]	3.01		2.67		2.51		1.12		0.60		1.03	
Hardness (mg/L as CaCO ₃)			61.3		51.0		72.5		73.2		22.0		21.7	
Dissolved Metals (ppb)														
Arsenic (dissolved)		150	1.50	J	0.97	J	0.58	J	0.50	U	0.53	J	1.65	J
Beryllium (dissolved)		5.1	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
Cadmium (dissolved)		0.09 [b]	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U
Chromium (dissolved)		21.3 [b]	0.29	U	0.29	U	0.29	U	0.29	U	0.29	U	0.29	U
Lead (dissolved)		0.5 [b]	0.37	J	0.51	J	0.27	J	0.17	J	0.20	J	0.86	J
Mercury (dissolved)		0.77	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U
Nickel (dissolved)		14.4 [b]	2.33		2.37		0.85		0.84		0.40	J	0.48	J

- [a] Refer to Table 3-2 for source of benchmark levels
- [b] Benchmark value normalized to site-specific hardness as CaCO₃. The screening value is presented for these metals based on the lowest mean water hardness (Pond 5).
- [c] TEQs calculated using mamallian TEFs and only detected PCDD/PCDFs.
- [d] TEQs calculated using mamalian TEFs and estimated detection limit (EDL) for undetected PCDD/PCDFs.
- [e] Concentration is average of sample and duplicate if detected in both samples or detected value if only detected in one sample.
- ppq parts per quadrillion (pg/L)
- ppb = parts per billion (ug/L)

 $mg/L \ as \ CaCO_3 = milligrams \ per \ liter \ as \ calcium \ carbonate$

- $U\ -\ compound\ was\ analyzed\ for\ but\ not\ detected\ above\ the\ laboratory\ estimated\ detection\ limit\ (EDL)\ or\ method\ detection\ limit\ (MDL).$
- J Estimated concentration as the analyte was detected in the sample at a concentration greater than the instrument detection limit, but less than the lab's practical quantitation limit

Bold text indicates the detected concentration exceeds one or more benchmark values.

Table 3-5.

Comparison of Sediment Concentrations to Benchmarks
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland

0.371 0.342 0.688 0.651 0.706 12.2 835 0.315 0.252 0.211 0.233 0.197 0.225 0.356	U U U U U U U U U U U U U U U U	0.286 0.424 0.750 1.232 1.700 46.5 2440 0.410 0.256 0.272 0.250 0.274 0.317		VFSD0: 6/17/201 0.168 0.166 0.335 0.519 0.897 18.7 541 0.232 0.0893 0.0846 0.125 0.230		VFSD0 6/17/201 0.160 0.134 0.322 0.724 1.37 24 610 0.213 0.138 0.128 0.189	U U J J J U U U	CPSD0 6/18/201 0.134 0.113 0.164 0.319 0.309 11.8 767 0.148 0.0926 0.0849	U U U J J J U U	0.222 0.336 0.425 0.486 0.78 30.9 2260 0.128 0.0766	U U U J J
0.371 0.342 0.688 0.651 0.706 12.2 835 0.315 0.252 0.211 0.233 0.197 0.225 0.356 0.485	U U U U U U U U U U U U U U U U U U U	0.286 0.424 0.750 1.232 1.700 46.5 2440 0.410 0.256 0.272 0.250 0.274 0.317	J J J J J U	0.168 0.166 0.335 0.519 0.897 18.7 541 0.232 0.0893 0.0846 0.125	U J J J U U	0.160 0.134 0.322 0.724 1.37 24 610 0.213 0.138 0.128	1 1 1 1 1 1 0	0.134 0.113 0.164 0.319 0.309 11.8 767 0.148 0.0926	J J U U	0.222 0.336 0.425 0.486 0.78 30.9 2260 0.128	1 1 1 0
0.342 0.688 0.651 0.706 12.2 835 0.315 0.252 0.211 0.233 0.197 0.225 0.356 0.485	0 U U U U U U U U U U U U U U U U U U U	0.424 0.750 1.232 1.700 46.5 2440 0.410 0.256 0.272 0.250 0.274 0.317	1 1 1 1 1 1 1 1 1	0.166 0.335 0.519 0.897 18.7 541 0.232 0.0893 0.0846 0.125	U J J J U U	0.134 0.322 0.724 1.37 24 610 0.213 0.138 0.128 0.189	1 1 1 1 1 1	0.113 0.164 0.319 0.309 11.8 767 0.148 0.0926	U U J J U	0.336 0.425 0.486 0.78 30.9 2260 0.128	U U U
0.342 0.688 0.651 0.706 12.2 835 0.315 0.252 0.211 0.233 0.197 0.225 0.356 0.485	0 U U U U U U U U U U U U U U U U U U U	0.424 0.750 1.232 1.700 46.5 2440 0.410 0.256 0.272 0.250 0.274 0.317	1 1 1 1 1 1 1 1 1	0.166 0.335 0.519 0.897 18.7 541 0.232 0.0893 0.0846 0.125	U J J J U U	0.134 0.322 0.724 1.37 24 610 0.213 0.138 0.128 0.189	1 1 1 1 1 1	0.113 0.164 0.319 0.309 11.8 767 0.148 0.0926	U U J J U	0.336 0.425 0.486 0.78 30.9 2260 0.128	U U U
0.688 0.651 0.706 12.2 835 0.315 0.252 0.211 0.233 0.197 0.225 0.356 0.485	U U U U U U U U U U U U U U U U U U U	0.750 1.232 1.700 46.5 2440 0.410 0.256 0.272 0.250 0.274 0.317	1 1 1 1 1 1 1 1	0.335 0.519 0.897 18.7 541 0.232 0.0893 0.0846 0.125	J J J U U	0.322 0.724 1.37 24 610 0.213 0.138 0.128 0.189	U U J J	0.164 0.319 0.309 11.8 767 0.148 0.0926	U J J U	0.425 0.486 0.78 30.9 2260 0.128	J J U
0.651 0.706 12.2 835 0.315 0.252 0.211 0.233 0.197 0.225 0.356 0.485	U U U U U U U U U U U U U U U U U U U	1.232 1.700 46.5 2440 0.410 0.256 0.272 0.250 0.274 0.317	J J J J J	0.519 0.897 18.7 541 0.232 0.0893 0.0846 0.125	J J U U	0.724 1.37 24 610 0.213 0.138 0.128 0.189	J J U U	0.319 0.309 11.8 767 0.148 0.0926	J J U	0.486 0.78 30.9 2260 0.128	J J U
0.706 12.2 835 0.315 0.252 0.211 0.233 0.197 0.225 0.356 0.485	U U U U U U	1.700 46.5 2440 0.410 0.256 0.272 0.250 0.274 0.317	J J J J J	0.897 18.7 541 0.232 0.0893 0.0846 0.125	J J U U	1.37 24 610 0.213 0.138 0.128 0.189	J U U	0.309 11.8 767 0.148 0.0926	J J U	0.78 30.9 2260 0.128	J U
12.2 835 0.315 0.252 0.211 0.233 0.197 0.225 0.356 0.485	U U U U U	46.5 2440 0.410 0.256 0.272 0.250 0.274 0.317	J J J J	18.7 541 0.232 0.0893 0.0846 0.125	J U U	24 610 0.213 0.138 0.128 0.189	J U U	11.8 767 0.148 0.0926	J U	30.9 2260 0.128	U
835 0.315 0.252 0.211 0.233 0.197 0.225 0.356 0.485	U U U U U	2440 0.410 0.256 0.272 0.250 0.274 0.317	J J J	541 0.232 0.0893 0.0846 0.125	U U	610 0.213 0.138 0.128 0.189	U U	767 0.148 0.0926	U	2260 0.128	
0.315 0.252 0.211 0.233 0.197 0.225 0.356 0.485	U U U U U	0.410 0.256 0.272 0.250 0.274 0.317	J J J J	0.232 0.0893 0.0846 0.125	U U	0.213 0.138 0.128 0.189	U U	0.148 0.0926	U	0.128	
0.252 0.211 0.233 0.197 0.225 0.356 0.485	U U U U U	0.256 0.272 0.250 0.274 0.317	J J J	0.0893 0.0846 0.125	U U	0.138 0.128 0.189	U U	0.0926	U		
0.211 0.233 0.197 0.225 0.356 0.485	U U U U U	0.272 0.250 0.274 0.317	J J J	0.0846 0.125	U	0.128 0.189	U		_	0.0766	7.7
0.233 0.197 0.225 0.356 0.485	U U U U	0.250 0.274 0.317	J J	0.125	_	0.189	_	0.0849			U
0.197 0.225 0.356 0.485	U U U	0.274 0.317	J		U		- 1	0.00	U	0.0693	U
0.225 0.356 0.485	U U	0.317	-	0.230			J	0.0852	U	0.104	U
0.356 0.485	U		T		J	0.261	J	0.0856	U	0.103	U
0.485	_	0.312	J	0.232	J	0.272	J	0.0889	U	0.112	U
			U	0.184	U	0.253	U	0.127	U	0.158	U
0.414	J	1.855	J	2.060	J	2.76	J	0.330	J	0.351	J
0.414	U	0.347	U	0.226	U	0.204	U	0.243	U	0.205	U
1.22	J	2.35	J	5.72	J	7.47	J	0.447	J	0.454	J
0.378		2.223		0.616		0.788		0.429		1.117	
1.503		2.543		1.011		1.152		0.762		1.803	
0.101		1.391		0.333		0.378		0.106		0.273	
1.410		1.712		0.747		0.770		0.523		1.138	
1.40	т	1 11	т	1 50	т	1 96	т	2.24	T	1.20	J
	J		J		J		,		J		J
0.023											
15.4		10.53		3.31		11.2		10.0		0.80	
15.4			T	11300	J	31250	J	7935	J	4400	J
	1.49 1.24 0.160 22.6 17.6 0.025 15.4	1.24 0.160 22.6 17.6 0.025 15.4	1.24 0.992 0.160 0.077 22.6 19.6 17.6 15.7 0.025 0.018 15.4 10.53	1.24 0.992 0.160 0.077 22.6 19.6 17.6 15.7 0.025 0.018	1.24 0.992 1.34 0.160 0.077 0.057 22.6 19.6 11.5 17.6 15.7 15.9 0.025 0.018 0.012 15.4 10.53 5.31	1.24 0.992 1.34 0.160 0.077 0.057 22.6 19.6 11.5 17.6 15.7 15.9 0.025 0.018 0.012 15.4 10.53 5.31	1.24 0.992 1.34 1.13 0.160 0.077 0.057 0.163 22.6 19.6 11.5 17.2 17.6 15.7 15.9 29.1 0.025 0.018 0.012 0.042 15.4 10.53 5.31 11.2	1.24 0.992 1.34 1.13 0.160 0.077 0.057 0.163 22.6 19.6 11.5 17.2 17.6 15.7 15.9 29.1 0.025 0.018 0.012 0.042 15.4 10.53 5.31 11.2	1.24 0.992 1.34 1.13 1.61 0.160 0.077 0.057 0.163 0.104 22.6 19.6 11.5 17.2 17.0 17.6 15.7 15.9 29.1 17.0 0.025 0.018 0.012 0.042 0.023 15.4 10.53 5.31 11.2 10.0	1.24 0.992 1.34 1.13 1.61 0.160 0.077 0.057 0.163 0.104 22.6 19.6 11.5 17.2 17.0 17.6 15.7 15.9 29.1 17.0 0.025 0.018 0.012 0.042 0.023 15.4 10.53 5.31 11.2 10.0	1.24 0.992 1.34 1.13 1.61 0.686 0.160 0.077 0.057 0.163 0.104 0.034 22.6 19.6 11.5 17.2 17.0 18.8 17.6 15.7 15.9 29.1 17.0 16.4 0.025 0.018 0.012 0.042 0.023 0.053 15.4 10.53 5.31 11.2 10.0 6.86

- -- = No benchmark value available
- [a] Refer to Table 3-2 for source of benchmark levels
- [b] TEQs calculated using mamalian TEFs (Table 3-1) and only detected PCDD/PCDFs.
- [c] TEQs calculated using mamalian TEFs (Table 3-1) and detection limit for undetected PCDD/PCDFs.
- [d] TEQs calculated using fish TEFs (Table 3-1) and only detected PCDD/PCDFs.
- [e] TEQs calculated using fish TEFs (Table 3-1) and detection limit for undetected PCDD/PCDFs.
- [f] Concentration is average of sample and duplicate.
- ppt = parts per trillion (pg/g)
- ppm = parts per million (mg/kg)
- U compound was analyzed for but not detected above the laboratory Practical Quantitation Limit.
- J Estimated concentration as the analyte was detected in the sample at a concentration greater than the instrument detection limit, but less than the lab's practical quantitation limit

Bold text indicates the concentration exceeds one or more benchmark values.

Table 3-6a.

Comparison of Fish Tissue Concentrations to Benchmarks
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland

									Pon	nd 3										Pond 4		
	Screening Level [a]	LFBG01 Whole Bluegill 6/17/201	l	LFBG02[Whole Bluegill 6/17/201	ı	LFBG01- Fillet Bluegill 6/17/2014		LFBG02-F Fillet Bluegill 6/17/2014		LFLMB0 Whole LMB 6/17/2014		LFLMB0 Whole LMB 6/19/2014		LFLMB01 Fillet LMB 6/17/2014		LFLMB02 Fillet LMB 6/19/2014		YFBG0: Whole Bluegill 6/17/201		YFBG02 Whole Bluegill 6/17/2014		YFBG01/02-F Fillet Bluegill 6/17/2014
Dioxins/Furans (ppt)																						
2,3,7,8-TCDD		0.1700	U	0.2130	U	0.2040	U	0.1510	U	0.2030	U	0.2890	U	0.1860	U	0.2750	U	0.1760	U	0.1800	U	0.1640 U
1,2,3,7,8-PeCDD		0.0826	U	0.1180	U	0.1010	U	0.0759	U	0.1280	U	0.1710	U	0.0921	U	0.1660	U	0.1060	U	0.0985	U	0.0910 U
1,2,3,4,7,8-HxCDD		0.1340	U	0.1310	U	0.1540	U	0.1080	U	0.1510	U	0.2850	U	0.1100	U	0.2270	U	0.1270	U	0.1460	U	0.1220 U
1,2,3,6,7,8-HxCDD		0.1260	U	0.1340	U	0.1440	U	0.1050	U	0.1490	U	0.2630	U	0.1070	U	0.2190	U	0.1160	U	0.1440	U	0.1200 U
1,2,3,7,8,9-HxCDD		0.1380	U	0.1410	U	0.1570	U	0.1120	U	0.1590	U	0.2870	U	0.1150	U	0.2350	U	0.1280	U	0.1540	U	0.1280 U
1,2,3,4,6,7,8-HpCDD		0.2490	J	0.4289	J	0.2200	U	0.1640	U	0.3490	J	0.5662	J	0.2740	J	0.3760	U	0.4067	J	0.2733	J	0.1640 U
OCDD		4.123	J	4.608	J	1.170	J	0.345	U	1.580	J	2.592	J	0.957	J	0.852	J	4.594	J	7.858	J	0.461 U
2,3,7,8-TCDF		0.2833	J	0.2860	J	0.1740	U	0.2710	J	0.3840	J	0.2351	J	0.3100	J	0.2410	U	0.2641	J	0.2805	J	0.2220 J
1,2,3,7,8-PeCDF		0.0800	U	0.0999	U	0.1030	U	0.0722	U	0.0971	U	0.1480	U	0.0838	U	0.1440	U	0.0931	U	0.0893	U	0.0769 U
2,3,4,7,8-PeCDF		0.0735	U	0.0887	U	0.0930	U	0.0628	U	0.0900	U	0.1350	U	0.0683	U	0.1230	U	0.0847	U	0.0840	U	0.0675 U
1,2,3,4,7,8-HxCDF		0.0944	U	0.0965	U	0.1060	U	0.0716	U	0.1060	U	0.1720	U	0.0725	U	0.1720	U	0.1090	U	0.0991	U	0.0810 U
1,2,3,6,7,8-HxCDF		0.0864	U	0.0942	U	0.0996	U	0.0665	U	0.1020	U	0.1630	U	0.0739	U	0.1540	U	0.1040	U	0.0945	U	0.0771 U
1,2,3,7,8,9-HxCDF		0.0976	U	0.0972	U	0.1120	U	0.0736	U	0.1100	U	0.1920	U	0.0769	U	0.1740	U	0.1160	U	0.1000	U	0.0836 U
2,3,4,6,7,8-HxCDF		0.1420	U	0.1530	U	0.1580	U	0.1120	U	0.1600	U	0.3010	U	0.1200	U	0.2630	U	0.1710	U	0.1510	U	0.1380 U
1,2,3,4,6,7,8-HpCDF		0.0988	U	0.1151	J	0.1100	U	0.0720	U	0.1170	U	0.2150	U	0.1020	U	0.2610	U	0.2076	J	0.1186	J	0.0808 U
1,2,3,4,7,8,9-HpCDF		0.1610	U	0.1820	U	0.1800	U	0.1250	U	0.1910	U	0.3730	U	0.1690	U	0.4720	U	0.2080	U	0.1820	U	0.1350 U
OCDF		0.3670	U	0.4750	U	0.4530	U	0.3490	U	0.4870	Ū	0.9060	U	0.3540	U	0.9610	U	0.5110	U	0.4110	U	0.3290 U
Lipid (%)		3.17		1.83		0.744		0.245		3.13		2.48		0.289		0.429		0.99		0.736		0.293
TCDD TEQ[c]	1.2	0.0321		0.0354		0.0004		0.0271		0.0424		0.0300		0.0340		0.0003		0.0339		0.0343		0.0222
TCDD TEQ (lipid normalized)		1.010		1.934		0.047		11.06		1.353		1.21		11.77		0.06		3.44		4.66		7.58
TCDD TEQ[d]	1.2	0.3937		0.4827		0.4520		0.3437		0.5002		0.7073		0.4055		0.6624		0.4335		0.4315		0.3788
TCDD TEQ (lipid normalized)		12.409		26.35		60.76		140.28		15.981		28.54		140.30		154.39		43.95		58.64		129.27
Metals (ppm)																						
Arsenic	0.27	0.194		0.095	J	0.007	U	0.006	U	0.032	U	0.029	U	0.006	U	0.006	U	0.162		0.006	U	0.006 U
Beryllium		0.015	J	0.014	J	0.005	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.014	J	0.004	U	0.004 U
Cadmium	4.0	0.005	J	0.010	U	0.002	J	0.002	U	0.010	U	0.009	U	0.002	U	0.002	U	0.013	J	0.010	U	0.002 U
Chromium	12.0	13.54		1.12		5.85		1.30		1.43	J	3.01		1.77		0.946		0.976		0.708		0.893
Lead		0.082	J	0.077	J	0.006	J	0.003	U	0.014	U	0.030	J	0.003	U	0.003	J	0.269		0.079	J	0.004 J
Mercury	0.3	0.017	J	0.007	J	0.025	J	0.014	J	0.036	J	0.011	J	0.033	J	0.022	J	0.023	J	0.040	J	0.044 J
Nickel	220	8.86		0.773		2.94		0.449		0.772		2.12		0.799		0.616		0.872		0.741		0.162

LMB = Largemouth bass

- -- = No benchmark value available
- [a] Refer to Table 3-2 for source of benchmark levels
- [b] Concentration is average of sample and duplicate.
- [c] TEQs calculated using mamallian TEFs and only detected PCDD/PCDFs.
- [d] TEQs calculated using mamalian TEFs and detection limit for undetected PCDD/PCDFs.

ppt = parts per trillion (pg/g)

ppm = parts per million (mg/kg)

- U compound was analyzed for but not detected above the laboratory Practical Quantitation Limit.
- J Estimated concentration as the analyte was detected in the sample at a concentration greater than the instrument detection limit, but less than the lab's practical quantitation limit Bold text indicates the concentration exceeds one or more benchmark values.

Table 3-6a (cont...).

Comparison of Fish Tissue Concentrations to Benchmarks

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

									Por	nd 5							
	Screening Level [a]	CPBG01 Whole Bluegill 6/18/2014		CPBG02 Whole Bluegill 6/18/2014		CPBG01- Fillet Bluegill 6/18/201	1	CPBG02 Fillet Bluegill 6/18/201	l	CPLMB0 Whole LMB 6/18/2014		CPLMB02 Whole LMB 6/18/201		CPLMB0 Fillet LMB 6/18/201		CPLMB02 Fillet LMB 6/18/201	
Dioxins/Furans (ppt)																	
2,3,7,8-TCDD		0.1660	U	0.1700	U	0.1760	U	0.1860	U	0.2440	J	0.4445	J	0.1680	U	0.2330	U
1,2,3,7,8-PeCDD		0.1020	U	0.0847	U	0.0950	U	0.1030	U	0.0951	U	0.0921	U	0.0947	U	0.1240	U
1,2,3,4,7,8-HxCDD		0.1200	U	0.1150	U	0.1280	U	0.1340	U	0.1440	U	0.1400	U	0.1150	U	0.1790	U
1,2,3,6,7,8-HxCDD		0.1140	U	0.1140	U	0.1150	U	0.1190	U	0.1370	U	0.1270	U	0.1110	U	0.1740	U
1,2,3,7,8,9-HxCDD		0.1240	U	0.1210	U	0.1280	U	0.1330	U	0.1480	U	0.1400	U	0.1190	U	0.1870	U
1,2,3,4,6,7,8-HpCDD		0.2280	U	0.1690	U	0.1970	U	0.2250	U	0.3210	J	0.3485	J	0.1740	U	0.2610	U
OCDD		2.040	J	1.740	J	0.370	U	0.362	U	4.580	J	2.230	J	0.363	U	0.644	U
2,3,7,8-TCDF		0.3020	J	0.2980	J	0.2400	J	0.2880	J	0.3950	J	0.4160	J	0.2480	J	0.2245	J
1,2,3,7,8-PeCDF		0.0758	U	0.0694	U	0.0739	U	0.0733	U	0.0931	U	0.0961	U	0.0789	U	0.0846	U
2,3,4,7,8-PeCDF		0.0673	U	0.0620	U	0.0651	U	0.0641	U	0.0842	U	0.0831	U	0.0686	U	0.0750	U
1,2,3,4,7,8-HxCDF		0.0895	U	0.0686	U	0.0760	U	0.0741	U	0.0892	U	0.0860	U	0.0704	U	0.1160	U
1,2,3,6,7,8-HxCDF		0.0828	U	0.0611	U	0.0739	U	0.0702	U	0.0807	U	0.0818	U	0.0663	U	0.1100	U
1,2,3,7,8,9-HxCDF		0.0926	U	0.0664	U	0.0804	U	0.0781	U	0.0838	U	0.0904	U	0.0723	U	0.1190	U
2,3,4,6,7,8-HxCDF		0.1420	U	0.1020	U	0.1260	U	0.1250	U	0.1300	U	0.1410	U	0.1100	U	0.1840	U
1,2,3,4,6,7,8-HpCDF		0.1220	U	0.0909	U	0.0931	U	0.0927	U	0.1080	J	0.0921	U	0.0844	U	0.1600	U
1,2,3,4,7,8,9-HpCDF		0.2050	U	0.1480	U	0.1600	U	0.1540	U	0.1650	U	0.1460	U	0.1410	U	0.2650	U
OCDF		0.4190	U	0.3530	U	0.3800	U	0.4180	U	0.3500	U	0.4010	U	0.3760	U	0.6010	U
Lipid (%)		2.18		2.31		0.688		0.406		3.29		3.03		0.773		0.738	
TCDD TEQ[c]	1.2	0.0308		0.0303		0.0240		0.0288		0.2892		0.4903		0.0248		0.0225	
TCDD TEQ (lipid normalized)		1.41		1.31		3.49		7.09		8.79		16.18		3.21		3.04	
TCDD TEQ[d]	1.2	0.4034		0.3747		0.3942		0.4175		0.4953		0.6933		0.3811		0.5186	
TCDD TEQ (lipid normalized)		18.51		16.22		57.30		102.84		15.06		22.88		49.30		70.27	
Metals (ppm)																	
Arsenic	0.27	0.006	U	0.032	U	0.028	U	0.029	U	0.032	U	0.032	U	0.006	U	0.006	U
Beryllium		0.004	U	0.005	U	0.004	U	0.004	U	0.005	U	0.023	U	0.004	U	0.004	U
Cadmium	4.0	0.009	U	0.010	U	0.002	U	0.002	U	0.010	U	0.010	U	0.002	U	0.002	U
Chromium	12.0	3.19		4.55		1.14	J	0.924	J	1.67	J	1.41	J	1.73		0.796	
Lead		0.029	J	0.028	J	0.002	U	0.003	U	0.014	U	0.014	U	0.003	J	0.003	U
Mercury	0.3	0.037	J	0.051	J	0.048	J	0.040	J	0.140	J	0.164	J	0.148	J	0.164	J
Nickel	220	2.32		3.05		0.339	J	0.061	U	1.10		0.783		0.631		0.012	U
1																	

Notes:

- LMB = Largemouth bass
- -- = No benchmark value available
- [a] Refer to Table 3-2 for source of benchmark levels
- [b] Concentration is average of sample and duplicate.
- [c] TEQs calculated using mamallian TEFs and only detected PCDD/PCDFs.
- [d] TEQs calculated using mamalian TEFs and detection limit for undetected PCDD/PCDFs.
- ppt = parts per trillion (pg/g)
- ppm = parts per million (mg/kg)
- U compound was analyzed for but not detected above the laboratory Practical Quantitation Limit.
- J Estimated concentration as the analyte was detected in the sample at a concentration greater than the instrument detection limit, but less than the lab's practical quantitation limit

Table 3-6b Comparison of Estimated/Actual Fish PCDD/PCDF Concentrations Non-Air Environmental Media Sampling Montgomery County Resource Recovery Facility - Dickerson, Maryland

Dioxin/Furan Congeners	Mean Sediment Concentration (mg/kg) ¹	TOC Normalized Sediment Concentration (mg/kg) ²	Fish Whole-Body BSAF ³		Fish Whole-Body Lipid Content (mg/kg) 4 Predicted Fish Whole-Body Concentration (mg/kg) 5			Actual Fish Whole-Body Concentration (mg/kg) ⁶	
		(mg/kg)				Minimum	Maximum	Minimum	Maximum
Pond 3									
1,2,3,4,6,7,8-HpCDD	2.94E-05	1.95E-03	0.0012	0.0348	0.0265	6.19E-08	1.79E-06	2.49E-07	5.66E-07
OCDD	1.64E-03	1.09E-01	0.0008	0.0300	0.0265	2.37E-06	8.64E-05	1.58E-06	4.61E-06
2,3,7,8-TCDF	3.63E-07	2.40E-05	0.0205	0.3970	0.0265	1.31E-08	2.53E-07	2.35E-07	3.84E-07
1,2,3,4,6,7,8-HpCDF	1.17E-06	7.75E-05	0.0035	0.2126	0.0265	7.12E-09	4.37E-07	1.15E-07	1.15E-07
Pond 4									
1,2,3,4,6,7,8-HpCDD	2.14E-05	1.00E-03	0.0012	0.0348	0.0086	1.04E-08	3.01E-07	2.73E-07	4.07E-07
OCDD	5.76E-04	2.71E-02	0.0008	0.0300	0.0086	1.92E-07	7.01E-06	4.59E-06	7.86E-06
2,3,7,8-TCDF	2.23E-07	1.05E-05	0.0205	0.3970	0.0086	1.85E-09	3.58E-08	2.64E-07	2.81E-07
1,2,3,4,6,7,8-HpCDF	2.41E-06	1.13E-04	0.0035	0.2126	0.0086	3.39E-09	2.08E-07	1.19E-07	2.08E-07
Pond 5									
2,3,7,8-TCDD	1.78E-07	2.89E-05	0.0387	0.6778	0.0270	3.02E-08	5.29E-07	2.44E-07	4.45E-07
1,2,3,4,6,7,8-HpCDD	2.14E-05	3.46E-03	0.0012	0.0348	0.0270	1.12E-07	3.25E-06	3.21E-07	3.49E-07
OCDD	1.51E-03	2.45E-01	0.0008	0.0300	0.0270	5.46E-06	1.99E-04	1.74E-06	4.58E-06
2,3,7,8-TCDF	1.38E-07	2.24E-05	0.0205	0.3970	0.0270	1.24E-08	2.40E-07	2.98E-07	4.16E-07
1,2,3,4,6,7,8-HpCDF	3.41E-07	5.52E-05	0.0035	0.2126	0.0270	5.17E-09	3.17E-07	1.08E-07	1.08E-07

Notes:

¹ Mean sediment concentration (dry weight) detected in each pond (see Table 3-5)

² Mean sediment concentration (dry weight) divided by mean TOC (dry weight) for each pond (see Table 3-5).

³ BSAF database (USEPA, 2007) - minimum and maximum sunfish/largemouth bass whole-body BSAFs.

 $^{^4\,}$ Mean lipid content of whole-body samples for each pond (see Table 3-6).

⁵ TOC normalized sediment concentration * fish whole-body BSAF * fish whole-body lipid content.

⁶ Minimum and maximum of whole-body sample results for each pond (see Table 3-6).

Table 3-7. Comparison of Hay Concentrations to Benchmarks Non-Air Environmental Media Sampling Montgomery County Resource Recovery Facility - Dickerson, Maryland

		Background		Lei	Lermond Farm			Johnson Dairy Farm			
	Screening	MFH01		LFH01[c	d]	LFH02	2	JFH01		JFH02	2
	Level [a]	6/18/201	4	6/17/201	4	6/17/201	14	6/17/201	14	6/17/201	14
Dioxins/Furans (ppt)											
2,3,7,8-TCDD		0.125	U	0.118	U	0.144	U	0.163	U	0.13	U
1,2,3,7,8-PeCDD		0.0926	U	0.082	U	0.0995	U	0.121	U	0.119	U
1,2,3,4,7,8-HxCDD		0.121	U	0.122	U	0.133	U	0.131	U	0.148	U
1,2,3,6,7,8-HxCDD		0.126	U	0.123	U	0.137	U	0.128	U	0.15	U
1,2,3,7,8,9-HxCDD		0.131	U	0.130	U	0.143	U	0.138	U	0.159	U
1,2,3,4,6,7,8-HpCDD		0.777	J	0.458	J	0.771	J	0.689	J	0.717	J
OCDD		9.16	J	5.15	J	10.5	J	5.84	J	5.93	J
2,3,7,8-TCDF		0.108	U	0.118	J	0.170	J	0.128	U	0.102	U
1,2,3,7,8-PeCDF		0.0622	U	0.0530	U	0.074	U	0.0864	U	0.0682	U
2,3,4,7,8-PeCDF		0.0585	U	0.0489	U	0.0663	U	0.0778	U	0.0638	U
1,2,3,4,7,8-HxCDF		0.067	U	0.0811	U	0.111	U	0.0918	U	0.0875	U
1,2,3,6,7,8-HxCDF		0.0642	U	0.0777	U	0.109	U	0.0886	U	0.0843	U
2,3,4,6,7,8-HxCDF		0.0685	U	0.0869	U	0.117	U	0.0964	U	0.0928	U
1,2,3,7,8,9-HxCDF		0.0987	U	0.120	U	0.178	U	0.147	U	0.138	U
1,2,3,4,6,7,8-HpCDF		0.0704	U	0.0847	U	0.106	U	0.120	U	0.29	J
1,2,3,4,7,8,9-HpCDF		0.118	U	0.142	U	0.181	U	0.216	U	0.18	U
OCDF		0.210	U	0.341	U	0.422	U	0.395	U	0.351	U
TCDD TEQ[b]		0.011		0.018		0.028		0.009		0.012	
TCDD TEQ[0] TCDD TEQ (lipid)		0.65		2.23		3.25		0.009		0.012	
TCDD TEQ (lipid) TCDD TEQ[c]		0.03		0.311		0.389		0.33		0.43	
TCDD TEQ[c] TCDD TEQ (lipid normalized)		20.37		38.77		45.42		15.97		13.87	
TEOD TEQ (lipid liotilialized)		20.37		36.77		43.42		13.97		13.67	
Metals (ppm)											
Arsenic	0.0027 - 0.45	0.029	U	0.029	U	0.029	U	0.033	U	0.031	U
Beryllium	0.0003 - 0.12	0.020	U	0.021	U	0.020	U	0.023	U	0.022	U
Cadmium	0.009 - 0.09	0.036	J	0.027	J	0.016	J	0.033	J	0.058	J
Chromium	0.006 - 0.06	0.385	J	0.511		0.991		0.352	J	0.327	J
Lead	0.24 - 1.68	0.100	J	0.065		0.355		0.060	J	0.062	J
Mercury	0.003	0.004	U	0.004	U	0.004	U	0.005	J	0.004	U
Nickel	0.021 - 0.201	0.718		0.162	J	0.520		0.575		0.640	
Lipid (%)		1.61		0.801		0.857		2.61		2.74	

Notes:

- -- = No benchmark value available
- [a] Refer to Table 3-2 for source of benchmark levels
- [b] TEQs calculated using mamallian TEFs and only detected PCDD/PCDFs.
- $\label{eq:continuous} \mbox{[c] TEQs calculated using mamalian TEFs and detection limit for undetected PCDD/PCDFs.}$
- [d] Concentration is average of sample and duplicate.

ppt = parts per trillion (pg/g)

ppm = parts per million (mg/kg)

- U compound was analyzed for but not detected above the laboratory Practical Quantitation Limit.
- J Estimated concentration as the analyte was detected in the sample at a concentration greater than the instrument detection limit, but less than the lab's practical quantitation limit

Bold text indicates the concentration exceeds one or more benchmark values.

Table 3-8.

Comparison of Cow's Milk Results to Benchmarks

Non-Air Environmental Media Sampling

Montgomery County Resource Recovery Facility - Dickerson, Maryland

	Screening	JFM01[b]		JFM02	
	Level [a]	6/17/2014		6/17/2014	
Dioxins/Furans (ppq)					
2,3,7,8-TCDD		19.7	U	71.2	U
1,2,3,7,8-PeCDD		9.92	U	38.8	U
1,2,3,4,7,8-HxCDD		13.2	U	53.4	U
1,2,3,6,7,8-HxCDD		12.7	U	51.8	U
1,2,3,7,8,9-HxCDD		13.7	U	55.6	U
1,2,3,4,6,7,8-HpCDD		37.8	J	58.2	U
OCDD		118	J	82.8	U
2,3,7,8-TCDF		12.6	U	54.4	U
1,2,3,7,8-PeCDF		7.60	J	34.4	U
2,3,4,7,8-PeCDF		6.04	U	30.0	U
1,2,3,4,7,8-HxCDF		8.52	U	34.0	U
1,2,3,6,7,8-HxCDF		7.66	U	32.4	U
1,2,3,7,8,9-HxCDF		8.66	U	35.2	U
2,3,4,6,7,8-HxCDF		12.8	U	50.4	U
1,2,3,4,6,7,8-HpCDF		9.28	U	32.8	U
1,2,3,4,7,8,9-HpCDF		16.3	U	49.2	U
OCDF		53.2	U	114	U
TCDD TEQ[c]		0.641		0.000	
TCDD TEQ (lipid normalized)	3000	19.7		0.00	
TCDD TEQ[d]		41.329		158.213	
TCDD TEQ (lipid normalized)	3000	1271.7		4694.7	
Metals (ppb)					
Arsenic	10	0.85	U	5.96	J
Beryllium	4	0.86	U	0.86	U
Cadmium	5	0.27	J	0.15	U
Chromium	100	181		185	
Lead	15	0.65	U	0.65	U
Mercury	2	0.14	UJ	0.14	UJ
Nickel	50	16.59		16.78	
Lipid (%)		3.25		3.37	

- [a] Refer to Table 3-2 for source of benchmark levels
- [b] Concentration is average of sample and duplicate if detected in both samples or detected value if only detected in one sample.
- [c] TEQs calculated using mamallian TEFs and only detected PCDD/PCDFs.
- [d] TEQs calculated using mamalian TEFs and detection limit for undetected PCDD/PCDFs.
- ppq = parts per quadrillion (pg/L)
- ppb = parts per billion (ug/L)
- U compound was analyzed for but not detected above the laboratory Practical Quantitation Limit.
- J Estimated concentration since the analyte was detected in the sample at a concentration greater than the instrument detection limit, but less than the lab's practical quantitation limit Bold text indicates the concentration exceeds one or more benchmark values.

Table 4-1.
Summary of Trend Analysis Results
Non-Air Environmental Media Sampling
Montgomery County Resource Recovery Facility - Dickerson, Maryland

				Mann-K	Kendall Trend	Analysis			
Media/Constituent		Pond 3			Pond 4			Pond 5	
	ND = 0	All Detects	ND = DL	ND = 0	All Detects	ND = DL	ND = 0	All Detects	ND = DL
Surface Water									
Arsenic	0	NA	0	0	NA	0	0	NA	0
Beryllium	0	NA	0	0	NA	0	0	NA	0
Cadmium	0	NA	-	0	NA	0	0	NA	-
Chromium	0	NA	0	0	NA	0	0	NA	-
Lead	ND	NA	ND	0	NA	0	ND	NA	ND
Mercury	ND	NA	ND	ND	NA	ND	ND	NA	ND
Nickel	0	NA	-	0	NA	0	0	NA	-
1,2,3,4,6,7,8-HpCDD	NA	0	NA	NA	*	NA	NA	*	NA
OCDD	NA	-	NA	NA	*	NA	NA	0	NA
PCDD/PCDF - TEQs	0	NA	0	0	NA	-	0	NA	0
Sediment									
Arsenic	0	NA	0	*	NA	*	0	NA	0
Beryllium	0	NA	0	*	NA	*	0	NA	0
Cadmium	-	NA	_	*	NA	*	0	NA	0
Chromium	0	NA	0	*	NA	*	0	NA	0
Lead	0	NA	0	*	NA	*	0	NA	0
Mercury	0	NA	0	*	NA	*	0	NA	-
Nickel	0	NA	0	*	NA	*	0	NA	0
1,2,3,4,6,7,8-HpCDD	NA	*	NA	NA	*	NA	NA	0	NA
OCDD	NA	0	NA	NA	*	NA	NA	0	NA
OCDF	NA	0	NA	NA	*	NA	NA	*	NA
PCDD/PCDF - TEQs	0	NA	-	*	NA	*	0	NA	0
Bluegill Whole-body	v	- 11.2			- 11.2		Ü	- 11.2	
Arsenic	0	NA	0	0	NA	0	ND	NA	ND
Beryllium	0	NA	0	0	NA	0	ND	NA	ND
Cadmium	0	NA	-	0	NA	0	ND	NA	ND
Chromium	0	NA	0	0	NA	+	0	NA	0
Lead	0	NA	0	0	NA	0	0	NA	-
Mercury	0	NA	-	0	NA	0	0	NA	0
Nickel	0	NA	0	0	NA	0	0	NA	0
PCDD/PCDF - TEQs	0	NA	0	0	NA	0	0	NA	0
Bluegill Fillet	0	1171	U	0	1171	U	U	1171	U
Arsenic	ND	NA	ND	ND	NA	ND	ND	NA	ND
						ND ND			
Beryllium Cadmium	ND 0	NA NA	ND 0	ND ND	NA NA	ND ND	ND ND	NA NA	ND ND
Chromium	0	NA NA	0	*	NA NA	ND *	*	NA NA	ND *
				*		*			
Lead	0	NA NA	0	*	NA NA	*	ND *	NA NA	ND *
Mercury	0	NA NA	0	*	NA	*	*	NA	*
Nickel PCDD/PCDF - TEQs	0	NA NA	0	*	NA	*	*	NA	*
,	0	NA	U	7.	NA	·e	T	NA	-,-
Bass Whole-body	MD	37.4	ND	NY 4	***	NT 4	ND	***	ME
Arsenic	ND	NA	ND	NA	NA	NA	ND	NA	ND
Beryllium	ND	NA	ND	NA	NA	NA	ND	NA	ND
Cadmium	ND	NA	ND	NA	NA	NA	ND	NA	ND
Chromium	0	NA	0	NA	NA	NA	0	NA	0
Lead	0	NA	0	NA	NA	NA	ND	NA	ND
Mercury	0	NA	0	NA	NA	NA	0	NA	0

Table 4-1. Summary of Trend Analysis Results Non-Air Environmental Media Sampling Montgomery County Resource Recovery Facility - Dickerson, Maryland

ND = 0	All Detects			Pond 4			Pond 5		
0	All Detects	ND = DL	ND = 0	All Detects	ND = DL	ND = 0	All Detects	ND = DL	
0	NA	0	NA	NA	NA	0	NA	0	
NA	0	NA	NA	*	NA	NA	0	NA	
NA	0	NA	NA	*	NA	NA	0	NA	
0	NA	0	NA	NA	NA	0	NA	0	
ND	NA	ND	NA	NA	NA	ND	NA	ND	
ND	NA	ND	NA	NA	NA	ND	NA	ND	
ND	NA	ND	NA	NA	NA	ND	NA	ND	
0	NA	0	NA	NA	NA	0	NA	0	
0	NA	0	NA	NA	NA	0	NA	0	
0	NA	0	NA	NA	NA	0	NA	0	
0	NA	0	NA	NA	NA	0	NA	0	
NA	0	NA	NA	*	NA	NA	*	NA	
0	NA	0	NA	NA	NA	0	NA	0	
L	ermond Farn	n	Johnson Dairy Farm			Background			
ND = 0	All Detects	ND = DL	ND = 0	All Detects	ND = DL	ND = 0	All Detects	ND = DL	
				-					
ND	NA	ND	ND	NA	ND	ND	NA	ND	
ND	NA	ND	ND	NA	ND	ND	NA	ND	
0	NA	0	*	NA	*	0	NA	0	
0	NA	0	*	NA	*	0	NA	0	
0	NA	0	*	NA	*	0	NA	0	
0	NA	0	*	NA	*	0	NA	0	
0	NA	0	*	NA	*	0	NA	0	
NA	0	NA	NA	*	NA	NA	0	NA	
NA	0	NA	NA	*	NA	NA	0	NA	
0	NA	0	*	NA	*	0	NA	0	
NA	NA	NA	0	NA	0	NA	NA	NA	
NA	NA	NA	ND	NA	ND	NA	NA	NA	
NA	NA	NA	0	NA	0	NA	NA	NA	
NA	NA	NA	0	NA	0	NA	NA	NA	
NA	NA	NA	ND	NA	ND	NA	NA	NA	
NA	NA	NA	ND	NA	ND	NA	NA	NA	
NA	NA	NA	0	NA	0	NA	NA	NA	
NA	*	NA	NA	0	NA	NA	*	NA	
NA	*	NA	NA	0	NA	NA	*	NA	
NA	NA	NA	0	NA	0	NA	NA	NA	
	0 ND ND 0 0 0 NA 0 IND ND 0 0 NA 0 ND ND ND ND ND ND ND ND ND	0 NA ND NA ND NA 0 NA 0 NA 0 NA 0 NA 0 NA 0 NA NA 0 ND NA ND NA ND NA 0 NA 0 NA 0 NA 0 NA 0 NA 0 NA NA NA	0 NA 0 ND NA ND ND NA ND ND NA ND 0 NA 0 0 NA 0 0 NA 0 0 NA 0 NA 0 NA 0 NA 0 NA 0 NA 0 NA ND ND NA ND NA NA ND 0 NA 0 0 NA 0 NA 0 NA 0 NA 0 NA NA NA NA NA NA NA NA NA	0 NA 0 NA ND NA ND NA ND NA ND NA ND NA ND NA ND NA NA NA ND NA 0 NA NA 0 NA NA ND NA ND ND NA NA NA NA NA NA NA NA NA NA NA	NA	NA O NA NA NA ND NA NA NA NA NA NA NA NA NA ND NA NA NA ND ND NA NA ND NA ND	NA	NA	

Notes

NA: Not Applicable

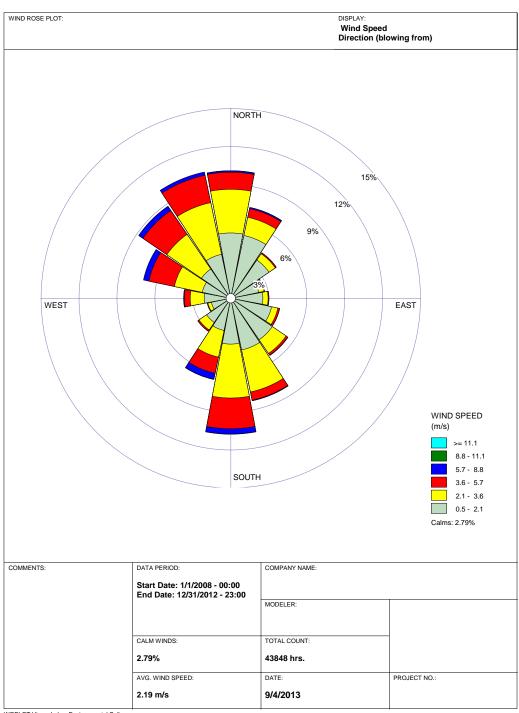
ND: Not Detected in 2014 samples

- * Insufficient data to conduct statistical trend analysis
- + Statistically significant increasing trend
- 0 No statistical trend present
- Statistically significant decreasing trend

APPENDIX A

AIR DISPERSION ANALYSIS

Figure 1 – Windrose for Complete 5 Year Period (2008-01-01 to 2012-12-13)



WRPLOT View - Lakes Environmental Software

Figure 2 –TRC Windrose to Compare to AECOM 2008 Report's "Figure 1-2: Windrose for Winter 2008 Sampling Period" (2008-01-01 to 2008-02-16)

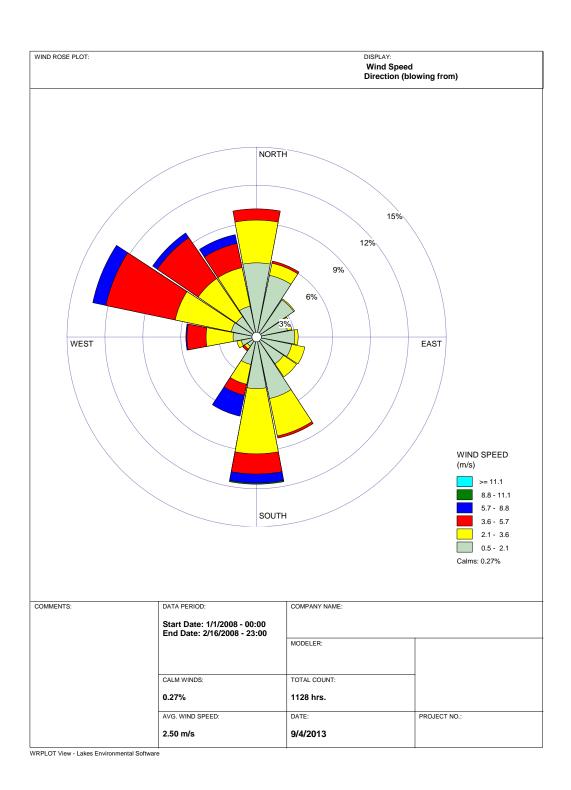
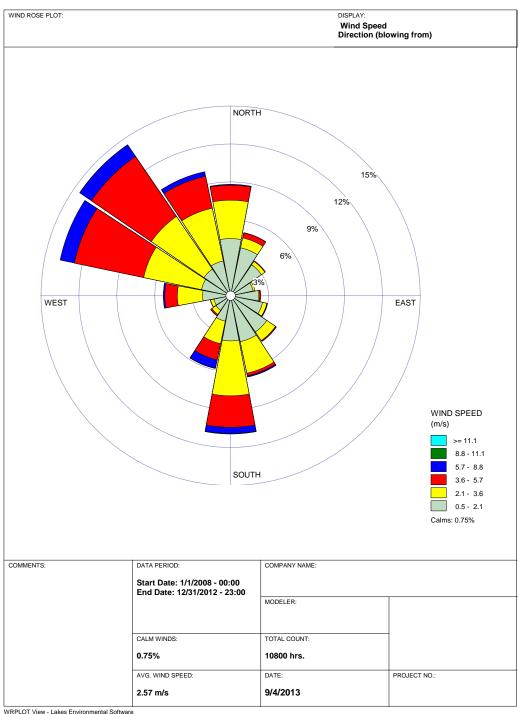
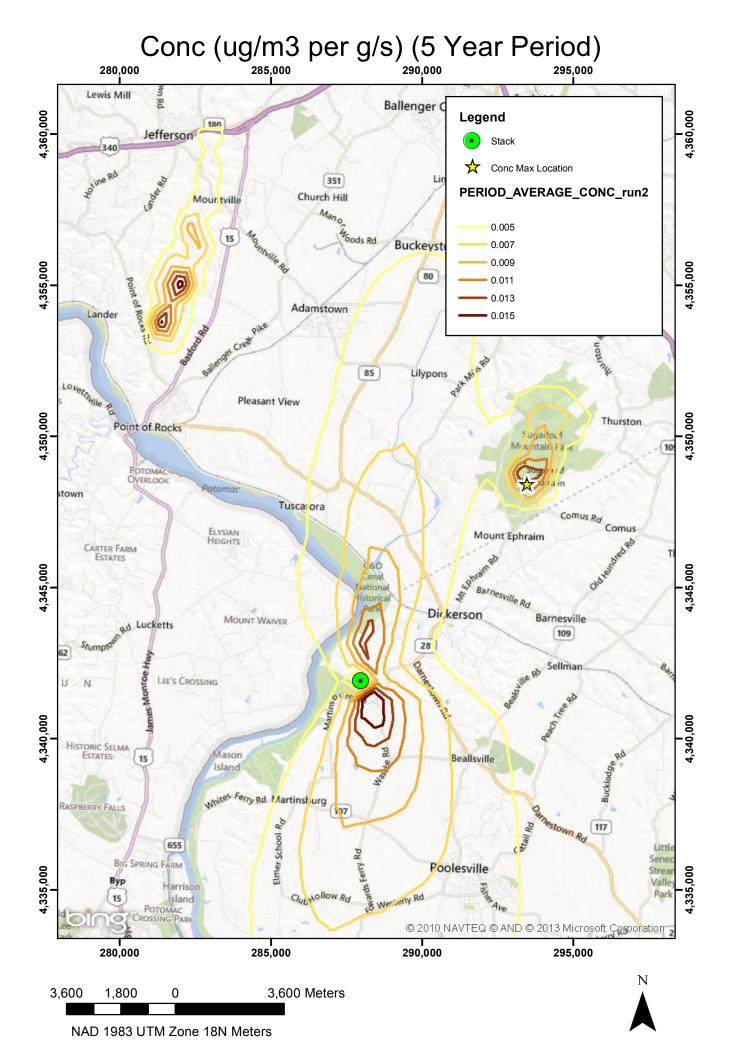


Figure 3 – Windrose for Winter Months (Dec, Jan, Feb) Across All 5 Years (2008-2012)



WRPLOT View - Lakes Environmental Software



Dry Deposition (g/m2 per g/s) (5 Year Period) 280,000 Buckeystown Hope Hill Legend 4,355,000 4,355,000 80 Stack Flint Hill Adamstown Dry Dep Max Location PERIOD_DRY_DEPO_run2 0.002 0.004 85 Lilypons 0.006 0.008 ant View 4,350,000 Sugarloaf Mountain Park POTOMAC Sugarlo if OVERLOOK Mountain. Potomac Tuscarora Comus R ELYSIAN Mount Ephraim HEIGHTS R FARM ATES 4,345,000 Barnesville Rd ational Dickerson Barnesville An Ad Lucketts MOUNT WAIV R 109 28 Sellman LEE'S CROSSING 4,340,000 Mason Beallsville 15 Island Martinsburg Oarnestown Rd Elmer School Roy Westerly Rd © 2010 N 655 SPRING FARM Poolesville 4,335,000 vesterly Rd © 2010 NAVTEQ © AND © 2013 Microsoft Corporation Harrison Cluby ollow Rd sland 285,000 280,000 295,000 290,000 2,900 2,900 Meters 1,450 0

NAD 1983 UTM Zone 18N Meters

Wet Deposition (g/m2 per g/s) (5 Year Period) 880 4,355,000 4,355,000 80 Legend Flint Hill Stack Adamstown Wet Dep Max Location PERIOD_WET_DEPO_run2 0.005 85 Lilypons 0.01 0.02 asant View 0.04 4,350,000 Sugarloaf Mountain Park Sugarloaf POTOMAC OVERLOOK Mountain Potomac Tuscarora Comus ELYSIAN Mount Ephraim HEIGHTS RTER FARM AN Lohrain Rd ESTATES 4,345,000 anal Barnesville Rd Dickerson Barnesville MOUNT WAIVER Rd Lucketts 109 28 LEE'S CROSSING 4,340,000 C SELMA Mason 15 Beallsville Island whites Ferry Rd Martinsburg FALLS 107 arnestown Rd Elmer School Ro 655 SPRING FARM Poolesville 4,335,000 Harrison Cluby allow Rd Westerly Rd 15 Island Ротомас © 2010 NAVTEQ © AND © 2013 Microsoft Corporation 280,000 285,000 290,000 295,000 2,900 Meters 2,900 1,450 0



APPENDIX B

MARYLAND SCIENTIFIC COLLECTION PERMIT



MARYLAND DEPARTMENT OF NATURAL RESOURCES FISHERIES SERVICE SCIENTIFIC COLLECTION PERMIT

I. PERMITTEE	2. PERMIT NUMBER	SCP201477		
TRC SOLUTIONS 650 SUFFOLK STREET LOWELL, MA 01854	3. EFFECTIVE 5-22-2014	4. EXPIRES 12-31-2014		
DOW GLOCK WINE	5. PHONE E-MAIL	978-656-3583 (WORK) sheim@tresolutions.com		

6, NAME AND TITLE OF PRINCIPAL OFFICER SCOTT HEIM, SENIOR ECOLOGIST

7. CONDITIONS AND AUTHORIZATIONS:

- A. AUTHORITY FOR THIS PERMIT IS UNDER THE ANNOTATED CODE OF MARYLAND §4-212. THE CONDITIONS IN STATE LAW AND REGULATIONS ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY OF THIS PERMIT IS SUBJECT TO COMPLIETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS, AND CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, FEDERAL, LOCAL OR OTHER STATE LAWS.
- B. YOU MUST REPORT THE COLLECTION OF ANY MARKED FISH TO THE APPROPRIATE AGENCY. MARKINGS MAY INCLUDE FIN CLIPS, STREAMER OR FLOY TAGS, ETC.
- C. YOU MUST CONTACT THE DEPARTMENT OF NATURAL RESOURCES POLICE AT 410-260-8940 TO LET THEM KNOW WHEN YOU WILL BE OPERATING IN MARYLAND WATERS. THIS ELIMINATES UNNECESSARY POLICE INVESTIGATIONS.
- D. THIS PERMIT DOES NOT AUTHORIZE THE COLLECTION, SALVAGE, POSSESSION OR TRANSPORTATION OF ANY SPECIES CLASSIFIED AS PROHIBITED, THREATENED OR ENDANGERED AT THE STATE OR FEDERAL LEVEL (EXCEPT AS LISTED BELOW).
- E. PROJECT DESCRIPTION: COLLECTION OF FISH FROM THREE PONDS FOR CONTAMINENT ANAYLSIS TO ASSESS IMPACT OF EMISSIONS FROM THE MONTGOMERY COUNTY SOLID WASTE RESOURCE RECOVERY FACILITY.
- F. COLLECTION IS PERMITTED OF UP TO 10 LARGEMOUTH BASS AND 50 BLUEGILL SUNFISH; UP TO 20 OF ANY OTHER (NON-ENDANGERED) SPECIES MAY BE COLLECTED IF NECESSARY.
- G. ALL FISH HELD IN CAPTIVITY MUST BE SACRIFICED. DO NOT RETURN TO STATE WATERS.
- H. PRIOR PERMISSION TO SAMPLE IS REQUIRED FROM BOTH PRIVATE PROPERTY OWNERS AND MONTGOMERY COUNTY.
- I. GILL NET RESTRICTIONS: GILL NETS ARE NOT PERMITTED TO BE SET FOR MORE THAN TWO (2) HOURS.
- J. SAMPLING AND COLLECTION OF FISH USING SEINES, GILL NETS AND HOOK & LINE IS PERMITTED ACCORDING TO SECTIONS 7A-1 (SEE ABOVE) IN THREE PONDS IN MONTGOMERY COUNTY FOR PURPOSES OF CONTAMINENT ANALYSIS.
- K. SPECIES COLLECTED AND/OR HELD UNDER THIS PERMIT ARE NOT PERMITTED FOR PERSONAL CONSUMPTION OR SALE.
- 8. LIST OF COLLECTORS IN ADDITION TO THE PRINCIPAL OFFICER (at least one collector on site must be earrying a copy of this permit);

MATT WYANT

KEVIN O'BRION

9. REPORTING REQUIREMENTS:

SUMMARY REPORT OF PERMIT ACTIVITY DUE BY JANUARY 31, 2015

ISSUED BY

Ruhard Bolin

PERMIT COORDINATOR 410-260-8317 12-31-2014

EXPIRES

APPENDIX C

DATA VALIDATION MEMORANDUMS



Memorandum

To:

Karen Vetrano

From:

Paula DiMattei

CC:

Elizabeth Denly

Date:

December 11, 2014

Subject:

Inorganic and Wet Chemistry Data Validation Review: Montgomery County

RRF/Dickerson, MD site: Laboratory Project Nos: L1413507 and L1413508

SUMMARY

Limited validation was performed on the data for seven surface water samples, seven sediment samples, three milk samples, six hay samples, 10 whole body fish tissue samples and 10 fillet fish samples collected at the Montgomery County site in Dickerson, Maryland. The samples were collected on June 17-19, 2014 and submitted to Alpha Analytical in Mansfield, Massachusetts for analysis. The samples were analyzed for select total and/or dissolved metals using SW-846 Methods 6020A/7470A/7471B, total organic carbon (TOC) using the Lloyd Kahn method, percent lipids using the NOAA Technical Memorandum NOS ORCA 130 (March 1998) and/or total hardness using Standard Methods SM 2340B. The laboratory reported the results under laboratory project numbers L1413507 and L1413508.

The sample results were assessed using the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review," January 2010.

In general, the data appear valid as reported and may be used for decision-making purposes. The following issues were noted which may have a minor impact on the data usability:

• The positive results for TOC in select sediment samples were qualified as estimated biased low (J-) due to a calibration nonconformance.

Arsenic (total and dissolved) and lead (total) in select surface water and milk samples, arsenic and
nickel in select whole body and fillet fish samples, and beryllium in select hay samples were
qualified as nondetects at the reporting limit (RL) due to laboratory blank contamination.

• Arsenic (total and dissolved) in select surface water and milk samples, arsenic, nickel and chromium in select whole body and fillet fish samples, and chromium in select hay samples were qualified as estimated biased high (J+) due to laboratory blank contamination.

• The positive and nondetect results for mercury in select milk and whole body and fillet fish samples were qualified as estimated biased low (J-, UJ) due to low matrix spike/matrix spike duplicate (MS/MSD) recoveries.

The positive result for arsenic in milk sample JFMo2 was qualified as estimated biased high (J+) due to high recoveries in the MS/MSD analyses.

• The positive results for arsenic in all sediment samples were qualified as estimated (J) due to laboratory duplicate variability.

• The positive and nondetect results for total and dissolved lead in surface water samples LFSW01, LFSW02, LFSW03 and CPSW02 were qualified as estimated (J, UJ) since the dissolved results were greater than the total results.

• The positive results for total and dissolved arsenic in surface water sample CPSWo2 were qualified as estimated (J) since the dissolved results were greater than the total results.

Memorandum December 11, 2014 Page 2 of 12

> Potential uncertainty exists for select results which were below the RL, but greater than or equal to the method detection limit (MDL).

SAMPLES

Samples included in this review are listed below:

L1413507

EB₀₁

Surface water:		LFSW02	LFSW031	YFSW01	YFSW02
Sediment:	CPSW01 LFSD01 CPSD01	CPSW02 LFSD02 CPSD02	LFSD03 ²	YFSD01	YFSD02
Milk:	JFM01	JFM02	JFMo3 ³		
¹ Field duplicate	of LFSW02	² Field duplicate	of LFSD02	³ Field duplicate	of JFM01

L1413508

Hay:	LFH01	LFH02	LFH03 ⁴	JFH01	JFH02	MFH01
Blue Gill Who		LEDGee	YFBG01	YFBG02	CPBG01	
	LFBG01 CPBG02	LFBG02	YFBG01	IFBG02	CI BGOI	
Large Mouth	Bass Whole Bod					
J	LFLMB01	LFLMB02	CPLMB01	CPLMB02		
Blue Gill Fille	t:			_		
•	LFBG01-F	LFBG02-F	YFBG01-F/YF	BG02-F	·	
	CPBG01-F	CPBG02-F	8			
Large Mouth	Bass Fillet:					
U	LFLMB01-F	LFLMB02-F	CPLMB01-F	CPLMB02-F		

4Field duplicate of LFH01

REVIEW ELEMENTS

Sample data were reviewed for the following parameters:

- Agreement of analyses conducted with chain-of-custody requests
- Data completeness
- Holding times and sample preservation
- Initial and continuing calibrations
- Blanks
- Matrix spike/matrix spike duplicate (MS/MSD) results
- Laboratory control sample (LCS) results
- Laboratory duplicate results
- Field duplicate results
- ICP serial dilution results



Memorandum December 11, 2014 Page 3 of 12

- Total and dissolved metals results
- Reporting limits and sample results

DISCUSSION

Agreement of Analyses Conducted with Chain-of-Custody Requests

Sample reports were checked to verify that the results corresponded to analytical requests as designated on the chain-of-custody (COC) and any correspondence between TRC and the laboratory. The following discrepancies were noted.

- Sample MFHo1 was received by the laboratory but was not listed on the COC. The laboratory was directed to proceed with the metals and percent lipids analyses for this sample.
- According to the sample receipt form, the tissue samples were not frozen upon receipt at the laboratory. However, the laboratory confirmed that the samples were indeed frozen upon receipt and updated the documentation accordingly.

Data Completeness

The data package was found to be complete as received from the laboratory.

Holding Times and Sample Preservation

All samples were prepared and analyzed within the method-specified holding times. The cooler temperatures were within the acceptance criteria upon sample receipt at the laboratory.

Initial and Continuing Calibrations

All correlation coefficients were within the acceptance criteria in the initial calibrations associated with the samples in this data set. All initial and continuing calibration verifications were within criteria with the following exception.

CCV	Analyte	% Recovery	Associated Samples
7/9/14 10:15	тос	61	LFSD03, YFSD01, YFSD02, CPSD01, CPSD02

The positive results for TOC in the above-listed samples were qualified as estimated biased low (J-).

Blanks

The tables below list the contamination detected and the resulting validation actions. The maximum concentrations of contamination for all associated samples were used to establish the validation actions.



	Service I	aboratory Project ID	: L1413507
Analyte ¹	Maximum Blank Concentration	Blank ID: Associated Samples	Validation Action
Arsenic (total)	0.00027 J mg/L	MB (WG703169-1): EB01, LFSW01, LFSW02, LFSW03,	The positive arsenic results in all associated samples were qualified as estimated biased high (J+). The result for arsenic in sample CPSW02 was subsequently qualified as estimated (J) due to a total/dissolved metals nonconformance; therefore, the arsenic result in sample CPSW02 is qualified with the overall qualifier (J).
Lead (total)	0.00009 J mg/L	YFSW01, YFSW02, CPSW01, CPSW02	The positive lead results in samples LFSW01, LFSW02, LFSW03, YFSW02, CPSW01 and CPSW02 were qualified as nondetect (U) at the RL. No validation actions were required on samples YFSW01 and EB01 since lead was detected at a concentration >10x the blank concentration.
Arsenic (dissolved)	o.ooo28 J mg/L	CCB2 (7/9/14 10:21): LFSW01, LFSW02, LFSW03, YFSW01, YFSW02, CPSW01, CPSW02	The positive arsenic (dissolved) result in sample YFSW02 was qualified as nondetect (U) at the RL. The positive arsenic (dissolved) results in samples LFSW01, LFSW02, LFSW03, YFSW01, CPSW01 and CPSW02 were qualified as estimated biased high (J+). The result for arsenic (dissolved) in sample CPSW02 was subsequently qualified as estimated (J) due to a total/dissolved metals nonconformance; therefore, the arsenic result in sample CPSW02 is qualified with the overall qualifier (J).
Arsenic	0.000224 J mg/L	CCB1 (7-10-14 17:37): JFM01, JFM02, JFM03	The positive arsenic results in samples JFM01 and JFM03 were qualified as nondetect (U) at the RL. The positive arsenic result in sample JFM02 was qualified as estimated biased high (J+).
Lead	0.00006 J mg/L	MB (WG703170-1): JFM01, JFM02, JFM03	The positive lead result in sample JFM01 was qualified as nondetect (U) at the RL. No validation actions were required on the remaining samples since lead was not detected.
Arsenic	0.051 mg/kg	EBo1:	No validation actions were required since all associated results for arsenic were >10x the blank concentration.
Beryllium	o.0045 J mg/kg	LFSD01, LFSD02, LFSD03, YFSD01, YFSD02, CPSD01,	No validation actions were required since all associated results for beryllium were >10x the blar concentration.
Cadmium	0.0025 J mg/kg	CPSDo2	No validation actions were required since all associated results for cadmium were >10x the blar concentration.



Laboratory Project ID: L1413507						
Analyte ¹	Maximum Blank Concentration	Blank ID: Associated Samples	Validation Action			
Chromium	0.126 mg/kg		No validation actions were required since all associated results for chromium were >10x the blank concentration.			
Lead	0.114 mg/kg		No validation actions were required since all associated results for lead were >10x the blank concentration.			
Nickel	0.098 mg/kg		No validation actions were required since all associated results for nickel were >10x the blank concentration.			

	Laboratory Project ID: L1413508							
Analyte Maximum Blank Concentration		Blank ID: Associated Samples	Validation Action					
Arsenic	0.014 mg/kg	MB (WG706876-1): LFBG01, LFBG02, LFLMB01, YFBG01, YFBG02, CPBG01, CPBG02, CPLMB01,	The positive arsenic results in samples LFLMB01, YFBG02, CPBG01, CPBG02, CPLMB01, CPLMB02, and LFLMB02 were qualified as nondetect (U) at the RL. The positive arsenic result in sample LFBG02 was qualified as estimated biased high (J+). No validation actions were required for the remaining samples (LFBG01 and YFBG01) since results for arsenic were >10x the blank concentration.					
Chromium	0.056 mg/kg	CPLMB02, LFLMB02	The positive chromium results in samples LFLMB01, CPLMB01 and CPLMB02 were qualified as estimated biased high (J+). No validation actions were required for the remaining samples since results for chromium were >10x the blank concentration.					
Chromium	0.029 mg/kg	MB (WG705829-1): LFBG01-F, LFBG02-F, LFLMB01-F, YFBG01- F/YFBG02-F, CPBG01-F, CPBG02-F, CPLMB01-F, CPLMB02-F, LFLMB02-F	The positive chromium results in samples CPBG01-F and CPBG02-F were qualified a estimated biased high (J+). No validation actions were required for the remaining samples since results for chromium were >10x the blank concentration.					



		Laboratory Project ID: L141	13508
Analyte	Maximum Blank Concentration	Blank ID: Associated Samples	Validation Action
Nickel	0.012 mg/kg	a magazine esta di	The positive nickel results in samples CPBGo2-F and CPLMBo2-F were qualified as nondetect (U) at the RL. The positive nickel result in sample CPBGo1-F was qualified as estimated biased high (J+). No validation actions were required for the remaining samples since results for nickel were >10x the blank concentration.
Arsenic	0.0099 mg/kg	CCB1 (7-27-14 10:34): LFLMB01, CPBG02, CPLMB01, CPLMB02	The positive arsenic results in samples LFLMB01, CPBG02, CPLMB01 and CPLMB02 were qualified as nondetect (U) at the RL.
Arsenic	0.0070 mg/kg	CCB3 (7-27-14 11:08): LFLMB02	The positive arsenic result in sample LFLMB02 was qualified as nondetect (U) at the RL.
Arsenic	0.0077 mg/kg	CCB4 (7-27-14 11:27): LFBG01-F, LFBG02-F, LFLMB01-F, YFBG01-F/YFBG02-F, CPBG01-F, CPBG02-F	The positive arsenic results in samples LFBG01-F, LFBG02-F, LFLMB01-F, YFBG01-F/YFBG02-F, CPBG01-F and CPBG02-F were qualified as nondetect (U) at the RL.
Arsenic	0.0072 mg/kg	CCB6 (7-27-14 11:59): CPLMB01-F, CPLMB02-F, LFLMB02-F	The positive arsenic results in samples CPLMB01-F, CPLMB02-F and LFLMB02-F were qualified as nondetect (U) at the RL.
Arsenic	0.024 mg/kg	MB (WG705785-1): LFH01, LFH02, LFH03, JFH01, JFH02, MFH01	The positive arsenic results in samples LFH02, LFH03, JFH02 and MFH01 were qualified as nondetect (U) at the RL. No validation actions were required for the remaining samples since arsenic was not detected.
Chromium	0.0079 mg/kg	CCB2 (7-17-14 12:36): LFH01, LFH02, LFH03, JFH01, JFH02, MFH01	The positive chromium results in samples JFH01, JFH02 and MFH01 were qualified as estimated biased high (J+). No validation actions were required for the remaining samples since results for chromium were >10x the blank concentration.
Beryllium	0.0030 mg/kg	ICB (7-17-14 12:06): LFH01, LFH02, LFH03, JFH01, JFH02, MFH01	The positive beryllium results in samples JFH01 and JFH02 were qualified as nondetect (U) at the RL. No validation actions were required for the remaining samples since beryllium was not detected.



Qualification of the data was performed as follows:

- Sample results < the RL were qualified as nondetects (U) at the RL if detected in the associated blank.
- Sample results ≥ RL were qualified as estimated biased high (J+) if the result was ≤10x the concentration detected in the blank.
- Qualification was not required for nondetect results or for positive results >10x the concentration detected in the blank.

MS/MSD Results

MS/MSD analyses were performed as summarized in the following table:

Sample ID	MS/MSD Analyses
CPSW01	Total and dissolved metals, total and dissolved mercury, hardness
JFM01	Total metals, total mercury
CPSD01	Metals, mercury, TOC
JFH02	Metals, mercury
CPLMB02	Metals, mercury
CPLMB02-F	Metals, mercury

The following table summarizes the percent recoveries (%Rs) which were outside of the acceptance criteria in the MS/MSD analyses.

Sample ID	Analyte	MS/MSD % Recovery	QC Limits (%)	Associated Samples	Validation Action
JFM01	Mercury	53/51	75-125	JFM01, JFM02 JFM03	The nondetect results for mercury in all associated samples were qualified as estimated (UJ).
JFM01	Arsenic	137/137	75-125	JFM01, JFM02, JFM03	The positive result for arsenic in sample JFMo2 was qualified as estimated biased high (J+). The positive results for arsenic in samples JFMo1 and JFMo3 were previously qualified as nondetect (U) at the RL; therefore, qualification as a result of the high bias in the MS and MSD analyses is not required.



Sample ID	Analyte	MS/MSD % Recovery	QC Limits (%)	Associated Samples	Validation Action
CPLMB02	Mercury	68/54	80-120	LFBG01, LFBG02, LFLMB01, YFBG01, YFBG02, CPBG01, CPBG02, CPLMB01, CPLMB02, LFLMB02	The positive results for mercury in all associated samples were qualified as estimated biased low (J-).
CPLMB02-F	Mercury	51/32	80-120	LFBG01-F, LFBG02-F, LFLMB01-F, CPBG02-F, CPLMB01-F, CPLMB02-F, LFLMB02-F, YFBG01- F/YFBG02-F	The positive results for mercury in all associated samples were qualified as estimated biased low (J-).

LCS Results

All criteria were met.

Laboratory Duplicate Results

Laboratory duplicate analyses were performed as summarized in the following table:

Sample ID	Laboratory Duplicate Analyses
LFSW03	Total and dissolved metals, total and dissolved mercury, hardness
JFM03	Total metals, total mercury
JFM01	Lipids
LFSD03	Metals, mercury, TOC
LFH03	Metals, mercury
LFBG02	Metals, mercury
CPLMB02	Metals, mercury
CPLMB01	Lipids
CPLMB02-F	Metals, mercury
LFBG02-F	Metals, mercury

The following table summarizes the relative percent differences (RPDs) which were outside of the acceptance criteria in the laboratory duplicate analyses.



Sample ID	Analyte	RPD (%)	QC Limits	Associated Samples	Validation Action
LFSD03	Arsenic	23	20	LFSD01, LFSD02, LFSD03, YFSD01, YFSD02, CPSD01, CPSD02	The positive results for arsenic in all associated samples were qualified as estimated (J).

Field Duplicate Results

Samples LFHo₁/LFHo₃ (hay), LFSWo₂/LFSWo₃ (surface water), LFSDo₂/LFSDo₃ (sediment) and JFMo₁/JFMo₃ (milk) were submitted as the field duplicate pairs with this sample data set. The following tables summarize the RPDs of the detected analytes in the field duplicate pairs. Several RPDs were not calculable (NC) due to a nondetect result in one of the two samples. The calculated RPDs were within the acceptance criteria in all field duplicate pairs.

Analyte	LFSW02 (mg/L)	LFSW03 (mg/L)	RPD (%)
Arsenic (total)	0.00129	0.00126	2.4
Beryllium (total)	0.00050 U	0.00010 J	NC
Cadmium (total)	0.00001 J	0.00050 U	NC
Chromium (total)	0.00063 J	0.00063 J	0.0
Nickel (total)	0.00266	0.00268	0.7
Hardness	50.7	51.2	1.0
Arsenic (dissolved)	0.00103	0.0009	13.5
Lead (dissolved)	0.00038 J	0.00037 J	2.7
Nickel (dissolved)	0.00236	0.00238	0.8

NC: not calculable

Criteria: For results ≥ 5x RL, RPD <30

For results <5x RL, the difference between the results must be <RL

Analyte	LFSD02 (mg/kg)	LFSD03 (mg/kg)	RPD (%)
Arsenic	0.914	1.31	35.6
Beryllium	0.883	1.10	21.9
Cadmium	0.067	0.087	26.0
Chromium	18.6	20.6	10.2
Lead	14.3	17.1	17.8
Mercury	0.017	0.018	5.7
Nickel	9.36	11.7	22.2

NC: not calculable

Criteria : For results $\geq 5x$ RL , RPD < 50

For results <5x RL, the difference between the results must be <2x RL



Analyte	JFM01 (mg/L)	JFM03 (mg/L)	RPD (%)
Cadmium	0.00027 J	0.0050 U	NC
Chromium	0.178	0.183	2.8
Nickel	0.01669	0.01648	1.3

NC: not calculable

Criteria: For results $\geq 5x RL$, RPD <30

For results <5x RL, the difference between the results must be <RL

Analyte	LFH01 (mg/kg)	LFH03 (mg/kg)	RPD (%)
Cadmium	0.026 J	0.028 J	7.4
Chromium	0.535	0.487	9.4
Lead	0.079 J	0.051 J	43.1
Nickel	0.164 J	0.160 J	2.5

NC: not calculable

Criteria: For results $\geq 5x$ RL, RPD < 50

For results <5x RL, the difference between the results must be <2x RL

ICP Serial Dilution Results

ICP serial dilution analysis was not performed on samples in this data set. No data validation actions were required on this basis.

Total and Dissolved Metals Results

The total and dissolved metals results were evaluated to ensure that the concentration of each dissolved metal was not greater than the concentration of each total metal when detected at concentrations greater than 5x the MDL. All criteria were met with the following exceptions.

- The results for total lead in samples LFSW01, LFSW02, LFSW03 and CPSW02 were qualified as
 nondetect at the RL due to blank contamination. Dissolved lead was present in these samples at
 concentrations greater than 5x the MDL. Consequently, the positive and nondetect results for total
 and dissolved lead in these samples were qualified as estimated (J and UJ, respectively).
- The result for dissolved arsenic in sample CPSWo2 was greater than the total result by more than 20%. The positive results for total and dissolved arsenic in sample CPSWo2 were qualified as estimated (J).

Reporting Limits and Sample Results

Select metals results were reported which were below the below the RL, but greater than or equal to the MDL. These results were qualified by the laboratory as estimated (J).

Diluted analyses were required to avoid exceeding the calibration range or as a result of matrix interferences for the samples and analytes summarized in the table below. RLs were adjusted accordingly.



Analyte	Dilution Factor	Affected Samples						
Arsenic Beryllium Cadmium Chromium Nickel	2-fold	LFSD01, LFSD02, LFSD03, YFSD01, YFSD02, CPSD01, CPSD02						
Lead	10-fold	The same of						
Arsenic Beryllium Cadmium Chromium Lead Nickel	10-fold	JFM01, JFM02, JFM03						
Mercury	2-fold							
Arsenic Beryllium Cadmium Chromium Lead Nickel	10-fold	LFH01, LFH02, LFH03, JFH01, JFH02, CPLMB02, MFH01						
Arsenic Beryllium Cḥromium Nickel	2-fold	LFBG01, LFBG02, YFBG01, YFBG02, CPBG01						
Cadmium Lead	10-fold							
Arsenic Cadmium Chromium Lead Nickel	10-fold	LFLMB01, CPBG02, CPLMB01, LFLMB02						
Beryllium	2-fold							
Arsenic Beryllium Cadmium Chromium Lead Nickel	2-fold	LFBG01-F, LFBG02-F, LFLMB01-F, YFBG01-F/YFBG02-F, CPLMB01-F, CPLMB02-F, LFLMB02-F						



Analyte	Dilution Factor	Affected Samples
Arsenic Chromium Nickel	10-fold	CPBG01-F, CPBG02-F
Beryllium Cadmium Lead	2-fold	CI BG01 1, OI BG02 1



Qualified Form Is

Senai_No:07281413:09

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT Lab Number:

L1413508

Report Date:

07/28/14

Lab ID:

L1413508-01

DICKERSON, MD

Date Collected:

06/17/14 08:05

Client ID:

06/18/14

LFH01

Date Received: Field Prep:

Not Specified

Sample Location: Matrix:

Percent Solids:

Tissue

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab		The same of the sa					, T			
Arsenic, Total	ND		mg/kg	0.588	0.033	₌ 10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.294	0.023	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD
Cadmium, Total	0.026	J	mg/kg	0.118	0.011	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD
Chromium, Total	0.535	مها مها	mg/kg	0.294	0.064	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD
Lead, Total	0.079	j	mg/kg	0.118	0.014	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD
Mercury, Total	ND		mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 15:54	EPA 7471B	1,7471B	AK
Nickel, Total	0.164	J	mg/kg	0.294	0.069	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD

Serial_No:07281413:09

Project Name: MONTGOMERY COUNTY RRF

MONTGOMERY COUNT

Lab Number:

L1413508

06/17/14 08:25

Not Specified

Project Number:

Report Date:

Date Collected:

Date Received:

Field Prep:

07/28/14

06/18/14

Lab ID:

L1413508-02

Client ID:

Sample Location:

LFH02

Matrix:

Tissue

Percent Solids:

DICKERSON, MD

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mai	nsfield Lab	KI STONIA III.		u		1887 (1.158		too.e.			
Arsenic, Total	0.230	_	mg/kg	0.510	0.029	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.255	0.020	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD
Cadmium, Total	0.016	J	mg/kg	0.102	0.009	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD
Chromium, Total	0.991		mg/kg	0.255	0.056	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD
Lead, Total	0.355		mg/kg	0.102	0.012	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD
Mercury, Total	ND		mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 15:56	EPA 7471B	1,7471B	AK
Nickel, Total	0.520		mg/kg	0.255	0.060	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD

Senai_No:0/281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

Lab ID:

L1413508-03

Date Collected:

06/17/14 08:10

Client ID:

Date Received:

06/18/14

Sample Location:

LFH03 DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	nsfield Lab			(m) 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				W.	s, and the		nieri i
Arsenic, Total	-0.031 —		mg/kg	الب	0.029	10	07/15/14 12:00	07/17/14 13:34	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.260	0.021	10	07/15/14 12:00	07/17/14 13:34	EPA 3051A	1,6020A	PD
Cadmium, Total	0.028	J	mg/kg	0.104	0.009	10	07/15/14 12:00	07/17/14 13:34	EPA 3051A	1,6020A	PD
Chromium, Total	0.487	مه سل	mg/kg	0.260	0.057	10	07/15/14 12:00	0 07/17/14 13:34	EPA 3051A	1,6020A	PD
Lead, Total	0.051	J	mg/kg	0.104	0.013	10	07/15/14 12:00	07/17/14 13:34	EPA 3051A	1,6020A	PD
Mercury, Total	ND		mg/kg	0.005	0.004	1	07/17/14 14:00	0 07/18/14 15:59	EPA 7471B	1,7471B	AK
Nickel, Total	0.160	J	mg/kg	0.260	0.061	10	07/15/14 12:0	0 07/17/14 13:34	EPA 3051A	1,6020A	PD

Project Name: MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

Date Collected:

07/28/14

Lab ID:

L1413508-07

Client ID:

JFH01

Date Received:

06/17/14 13:20

Sample Location:

DICKERSON, MD

Field Prep:

06/18/14 **Not Specified**

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab		gradien in the second	2 1		A CONTRACTOR	\$ 100 miles				Trace - or
Arsenic, Total	ND		mg/kg	0.581	0.033	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD
Beryllium, Total	0.057	 +	mg/kg	0.291 V	0.023	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD
Cadmium, Total	0.033	J	mg/kg	0.116	0.010	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD
Chromium, Total	0.352	J+ J	mg/kg	0.291	0.063	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD
Lead, Total	0.060	J	mg/kg	0.116	0.014	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD
Mercury, Total	0.005	J	mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 16:07	EPA 7471B	1,7471B	AK
Nickel, Total	0.575		mg/kg	0.291	0.068	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD

Serial_No:07281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

Lab ID:

L1413508-08

Date Collected:

06/17/14 13:25

Client ID:

Date Received:

06/18/14

Sample Location:

JFH02

DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Ma	nsfield Lab						CT6 2+ ED0-41		10 m		
Arsenic, Total	-0.044	 -j	mg/kg	0.556 ^W	9.031	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD
Beryllium, Total	0.028		mg/kg	. 0.278 ^U	0.022	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD
Cadmium, Total	0.058	J	mg/kg	0.111	0.010	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD
Chromium, Total	0.327	1 1	mg/kg	0.278	0.060	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD
Lead, Total	0.062	J	mg/kg	0.111	0.014	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD
Mercury, Total	ND		mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 16:10	EPA 7471B	1,7471B	AK
Nickel, Total	0.640		mg/kg	0.278	0.065	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD

Serial_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT Lab Number:

L1413508

Report Date:

07/28/14

Lab ID:

L1413508-16

Client ID:

MFH01

Date Collected:

Field Prep:

06/18/14 00:00

Date Received:

06/19/14 **Not Specified**

Sample Location: Matrix:

Tissue

Percent Solids:

DICKERSON, MD

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab	(- J.				in the second	The second	153 P. A. P.		***************************************	1722
Arsenic, Total	0:270		mg/kg	0.510 ^{LL}	0.029	10	07/15/14 12:0	0 07/17/14 13:43	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.255	0.020	10	07/15/14 12:0	0 07/17/14 13:43	EPA 3051A	1,6020A	PD
Cadmium, Total	0.036	J	mg/kg	0.102	0.009	10	07/15/14 12:0	0 07/17/14 13:43	EPA 3051A	1,6020A	PD
Chromium, Total	0.385	JY V	mg/kg	0.255	0.056	10	07/15/14 12:0	0 07/17/14 13:43	EPA 3051A	1,6020A	PD
Lead, Total	0.10	J	mg/kg	0.102	0.012	10	07/15/14 12:0	0 07/17/14 13:43	EPA 3051A	1,6020A	PD
Mercury, Total	ND		mg/kg	0.005	0.004	1	07/17/14 14:0	0 07/18/14 16:28	EPA 7471B	1,7471B	AK
Nickel, Total	0.718		mg/kg	0.255	0.060	10	07/15/14 12:0	0 07/17/14 13:43	EPA 3051A	1,6020A	PD

Project Name:

MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-01

Client ID:

LFH01

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 08:05

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Percent Lipids 0.	l Lab 801	e Ministra	%	0.100	NA	1	# # # # -	07/23/14 09:00	111,-	AK



Seriai_No:07281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-02

Client ID:

LFH02

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 08:25

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfie	ld Lab	The second second		e Torgen	建 型	141 144	The -	harman and 198		1000
Percent Lipids	0.857		%	0.100	NA	1	• '	07/23/14 09:00	111,-	AK

Serial_No:0/281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-07

Client ID:

JFH01

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 13:20

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield	i Lab		The state of	-		-947	With the second	427	100 mm 41	
	61		%	0.100	NA	1	:#X	07/23/14 09:00	111,-	AK

OCHOL 140.07 20 15 10.00

Project Name:

MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-08

Client ID:

JFH02

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 13:25

Date Received:

06/18/14

Field Prep:

Parameter	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Ma Percent Lipids	nsfield Lab 2.74	%	0.100	NA	1		07/23/14 09:00	111,-	AK

Senal_INU.U/ 20 14 10.09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-16

Client ID:

MFH01

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/18/14 00:00

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Percent Lipids 1.	l Lab 61		%	0.100	NA	% (° 4) 1		07/23/14 09:00	111,-	AK

Senai_No:07281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

Lab ID:

L1413508-04

Date Collected:

06/17/14 11:00

Client ID:

Date Received:

06/18/14

Sample Location:

LFBG01

Field Prep:

SAMPLE RESULTS

Not Specified

Matrix:

DICKERSON, MD Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab	eng Trend	0.5		1 13	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	a fragitus of the a	and the second	and the second		() - () · ()
Arsenic, Total	0.223		mg/kg	0.108	0.006	2		07/27/14 09:43	EPA 3051A	1,6020A	PD
Beryllium, Total	0.0090	J	mg/kg	0.054	0.004	2	07/18/14 14:00	07/27/14 09:43	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.108	0.010	10	07/18/14 14:00	07/27/14 10:58	EPA 3051A	1,6020A	PD
Chromium, Total	14.7		mg/kg	0.054	0.012	2	07/18/14 14:00	07/27/14 09:43	EPA 3051A	1,6020A	PD
Lead, Total	0.094	J	mg/kg	0.108	0.013	10	07/18/14 14:00	07/27/14 10:58	EPA 3051A	1,6020A	PD
Mercury, Total	0.016	J- 1	mg/kg	0.005	0.004	1	07/09/14 14:00	07/15/14 11:40	EPA 7471B	1,7471B	AK
Nickel, Total	9.76		mg/kg	0.054	0.013	2	07/18/14 14:00	07/27/14 09:43	EPA 3051A	1,6020A	PD

Serial_No:07281413:09

Project Name: MONTGOMERY COUNTY RRF

MONTGOMERY COUNT

Lab Number:

L1413508

Project Number:

Report Date:

07/28/14

Lab ID:

L1413508-05

Client ID:

LFBG02

Date Collected: Date Received: 06/17/14 12:00

Sample Location:

DICKERSON, MD

Field Prep:

06/18/14 Not Specified

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab	NAME OF THE PARTY OF						- A STATE OF THE S		4.	
Arsenic, Total	0.109	ا الال	mg/kg	0.108	0.006	2	07/18/14 14:00	07/27/14 09:44	EPA 3051A	1,6020A	PD
Beryllium, Total	0.006	j	mg/kg	0.054	0.004	2	07/18/14 14:00	07/27/14 09:44	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.108	0.010	10	07/18/14 14:00	07/27/14 10:32	EPA 3051A	1,6020A	PD
Chromium, Total	1.08		mg/kg	0.054	0.012	2	07/18/14 14:00	07/27/14 09:44	EPA 3051A	1,6020A	PD
Lead, Total	0.088	J	mg/kg	0.108	0.013	10	07/18/14 14:00	07/27/14 10:32	EPA 3051A	1,6020A	PD
Mercury, Total	0.005	J~ 【	mg/kg	0.005	0.004	1	07/09/14 14:00	07/15/14 11:42	EPA 7471B	1,7471B	AK
Nickel, Total	0.838		mg/kg	0.054	0.013	2	07/18/14 14:00	07/27/14 09:44	EPA 3051A	1,6020A	PD

Senai_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number: MONTGOMERY COUNT **Report Date:**

Date Collected:

Date Received:

Field Prep:

07/28/14

06/18/14

06/17/14 08:40

Not Specified

Lab ID:

L1413508-06

Client ID:

LFLMB01

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Anaiyst
Total Metals - Man	sfield Lab	The second of the		4		1000				
Arsenic, Total	0.083 J	mg/kg	0.562 ^W	0.032	10	07/18/14 14:00	07/27/14 10:38	EPA 3051A	1,6020A	PD
Beryllium, Total	ND	mg/kg	0.056	0.004	2	07/18/14 14:00	07 <i>/</i> 27/14 09:51	EPA 3051A	1,6020A	PD
Cadmium, Total	ND	mg/kg	0.112	0.010	10	07/18/14 14:00	07/27/14 10:38	EPA 3051A	1,6020A	PD
Chromium, Total	1.43 1+	mg/kg	0.281	0.061	10	07/18/14 14:00	07/27/14 10:38	EPA 3051A	1,6020A	PD
Lead, Total	ND	mg/kg	0.112	0.014	10	07/18/14 14:00	07/27/14 10:38	EPA 3051A	1,6020A	PD
Mercury, Total	0.036 1-	mg/kg	0.006	0.004	1	07/09/14 14:00	07/15/14 11:50	EPA 7471B	1,7471B	AK
Nickel, Total	0.772 🌂 🛶	mg/kg	0.281	0.066	10	07/18/14 14:00	07/27/14 10:38	EPA 3051A	1,6020A	PD

Serial_No:07281413:09

Project Name: MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

Date Collected:

Date Received:

Field Prep:

07/28/14

06/19/14 **Not Specified**

06/17/14 13:40

Lab ID:

L1413508-09

Client ID:

YFBG01

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab								100 - 184 ± 200	\$1.5 p. 11	
Arsenic, Total	0.162	سن	mg/kg	0.118	0.007	2	07/18/14 14:00	07/27/14 09:52	EPA 3051A	1,6020A	PD
Beryllium, Total	0.007	J	mg/kg	0.059	0.005	2	07/18/14 14:00	07/27/14 09:52	EPA 3051A	1,6020A	PD
Cadmium, Total	0.011	j	mg/kg	0.118	0.011	10	07/18/14 14:00	07/27/14 10:40	EPA 3051A	1,6020A	PD
Chromium, Total	0.976		mg/kg	0.059	0.013	2	07/18/14 14:00	07/27/14 09:52	EPA 3051A	1,6020A	PD
Lead, Total	0.269		mg/kg	0.118	0.014	10	07/18/14 14:00	07/27/14 10:40	EPA 3051A	1,6020A	PD
Mercury, Total	4 0.023	- 1	mg/kg	0.006	0.004	1	07/09/14 14:00	07/15/14 11:54	EPA 7471B	1,7471B	AK
Nickel, Total	0.872		mg/kg	0.059	0.014	2	07/18/14 14:00	07/27/14 09:52	EPA 3051A	1,6020A	PD

Serial_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

MONTGOMERY COUNT

Lab Number:

L1413508

Project Number:

Report Date:

07/28/14

Lab ID:

L1413508-10

Date Collected:

06/17/14 13:55

Client ID:

Date Received:

06/19/14

Sample Location:

YFBG02 DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Ma	insfield Lab			atomic +	The selection	it. emp	The Law Street				
Arsenic, Total	- 0.098		mg/kg	0.111 ^U	0.006	2	07/18/14 14:00	07/27/14 09:53	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.056	0.004	2	07/18/14 14:00	07/27/14 09:53	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.111	0.010	10	07/18/14 14:00	07/27/14 10:41	EPA 3051A	1,6020A	PD
Chromium, Total	0.708		mg/kg	0.056	0.012	2	07/18/14 14:00	07/27/14 09:53	EPA 3051A	1,6020A	PD
Lead, Total	0.079	j	mg/kg	0.111	0.014	10	07/18/14 14:00	07/27/14 10:41	EPA 3051A	1,6020A	PD
Mercury, Total	0.040 4	-]	mg/kg	0.006	0.004	1	07/09/14 14:00	07/15/14 11:56	EPA 7471B	1,7471B	AK
Nickel, Total	0.741		mg/kg	0.056	0.013	2	07/18/14 14:00	07/27/14 09:53	EPA 3051A	1,6020A	PD

Senal_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

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Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

Lab ID:

L1413508-11

Client ID:

CDDC04

CPBG01

Date Collected:

06/18/14 00:00

Sample Location:

DICKERSON, MD

Date Received: Field Prep:

06/19/14 Not Specified

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab		1000	1		and the	17770			
Arsenic, Total	-0.079J	mg/kg	0.105 ^{لل}	0.006	2	07/18/14 14:00	07/27/14 09:55	EPA 3051A	1,6020A	PD
Beryllium, Total	ND	mg/kg	0.053	0.004	2	07/18/14 14:00	07/27/14 09:55	EPA 3051A	1,6020A	PD
Cadmium, Total	ND	mg/kg	0.105	0.009	10	07/18/14 14:00	07/27/14 10:42	EPA 3051A	1,6020A	PD
Chromium, Total	3.19	mg/kg	0.053	0.011	2	07/18/14 14:00	07/27/14 09:55	EPA 3051A	1,6020A	PD
Lead, Total	0.029 J	mg/kg	0.105	0.013	10	07/18/14 14:00	07/27/14 10:42	EPA 3051A	1,6020A	PD
Mercury, Total	0.037 1- 1	mg/kg	0.005	0.004	1	07/09/14 14:00	07/15/14 12:00	EPA 7471B	1,7471B	AK
Nickel, Total	2.32	mg/kg	0.053	0.012	2	07/18/14 14:00	07/27/14 09:55	EPA 3051A	1,6020A	PD

Serial_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

MONTGOMERY COUNT

Lab Number:

L1413508

Project Number:

Report Date:

07/28/14

Lab ID:

L1413508-12

DICKERSON, MD

Date Collected:

06/18/14 00:00

Client ID:

Date Received:

Field Prep:

06/19/14

Sample Location:

CPBG02

Not Specified

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab					497 727			MARTIN WA		
Arsenic, Total	~0:091~~~		mg/kg	0.575 ^U	0.032	10	07/18/14 14:00	07/27/14 10:44	EPA 3051A	1,6020A	PD
Beryllium, Total	ND .		mg/kg	0.058	0.005	2	07/18/14 14:00	07/27/14 09:56	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.115	0.010	10	07/18/14 14:00	07/27/14 10:44	EPA 3051A	1,6020A	PD
Chromium, Total	4.55		mg/kg	0.287	0.063	10	07/18/14 14:00	07/27/14 10:44	EPA 3051A	1,6020A	PD
Lead, Total	0.028	J	mg/kg	0.115	0.014	10	07/18/14 14:00	07/27/14 10:44	EPA 3051A	1,6020A	PD
Mercury, Total	0.051 나	- 1	mg/kg	0.005	0.004	1	07/09/14 14:00	07/15/14 12:08	EPA 7471B	1,7471B	AK
Nickel, Total	3.05		mg/kg	0.287	0.067	10	07/18/14 14:00	07/27/14 10:44	EPA 3051A	1,6020A	PD

Senai_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

.....

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

Lab ID:

L1413508-13

Date Collected:

06/18/14 00:00

Client ID:

CPLMB01

Date Received: Field Prep:

06/19/14 Not Specified

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result Qual	ifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab			,	MCSP	A MARKET TO SERVICE AND A SERV				
Arsenic, Total	0.047 J	mg/kg	0.575	0.032	10	07/18/14 14:0	0 07 <i>/</i> 27/14 10:45	EPA 3051A	1,6020A	PD
Beryllium, Total	ND	mg/kg	0.058	0.005	2	07/18/14 14:0	0 07 <i>/</i> 27/14 09:57	EPA 3051A	1,6020A	PD
Cadmium, Total	ND	mg/kg	0.115	0.010	10	07/18/14 14:0	0 07 <i>1</i> 27/14 10:45	EPA 3051A	1,6020A	PD
Chromium, Total	1.67 ゴオ 🗸	mg/kg	0.287	0.063	10	07/18/14 14:0	0 07/27/14 10:45	EPA 3051A	1,6020A	PD
Lead, Total	ND ,	mg/kg	0.115	0.014	10	07/18/14 14:0	0 07 <i>/</i> 27/14 10:45	EPA 3051A	1,6020A	PD
Mercury, Total	0.140 🗸	mg/kg	0.006	0.004	1	07/09/14 14:0	0 07/15/14 12:12	EPA 7471B	1,7471B	AK
Nickel, Total	1.10 5 W	mg/kg	0.287	0.067	10	07/18/14 14:0	0 07 <i>/</i> 27/14 10:45	EPA 3051A	1,6020A	PD

Senai_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

Lab Number:

L1413508

06/18/14 00:00

Not Specified

Project Number:

MONTGOMERY COUNT

Report Date:

Date Collected:

Date Received:

Field Prep:

07/28/14

06/19/14

Lab ID:

L1413508-14

Client ID:

CPLMB02

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result Qua	alifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab	TOTAL TRANSPORT	SEPHINE	1	in contain				1417257	
Arsenic, Total	0.041	J mg/kg	0.575	0.032	10	07/18/14 14:0	0 07/27/14 10:46	EPA 3051A	1,6020A	PD
Beryllium, Total	ND	mg/kg	0.287	0.023	10	07/18/14 14:0	0 07 <i>1</i> 27/14 10:46	EPA 3051A	1,6020A	PD
Cadmium, Total	ND	mg/kg	0.115	0.010	10	07/18/14 14:0	0 07 <i>/</i> 27/14 10:46	EPA 3051A	1,6020A	PD
Chromium, Total	1.41 5+ 1	mg/kg	0.287	0.063	10	07/18/14 14:0	0 07/27/14 10:46	EPA 3051A	1,6020A	PD
Lead, Total	ND	mg/kg	0.115	0.014	10	07/18/14 14:0	0 07/27/14 10:46	EPA 3051A	1,6020A	PD
Mercury, Total	0.164 J-	mg/kg	0.006	0.004	1	07/09/14 14:0	0 07/15/14 12:16	EPA 7471B	1,7471B	AK
Nickel, Total	0.783	mg/kg	0.287	0.067	10	07/18/14 14:0	0 07/27/14 10:46	EPA 3051A	1,6020A	PD

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

Lab ID:

L1413508-15

Date Collected:

06/19/14 09:30

Client ID:

LFLMB02

Date Received:

06/20/14

Sample Location:

DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab				P. Aldrews	14			The state of the s	- E	467
Arsenic, Total	0.078		mg/kg	0.521 L	0.029	10	07/18/14 14:00	0 07/27/14 10:59	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.052	0.004	2	07/18/14 14:00	0 07/27/14 10:00	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.104	0.009	10	07/18/14 14:00	0 07/27/14 10:59	EPA 3051A	1,6020A	PD
Chromium, Total	3.56		mg/kg	0.260	0.057	10	07/18/14 14:00	0 07/27/14 10:59	EPA 3051A	1,6020A	PD
Lead, Total	0.037	J	mg/kg	0.104	0.013	10	07/18/14 14:0	0 07 <i>/</i> 27/14 10:59	EPA 3051A	1,6020A	PD
Mercury, Total	ل 800.0	- 1	mg/kg	0.006	0.004	1	07/09/14 14:0	0 07/15/14 12:31	EPA 7471B	1,7471B	AK
Nickel, Total	2.53		mg/kg	0.260	0.061	10	07/18/14 14:0	0 07/27/14 10:59	EPA 3051A	1,6020A	PD

Project Name: MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

Date Collected:

Date Received:

Field Prep:

07/28/14

06/18/14

06/17/14 11:00

Not Specified

Lab ID:

L1413508-17

Client ID:

LFBG01-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mai	nsfield Lab		\$15m	an registration	A STATE OF THE STA			Mary Control	The state of the s	23	
Arsenic, Total	0.029		mg/kg	ار 0.116		2	07/15/14 16:00	07/27/14 11:33	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.058	0.005	2	07/15/14 16:00	07/27/14 11:33	EPA 3051A	1,6020A	PD
Cadmium, Total	0.002	J	mg/kg	0.023	0.002	2	07/15/14 16:00	07/27/14 11:33	EPA 3051A	1,6020A	PD
Chromium, Total	5.85		mg/kg	0.058	0.013	2	07/15/14 16:00	07/27/14 11:33	EPA 3051A	1,6020A	PD
Lead, Total	0.006	J	mg/kg	0.023	0.003	2	07/15/14 16:00	07/27/14 11:33	EPA 3051A	1,6020A	PD
Mercury, Total	0.025 ノー	. 1	mg/kg	0.005	0.004	1	07/17/14 14:00	07/21/14 12:03	EPA 7471B	1,7471B	AK
Nickel, Total	2.94		mg/kg	0.058	0.014	2	07/15/14 16:00	07/27/14 11:33	EPA 3051A	1,6020A	PD

Senal_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

MONTGOMERY COUNT

Lab Number:

L1413508

Project Number:

Report Date:

07/28/14

Lab ID:

L1413508-18

Client ID:

Date Collected:

06/17/14 12:00

Date Received:

06/18/14

Sample Location:

LFBG02-F

DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Ma	nsfield Lab	eron aradak		Man	1	Mar 31/15 www.ally-	to a second to the second	Service de la companya della companya della companya de la companya de la companya della company			4
Arsenic, Total	-0.031	J -	mg/kg	0.109	0.006	2	07/15/14 16:00	07/27/14 11:35	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.054	0.004	2	07/15/14 16:00	07/27/14 11:35	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.022	0.002	2	07/15/14 16:00	07/27/14 11:35	EPA 3051A	1,6020A	PD
Chromium, Total	1.30		mg/kg	0.054	0.012	2	07/15/14 16:00	07/27/14 11:35	EPA 3051A	1,6020A	PD
Lead, Total	ND	,	mg/kg	0.022	0.003	2	07/15/14 16:00	07/27/14 11:35	EPA 3051A	1,6020A	PD
Mercury, Total	0.014 J-	4	mg/kg	0.005	0.004	1	07/17/14 14:00	07/21/14 12:06	EPA 7471B	1,7471B	AK
Nickel, Total	0.449		mg/kg	0.054	0.013	2	07/15/14 16:00	07/27/14 11:35	EPA 3051A	1,6020A	PD

Serial_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT Lab Number:

L1413508

Report Date:

07/28/14

Lab ID: Client ID: L1413508-19

LFLMB01-F

Date Collected:

06/17/14 08:40

Sample Location:

DICKERSON, MD

Date Received: Field Prep:

06/18/14 **Not Specified**

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Ma	nsfield Lab		K S. C.	2010	1	H 14.2		400		The state of the s	
Arsenic, Total	-0:023 -		mg/kg	0.112	0.006	2	07/15/14 16:0	0 07 <i>/</i> 27/14 11:38	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.056	0.004	2	07/15/14 16:0	0 07/27/14 11:38	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.023	0.002	2	07/15/14 16:0	0 07/27/14 11:38	EPA 3051A	1,6020A	PD
Chromium, Total	1.77		mg/kg	0.056	0.012	2	07/15/14 16:0	0 07/27/14 11:38	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.023	0.003	2	07/15/14 16:0	0 07 <i>1</i> 27/14 11:38	EPA 3051A	1,6020A	PD
Mercury, Total	ىل 0.033	-1	mg/kg	0.006	0.004	1	07/17/14 14:0	0 07/21/14 12:14	EPA 7471B	1,7471B	AK
Nickel, Total	0.799		mg/kg	0.056	0.013	2	07/15/14 16:0	0 07 <i>/</i> 27/14 11:38	EPA 3051A	1,6020A	PD

Senai_No:u/281413:u9

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT Lab Number:

L1413508

Report Date:

Date Collected:

Date Received:

Field Prep:

07/28/14

06/19/14

06/17/14 13:40

Not Specified

Lab ID:

L1413508-20

Client ID:

YFBG01-F / YFBG02-F

Sample Location:

Matrix:

Tissue

Percent Solids:

DICKERSON, MD

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Ma	nsfield Lab	Ne o		I.	in the same			the same	- C-stage	Marie Marie	CV SIMU
Arsenic, Total	0.063		mg/kg	0.108	0.006	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.054	0.004	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.022	0.002	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD
Chromium, Total	0.893		mg/kg	0.054	0.012	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD
Lead, Total	0.004	⊛ J	mg/kg	0.022	0.003	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD
Mercury, Total	0.044	1-	mg/kg	0.006	0.004	1	07/17/14 14:00	07/21/14 12:17	EPA 7471B	1,7471B	AK
Nickel, Total	0.162	yw	mg/kg	0.054	0.013	2	07/15/14 16:00	07 <i>1</i> 27/14 11:40	EPA 3051A	1,6020A	PD

Senal_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

Lab Number:

L1413508

06/18/14 00:00

Not Specified

Project Number:

MONTGOMERY COUNT

Report Date:

Date Collected:

Date Received:

Field Prep:

07/28/14

06/19/14

Lab ID:

L1413508-22

Client ID:

CPBG01-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mai	nsfield Lab		March 1					To the state of th	Total of the state of		
Arsenic, Total	0.037		mg/kg	0.505 U	0.028	10	07/15/14 16:00	07/27/14 11:16	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.051	0.004	2	07/15/14 16:00	07/27/14 11:41	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.020	0.002	2	07/15/14 16:00	07/27/14 11:41	EPA 3051A	1,6020A	PD
Chromium, Total	1.14	7+1	mg/kg	0.252	0.055	10	07/15/14 16:00	07/27/14 11:16	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.020	0.002	2	07/15/14 16:00	07/27/14 11:41	EPA 3051A	1,6020A	PD
Mercury, Total	0.048 👃	- 4	mg/kg	0.006	0.004	1	07/17/14 14:00	07/21/14 12:21	EPA 7471B	1,7471B	AK
Nickel, Total	0.339	1+1	mg/kg	0.252	0.059	10	07/15/14 16:00	07/27/14 11:16	EPA 3051A	1,6020A	PD

Serial_No:07281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

Lab ID:

L1413508-23

Date Collected:

06/18/14 00:00

Client ID:

CPBG02-F

Date Received:

06/19/14

Sample Location:

DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Ma	nsfield Lab	Marine Tolland	Market Committee		LOWING SAME		A Property		arrate		D-4/7/
Arsenic, Total	0.039		mg/kg	0.521	0.029	10	07/15/14 16:00	07/27/14 11:17	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.052	0.004	2	07/15/14 16:00	07/27/14 11:42		1,6020A	PD
Cadmium, Total	nD		mg/kg	0.021	0.002	2	07/15/14 16:00	07/27/14 11:42	EPA 3051A	1,6020A	PD
Chromium, Total	0.924	7+ 1	mg/kg	0.260	0.057	10	07/15/14 16:00) 07/27/14 11:17	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.021	0.003	2	07/15/14 16:00	07/27/14 11:42	EPA 3051A	1,6020A	PD
Mercury, Total	0.040 🌙	- 1	mg/kg	0.005	0.004	1	07/17/14 14:00	07/21/14 12:24	EPA 7471B	1,7471B	AK
Nickel, Total	0.235		mg/kg	0.260 ⁴	0.061	10	07/15/14 16:00	07/27/14 11:17	EPA 3051A	1,6020A	PD

Project Number: MONTGOMERY COUNT Lab Number:

L1413508

Report Date:

07/28/14

Lab ID:

L1413508-24

Client ID:

CPLMB01-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Date Collected:

06/18/14 00:00

Date Received:

06/19/14

Field Prep:

Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Ma	nsfield Lab	71.83.43	STEEL SON		a det						3912
Arsenic, Total	-0.019	- J	mg/kg	0.103	0.006	2	07/15/14 16:0	0 07/27/14 11.47	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.052	0.004	2	07/15/14 16:0	0 07/27/14 11:47	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.021	0.002	2	07/15/14 16:0	0 07/27/14 11:47	EPA 3051A	1,6020A	PD
Chromium, Total	1.73		mg/kg	0.052	0.011	2	07/15/14 16:0	0 07/27/14 11:47	EPA 3051A	1,6020A	PD
Lead, Total	0.003	J	mg/kg	0.021	0.003	2	07/15/14 16:0	0 07/27/14 11:47	EPA 3051A	1,6020A	PD
Mercury, Total	ل 0.148	- 1	mg/kg	0.005	0.004	. 1	07/17/14 14:0	0 07/21/14 12:39	EPA 7471B	1,7471B	AK
Nickel, Total	0.631	ű.	mg/kg	0.052	0.012	2	07/15/14 16:0	0 07/27/14 11:47	EPA 3051A	1,6020A	PD

Serial_No:0/281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

06/18/14 00:00

Not Specified

Project Number:

MONTGOMERY COUNT

Report Date:

Date Collected:

Date Received:

Field Prep:

07/28/14

06/19/14

Lab ID:

Matrix:

L1413508-25

Client ID:

CPLMB02-F

Sample Location:

DICKERSON, MD

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result Qu	alifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Ma	nsfield Lab			it was			the second	waite to be		湖 追悼:
Arsenic, Total	0.024	プ mg/kg	0.106 V	0.006	2	07/15/14 16:00	0 07/27/14 11:48	EPA 3051A	1,6020A	PD
Beryllium, Total	ND	mg/kg	0.053	0.004	2	07/15/14 16:00	0 07/27/14 11:48	EPA 3051A	1,6020A	PD
Cadmium, Total	ND	mg/kg	0.021	0.002	2	07/15/14 16:00	07/27/14 11:48	EPA 3051A	1,6020A	PD
Chromium, Total	0.796	mg/kg	0.053	0.012	2	07/15/14 16:00	07/27/14 11:48	EPA 3051A	1,6020A	PD
Lead, Total	ND	mg/kg	0.021	0.003	2	07/15/14 16:00	07/27/14 11:48	EPA 3051A	1,6020A	PD
Mercury, Total	0.164	mg/kg	0.006	0.004	1	07/17/14 14:00	07/21/14 12:44	EPA 7471B	1,7471B	AK
Nickel, Total	0.025	J mg/kg	0.053	0.012	2	07/15/14 16:00	07/27/14 11:48	EPA 3051A	1,6020A	PD

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

Lab ID:

L1413508-26

Date Collected:

06/19/14 09:30

Client ID:

Date Received:

06/20/14

Sample Location:

LFLMB02-F DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Tissue

Percent Solids:

Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab	M+			15 and 2	2. #	un management		1000	· 李雅·李、	
Arsenic, Total	0:035		mg/kg	0.110	0.006	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.055	0.004	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.022	0.002	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD
Chromium, Total	0.946		mg/kg	0.055	0.012	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD
Lead, Total	0.003	J	mg/kg	0.022	0.003	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD
Mercury, Total	0.022	1-1	mg/kg	0.005	0.004	1	07/17/14 14:00	07/21/14 13:02	EPA 7471B	1,7471B	AK
Nickel, Total	0.616		mg/kg	0.055	0.013	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD

Project Name:

MONTGOMERY COUNTY RRF

Project Number:

MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-04

Client ID:

LFBG01

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 11:00

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - I	Mansfield Lab 3.54	* * *	%	0.100	NA	1 P		07/23/14 09:00	111,-	AK

Senal_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-05

Client ID:

LFBG02

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 12:00

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - I	Mansfield Lab		g		in the	de la constante de la constant		THE WALL	OF THE PARTY	
Percent Lipids	2.15		%	0.100	NA	1	76 4 6	07/23/14 09:00	111,-	AK

Senal_NO.01201413.08

Project Name:

Project Number:

MONTGOMERY COUNTY RRF

MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-06

Client ID:

LFLMB01

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 08:40

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier U	Inits	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Seneral Chemistry - Ma	nsfield Lab	12 1 16				4 T. S. SA				
Percent Lipids	2.90		%	0.100	NA	1		07/23/14 09:00	111,-	AK

Serial_No:07281413:09

Project Name: MONTGOMERY COUNTY RRF

MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-09

Client ID:

YFBG01

Sample Location:

Project Number:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 13:40

Date Received:

06/19/14

Field Prep:

Parameter	Result Qua	alifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mar		0/	0.400	ALA.	and the st		07/22/14 00:00		AV
Percent Lipids	1.10	%	0.100	NA	- 1	=	07/23/14 09:00	111,-	AK

Senai_No:07281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-10

Client ID:

YFBG02

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 13:55

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfiel Percent Lipids	d Lab 0.823	p* 15	%	0.100	NA	1	in the late	07/23/14 09:00	111,-	AK

Senal_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-11

Client ID:

CPBG01

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/18/14 00:00

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL.	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Ma	nsfield Lab			17.1	de P			19 E		
Percent Lipids	2.18		%	0.100	NA	1	(98)	07/23/14 09:00	111,-	AK

Serial_No:07201413.09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number: MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-12

Client ID:

CPBG02

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/18/14 00:00

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Ma Percent Lipids	nsfield Lab 2.31		%	0.100	NA	1	* * * * * * * * * * * * * * * * * * *	07/23/14 09:00	111,-	AK

Senai_No:0/281413:09

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-13

Client ID:

CPLMB01

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/18/14 00:00

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfiel	d Lab			477 - 153			Wan a	THE KINDS THE REAL PROPERTY.	in the state of the state of	
Percent Lipids	3.29		%	0.100	NA	1	5	07/23/14 09:00	111,-	AK

Serial_No:07281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number: MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-14

Client ID:

CPLMB02

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/18/14 00:00

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab	a			N. P. W.	- 28 B 48	N 10 19.	22 242		
Percent Lipids	3.03		%	0.100	NA	1		07/23/14 09:00	111,-	AK

Senai_No:0/281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-15

Client ID:

LFLMB02

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/19/14 09:30

Date Received:

06/20/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Man	sfield Lab			was and a			70			
Percent Lipids	2.06		%	0.100	NA	1	3.65	07/23/14 09:00	111,-	AK



Senai_No:07281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-17

Client ID:

LFBG01-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 11:00

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - N	Mansfield Lab						a de la company		E SPECIAL	
Percent Lipids	0.744		%	0.100	NA	1	=	07/23/14 09:00	111,-	AK

Senai_No:07261413.09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number: MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-18

Client ID:

LFBG02-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 12:00

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - N	lansfield Lab	#*						Reserved to the second	A Part of the	
Percent Lipids	0.245		%	0.100	NA	1	+	07/23/14 09:00	111,-	AK

Serial_No:07281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number: MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-19

Client ID:

LFLMB01-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 08:40

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfiel	d Lab	potential in						9.95 m	UMF LIBERT	
Percent Lipids 0	.289		%	0.100	NA	1	•	07/23/14 09:00	111,-	AK

Senal_NO.07201413.08

Project Name:

Project Number:

MONTGOMERY COUNTY RRF

MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-20

Client ID:

YFBG01-F / YFBG02-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/17/14 13:40

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - M					T			07/22/44 00:00		AV.
Percent Lipids	0.293		%	0.100	NA	1.	•	07/23/14 09:00	111,-	AK

Senai_No:u/281413:u9

Project Name: MONTGOMERY COUNTY RRF

Lab Number: L1413508 Project Number: MONTGOMERY COUNT **Report Date:** 07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-22

Client ID:

CPBG01-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/18/14 00:00

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	. Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab	The state of the s	0 1 350				The state of the s		
Percent Lipids	0.688	%	0.100	NA	1	-	07/23/14 09:00	111,-	AK

Senal_NU.U/201413.UF

Project Name:

MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-23

Client ID:

CPBG02-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/18/14 00:00

Date Received:

06/19/14

Field Prep:

Parameter	Resuit	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mans Percent Lipids	field Lab 0.406	F # 4	%	0.100	NA	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		07/23/14 09:00	111,-	AK

Serial_No:0/281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number: MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-24

Client ID:

CPLMB01-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/18/14 00:00

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mans	field Lab	and the second	1 (84) 1 (84)	A CAPPEL				140 m	-2×9/#	mit general
Percent Lipids	0.773		%	0.100	NA	1	8. 5 .	07/23/14 09:00	111,-	AK

Serial_NO:07281413:09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-25

Client ID:

CPLMB02-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/18/14 00:00

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab				A	ege.			4 L
Percent Lipids	0.738	%	0.100	NA	1	5	07/23/14 09:00	111,-	AK

Senai_No.07261413.09

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413508

Project Number:

MONTGOMERY COUNT

Report Date:

07/28/14

SAMPLE RESULTS

Lab ID:

L1413508-26

Client ID:

LFLMB02-F

Sample Location:

DICKERSON, MD

Matrix:

Tissue

Date Collected:

06/19/14 09:30

Date Received:

06/20/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Percent Lipids 0.	i Lab 429	** y **	%	0.100	NA	399 ₆₉₍₃₀₎ (31) ₍₄₎	The same of the same	07/23/14 09:00	111,-	AK

MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

SAMPLE RESULTS

Lab ID:

L1413507-02

Client ID:

LFSW01

Sample Location:

DICKERSON, MD

Matrix:

Water

Lab Number:

L1413507

Report Date:

07/11/14

Date Collected:

06/17/14 09:45

Date Received:

06/18/14

Field Prep:

Parameter ·	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab		PA MAR	Thy of the	te de	in the state of th	aciji Ngjara	9) TO 30		(1862. NO.)	38. 38
Arsenic, Total	0.00171	J+1	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS
Beryllium, Total	0.00011	J	mg/l	0.00050	0.00008	3 1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS
Cadmium, Total	0.00003	J	mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS
Chromium, Total	0.00070	J/ _ /	mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS
Lead, Total	0.00\0 -0.00078	45/	mg/l	0.00100	0.00006	6 1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	7 1	07/07/14 09:00	07/09/14 09:43	EPA 7470A	1,7470A	AK
Nickel, Total	0.00301		mg/l	0.00050	0.00015	5 1	07/07/14 09:00	0 07/09/14 11:49	EPA 3020A	1,6020A	BS
Total Hardness by	SM-2340B	- Mansfield	Lab			1.5					. 40
Hardness	61.3	p and the "T	mg/l	0.460	0.230	1	07/07/14 09:0	0 07/09/14 11:49	EPA 3020A	1,6020A	BS
Dissolved Metals -	Mansfield	Lab .					We all the		n jabr., m		- 12 (E. 177)
Arsenic, Dissolved		3451V	mg/l	0.00050	0.0000	B 1		07/09/14 10:01	NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.0000	B 1		07/09/14 10:01	NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050	0.0000	8 1		07/09/14 10:01	NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.00029	9 1		07/09/14 10:01	NA	1,6020A	PD
Lead, Dissolved	0.00037	J	mg/l	0.00100	0.0000	6 1		07/09/14 10:01	· NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.0000	7 1	07/07/14 09:0	0 07/09/14 10:34	EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00233		mg/l	0.00050	0.0001	5 1		07/09/14 10:01	NA NA	1,6020A	PD

MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number:

MONTGOMERY COUNT

Report Date:

07/11/14

Lab ID:

L1413507-03

Date Collected:

06/17/14 10:20

Client ID:

LFSW02

Date Received:

06/18/14

Sample Location:

DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab	ng en e		- 12	- 46	- 1					第一名。
Arsenic, Total	0.00129	V + €	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:53	EPA 3020A	1,6020A	BS
Beryllium, Total	ND		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:53	EPA 3020A	1,6020A	BS
Cadmium, Total	0.00001	j	mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 11:53	EPA 3020A	1,6020A	BS
Chromium, Total	0.00063	11	mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 11:53	EPA 3020A	1,6020A	BS
Lead, Total	0.00065	VEP	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 11:53	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	a 1	07/07/14 09:00	07/09/14 09:45	EPA 7470A	1,7470A	AK
Nickel, Total	0.00266		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 11:53	EPA 3020A	1,6020A	BS
Total Hardness by S	SM 2340B	- Mansfield	Lab	7"							
Hardness	50.7		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 11:53	EPA 3020A	1,6020A	BS
Dissolved Metals - N	Viansfield	Lab		No.		To see the	A CONTRACTOR OF THE STREET	Section 8 15 Cash	rajes de la companya	True	
Arsenic, Dissolved	0.00103	ar Jy	mg/l	0.00050	0.00008	1		07/09/14 10:02	NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:02	NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:02	NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.00029	1		07/09/14 10:02	NA	1,6020A	PD
Lead, Dissolved	0.00038	J	mg/l	0.00100	0.00006	1		07/09/14 10:02	NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:37	EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00236		mg/l	0.00050	0.00015	1		07/09/14 10:02	NA	1,6020A	PD

MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number:

MONTGOMERY COUNT

Report Date:

07/11/14

Lab ID:

L1413507-04

1.501

Date Collected:

06/17/14 10:20

Client ID:

LFSW03

Date Received:

06/18/14

Sample Location:

DICKERSON, MD

Field Prep:

Not Specified

Matrix	
--------	--

Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab				- No.			CHEST 1			2 - 1807 - 1807
Arsenic, Total	0.00126	1+1	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Beryllium, Total	0.00010	J	mg/i	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Cadmium, Total	ND		mg/l	0.00050	0.00001	8 =1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Chromium, Total	0.00063	1/1	mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Lead, Total	0.0010	43	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 09:48	EPA 7470A	1,7470A	AK
Nickel, Total	0.00268		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Total Hardness by S	SM 2340B	- Mansfield	d Lab	THE .	No.		100			Section 1	- 0
Hardness	51.2		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Dissolved Metals - I	Mansfield	Lab									
Arsenic, Dissolved	0.00090	1+ 1	mg/l	0.00050	0.00008	1		07/09/14 10:07	NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.00008	. 1		07/09/14 10:07	· NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:07	NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.00029	1		07/09/14 10:07	* NA	1,6020A	PD
Lead, Dissolved	0.00037	j	mg/l	0.00100	0.00006	1		07/09/14 10:07	NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:39	EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00238		mg/l	0.00050	0.00015	1		07/09/14 10:07	NA	1,6020A	PD

MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number:

MONTGOMERY COUNT

Report Date:

07/11/14

Lab ID:

L1413507-11

Client ID:

YFSW01

Sample Location: D

DICKERSON, MD

Matrix:

Water

Date Collected:

06/17/14 14:40

Date Received:

06/19/14

Field Prep:

Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab	The second second	2	274.4"			Channia Tribbas Cilinar				N. THE
Arsenic, Total	0.00125	5+1	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
Beryllium, Total	0.00023	j	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
Cadmium, Total	0.00002	J	mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
Chromium, Total	0.00222		mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
Lead, Total	0.00336		mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	0 07/09/14 09:56	EPA 7470A	1,7470A	AK
Nickel, Total	0.00251		mg/l	0.00050	0.00015	1	07/07/14 09:00	0 07/09/14 11:59	EPA 3020A	1,6020A	BS
Total Hardness by	SM 2340B	- Mansfiel	d Lab				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
Hardness	72.5		mg/l	0.460	0.230	1	07/07/14 09:0	0 07/09/14 11:59	EPA 3020A	1,6020A	BS
Dissolved Metals -	Mansfield	Lab									
Arsenic, Dissolved	0.00058	5+1	mg/l	0.00050	0.00008	3 1		07/09/14 10:08	NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:08	NA	1,6020A	PĐ
Cadmium, Dissolved	ND		mg/l	0.00050	0.00008	3 1		07/09/14 10:08	NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.00029	9 1		07/09/14 10:08	NA	1,6020A	PD
Lead, Dissolved	0.00027	J	mg/l	0.00100	0.00006	5 1		07/09/14 10:08	NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	7 1	07/07/14 09:0	0 07/09/14 10:47	EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00085		mg/l	0.00050	0.00015	5 1		07/09/14 10:08	NA	1,6020A	PD

MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number:

MONTGOMERY COUNT

Report Date:

07/11/14

Lab ID:

L1413507-12

Date Collected:

06/17/14 15:00

Client ID:

YFSW02

Date Received:

06/19/14

Sample Location:

DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab		2001				The state of	COST TOWN		The State of	
Arsenic, Total	0.00075	J+ 4	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Beryllium, Total	ND		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Cadmium, Total	ND		mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Chromium, Total	0.00047	J	mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Lead, Total	0.00060	- J	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 09:59	EPA 7470A	1,7470A	AK
Nickel, Total	0.00112		mg/l	0.00050	0.00015	i 1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Total Hardness by	SM 2340E	- Mansfiel	d Lab			Hit Jak		370- 1111 A	1121 - 12 Da 12 12 12 12 12 12 12 12 12 12 12 12 12		
Hardness	73.2		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Dissolved Metals - I	Mansfield	Lab			100	f g					
Arsenic, Dissolved	0.00046	30 W V	mg/l	0.00050	80000.0	1		07/09/14 10:10	NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:10	NA NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050	0.00008	3 1		07/09/14 10:10	NA NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.00029) 1		07/09/14 10:10	NA NA	1,6020A	PD
Lead, Dissolved	0.00017	J	mg/l	0.00100	0.00006	3 1		07/09/14 10:10	NA NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	7 1	07/07/14 09:00	07/09/14 10:50	EPA 7470A	1,74 7 0A	AK
Nickel, Dissolved	0.00084		mg/l	0.00050	0.00015	5 1	Đ)	07/09/14 10:10	NA NA	1,6020A	PD

Project Number: MONTGOMERY COUNT

Lab Number:

L1413507

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-15

Client ID:

CPSW01

Sample Location:

DICKERSON, MD

Matrix:

Water

Date Collected:

06/18/14 11:00

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab	Mg 75	村 一	111111111111111111111111111111111111111			W. W	STATE OF THE STATE			
Arsenic, Total	0.00090	J+1	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Beryllium, Total	0.00009	J	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Cadmium, Total	ND		mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Chromium, Total	0.00039	1 3	mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Lead, Total	0.00052	J	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:08	EPA 7470A	1,7470A	AK
Nickel, Total	0.00060		mg/l	0.00050	0.00015	1	07/07/14 09:00	0 07/09/14 12:02	EPA 3020A	1,6020A	BS
Total Hardness by	SM 2340B	- Mansfiel	d Lab					Transfer Branch			
Hardness	22.0	*	mg/l	0.460	0.230	1	07/07/14 09:00	0 07/09/14 12:02	EPA 3020A	1,6020A	BS
Dissolved Metals -	Mansfield	Lab		4.				THE STATE OF THE S			
Arsenic, Dissolved	0.00053	J+ 1	mg/l	0.00050	0.00008	1		07/09/14 10:11	NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:11	NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/i	0.00050	80000.0	1		07/09/14 10:11	NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.00029	1	65	07/09/14 10:11	NA g	1,6020A	PD
Lead, Dissolved	0.00020	J	mg/l	0.00100	0.00006	1		07/09/14 10:11	NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	0 07/09/14 10:53	EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00040	J	mg/l	0.00050	0.00015	1		07/09/14 10:11	NA	1,6020A	PD

MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number:

MONTGOMERY COUNT

Report Date:

07/11/14

Lab ID:

L1413507-16

Client ID:

CPSW02

Sample Location:

DICKERSON, MD

Matrix:

Water

Date Collected:

06/18/14 11:30

Date Received:

06/19/14

Field Prep:

Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab			t and			a garage				a Paul
Arsenic, Total	0.00088	311	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Beryllium, Total	ND		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Cadmium, Total	0.00003	J	mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Chromium, Total	0.00045	11,	mg/i	0.00100	0.00029	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Lead, Total	0.00045	<u>m</u> 3	mg/i	0.00100	0.00006	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:18	EPA 7470A	1,7470A	AK
Nickel, Total	0.00103		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Total Hardness by	SM 2340B	- Mansfield	l Lab	1					The second		
Hardness	21.7		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Dissolved Metals -	Mansfield	Lab 👺		736.							
Arsenic, Dissolved	0.00165	111	mg/l	0.00050	0.00008	1		07/09/14 10:18	NA	1,6020A	PD
Beryllium, Dissolved	ND	8	mg/i	0.00050	0.00008	1		07/09/14 10:18	NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:18	NA	1,6020A	PD
Chromium, Dissolved	ND :		mg/i	0.00100	0.00029	1		07/09/14 10:18	NA	1,6020A	PD
Lead, Dissolved	0.00086	J	mg/l	0.00100	0.00006	1		07/09/14 10:18	NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 11:14	EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00048	j	mg/l	0.00050	0.00015	1		07/09/14 10:18	NA	1,6020A	PD

Project Number: MONTGOMERY COUNT

SAMPLE RESULTS

Report Date:

L1413507 07/11/14

Lab ID:

L1413507-01

Client ID:

EB01

Sample Location:

DICKERSON, MD

Matrix:

Water

Date Collected:

Lab Number:

06/17/14 09:00

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab								The same	Ton Spare	
Arsenic, Total	0.00102	J+ V	mg/l	0.00050	80000.0	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS
Beryllium, Total	0.00009	J	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS
Cadmium, Total	0.00005	J	mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS
Chromium, Total	0.00251		mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS
Lead, Total	0.00227		mg/l	0.00100	0.00006	5 1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 09:40	EPA 7470A	1,7470A	AK
Nickel, Total	0.00195		mg/l	0.00050	0.00015	5 1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS
Total Hardness by	SM 2340B	- Mansfiel	d Lab	" Marie Ma	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	de the	and the state of	A STATE	man or man one		
Hardness	0.358	J	mg/l	0.460	0.230	1 ,	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS

Lab Number:

L1413507

MONTGOMERY COUNT

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-05

Client ID:

LFSD01

Sample Location:

Project Number:

DICKERSON, MD

Matrix:

Sediment

Date Collected:

06/17/14 10:00

Date Received:

06/18/14

Field Prep:

Percent Solids:	53%					Dilution	Date	Date	Ргер	Analytical	
Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst
Total Metals - Mans	sfield Lab		AND TO	10 THE	790		No.	The same of the sa			Charles .
Arsenic, Total	1.49 🦸	1	mg/kg	0.052	0.006	2	07/09/14 14:00	07/10/14 15:06	EPA 3050B	1,6020A	PD
Beryllium, Total	1.24		mg/kg	0.031	0.009	2	07/09/14 14:00	07/10/14 15:06	EPA 3050B	1,6020A	PD
Cadmium, Total	0.160		mg/kg	0.021	0.003	2	07/09/14 14:00	07/10/14 15:06	EPA 3050B	1,6020A	PD
Chromium, Total	22.6		mg/kg	0.208	0.049	2	07/09/14 14:00	07/10/14 15:06	EPA 3050B	1,6020A	PD
Lead, Total	17.6 👉	- 400	mg/kg	0.312	0.100	10	07/09/14 14:00	0 07/10/14 16:10	EPA 3050B	1,6020A	PD
Mercury, Total	0.025	Las	mg/kg	0.010	0.007	1	07/09/14 14:00	0 07/10/14 14:42	EPA 7471B	1,7471B	AK
Nickel, Total	15.4		mg/kg	0.104	0.016	2	07/09/14 14:00	07/10/14 15:06	EPA 3050B	1,6020A	PD

MONTGOMERY COUNT

Lab Number:

L1413507

Report Date:

07/11/14

Lab ID:

L1413507-06

Client ID:

LFSD02

Sample Location:

Project Number:

DICKERSON, MD

Matrix:

Sediment

57%

Date Collected:

06/17/14 10:45

Date Received:

06/18/14

Field Prep:

Not Specified

Percent Solid	JS: 5/%					Dilution	Date	Date	Prep	Analytical		
Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst	
	et land 5 - 1877 - 1877	NA JAME CONTIN		1 3	ar in		Mr. Swiffer	Tax Was Tax.	My Crima W.			

Parameter	Result Qualifi	er units	KL	MDF				
Total Metals - Mar	nsfield Lab		Many . A.	#			W Man	
Arsenic, Total	0.914	mg/kg	0.047	0.006	2	07/09/14 14:00 07/10/14 15:07 EPA 3050B	1,6020A	PD
Beryllium, Total	0.883	mg/kg	0.028	0.008	2	07/09/14 14:00 07/10/14 15:07 EPA 3050B	1,6020A	PD
Cadmium, Total	0.067	mg/kg	0.019	0.002	2	07/09/14 14:00 07/10/14 15:07 EPA 3050B	1,6020A	PD
Chromium, Total	18.6	mg/kg	0.186	0.044	2	07/09/14 14:00 07/10/14 15:07 EPA 3050B	1,6020A	PD
Lead, Total	14.3 🛫 🗽	mg/kg	0.279	0.090	10	07/09/14 14:00 07/10/14 16:11 EPA 3050B	1,6020A	PD
Mercury, Total	0.017 🏍 🛶	mg/kg	0.010	0.007	1	07/09/14 14:00 07/10/14 14:45 EPA 7471B	1,7471B	AK
Nickel, Total	9.36	mg/kg	0.093	0.014	2	07/09/14 14:00 07/10/14 15:07 EPA 3050B	1,6020A	PD

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number:

MONTGOMERY COUNT

Report Date:

07/11/14

Lab ID:

SAMPLE RESULTS

mg/kg

0.092

Date Collected:

07/09/14 14:00 07/10/14 15:11 EPA 3050B

06/17/14 10:45

Client ID:

L1413507-10 LFSD03

Date Received:

06/18/14

Sample Location:

DICKERSON, MD

Field Prep:

Not Specified

1,6020A

PD

Matrix:

Nickel, Total

Sediment

11.7

60% Percent Solids:

Percent Solids:	Result Qualifi	er Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab	76. W					Jacob - Species	and the same	T 10 3	
Arsenic, Total	1.31 5	mg/kg	0.046	0.006	2	07/09/14 14:0	0 07/10/14 15:1	1 EPA 3050B	1,6020A	PD
Beryllium, Total	1.10	mg/kg	0.028	0.008	2	07/09/14 14:0	0 07/10/14 15:1	1 EPA 3050B	1,6020A	PD
Cadmium, Total	0.087	mg/kg	0.018	0.002	2	07/09/14 14:0	0 07/10/14 15:1	1 EPA 3050B	1,6020A	PĎ
Chromium, Total	20.6	mg/kg	0.183	0.043	2	07/09/14 14:0	0 07/10/14 15:1	1 EPA 3050B	1,6020A	PD
Lead, Total	17.1 🕶 🕼	mg/kg	0.275	0.089	10	07/09/14 14:0	0 07/10/14 16:1:	2 EPA 3050B	1,6020A	PD
Mercury, Total	0.018 🟍 🐿	mg/kg	0.010	0.007	1	07/09/14 14:0	0 07/10/14 14:4	8 EPA 7471B	1,7471B	AK

0.014

2

Senai_No:0/111415:36

Project Name: MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number: MONTGOMERY COUNT **Report Date:**

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-13

Client ID:

YFSD01

Sample Location:

DICKERSON, MD

Matrix:

Sediment

Date Collected:

06/17/14 14:45

Date Received:

06/19/14

Field Prep:

Percent Solids: Parameter	65% Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Anaivst
Total Metals - Mans	sfield Lab		100		10.77		The same of			
Arsenic, Total	1.58 5	mg/kg	0.039	0.005	2	07/09/14 14:00	07/10/14 15:15	EPA 3050B	1,6020A	PD
Beryllium, Total	1.34	mg/kg	0.023	0.007	2	07/09/14 14:00	07/10/14 15:15	EPA 3050B	1,6020A	PD
Cadmium, Total	0.057	mg/kg	0.016	0.002	2	07/09/14 14:00	07/10/14 15:15	EPA 3050B	1,6020A	PD
Chromium, Total	, 11.5	mg/kg	0.156	0.037	2	07/09/14 14:00	07/10/14 15:15	EPA 3050B	1,6020A	PD
Lead, Total	15.9 🛶 😘	mg/kg	0.233	0.075	10	07/09/14 14:00	07/10/14 16:16	EPA 3050B	1,6020A	PD
Mercury, Total	0.012 🛰 🐠	mg/kg	0.009	0.006	1	07/09/14 14:00	07/10/14 14:56	EPA 7471B	1,7471B	AK
Nickel, Total	5.31	mg/kg	0.078	0.012	2	07/09/14 14:00	07/10/14 15:15	EPA 3050B	1,6020A	PD

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number:

MONTGOMERY COUNT

Report Date:

07/11/14

Lab ID:

SAMPLE RESULTS

Date Collected:

06/17/14 15:05

L1413507-14

Date Received:

06/19/14

Client ID: Sample Location: YFSD02

DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Sediment

Percent Solids:

43%					Dilution	Date	Date	Prep	Analytical	
Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab		. ga.		The fi			, out	A Company		A STATE OF THE STA
Arsenic, Total	1.86	5 1	mg/kg	0.059	0.007	2	07/09/14 14:0	0 07/10/14 15:17	EPA 3050B	1,6020A	PD
Beryllium, Total	1.13		mg/kg	0.035	0.010	2	07/09/14 14:0	0 07/10/14 15:17	EPA 3050B	1,6020A	PD
Cadmium, Total	0.163		mg/kg	0.024	0.003	2	07/09/14 14:0	0 07/10/14 15:17	EPA 3050B	1,6020A	PD
Chromium, Total	17.2		mg/kg	0.236	0.055	2	07/09/14 14:0	0 07/10/14 15:17	EPA 3050B	1,6020A	PD
Lead, Total	29.1		mg/kg	0.354	0.114	10	07/09/14 14:0	0 07/10/14 16:17	EPA 3050B	1,6020A	PD
Mercury, Total	0.042 3	~W	mg/kg	0.013	0.009	1	07/09/14 14:0	0 07/10/14 14:58	EPA 7471B	1,7471B	AK
Nickel, Total	11.2		mg/kg	0.118	0.018	2	07/09/14 14:0	0 07/10/14 15:17	EPA 3050B	1,6020A	PD

Senai_No:U/111415:36

Project Name: MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number:

MONTGOMERY COUNT

Report Date:

07/11/14

Lab iD:

L1413507-17

Date Collected:

06/18/14 11:15

Client ID: Sample Location: CPSD01

Date Received:

06/19/14

Matrix:

DICKERSON, MD

Field Prep:

Not Specified

Sediment

Percent Solids:	73%					Dilution	Date	Date	Prep	Analytical	
Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst
Total Metals - Mans	sfield Lab	17.				1					
Arsenic, Total	2.34	51	mg/kg	0.037	0.005	2	07/09/14 14:00	0 07/10/14 15:18	EPA 3050B	1,6020A	PD
Beryllium, Total	1.61		mg/kg	0.022	0.006	2	07/09/14 14:00	0 07/10/14 15:18	EPA 3050B	1,6020A	PD
Cadmium, Total	0.104		mg/kg	0.015	0.002	2	07/09/14 14:00	0 07/10/14 15:18	EPA 3050B	1,6020A	PD
Chromium, Total	17.0		mg/kg	0.149	0.035	2	07/09/14 14:00	0 07/10/14 15:18	EPA 3050B	1,6020A	PD
Lead, Total	17.0		mg/kg	0.224	0.072	10	07/09/14 14:00	0 07/10/14 16:19	EPA 3050B	1,6020A	PD
Mercury, Total	0.023 5	K.W	mg/kg	0.008	0.005	1	07/09/14 14:00	0 07/10/14 15:01	EPA 7471B	1,7471B	AK
Nickel, Total	10.0 .		mg/kg	0.075	0.011	2	07/09/14 14:0	0 07/10/14 15:18	EPA 3050B	1,6020A	PD

SAMPLE RESULTS

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT Lab Number:

L1413507

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-18

Client ID:

CPSD02

Sample Location:

DICKERSON, MD

Matrix:

Sediment

Percent Solids:

66%

Date Collected:

Date Received:

06/18/14 11:45

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab	The state	e water		No contract		A THE	THE THE			
Arsenic, Total	1.39	5	mg/kg	0.046	0.006	2	07/09/14 14:0	0 07/10/14 15:22	2 EPA 3050B	1,6020A	PD
Beryllium, Total	0.686		mg/kg	0.028	0.008	2	07/09/14 14:0	0 07/10/14 15:22	2 EPA 3050B	1,6020A	PD
Cadmium, Total	0.034 📥	ه) ۲	mg/kg	0.018	0.002	2	07/09/14 14:0	0 07/10/14 15:22	2 EPA 3050B	1,6020A	PD
Chromium, Total	18.8		mg/kg	0.184	0.043	2	07/09/14 14:0	0 07/10/14 15:22	2 EPA 3050B	1,6020A	PD
Lead, Total	16.4	W	mg/kg	0.276	0.089	10	07/09/14 14:0	0 07/10/14 16:25	EPA 3050B	1,6020A	PD
Mercury, Total	0.053 🝮	- Cup	mg/kg	0.008	0.006	1	07/09/14 14:0	0 07/10/14 15:17	EPA 7471B	1,7471B	AK
Nickel, Total	6.86		mg/kg	0.092	0.014	2	07/09/14 14:0	0 07/10/14 15:22	2 EPA 3050B	1,6020A	PD

JEHAL_140.07 1 1 17 10.00

Project Name:

MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413507

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-05

Client ID:

LFSD01

Sample Location:

DICKERSON, MD

Matrix:

Sediment

Date Collected:

06/17/14 10:00

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Ma	nefield I ah	the govern	Dr. 12	5 5	11 14 1	4-15-15-2	7 4 1	中心有政人	No. To 1	
			%	0.050	0.050	1	()	07/09/14 11:37	13,-	ΥX
Total Organic Carbon (Rep1)	2.12				-	4	•	07/09/14 11:37	13,-	ΥX
Total Organic Carbon (Rep2)	2.05		%	0.050	0.050			07700714 71301	NATIONAL THEIR PROPERTY	
General Chemistry - Mans	field Lab			1 1 1	相		1. 1. 1.	The state of the state of	79	J. 500
Solids, Total	53.1		%	0.100	0.100	1	6 - 6	07/07/14 10:00	30,2540G	MS

Serial_No:U/111415:30

Project Name:

MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413507

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-06

Client ID:

LFSD02

Sample Location:

DICKERSON, MD

Matrix:

Sediment

Date Collected:

06/17/14 10:45

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Fotal Organic Carbon - Ma	nsfield I ab	14-61-7	& JE					9 4 4 4 4	AND THE RESERVE AND THE PERSON OF THE PERSON	All Janes
Total Organic Carbon (Rep1)	0.874		%	0.050	0.050	1	-	07/09/14 11:42	13,-	YX
Total Organic Carbon (Rep2)	0.946		%	0.050	0.050	1	-	07/09/14 11:42	13,-	YX
General Chemistry - Mans	field Lab	18 14 5	8 14 5	170						
Solids, Total	56.9	12 - 10 - 10	%	0.100	0.100	1	(-)	07/07/14 10:00	30,2540G	MS

Senai_No:0/111415:30

Project Name: MONTGOMI

MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413507

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-10

Client ID:

LFSD03

Sample Location:

DICKERSON, MD

Matrix:

Sediment

Date Collected:

06/17/14 10:45

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Ma	ansfield Lab	医疗源 !			3 17 3	重整 1	N Y Y		澳大型	F F 6
Total Organic Carbon (Rep1)	0.900	31	%	0.050	0.050	1	-	07/09/14 09:32	13,-	ΥX
Total Organic Carbon (Rep2)	1.01	1	%	0.050	0.050	1	346	07/09/14 09:32	13,-	YX
General Chemistry - Mans	field Lab	A . The	317 376	12/10	91		A. 18. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		11.00	The second
Solids, Total	59.6		%	0.100	0.100	1	120	07/07/14 10:00	30,2540G	MS

Serial_No:0/111415:36

Project Name:

MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413507

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-13

Client ID:

YFSD01

Sample Location:

DICKERSON, MD

Matrix:

Sediment

Date Collected:

06/17/14 14:45

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Ma	ensfield Lab	ne	1 2 2		4		14			
Total Organic Carbon (Rep1)	1.11	57	%	0.050	0.050	1		07/09/14 09:43	13,-	ΥX
Total Organic Carbon (Rep2)	1.15	1	%	0.050	0.050	1	-	07/09/14 09:43	13,-	ΥX
General Chemistry - Mans	sfield Lab		4.30	4.87		7	W 12 1 1		全翼/费	
Solids, Total	64.9	***	%	0.100	0.100	1	(-)	07/07/14 10:00	30,2540G	MS

Senai_No.07 111410.30

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413507

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-14

Client ID:

YFSD02

Sample Location:

DICKERSON, MD

Matrix:

Sediment

Date Collected:

06/17/14 15:05

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Ma	ansfield Lab		1		all the	18 6 m		20 10 10 10 10 10 10 10 10 10 10 10 10 10	The state of the s	
Total Organic Carbon (Rep1)	2.91	5-1	%	0.050	0.050	1	<u></u>	07/09/14 09:21	13,-	YX
Total Organic Carbon (Rep2)	3.34	7	%	0.050	0.050	1	*	07/09/14 09:21	13,-	ΥX
General Chemistry - Mans Solids, Total	sfield Lab 43.4	A	%	0.100	0.100	1		07/07/14 10:00	30,2540G	MS

Senai_No:0/ 111410.30

Project Name:

MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413507

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-17

Client ID:

CPSD01

Sample Location: DICKERSON, MD

Matrix:

Sediment

Date Collected:

06/18/14 11:15

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
T. L. I. Owner's Carbon Mc	nofiold Lab	ar to the le	erin ve ili	Jan 15		W 12 12 13	. 3 E. 2 V.	* 74 % G F	W. 14. 14.	We see the see
Total Organic Carbon - Ma		1-1	%	0.050	0.050	1	5	07/09/14 09:53	13,-	ΥX
Total Organic Carbon (Rep1)	0.787	3	•-				± ±	07/09/14 09:53	13,-	YX
Total Organic Carbon (Rep2)	0.800	4	%	0.050	0.050	3	-	07703/14 03:00		OF AN OR -
General Chemistry - Mans	sfield Lab						7 14 1			
Solids, Total	72.9		%	0.100	0.100	1.		07/07/14 10:00	30,2540G	S MS

Serial_No:0/111415:30

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number: MONTGOMERY COUNT

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-18

Client ID:

CPSD02

Sample Location:

DICKERSON, MD

Matrix:

Sediment

Date Collected:

06/18/14 11:45

Date Received:

06/19/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Ma	ansfield Lab	AT -8. 1	(18 J	26 - MA	75		and the same		板一框 加二	
Total Organic Carbon (Rep1)	0.437	J- +	%	0.050	0.050	1	ě	07/09/14 10:04	13,-	YX
Total Organic Carbon (Rep2)	0.443	4	%	0.050	0.050	1	-	07/09/14 10:04	13,-	YX
General Chemistry - Mans	field Lab							The state of the s	100	
Solids, Total	65.9		%	0.100	0.100	1	*	07/07/14 10:00	30,2540G	MS

Senal_No:0/111415:36

Project Name: MONTGOMERY COUNTY RRF

Lab Number: L1413507 **Project Number:** MONTGOMERY COUNT **Report Date:** 07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-07

Client ID:

JFM01

Sample Location:

DICKERSON, MD

Matrix:

Liquid

Date Collected:

06/17/14 13:35

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Ma	nsfield Lab		gran		in the second				FIRST TO	THE STATE OF	pale :
Arsenic, Total	0.00383	J+	mg/l 🛂	0.00500	0.00085	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD
Beryllium, Total	ND		mg/l	0.00500	0.00086	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD
Cadmium, Total	0.00027	j	mg/i	0.00500	0.00015	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD
Chromium, Total	0.178		mg/l	0.0100	0.00298	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD
Lead, Total	0.00079		mg/l 从	0.0100	0.00065	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD
Mercury, Total	MB	uJJ	mg/l	0.00040	0.00014	2	07/07/14 09:00	07/08/14 16:40	EPA 7470A	1,7470A	AK
Nickel, Total	0.01669		mg/l	0.00500	0.00152	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD

Serial_No:0/111415:36

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number:

MONTGOMERY COUNT

Report Date:

07/11/14

Lab ID:

SAMPLE RESULTS

Date Collected:

06/17/14 13:40

Client ID:

L1413507-08

JFM02

Date Received:

06/18/14

Sample Location:

DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Liquid

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab		d of		40000000000000000000000000000000000000					, , , , , , , , , , , , , , , , , , ,	
Arsenic, Total	0.00596	J+ V	mg/l	0.00500	0.00085	10	07/07/14 09:00	07/10/14 17:40	D EPA 3020A	1,6020A	PD
Beryllium, Total	ND		mg/l	0.00500	0.00086	10	07/07/14 09:00	07/10/14 17:40	D EPA 3020A	1,6020A	PD
Cadmium, Total	ND		mg/i	0.00500	0.00015	10	07/07/14 09:00	0 07/10/14 17:40	0 EPA 3020A	1,6020A	PD
Chromium, Total	0.185		mg/l	0.0100	0.00298	10	07/07/14 09:0	0 07/10/14 17:40	0 EPA 3020A	1,6020A	PD
Lead, Total	ND		mg/l	0.0100	0.00065	10	07/07/14 09:0	0 07/10/14 17:40	0 EPA 3020A	1,6020A	PD
Mercury, Total	"NĐ	u5 1	mg/l	0.00040	0.00014	. 2	07/07/14 09:0	0 07/08/14 16:49	9 EPA 7470A	1,7470A	AK
Nickel, Total	0.01678		mg/l	0.00500	0.00152	10	07/07/14 09:0	0 07/10/14 17:4	0 EPA 3020A	1,6020A	PD

Serial_No:U/111415:36

Project Name: MONTGOMERY COUNTY RRF

MONTGOMERY COUNT

Lab Number:

L1413507

Project Number:

Report Date:

07/11/14

Lab ID:

L1413507-09

Date Collected:

06/17/14 13:45

Client ID:

JFM03

Date Received:

06/18/14

Sample Location:

DICKERSON, MD

Field Prep:

Not Specified

Matrix:

Liquid

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab		1	7	- C - S	1 F. F.				2.7 2 7.5	in a
Arsenic, Total	0.00402		mg/l	0.00500	0.00085	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
Beryllium, Total	ND		mg/l	0.00500	0.00086	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
Cadmium, Total	ND		mg/l	0.00500	0.00015	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
Chromium, Total	0.183		mg/l	0.0100	0.00298	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
Lead, Total	ND		mg/l	0.0100	0.00065	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
Mercury, Total	ND	NJ 1	mg/l	0.00040	0.00014	2	07/07/14 09:00	07/08/14 16:21	EPA 7470A	1,7470A	AK
Nickel, Total	0.01648		mg/l	0.00500	0.00152	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD

SAMPLE RESULTS

Jenai_110.07 11 111.0000

Project Name:

MONTGOMERY COUNTY RRF

Project Number:

MONTGOMERY COUNT

Lab Number:

L1413507

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-19

Client ID:

JFM01

Sample Location:

DICKERSON, MD

Matrix:

Liquid

Date Collected:

06/17/14 13:35

Date Received:

06/18/14

Field Prep:

Not Specified

Analytical Method Date Dilution Date Prepared Analyzed **Analyst Factor** MDL Result Qualifier Units RL **Parameter General Chemistry - Mansfield Lab** ΑK 07/01/14 14:00 111,-NA % 0.100 Percent Lipids 3.25

Serial_No:0/111415:36

Project Name:

MONTGOMERY COUNTY RRF

Lab Number:

L1413507

Project Number:

MONTGOMERY COUNT

Report Date:

07/11/14

SAMPLE RESULTS

Lab ID:

L1413507-20

Client ID:

JFM02

Sample Location:

DICKERSON, MD

Matrix:

Liquid

Date Collected:

06/17/14 13:40

Date Received:

06/18/14

Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab			The Bar	TON				44.7500	
Percent Lipids	3.37	•	%	0.100	NA	1	-	07/01/14 14:00	111,-	AK



Memorandum

To:

Karen Vetrano

From:

Paula DiMattei

CC:

Elizabeth Denly

Date:

December 11, 2014

Subject:

Dioxin Data Validation Review: Montgomery County RRF/Dickerson, MD:

Laboratory Work Orders: 6254, 6260 and 6324

SUMMARY

Limited validation was performed on the data for seven surface water samples, seven sediment samples, three milk samples, six hay samples, 10 whole body fish tissue samples and 10 fillet fish samples collected at the Montgomery County site in Dickerson, Maryland. The samples were collected on June 17-19, 2014. Samples were submitted to Cape Fear Analytical (CFA) for analysis. The samples were analyzed for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) using EPA Method 1613B. CFA reported the results under laboratory work orders 6254, 6260 and 6324.

The sample results were assessed using the "USEPA Contract Laboratory Program National Functional Guidelines for Chlorinated Dioxin/Furan Data Review," September 2011.

In general, the data appear valid as reported and may be used for decision-making purposes. The following issues were noted which have a minor impact on the data usability:

- Select results in some samples were qualified as nondetects (U) at the reported sample concentrations due to laboratory method blank contamination.
- Select results in some samples were qualified as estimated (J) due to laboratory method blank contamination.
- The results for 1,2,3,4,6,7,8-HpCDD, OCDD, total HpCDDs, total TCDFs, and total PeCDFs in samples LFSDo2 and LFSDo3 were qualified as estimated due to field duplicate variability.
- Several congeners in the select samples were reported by the laboratory as Estimated Maximum Possible Concentrations (EMPCs) since all identification criteria were not met. These results were qualified as estimated (J) during data validation.
- Select results were reported which were below the lowest calibration standard; these results were qualified as estimated (J).

SAMPLES

Samples included in this review are listed below:

6254

EB₀₁

Surface water: LFSW01 Sediment:

LFSD01

LFSW02 LFSD02

LFSW031 LFSD032

Memorandum December 11, 2014 Page 2 of 11

Milk:

JFM₀₁

JFM02

JFM033

¹Field duplicate of LFSW02

²Field duplicate of LFSD02

Field duplicate of JFM01

6260

Surface water: YFSW01

YFSW02

CPSW01

CPSW₀₂

Sediment: Hay:

YFSD01 LFH₀₁

YFSD02 LFH₀₂

CPSD01 LFH034

CPSD02 JFH₀₁

JFH₀₂

MFH₀₁

4Field duplicate of LFH01

6324

Blue Gill Whole Body:

LFBG02 LFBG01

YFBG02 YFBG01

CPBG01

CPBG02

Large Mouth Bass Whole Body:

LFLMB01

LFLMB02

CPLMB01

CPLMB₀₂

Blue Gill Fillet:

LFBG01-F

LFBG02-F

YFBG01-F/YFBG02-F

CPBG01-F

CPBG02-F

Large Mouth Bass Fillet:

LFLMB01-F LFLMB02-F CPLMB01-F

CPLMB02-F

REVIEW ELEMENTS

Sample data were reviewed for the following parameters:

- Agreement of analyses conducted with chain-of-custody requests
- Data completeness
- Holding times and sample preservation
- Initial and continuing calibrations
- **Blanks**
- Labeled compound recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) results
- Laboratory control sample (LCS)/Laboratory control sample duplicate (LCSD) results
- Field duplicate results
- Laboratory duplicate results
- Quantitation limits and sample results

DISCUSSION

Agreement of Analyses Conducted with Chain-of-Custody Requests

Sample reports were checked to verify that the results corresponded to analytical requests as designated on the chain-of-custody (COC). The following discrepancies were noted for laboratory work order 6260:

The laboratory noted that there was a discrepancy between the sample collection times noted on the sample labels and those noted on the COC for samples YFSDo1 and YFSDo2. The collection times on the COC were used for sample login purposes.



- The laboratory noted that there was a discrepancy between the sample collection times noted on the sample labels and those noted on the COC for samples CPSW01, CPSW02, CPSD01 and CPSD02.
 The collection times on the COC were used for sample login purposes.
- The laboratory noted that clarification of the sample identification for samples YFSW01 and YFSW02 was needed. TRC confirmed the sample identification information for these samples.

Data Completeness

The data packages were found to be complete as received from the laboratory.

Holding Times and Sample Preservation

All samples were prepared and analyzed within the method-specified holding times. The cooler temperatures were within the acceptance criteria upon sample receipt.

Initial and Continuing Calibrations

All initial and continuing calibration standards met the ion abundance ratio criteria specified in the method.

The percent relative standard deviations of all target congeners were within the acceptance criteria for the initial calibrations. The percent differences of all target congeners were within the acceptance criteria for the continuing calibrations.

Blanks

The following tables list the concentrations of target congeners detected in the laboratory method blanks and the resulting validation actions.

	Work Orders 6254 and 6260								
Compound	Blank Concentration	Blank ID: Associated Samples	Validation Action						
1,2,3,7,8-PeCDD	1.84 J pg/L		Qualification was not required since 1,2,3,7,8-PeCDD,						
1,2,3,6,7,8-HxCDD	3.90 J pg/L	MB (Batch 26220):	1,2,3,6,7,8-HxCDD, and 1,2,3,7,8,9-HxCDD were not detected in the associated samples.						
1,2,3,7,8,9-HxCDD	3.64 J pg/L	EB01	detected in the associated samples.						
		LFSW01 LFSW02 LFSW03 YFSW01	The positive results for 1,2,3,4,6,7,8-HpCDD in samples LFSW02, YFSW02 and CPSW02 were qualified as nondetects (U) at the sample concentration.						
1,2,3,4,6,7,8-HpCDD	3.78 J pg/L	YFSW02 CPSW01 CPSW02	The positive results for 1,2,3,4,6,7,8-HpCDD in samples LFSW01, LFSW03 and YFSW01 were qualified as estimated (J). Qualification was not required for the remaining samples since 1,2,3,4,6,7,8-HpCDD was not detected.						



		Work Orders 6254 and	6260
Compound	Blank Concentration	Blank ID: Associated Samples	Validation Action
			The positive result for OCDD in sample EB01 was qualified as nondetect (U) at the sample concentration.
OCDD	12.5 J pg/L		The positive results for OCDD in samples LFSW01, LFSW02, LFSW03, YFSW02, CPSW01 and CPSW0 were qualified as estimated (J).
			Qualification was not required for sample YFSW01 since OCDD was present at a concentration greater than 10x the blank concentration.
1,2,3,7,8-PeCDF	2.02 J pg/L		Qualification was not required since 1,2,3,7,8-PeCD was not detected in the associated samples.
O. A. T. R. POCINE	2.34 J pg/L		The positive result for 2,3,4,7,8-PeCDF in sample YFSW01 was qualified as nondetect (U) at the samp concentration.
2,3,4,7,8-PeCDF	2.34 0 PS/ D		Qualification was not required for the remaining samples since 2,3,4,7,8-PeCDF was not detected.
1,2,3,4,7,8-HxCDF	2.90 J pg/L		Qualification was not required since 1,2,3,4,7,8- HxCDF was not detected in the associated samples
1,2,3,6,7,8-HxCDF	2.50 J pg/L		The positive result for 1,2,3,6,7,8-HxCDF in sampl YFSW01 was qualified as nondetect (U) at the samp concentration.
1,2,3,0,7,0 12.021			Qualification was not required for the remaining samples since 1,2,3,6,7,8-HxCDF was not detected
2,3,4,6,7,8-HxCDF	3.78 J pg/L		Qualification was not required since 2,3,4,6,7,8- HxCDF was not detected in the associated sample
O - W ODE	446 I ng/I		The positive result for 1,2,3,7,8,9-HxCDF in samply YFSW01 was qualified as nondetect (U) at the sample concentration.
1,2,3,7,8,9-HxCDF	4.16 J pg/L		Qualification was not required for the remaining samples since 1,2,3,7,8,9-HxCDF was not detected
10016 TO UnODE	3.10 J pg/L		The positive result for 1,2,3,4,6,7,8-HpCDF in samy YFSW01 was qualified as nondetect (U) at the sam concentration.
1,2,3,4,6,7,8-HpCDF	3.100 pg/L		Qualification was not required for the remaining samples since 1,2,3,4,6,7,8-HpCDF was not detect
1,2,3,4,7,8,9-HpCDF	5.80 J pg/L		Qualification was not required since 1,2,3,4,7,8,9 HpCDF was not detected in the associated sample
OCDE	8.86 J pg/L		The positive result for OCDF in sample YFSW01 w qualified as nondetect (U) at the sample concentration.
OCDF	0.001 hR\r		Qualification was not required for the remainin samples since OCDF was not detected.



		Work Orders 6254 and	6260
Compound	Blank Concentration	Blank ID: Associated Samples	Validation Action
1,2,3,7,8-PeCDD	0.198 J pg/g	MB (Batch 26253): LFSD01 LFSD02 LFSD03 YFSD01 YFSD02	The positive results for 1,2,3,7,8-PeCDD in samples YFSD02 and CPSD01 were qualified as nondetects (U) at the sample concentration. The positive result for 1,2,3,7,8-PeCDD in sample LFSD03 was qualified as estimated (J). Qualification was not required for the remaining samples since 1,2,3,7,8-PeCDD was not detected.
1,2,3,4,7,8-HxCDD	0.198 J pg/g	CPSDo1 CPSDo2 LFHo1 LFHo2 LFHo3	The positive result for 1,2,3,4,7,8-HxCDD in samples LFSDo2, LFSDo3, YFSDo1 and YFSDo2 were qualified as estimated (J). Qualification was not required for the remaining samples since 1,2,3,4,7,8-HxCDD was not detected.
1,2,3,6,7,8-HxCDD	o.208 J pg/g	JFH01 JFH02 MFH01	The positive results for 1,2,3,6,7,8-HxCDD in sample LFSD02, LFSD03, CPSD02, YFSD01, YFSD02, CPSD01 and CPSD02 were qualified as estimated (J Qualification was not required for the remaining samples since 1,2,3,6,7,8-HxCDD was not detected
1,2,3,7,8,9-HxCDD	0.210 J pg/g		The positive results for 1,2,3,7,8,9-HxCDD in sample LFSD02, YFSD01, YFSD02, CPSD01 and CPSD02 were qualified as estimated (J). Qualification was not required for the remaining samples since 1,2,3,7,8,9-HxCDD was not detected.
1,2,3,4,6,7,8-HpCDD	o.380 J pg/g		The positive results for 1,2,3,4,6,7,8-HpCDD in samples LFH01, LFH02, LFH03, JFH01, JFH02 at MFH01 were qualified as estimated (J). Qualification was not required for the remaining samples since 1,2,3,4,6,7,8-HpCDD was present at concentration >5x the blank concentration.
OCDD	2.09 J pg/g		The positive results for OCDD in samples LFH01 LFH02, LFH03, JFH01, JFH02 and MFH01 wer qualified as estimated (J). Qualification was not required for the remaining samples since OCDD was present at a concentration greater than 10x the blank concentration.
1,2,3,7,8-PeCDF	0.242 J pg/g		The positive results for 1,2,3,7,8-PeCDF in sample LFSD02, YFSD01, CPSD02 and LFH01 were qualified as nondetects (U) at the sample concentration. The positive result for 1,2,3,7,8-PeCDF in sample LFSD03 was qualified as estimated (J). Qualification was not required for the remaining samples since 1,2,3,7,8-PeCDF was not detected.



		Work Orders 6254 and	6260
Compound	Blank Concentration	Blank ID: Associated Samples	Validation Action
			The positive results for 2,3,4,7,8-PeCDF in samples YFSDo1, CPSDo2 and LFHo2 were qualified as nondetects (U) at the sample concentration.
2,3,4,7,8-PeCDF	0.176 J pg/g		The positive result for 2,3,4,7,8-PeCDF in sample LFSD03 was qualified as estimated (J).
			Qualification was not required for the remaining samples since 2,3,4,7,8-PeCDF was not detected.
			The positive result for 1,2,3,4,7,8- HxCDF in sample CPSDo2 was qualified as nondetect (U) at the sample concentration.
1,2,3,4,7,8-HxCDF	o.188 J pg/g		The positive results for 1,2,3,4,7,8-HxCDF in samples LFSD03 and YFSD02 were qualified as estimated (J).
			Qualification was not required for the remaining samples since 1,2,3,4,7,8-HxCDF was not detected.
			The positive result for 1,2,3,6,7,8- HxCDF in sample CPSDo2 was qualified as nondetect (U) at the sample concentration.
1,2,3,6,7,8-HxCDF	0.176 J pg/g		The positive results for 1,2,3,6,7,8-HxCDF in samples LFSD03, YFSD01 and YFSD02 were qualified as estimated (J).
			Qualification was not required for the remaining samples since 1,2,3,6,7,8-HxCDF was not detected.
C.O.H.CDE	0.190 Ing/g		The positive results for 2,3,4,6,7,8-HxCDF in samples LFSD03, CPSD02 and YFSD02 were qualified as estimated (J).
2,3,4,6,7,8-HxCDF	0.180 J pg/g		Qualification was not required for the remaining samples since 2,3,4,6,7,8-HxCDF was not detected.
o W CDE	a oog Ing/g		The positive result for 1,2,3,7,8,9- HxCDF in sample MFH01 was qualified as nondetect (U) at the sample concentration.
1,2,3,7,8,9-HxCDF	0.322 J pg/g		Qualification was not required for the remaining samples since 1,2,3,7,8,9-HxCDF was not detected.
			The positive results for 1,2,3,4,6,7,8- HpCDF in samples LFH01, LFH02, LFH03, JFH01, and MFH01 were qualified as nondetects (U) at the sample concentration.
1,2,3,4,6,7,8-HpCDF	0.220 J pg/g		The positive results for 1,2,3,4,6,7,8-HpCDF in samples LFSD01, LFSD02, YFSD01, CPSD01, CPSD02 and JFH02 were qualified as estimated (J)
			Qualification was not required for the remaining samples since 1,2,3,4,6,7,8-HpCDF was present at a concentration >5x the blank concentration.
1,2,3,4,7,8,9-HpCDF	0.194 J pg/g		Qualification was not required since 1,2,3,4,7,8,9- HpCDF was not detected.



		Work Orders 6254 and 6	260
Compound	Blank Concentration	Blank ID: Associated Samples	Validation Action
OCDF	0.396 J pg/g	23.7	The positive results for OCDF in samples LFSD01, LFSD02, LFSD03, YFSD01, YFSD02, CPSD01 and CPSD02 were qualified as estimated (J). Qualification was not required for the remaining samples since OCDF was not detected.
OCDD	497 pg/L	MB (Batch 26305): JFM02 JFM03	The positive results for OCDD in samples JFM02 and JFM03 were qualified as nondetects (U) at the sample concentration.
OCDD	72.8 J pg/L	MB (Batch 26417): JFM01	The positive result for OCDD in sample JFM01 was qualified as estimated (J).

		Work Order 6322	
Compound	Blank Concentration (pg/g)	Blank ID: Associated Samples	Validation Action
OCDD	0.924 J	MB (Batch 26411): LFBG01 LFBG02 LFBG02 DUP LFLMB01 LFLMB02 YFBG01 YFBG02 CPBG01 CPBG02	The positive result for OCDD in samples LFBGo2-F LFBGo2-F DUP, YFBGo1-F/YFBGo2-F, CPBGo1-F CPBGo2-F and CPLMBo1-F were qualified as nondetects (U) at the sample concentration. The positive results for OCDD in samples LFBGo1, LFBGo2, LFBGo2 DUP, LFMBo1, YFBGo1, CPBGo2, CPBGo2, CPLMBo1, CPLMBo2, CPLMBo2 DUP, LFLMBo2, LFBGo1-F and LFLMBo1-F were qualified as estimated (J). Qualification was not required for sample YFBGo2 since OCDD was present at a concentration greater than 10x the blank concentration.
2,3,7,8-TCDF	0.186 J	CPLMB01 CPLMB02 CPLMB02 DUP LFBG01-F LFBG02-F LFBG02-F DUP LFLMB01-F YFBG01-F/YFBG02-F	The positive results for 2,3,7,8-TCDF in samples LFBG01, LFBG02, LFBG02 DUP, LFLMB01, YFBG02 YFBG02, CPBG01, CPBG02, CPLMB01, CPLMB02 LFLMB02, LFBG02-F, LFBG02-F DUP, LFLMB01-YFBG01-F/YFBG02-F, CPBG01-F, CPBG02-F and CPLMB01-F were qualified as estimated (J). Qualification was not required for samples CPLMB0 DUP and LFBG01-F since 2,3,7,8-TCDF was not detected.
1,2,3,7,8-PeCDF	0.108 J	CPBG01-F	Qualification was not required for the associated
2,3,4,7,8-PeCDF	0.082 J	CPBG02-F CPLMB01-F	samples since 1,2,3,7,8-PeCDF and 2,3,4,7,8-PeCD were not detected in the associated samples.



	Work Order 6324								
Compound	Blank Concentration (pg/g)	Blank ID: Associated Samples	Validation Action						
OCDD	0.832 J	MB (Batch 26438): CPLMB02-F CPLMB02-F DUP LFLMB02-F	The positive result for OCDD in sample CPLMB02-F was qualified as nondetect (U) at the sample concentration. The positive result for OCDD in sample LFLMB02-F was qualified as estimated (J). Qualification was not required for sample CPLMB02-F DUP since OCDD was not present.						

Qualification of the data was performed as follows:

- Sample results > the estimated detection limit (EDL) were qualified as nondetect (U) at the sample concentration if the result was < the blank concentration.
- Sample results > the EDL and < 10x the blank concentration for OCDD and OCDF and <5x the blank concentration for all other congeners were qualified as estimated (J).
- Sample results > the EDL and > 10x the blank concentration for OCDD and OCDF and >5x the blank concentration for all other congeners were accepted without qualification.

It should be noted that sample total homologue results were not assessed with regards to blank contamination. The total homologues are determined by summing the 2378-isomers and non-2378-isomers at each level of chlorination. As is typical, the individual peaks included in the total homologues are not identified by their specific compound name. Consequently, the total homologues in the method blanks could be comprised of different individual components than the associated samples and thus are not evaluated with respect to blank contamination.

Labeled Compound Recoveries

The labeled compound recoveries were within the acceptance criteria for all sample analyses.

MS/MSD Results

MS/MSD analyses were not performed on samples in this data set. No data validation actions were required on this basis.

LCS/LCSD Results

An LCS and LCSD were prepared with each extraction batch. All criteria were met.

Field Duplicate Results

Samples LFH01/LFH03, LFSW02/LFSW03, LFSD02/LFSD03 and JFM01/JFM03 were submitted as the field duplicate pairs with this sample data set. The following tables summarize the relative percent differences (RPDs) of the detected congeners and total homologs in the field duplicate pairs. The results for several RPDs were not calculable (NC) since the affected congener or total homolog was not detected in one of the two samples; qualification of the data was not required on this basis. The RPD criteria were exceeded



for the following congeners and total homologs detected in the field duplicate pair LFSDo2/LFSDo3: 1,2,3,4,6,7,8-HpCDD, OCDD, total HpCDDs, total TCDFs, and total PeCDFs. The positive results for these congeners and total homologs in samples LFSDo2 and LFSDo3 were qualified as estimated (J).

Compound	QL (pg/L)	LFSW02 (pg/L)	LFSW03 (pg/L)	RPD
1234678-HpCDD	50.6	2.86 U	4.26 J	NC
OCDD	101	56.4 J	95.6 J	51.6
Total HpCDDs	50.6	6.24 J	10.3 J	49.1
	sults are \geq 5x the quantitation of the course of the QI of the			

Compound	QL (pg/g)	LFSDo2 (pg/g)	LFSDo3 (pg/g)	RPD
12378-PeCDD	4.99	o.339 U	0.424	NC
123478-HxCDD	4.99	0.611	0.889	37.1
123678-HxCDD	4.99	0.894	1.57	54.9
123789-HxCDD	4.99	1.05	2.35	76.5
1234678-HpCDD	4.99	32.7	60.3	59.4
OCDD	9.980	1750	3130	56.6
2378-TCDF	0.998	0.401	0.418	4.2
12378-PeCDF	4.99	o.188 U	0.256	NC
23478-PeCDF	4.99	0.137 U	0.272	NC
123478-HxCDF	4.99	o.238 U	0.250	NC
123678-HxCDF	4.99	o.208 U	0.274	NC
234678-HxCDF	4.99	o.23 U	0.317	NC
1234678-HpCDF	4.99	1.00	2.21	75.4
OCDF	9.98	1.70	3.00	55.3
Total PeCDDs	4.99	1.76	3.41 J	63.8
Total HxCDDs	4.99	15.3	26.6	53.9
Total HpCDDs	4.99	92.7	182	65.0
Total TCDFs	0.998	o.803 J	2.96	115
Total PeCDFs	4.99	1.16 J	3.50 J	100
Total HxCDFs	4.99	1.26 J	3.36 J	91
Total HpCDFs	4.99	1.69 J	3.66	73.6
	nen both results are $\geq 5x$ oth results are $< 5x$ the C			

Compound	QL (pg/L)	JFM01 (pg/L)	JFMo3 (pg/L)	RPD NC	
1234678-HpCDD	500	23.6 U	37.8 J		
OCDD	1000	118 J	123 U	NC	
12378-PeCDF	500	7.6 J	23.8 U	NC	
Total HpCDDs	500	23.6 U	37.8	NC	
Total PeCDFs	500	7.6 J	21 U	NC	



Compound	QL (pg/g)	LFH01 (pg/g)	LFHo3 (pg/g)	RPD
1234678-HpCDD	4.73	0.420 J	0.495 J	16.4
OCDD	9.47	5.94 J	4.36 J	30.7
2378-TCDF	0.947	0.127 J	0.108 J	16.2
Total HxCDDs	4.73	0.477 J	0.206 J	79.4
Total HpCDDs	4.73	0.96 J	1.14 J	17.1
Total TCDFs	0.95	0.95 0.127 J	0.108 J	16.2
Total PeCDFs	4.73	0.0795 J	0.103 J	25.8
Total HpCDFs	4.73	0.305 J	o.398 J	26.5
Criteria: W		the QL, RPDs must be <5 QL, RPDs must be <100%.		

Laboratory Duplicate Results

Laboratory duplicate analyses were performed on samples LFBG02, CPLMB02, LFBG02-F and CPLMB02-F. The following tables summarize the RPDs of the detected congeners and total homologs in the laboratory duplicates. The results for several RPDs were not calculable (NC) since the affected congener or total homolog was not detected in one of the two analyses; qualification of the data was not required on this basis. The calculated RPDs were met for all laboratory duplicate analyses.

Compound	QL (pg/g)	LFBG02 (pg/g)	LFBGo2 DUP (pg/g)	RPD	
1234678-HpCDD	4.75	0.475 J	0.522 J	9.4	
OCDD	9.50	5.12 J	5.69 J	10.5	
2378-TCDF	0.950	0.291 J	0.287 J	1.4	
1234678-HpCDF	4.75	0.131 J	0.146 U	NC	
Total HpCDDs	4.75	0.475 J	0.522 J	9.4	
Total TCDFs	0.950	0.291 J	0.287 J	1	
Total HpCDFs	4.75	0.131 J	0.146 U	NC	

Compound	QL (pg/g)	CPLMB02 (pg/g)	CPLMBo2 DUP (pg/g)	RPD
2378-TCDD	0.986	0.394 J	0.495 J	22.7
1234678-HpCDD	4.93	0.286 J	0.411 J	35.9
OCDD	9.86	1.58 J	2.88 J	58.3
2378-TCDF	0.986	0.416 J	0.16 U	NC
Total TCDDs	0.986	0.394 J	0.495 J	22.7
Total HpCDDs	4.93	0.286 J	0.411 J	35.9
Total TCDFs	0.986	0.416 J	0.902 J	73.7

Compound	QL (pg/g)	LFBG02-F (pg/g)	LFBGo2-F DUP (pg/g)	RPD
2378-TCDF	0.987	0.298 J	0.244 J	19.9
Total TCDFs	0.987	0.298 J	0.394 J	27.7

Compound	QL (pg/g)	CPLMBo2-F (pg/g)	CPLMB02-F DUP (pg/g)	RPD
2378-TCDF	0.953	0.214 J	0.235 J	9.4



Compound	QL (pg/g)	CPLMB02-F (pg/g)	CPLMB02-F DUP (pg/g)	RPD	
Total TCDFs	0.953	0.214 J	0.421	65.2	

Quantitation Limits and Sample Results

Nondetect results were reported to the EDL as stipulated in the method.

Select results were reported which were below the lowest calibration standard level and QL. These results were qualified as estimated (J) by the laboratory.

2378-TCDF confirmation analysis was not performed since the affected sample results were detected at concentrations below the QL and thus are qualified as estimated by the laboratory. Further qualification of the data was not required.

Several congeners in the select samples were reported by the laboratory as EMPCs since all identification criteria were not met. These results were qualified as estimated (J) during data validation.

No dilutions were performed on samples in this data set.



Qualified Form Is

Report Date:

JUIY 41, 4014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis

Sample Summary

Client: Date Collected: Date Received:

Analyst:

Prep Method:

TRCC001 06/17/2014 09:45 06/18/2014 10:50 Project: Matrix: TRCC00314 WATER

As Received

Page 1

Client ID: Batch 1D: Run Date:

Data File:

SDG Number:

6254002 Lab Sample ID: 1613B Water Client Sample:

6254

LFSW01 Method:

26223 06/24/2014 23:33

A23JUN14A_4-12

26220 Prep Batch: 20-JUN-14 Prep Date:

EPA Method 1613B

SW846 3520C

JTF

Prep Basis: Instrument:

HRP750

Dilution:

978.9 mL Prep Aliquot: **PQL EMPC** Units **EDL** Result Qual CAS No. **Parmname** 10.2 0.913 .913 pg/L U 1746-01-6 2,3,7,8-TCDD 0.887 51.1 U .887 pg/L 1,2,3,7,8-PeCDD 40321-76-4 51.1 1.29 U 1.29 pg/L 1,2,3,4,7,8-HxCDD 39227-28-6 51.1 pg/L 1.24 υ 1.24 1,2,3,6,7,8-HxCDD 57653-85-7 51.1 1.34 U 1.34 pg/L 1,2,3,7,8,9-HxCDD 19408-74-3 2.00 51.1 pg/L 4.15 j 1,2,3,4,6,7,8-HpCDD 35822-46-9 11.8 102 pg/L J 92.4 3268-87-9 1,2,3,4,6,7,8,9-OCDD 0.815 10.2 11 .815 pg/L 51207-31-9 2,3,7,8-TCDF 51.1 0.744 pg/L .744 U 1,2,3,7,8-PeCDF 57117-41-6 pg/L 0.725 51.1 U .725 57117-31-4 2,3,4,7,8-PeCDF 51.1 0.548 pg/L 11 .548 70648-26-9 1,2,3,4,7,8-HxCDF 51.1 0.543 pg/L U .543 1,2,3,6,7,8-HxCDF 57117-44-9 0.580 pg/L U .58 2,3,4,6,7,8-HxCDF 60851-34-5 0.881 51.1 pg/L U .881 1,2,3,7,8,9-HxCDF 72918-21-9 51.1 0.635 .635 pg/L U 1,2,3,4,6,7,8-HpCDF 67562-39-4 0.930 51.1 U .93 pg/L 1,2,3,4,7,8,9-HpCDF 55673-89-7 2.19 102 pg/L U 2.19 1,2,3,4,6,7,8,9-OCDF 39001-02-0 10.2 0.913 IJ .913 pg/L Total Tetrachlorodibenzo-p-dioxin 41903-57-5 51.1 0.887 .887 pg/L U 36088-22-9 Total Pentachlorodibenzo-p-dioxin pg/L 51.1 1.24 U 1.24 Total Hexachlorodibenzo-p-dioxin 34465-46-8 51.1 pg/L 2.00 10.2 Total Heptachlorodibenzo-p-dioxin J 37871-00-4 0.815 10.2 U pg/L .815 Total Tetrachlorodibenzofuran 30402-14-3 0.556 51.1 pg/L U .556 Total Pentachlorodibenzofuran 30402-15-4 0.543 51.1 pg/L Total Hexachlorodibenzofuran 11 .543 55684-94-1 51.1 0.635 U .635 pg/L Total Heptachlorodibenzofuran 38998-75-3 0.0692 0.0692 pg/L 3333-30-0 TEQ WHO2005 ND=0 pg/L 1.46 TEQ WHO2005 ND=0.5 1.46 3333-30-1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1670	2040	pg/L	81.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		1860	2040	pg/L	91.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1510	2040	pg/L	74.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1620	2040	pg/L	79.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1710	2040	pg/L	83.6	(23%-140%)
13C-OCDD		3240	4090	pg/L	79.4	(17%-157%)
13C-2,3,7,8-TCDF		1760	2040	pg/L	86.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		1930	2040	pg/L	94.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		1890	2040	pg/L	92.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1570	2040	pg/L	77.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1620	2040	pg/L	79.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1600	2040	pg/L	78.1	(28%-136%)
		1480	2040	pg/L	72.6	(29%-147%)
13C-1,2,3,7,8,9-HxCDF						

SDG Number:

Lab Sample ID:

Client Sample:

Report Date:

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis

Sample Summary

Client: TRCC001 06/17/2014 10:20 Date Collected:

Date Received:

Prep Method:

Method:

Analyst:

Project: Matrix:

Prep Basis:

TRCC00314 WATER

As Received

Client 1D: 26223 **Batch ID:**

6254

6254003

LFSW02

1613B Water

06/25/2014 00:21 Run Date: Data File:

A23JUN14A_4-13

26220 Prep Batch: 20-JUN-14 Prep Date:

EPA Method 1613B

JTF SW846 3520C

06/18/2014 10:50

Instrument: Dilution:

HRP750 1

987.2 mL **Prep Aliquot: EDL** POL Result **EMPC** Units Qual CAS No. Parmname 0.774 10.1 .774 pg/L U 2,3,7,8-TCDD 1746-01-6 50.6 0.713 pg/L U .713 40321-76-4 1,2,3,7,8-PeCDD pg/L 1.13 50.6 1.13 υ 1,2,3,4,7,8-HxCDD 39227-28-6 50.6 1.11 1.11 pg/L U 1,2,3,6,7,8-HxCDD 57653-85-7 1.19 50.6 U 1.19 pg/L 1,2,3,7,8,9-HxCDD 19408-74-3 pg/L 2.07 50.6 2.86 JK U 35822-46-9 1,2,3,4,6,7,8-HpCDD 6.44 101 pg/L 56.4 J 1,2,3,4,6,7,8,9-OCDD 3268-87-9 10.1 0.810 pg/L U .81 2,3,7,8-TCDF 51207-31-9 0.610 50.6 pg/L U .61 1,2,3,7,8-PeCDF 57117-41-6 pg/L 0.598 50.6 .598 U 57117-31-4 2,3,4,7,8-PeCDF 50.6 0.569 pg/L U .569 1,2,3,4,7,8-HxCDF 70648-26-9 0.551 50.6 U .551 pg/L 1,2,3,6,7,8-HxCDF 57117-44-9 pg/L 0.563 50.6 U .563 2,3,4,6,7,8-HxCDF 60851-34-5 0.810 50.6 pg/L υ .81 1,2,3,7,8,9-HxCDF 72918-21-9 0.401 50.6 pg/L U .401 1,2,3,4,6,7,8-HpCDF 67562-39-4 0.598 50.6 pg/L .598 U 55673-89-7 1,2,3,4,7,8,9-HpCDF 101 1.80 υ 1.8 pg/L 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.774 10.1 U pg/L .774 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 50.6 pg/L 0.713 U .713 Total Pentachlorodibenzo-p-dioxin 36088-22-9 pg/L 1.11 50.6 U 1.11 Total Hexachlorodibenzo-p-dioxin 34465-46-8 2.07 50.6 3.38 6.24 pg/L J Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.810 10.1 U .81 pg/L 30402-14-3 Total Tetrachlorodibenzofuran pg/L 0.513 50.6 U 513 Total Pentachlorodibenzofuran 30402-15-4 0.551 50.6 pg/L U .551 Total Hexachlorodibenzofuran 55684-94-1 0.401 50.6 U .401 pg/L Total Heptachlorodibenzofuran 38998-75-3 0.0455 pg/L 0.0169 TEQ WHO2005 ND=0 3333-30-0 pg/L 1.21 1.23 3333-30-1 TEQ WHO2005 ND=0.5

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits		
13C-2,3,7,8-TCDD		1640	2030	pg/L	80.9	(25%-164%)		
13C-1,2,3,7,8-PeCDD		1720	2030	pg/L	84.9	(25%-181%)		
13C-1,2,3,4,7,8-HxCDD		1580	2030	pg/L	77.9	(32%-141%)		
13C-1,2,3,6,7,8-HxCDD		1560	2030	pg/L	77,1	(28%-130%)		
13C-1,2,3,4,6,7,8-HpCDD		1780	2030	pg/L	87.7	(23%-140%)		
13C-OCDD		3420	4050	pg/L	84.4	(17%-157%)		
13C-2,3,7,8-TCDF		1810	2030	pg/L	89.4	(24%-169%)		
13C-1,2,3,7,8-PeCDF		1830	2030	pg/L	90.1	(24%-185%)		
13C-2,3,4,7,8-PeCDF		1750	2030	pg/L	86.6	(21%-178%)		
13C-1,2,3,4,7,8-HxCDF		1520	2030	pg/L	75.2	(26%-152%)		
13C-1,2,3,6,7,8-HxCDF		1590	2030	pg/L	78.3	(26%-123%)		
13C-2,3,4,6,7,8-HxCDF		1610	2030	pg/L	79.7	(28%-136%)		
13C-1,2,3,7,8,9-HxCDF		1570	2030	pg/L	77.4	(29%-147%)	.4	

SDG Number:

Lab Sample ID:

Client Sample:

Report Date:

July 21, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis

Sample Summary Client: TRCC001

Date Collected:

Date Received:

06/17/2014 10:20 06/18/2014 10:50 Project: Matrix:

Prep Basis:

Dilution:

TRCC00314 WATER

As Received

1

Page 1

LFSW03 Client ID: Batch ID: 26223

06/24/2014 22:45 Run Date:

A23JUN14A_4-11 Data File:

6254

6254004

1613B Water

26220 Prep Batch: Prep Date: 20-JUN-14

EPA Method 1613B Method: Analyst:

JTF

HRP750 Instrument:

SW846 3520C Prep Method: **Prep Aliquot:** 982.2 mL

PQL EMPC Units **EDL** Result Qual CAS No. Parmname 1.10 10.2 pg/L U 1.1 1746-01-6 2,3,7,8-TCDD 50.9 0.916 U .916 pg/L 1,2,3,7,8-PeCDD 40321-76-4 1.50 50.9 pg/L υ 1.5 1,2,3,4,7,8-HxCDD 39227-28-6 pg/L 50.9 1.46 U 1.46 1,2,3,6,7,8-HxCDD 57653-85-7 п 1.57 pg/L 1.57 50.9 1,2,3,7,8,9-HxCDD 19408-74-3 3.01 50.9 4.26 pg/L 1,2,3,4,6,7,8-HpCDD 35822-46-9 102 5.93 pg/L J 95.6 1,2,3,4,6,7,8,9-OCDD 3268-87-9 1.12 10.2 u 1.12 pg/L 51207-31-9 2,3,7,8-TCDF 50.9 pg/L 0.926 .926 u 1,2,3,7,8-PeCDF 57117-41-6 0.874 50.9 pg/L U .874 2,3,4,7,8-PeCDF 57117-31-4 0.593 50.9 pg/L .593 υ 70648-26-9 1,2,3,4,7,8-HxCDF 50.9 0.586 .586 pg/L U 1,2,3,6,7,8-HxCDF 57117-44-9 50.9 0.593 U pg/L .593 2,3,4,6,7,8-HxCDF 60851-34-5 pg/L 0.882 50.9 U .882 1,2,3,7,8,9-HxCDF 72918-21-9 pg/L 0.627 50.9 .627 U 1,2,3,4,6,7,8-HpCDF 67562-39-4 1.03 50.9 U 1.03 pg/L 1,2,3,4,7,8,9-HpCDF 55673-89-7 2.44 102 pg/L U 2.44 1,2,3,4,6,7,8,9-OCDF 39001-02-0 pg/L 1.10 10.2 U 1.1 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 0.916 50.9 pg/L U .916 Total Pentachlorodibenzo-p-dioxin 36088-22-9 50.9 1.46 U 1.46 pg/L Total Hexachlorodibenzo-p-dioxin 34465-46-8 pg/L 3.01 50.9 J 10.3 37871-00-4 Total Heptachlorodibenzo-p-dioxin 1.12 10.2 U pg/L 1.12 Total Tetrachlorodibenzofuran 30402-14-3 50.9 0.751 pg/L .751 Total Pentachlorodibenzofuran 30402-15-4 50.9 0.586 U .586 pg/L Total Hexachlorodibenzofuran 55684-94-1 pg/L 0.627 50.9 U .627 Total Heptachlorodibenzofuran 38998-75-3 0.0712 0.0712 pg/L 3333-30-0 TEQ WHO2005 ND=0 pg/L TEQ WHO2005 ND=0.5 1.65 1.65 3333-30-1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		1470	2040	pg/L	72.0	(25%-164%)	
13C-1,2,3,7,8-PeCDD		1650	2040	pg/L	80.8	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		1560	2040	pg/L	76.4	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		1550	2040	pg/L	76.3	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		1740	2040	pg/L	85.4	(23%-140%)	
13C-OCDD		3150	4070	pg/L	77.4	(17%-157%)	
13C-2,3,7,8-TCDF		1620	2040	pg/L	79.7	(24%-169%)	
13C-1,2,3,7,8-PeCDF		1740	2040	pg/L	85.6	(24%-185%)	
13C-2,3,4,7,8-PeCDF		1770	2040	pg/L	87.0	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		1510	2040	pg/L	74.3	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		1590	2040	pg/L	78.1	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		1610	2040	pg/L	79.0	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		1490	2040	pg/L	73.4	(29%-147%)	
100-144,1,007-1100-1							

Report Date:

July 10, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6260 SDG Number: 6260001 Lab Sample ID:

1613B Water Client Sample: YFSW01

Client ID: 26223 Batch ID: 06/24/2014 19:32 Run Date:

A23JUN14A_4-7 Data File: 26220 Prep Batch: 20-JUN-14 Prep Date:

TRCC001 Client: Date Collected: Date Received:

Method:

Analyst:

Prep Method:

06/17/2014 14:40 06/19/2014 10:05

EPA Method 1613B JTF

SW846 3520C

Project: Matrix: **TRCC00314** WATER

As Received Prep Basis:

HRP750 Instrument: Dilution:

985.2 mL **Prep Aliquot: PQL EDL EMPC** Units Result Qual Parmname CAS No. 10.2 1.03 U 1.03 pg/L 1746-01-6 2,3,7,8-TCDD 50.8 pg/L 1.21 U 1.21 1,2,3,7,8-PeCDD 40321-76-4 50.8 pg/L 1.93 U 1.93 1,2,3,4,7,8-HxCDD 39227-28-6 1.97 50.8 pg/L U 1.97 1,2,3,6,7,8-HxCDD 57653-85-7 2,07 50.8 pg/L U 2.07 1,2,3,7,8,9-HxCDD 19408-74-3 50.8 pg/L 2.50 j 12.5 1,2,3,4,6,7,8-HpCDD 35822-46-9 7.75 102 pg/L 173 1,2,3,4,6,7,8,9-OCDD 3268-87-9 10.2 1.14 1.14 pg/L U 2,3,7,8-TCDF 51207-31-9 50.8 pg/L 0.897 U 297 1,2,3,7,8-PeCDF 57117-41-6 50.8 0.899 JK U 1.20 pg/L 57117-31-4 2,3,4,7,8-PeCDF 1.34 50.8 pg/L U 1.34 1,2,3,4,7,8-HxCDF 70648-26-9 50.8 pg/L 1.25 1,30 JK U 1,2,3,6,7,8-HxCDF 57117-44-9 50.8 1.34 pg/L u 1.34 2,3,4,6,7,8-HxCDF 60851-34-5 50.8 1.91 J 🗸 🗸 1.99 pg/L 72918-21-9 1,2,3,7,8,9-HxCDF pg/L 1.21 50.8 JK U 2.68 1,2,3,4,6,7,8-HpCDF 67562-39-4 50.8 1.94 pg/L U 1.94 1,2,3,4,7,8,9-HpCDF 55673-89-7 102 3.82 J 1 🗸 🗸 7.39 pg/L 39001-02-0 1,2,3,4,6,7,8,9-OCDF 10.2 1.03 1.03 pg/L U Total Tetrachlorodibenzo-p-dioxin 41903-57-5 50.8 pg/L 1.21 U 1.21 36088-22-9 Total Pentachlorodibenzo-p-dioxin 1.93 50.8 pg/L U 1.93 Total Hexachlorodibenzo-p-dioxin 34465-46-8 50.8 2.50 26.3 pg/L Total Heptachlorodibenzo-p-dioxin 37871-00-4 pg/L 1.14 10.2 U 1.14 Total Tetrachlorodibenzofuran 30402-14-3 0.641 50.8 .641 pg/L U 1.20 Total Pentachlorodibenzofuran 30402-15-4 50,8 1.25 pg/L J 1.99 3.29 Total Hexachlorodibenzofuran 55684-94-1 pg/L 1.21 50.8 2.13 4.81 Total Heptachlorodibenzofuran 38998-75-3 0.894 pg/L 0.378 TEQ WHO2005 ND=0 3333-30-0 pg/L 2.21 2.53 TEQ WHO2005 ND=0.5 3333-30-1

Surrogate/Tracer recovery		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
	***		1480	2030	pg/L	73.1	(25%-164%)
13C-2,3,7,8-TCDD			1650	2030	pg/L	81.5	(25%-181%)
13C-1,2,3,7,8-PeCDD			1470	2030	pg/L	72.4	(32%-141%)
13C-1,2,3,4,7,8-HxCDD			1610	2030	pg/L	79.3	(28%-130%)
13C-1,2,3,6,7,8-HxCDD			1710	2030	pg/L	84.4	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD			3250	4060	pg/L	80.0	(17%-157%)
13C-OCDD			1680	2030	pg/L	82.7	(24%-169%)
13C-2,3,7,8-TCDF			1790	2030	pg/L	88.1	(24%-185%)
13C-1,2,3,7,8-PeCDF					•	86.1	(21%-178%)
13C-2,3,4,7,8-PeCDF	.53		1750	2030	pg/L	73.6	(26%-152%)
13C-1,2,3,4,7,8-HxCDF			1490	2030	pg/L		(26%-123%)
13C-1,2,3,6,7,8-HxCDF			1520	2030	pg/L	75.0	• 122
13C-2,3,4,6,7,8-HxCDF			1590	2030	pg/L	78.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF			1510	2030	pg/L	74.2	(29%-147%)

Report Date:

July 10, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6260 SDG Number: 6260002 Lab Sample ID: Client Sample:

1613B Water

YFSW02 Client ID: 26223 Batch ID: 06/24/2014 20:20 Run Date:

A23JUN14A_4-8 Data File: 26220 Prep Batch:

20-JUN-14 Prep Date:

TRCC001 Client: Date Collected: Date Received:

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Qual

.879

.841

.657

.625

.633

917

.803

1.24

2.62

1.05

0.014

1.57

2020

2020

1500

1450

pg/L

pg/L

Method:

Analyst:

06/17/2014 15:00 06/19/2014 10:05

EPA Method 1613B JTF

Project: Matrix:

Prep Basis:

EDL

1.05

0.962

Units

pg/L

pg/L

TRCC00314 WATER

As Received

PQL

10.1

50.4

HRP750 Instrument: 1 **Dilution:**

SW846 3520C Prep Method: 991.9 mL Prep Aliquot: Result Qual Parmname CAS No. 1.05 U 2,3,7,8-TCDD 1746-01-6 U .962 1,2,3,7,8-PeCDD 40321-76-4 U 1.3 1,2,3,4,7,8-HxCDD 39227-28-6 U 1.34 1,2,3,6,7,8-HxCDD

57653-85-7 U 19408-74-3 1,2,3,7,8,9-HxCDD жч 1,2,3,4,6,7,8-HpCDD 35822-46-9 j 46.8 1,2,3,4,6,7,8,9-OCDD 3268-87-9 U 1.03

1,2,3,7,8-PeCDF 57117-41-6 2,3,4,7,8-PeCDF 57117-31-4 70648-26-9 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 57117-44-9 60851-34-5

2,3,7,8-TCDF

51207-31-9

37871-00-4

2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 72918-21-9 67562-39-4 1,2,3,4,6,7,8-HpCDF 1,2,3,4,7,8,9-HpCDF 55673-89-7

1,2,3,4,6,7,8,9-OCDF 39001-02-0 41903-57-5 Total Tetrachlorodibenzo-p-dioxin Total Pentachlorodibenzo-p-dioxin 36088-22-9 Total Hexachlorodibenzo-p-dioxin 34465-46-8

Total Heptachlorodibenzo-p-dioxin

Total Tetrachlorodibenzofuran 30402-14-3 Total Pentachlorodibenzofuran 30402-15-4 Total Hexachlorodibenzofuran 55684-94-1 Total Heptachlorodibenzofuran 38998-75-3

TEQ WHO2005 ND=0 3333-30-0 TEQ WHO2005 ND=0.5 3333-30-1

Surrogate/Tracer recovery

13C-2,3,7,8-TCDD

13C-1,2,3,7,8-PeCDD

13C-1,2,3,4,7,8-HxCDD

13C-1,2,3,6,7,8-HxCDD

13C-OCDD

13C-2,3,7,8-TCDF

13C-1,2,3,7,8-PeCDF

13C-2,3,4,7,8-PeCDF

13C-1,2,3,4,7,8-HxCDF

13C-1,2,3,6,7,8-HxCDF

13C-2,3,4,6,7,8-HxCDF

13C-1,2,3,7,8,9-HxCDF

13C-1,2,3,4,6,7,8-HpCDD

EMPC

50.4 1.30 pg/L pg/L 1.34 50.4 1.40 50.4 pg/L 50.4 2.08 3.61 pg/L 101 pg/L 5.30 1.03 10.1 pg/L 50.4 0.879 pg/L 50.4 pg/L 0.841 50.4 0.657 pg/L 0.625 50.4 pg/L 50.4 0.633 pg/L 50.4 0.917 pg/L 0.803 50.4 pg/L 1.24 50.4 pg/L 101 2.62 pg/L 10.1 1.05 pg/L

50.4 0.962 .962 pg/L 1.30 50.4 pg/L 1.3 50 4 pg/L 2.08 2.08 6.59 1.03 10.1 1.03 pg/L pg/L 0.728 50.4 728 0.625 50.4 .625 pg/L 0.803 50.4 pg/L 803

pg/L

pg/L

0.0501

1.60

Recovery% **Acceptable Limits** Units Result Nominal 66.1 (25%-164%) 2020 pg/L 1330 (25%-181%) pg/L 79.7 1610 2020 (32%-141%) 1420 2020 pg/L 70.4 (28%-130%) 2020 pg/L 78.1 1570 (23%-140%) 87.9 1770 2020 pg/L (17%-157%) 3290 4030 pg/L 81.6 pg/L 72.8 (24%-169%) 2020 1470 (24%-185%) 84.0 1690 2020 pg/L pg/L (21%-178%) 1670 2020 82.9 68.2 (26%-152%) 2020 pg/L 1370 (26%-123%) 2020 75.6 1520 pg/L

74.2

72.1

(28%-136%)

(29%-147%)

1410

1540

1510

1450

2140

2140

2140

2140

pg/L

pg/L

pg/L

pg/L

(26%-152%)

(26%-123%)

(28%-136%)

(29%-147%)

65.8

72.2

70.8

67.8

13C-1,2,3,4,7,8-HxCDF

13C-1,2,3,6,7,8-HxCDF

13C-2,3,4,6,7,8-HxCDF

13C-1,2,3,7,8,9-HxCDF

Report Date:

July 10, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 6260004 Lab Sample ID:

1613B Water Client Sample:

CPSW02 Client ID: 26223 Batch ID:

06/24/2014 21:56 Run Date: A23JUN14A_4-10 Data File:

26220 Prep Batch: 20-JUN-14 Prep Date:

TRCC001 Client: Date Collected: Date Received:

06/18/2014 11:30 06/19/2014 10:05

EPA Method 1613B

JTF

Project:

Matrix:

TRCC00314 WATER

As Received Prep Basis:

HRP750 Instrument: Dilution:

SW846 3520C Prep Method: 948.6 mL Prep Aliquot:

Method:

Analyst:

Prep Date:	20-3011-14			EMPC	Units	EDL	PQL	
CAS No.	Parmname	Qual	Result	EMPC		1.26	10.5	
1746-01-6	2,3,7,8-TCDD	U	1.26		pg/L	0.915	52.7	
40321-76-4	1,2,3,7,8-PeCDD	ប	.915		pg/L	1.50	52.7	
39227-28-6	1,2,3,4,7,8-HxCDD	U	1,5		pg/L		52.7	
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.5		pg/L	1.50	52.7	
19408-74-3	1,2,3,7,8,9-HxCDD	ប	1.59		pg/L	1.59	52.7	
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK U	V	2.17	pg/L	1.81		
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	31,5		pg/L	4.53	105	
51207-31-9	2,3,7,8-TCDF	บ	1.3		pg/L	1.30	10.5	
57117-41-6	1,2,3,7,8-PeCDF	U	.826		pg/L	0.826	52.7	
57117-31-4	2,3,4,7,8-PeCDF	ប	.816		pg/L	0.816	52.7	
70648-26-9	1,2,3,4,7,8-HxCDF	υ	.687		pg/L	0.687	52.7	
57117-44-9	1.2.3,6,7,8-HxCDF	υ	.687		pg/L	0.687	52.7	
60851-34-5	2,3,4,6,7,8-HxCDF	ប	.719		pg/L	0.719	52.7	
72918-21-9	1,2,3,7,8,9-HxCDF	U	.98		pg/L	0.980	52.7	
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.869		pg/L	0.869	52.7	
	1,2,3,4,0,7,6-1,pcDf 1,2,3,4,7,8,9-HpCDF	บ	1.43		pg/L	1.43	52.7	
55673-89-7	1,2,3,4,6,7,8,9-OCDF	U	2.93		pg/L	2.93	105	
39001-02-0	Total Tetrachlorodibenzo-p-dioxin	U	1.26		pg/L	1.26	10.5	
41903-57-5	Total Pentachlorodibenzo-p-dioxin	บ	.915		pg/L	0.915	52.7	
36088-22-9	Total Hexachlorodibenzo-p-dioxin	· U	1.5		pg/L	1.50	52:7	
34465-46-8	Total Heptachlorodibenzo-p-dioxin	U	1.81	5,33	pg/L	1.81	52.7	
37871-00-4	Total Tetrachlorodibenzofuran	U	1.3		pg/L	1.30	10.5	
30402-14-3	Total Pentachiorodibenzofuran	บ	.816		pg/L	0.816	52.7	
30402-15-4		υ	.687		pg/L	0.687	52.7	
55684-94-1	Total Hexachlorodibenzofuran	v	.869		pg/L	0.869	52.7	
38998-75-3	Total Heptachlorodibenzofuran	U	0.00944	0.0312	pg/L			
3333-30-0	TEQ WHO2005 ND=0			1.71	pg/L pg/L			
3333-30-1	TEQ WHO2005 ND=0.5		1.70	1./1	bf.r			

Oual	Result	Nominal	Units	Recovery%	Acceptable Limits
	1490	2110	pg/L	70.7	(25%-164%)
	1860	2110	pg/L	88.1	(25%-181%)
	1550	2110	pg/L	73.6	(32%-141%)
	1690	2110	pg/L	80.1	(28%-130%)
	1780	2110	pg/L	84.3	(23%-140%)
	3260	4220	pg/L	77.2	(17%-157%)
	1790	2110	pg/L	84.7	(24%-169%)
	1920	2110	pg/L	91.1	(24%-185%)
	1920	2110	pg/L	91.2	(21%-178%)
	1540	2110	pg/L	72.8	(26%-152%)
	1700	2110	pg/L	80.6	(26%-123%)
	1640	2110		77.6	(28%-136%)
	1590	2110	pg/L	75.5	(29%-147%)
	Qual	1490 1860 1550 1690 1780 3260 1790 1920 1920 1540 1700	1490 2110 1860 2110 1550 2110 1690 2110 1780 2110 3260 4220 1790 2110 1920 2110 1920 2110 1540 2110 1700 2110 1700 2110	1490 2110 pg/L 1860 2110 pg/L 1550 2110 pg/L 1690 2110 pg/L 1780 2110 pg/L 3260 4220 pg/L 1790 2110 pg/L 1920 2110 pg/L 1920 2110 pg/L 1920 2110 pg/L 1540 2110 pg/L 1540 2110 pg/L 1700 2110 pg/L	1490 2110 pg/L 70.7 1860 2110 pg/L 88.1 1550 2110 pg/L 73.6 1690 2110 pg/L 80.1 1780 2110 pg/L 84.3 3260 4220 pg/L 77.2 1790 2110 pg/L 84.7 1920 2110 pg/L 91.1 1920 2110 pg/L 91.2 1540 2110 pg/L 72.8 1700 2110 pg/L 72.8 1700 2110 pg/L 72.8 1700 2110 pg/L 77.6

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: Date Collected:

Date Received:

Method:

TRCC001 06/17/2014 09:00 06/18/2014 10:50

Project: Matrix:

TRCC00314 WATER

Page 1

Client ID: Batch ID:

SDG Number:

Lab Sample ID:

Client Sample:

6254001 1613B Water **EB01**

26223 06/24/2014 12:57 Run Date:

6254

A23JUN14A_3-11 Data File: 26220 Prep Batch: 20-JUN-14

Analyst: Prep Method: EPA Method 1613B **JTF**

SW846 3520C

Prep Basis: Instrument:

HRP750

1

As Received

Dilution:

904.4 mL Prep Aliquot: Prep Date: **EDL** PQL Result **EMPC** Units Qual Parmname CAS No. 0.818 11.1 pg/L U .818 2,3,7,8-TCDD 1746-01-6 0.889 55.3 pg/L U .889 40321-76-4 1,2,3,7,8-PeCDD 55.3 1.14 pg/L U 1.14 1,2,3,4,7,8-HxCDD 39227-28-6 55.3 1:17 pg/L 1.17 IJ 1,2,3,6,7,8-HxCDD 57653-85-7 55.3 1.23 pg/L υ 1.23 1,2,3,7,8,9-HxCDD 19408-74-3 pg/L 1.41 55.3 U 1.41 1,2,3,4,6,7,8-HpCDD 35822-46-9 111 4.36 K U 9.84 pg/L 4 1,2,3,4,6,7,8,9-OCDD 3268-87-9 11.1 1.01 pg/L U 1.01 51207-31-9 2,3,7,8-TCDF 0.809 55.3 .809 pg/L U 1,2,3,7,8-PeCDF 57117-41-6 pg/L 0.803 55.3 .803 U 57117-31-4 2,3,4,7,8-PeCDF 0.579 55.3 pg/L υ .579 1,2,3,4,7,8-HxCDF 70648-26-9 0.573 55.3 pg/L U .573 1,2,3,6,7,8-HxCDF 57117-44-9 55.3 pg/L 0.568 .568 U 2,3,4,6,7,8-HxCDF 60851-34-5 0.871 55.3 pg/L U .871 72918-21-9 1,2,3,7,8,9-HxCDF 0.845 55.3 pg/L υ .845 1,2,3,4,6,7,8-HpCDF 67562-39-4 pg/L 1.42 55.3 υ 1.42 55673-89-7 1,2,3,4,7,8,9-HpCDF 2.45 111 pg/L U 2 45 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.818 11.1 pg/L U .818 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 55.3 0.889 pg/L U .889 36088-22-9 Total Pentachlorodibenzo-p-dioxin 1.14 55.3 pg/L U 1.14 Total Hexachlorodibenzo-p-dioxin 34465-46-8 1.41 55.3 U pg/L 1.41 Total Heptachlorodibenzo-p-dioxin 37871-00-4 1.01 11.1 1.28 pg/L J Total Tetrachlorodibenzofuran 30402-14-3 pg/L 0.803 55.3 U .803 Total Pentachlorodibenzofuran 30402-15-4 55.3 0.568 .568 pg/L U Total Hexachlorodibenzofuran 55684-94-1 0.845 55.3 U .845 pg/L Total Heptachlorodibenzofuran 38998-75-3 0.00295 pg/L, 0.00 TEQ WHO2005 ND=0 3333-30-0 1.36 pg/L 1.36 TEQ WHO2005 ND=0.5 3333-30-1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1780	2210	pg/L	80.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		1990	2210	pg/L	90.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1810	2210	pg/L	81.7	(32%-141%)
, , , , , ,		1750	2210	pg/L	79.1	(28%-130%)
13C-1,2,3,6,7,8-HxCDD	97	1840	2210	pg/L	83.0	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		3490	4420	pg/L	79.0	(17%-157%)
13C-OCDD		1950	2210	pg/L	88.3	(24%-169%)
13C-2,3,7,8-TCDF		2080	2210	pg/L	94.1	(24%-185%)
13C-1,2,3,7,8-PeCDF		2050	2210	pg/L	92.8	(21%-178%)
13C-2,3,4,7,8-PeCDF	•	1740	2210	pg/L	78.7	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		1790	2210	pg/L	81.1	(26%-123%)
13C-1,2,3,6,7,8-HxCDF		1840	2210	pg/L	83.1	(28%-136%)
13C-2,3,4,6,7,8-HxCDF	(#C	-			77,8	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		1720	2210	pg/L	11.0	(27/0/14/70)

TRCC00314

Dry Weight

4.89

SOLID

47.3

July 21, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis **Sample Summary**

6254 SDG Number: 6254005 Lab Sample ID: 1613B Soil Client Sample:

Client ID: LFSD01 Batch ID: 26255

07/11/2014 03:22 Run Date: b09jul14a_5-6 Data File:

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

1,2,3,4,6,7,8,9-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

2,3,4,6,7,8-HxCDF

1,2,3,7,8,9-HxCDF

1,2,3,4,6,7,8-HpCDF

1,2,3,4,7,8,9-HpCDF

1,2,3,4,6,7,8,9-OCDF

Total Tetrachlorodibenzo-p-dioxin

Total Pentachlorodibenzo-p-dioxin

Total Hexachlorodibenzo-p-dioxin

Total Heptachlorodibenzo-p-dioxin

Total Tetrachlorodibenzofuran

Total Pentachlorodibenzofuran

Total Hexachlorodibenzofuran

Total Heptachlorodibenzofuran

TEQ WHO2005 ND=0

TEQ WHO2005 ND=0.5

Parmname

Prep Batch: 26253 Prep Date: 24-JUN-14

CAS No.

1746-01-6

40321-76-4

39227-28-6

57653-85-7

19408-74-3

35822-46-9

3268-87-9

51207-31-9

57117-41-6

57117-31-4

70648-26-9

57117-44-9

60851-34-5

72918-21-9

67562-39-4

55673-89-7

39001-02-0

41903-57-5

36088-22-9

34465-46-8

37871-00-4

30402-14-3

30402-15-4

55684-94-1

38998-75-3

3333-30-0

3333-30-1

TRCC001 Client: 06/17/2014 10:00 Date Collected: 06/18/2014 10:50 Date Received:

EPA Method 1613B Method: .TTF Analyst:

Prep Method:

SW846 3540C

HRP763 Instrument: Dilution:

Project:

Matrix:

%Moisture:

Prep Basis:

Prep Aliquot: 19.41 g **PQL EDL EMPC** Units Result Qual 0.977 .371 0.371 pg/g υ 4.89 0.342 υ .342 pg/g 4.89 0.688 .688 pg/g U 0.651 4.89 U .651 pg/g 0.706 4.89 U .706 pg/g 4.89 1.09 pg/g 12.2 9.77 4.53 835 pg/g 0.977 0.315 11 315 pg/g 4.89 0.252 U .252 pg/g 0.211 4.89 υ .211 pg/g 0.233 4.89 pg/g U .233 4.89 0.197 U .197 pg/g 0.225 4.89 U .225 pg/g 0.356 4.89 pg/g U .356 0.246 4.89 0.485 pg/g J 0.414 4.89 U .414 pg/g 0.893 9.77 pg/g J 1.22 0.977 0.371 pg/g U .371 4.89 0.342 pg/g 0.788 4.89 0.651 5.51 pg/g 4.89 pg/g 1.09 41.4 0.977 0.315 0.397 pg/g U .315 0.184 4.89 U .184 0.311 pg/g 0.197 4.89 U .197 0.389 pg/g

pg/g

pg/g

pg/g

0.378

0.941

0.246

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		161	195	pg/g	82.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		176	195	pg/g	90.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		129	195	pg/g	66.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		150	195	pg/g	76.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		170	195	pg/g	86.9	(23%-140%)
13C-OCDD		296	391	pg/g	75.7	(17%-157%)
13C-2,3,7,8-TCDF		191	195	pg/g	97.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		184	195	pg/g	93.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		207	195	pg/g	106	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		145	195	pg/g	74.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		192	195	pg/g	98.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		177	195	pg/g	90.5	(28%-136%)
13C-1,2,3,4,6,7,6-11XCDF		166	195	pg/g	85.1	(29%-147%)

0.979

0.378

0.941

j

July 21, 2014

of 2 Page 1

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6254 SDG Number: 6254006 Lab Sample ID:

1613B Soil Client Sample: LFSD02 Client ID:

26255 Batch ID: 07/07/2014 21:21 Run Date: b07jul14a-9 Data File:

24-JUN-14 Prep Date:

TRCC001 Client: Date Collected: Date Received:

Method:

Analyst:

06/17/2014 10:45 06/18/2014 10:50

EPA Method 1613B **JTF**

SW846 3540C

Matrix: %Moisture: Prep Basis:

Instrument:

Dilution:

Project:

TRCC00314 **SOLID**

39.1 **Dry Weight**

HRP763

1

Prep Method: 26253 Prep Batch: Prep Aliquot: 16.44 g **EDL PQL** Qual Result **EMPC** Units CAS No. Parmname 0.998 pg/g 0.377 U .377 2,3,7,8-TCDD 1746-01-6 0.339 4.99 U .339 pg/g 1,2,3,7,8-PeCDD 40321-76-4 0.425 4.99 0.611 JK J pg/g 39227-28-6 1,2,3,4,7,8-HxCDD 4.99 0.894 pg/g 0.449 57653-85-7 1,2,3,6,7,8-HxCDD 0.465 4.99 pg/g 1.05 1,2,3,7,8,9-HxCDD 19408-74-3 0,888 4.99 32.7 pg/g 35822-46-9 1,2,3,4,6,7,8-HpCDD 9.98 1750 pg/g 2.04 1,2,3,4,6,7,8,9-OCDD 3268-87-9 0.297 0.998 0.401 pg/g 2,3,7,8-TCDF 51207-31-9 4.99 0.157 JA 0.188 pg/g 1,2,3,7,8-PeCDF 57117-41-6 0.137 4.99 pg/g .137 U 2,3,4,7,8-PeCDF 57117-31-4 0.238 4.99 .238 pg/g U 1,2,3,4,7,8-HxCDF 70648-26-9 0.208 4.99 U .208 pg/g 57117-44-9 1,2,3,6,7,8-HxCDF 0.230 4.99 pg/g ,23 U 60851-34-5 2,3,4,6,7,8-HxCDF 4.99 0.317 υ .317 pg/g 1,2,3,7,8,9-HxCDF 72918-21-9 0.301 4.99 j 1.00 pg/g 1,2,3,4,6,7,8-HpCDF 67562-39-4 0.455 4.99 U .455 pg/g 55673-89-7 1,2,3,4,7,8,9-HpCDF 9.98 0.595 JK J 1.70 pg/g 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.998 0.377 .377 U Total Tetrachlorodibenzo-p-dioxin 41903-57-5 0.339 4.99 1.76 U .339 Total Pentachlorodibenzo-p-dioxin 36088-22-9 0.425 4.99 14.7 Total Hexachlorodibenzo-p-dioxin 34465-46-8 0.888 4.99 92.7 pg/g Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.998 0.297 0.803 0.401 pg/g Total Tetrachlorodibenzofuran 30402-14-3 0.137 4.99 0.188 1.16 pg/g J Total Pentachlorodibenzofuran 30402-15-4 0.208 4.99 0.309 1.26 pg/g 1 Total Hexachlorodibenzofuran 55684-94-1 0.301 4.99 1.69 pg/g J Total Heptachlorodibenzofuran 38998-75-3 1.16 1.10 pg/g TEQ WHO2005 ND=0 3333-30-0 1.55 1.59 pg/g TEQ WHO2005 ND=0.5 3333-30-1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2.3,7,8-TCDD		159	200	pg/g	79.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		169	200	pg/g	84.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		166	200	pg/g	83.0	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		151	200	pg/g	75.8	(28%-130%)
1000		206	200	pg/g	103	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		418	399	pg/g	105	(17%-157%)
13C-OCDD		185	200	pg/g	92.7	(24%-169%)
13C-2,3,7,8-TCDF		173	200	pg/g	86,7	(24%-185%)
13C-1,2,3,7,8-PeCDF		193	200	pg/g	96.7	(21%-178%)
13C-2,3,4,7,8-PeCDF		182	200	pg/g	91.0	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		184	200	pg/g	92.0	(26%-123%)
13C-1,2,3,6,7,8-HxCDF		184	200	pg/g	92.3	(28%-136%)
13C-2,3,4,6,7,8-HxCDF					98.1	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		196	200	pg/g	70.1	(20,000,000)

Client Sample:

Client ID:

Batch ID:

Run Date:

Report Date:

July 21, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6254 SDG Number: Lab Sample ID: 6254007

1613B Soil

LFSD03 26255 07/07/2014 20:33

b07jul14a-8 Data File: 26253 Prep Batch: 24-JUN-14 Prep Date:

Client: Date Collected: Date Received:

Method:

Analyst:

Prep Method:

Prep Aliquot:

TRCC001 06/17/2014 10:45 06/18/2014 10:50

SW846 3540C

20.4 g

EPA Method 1613B

Instrument: Dilution:

%Moisture:

Prep Basis:

Project:

Matrix:

TRCC00314 **SOLID** 50.3

Page 1

Dry Weight

HRP763 1

Prep Date:	24-JUN-14	. rep . and and					
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.286	14	pg/g	0.286	0.986
10321-76-4	1,2,3,7,8-PeCDD	1	0.424		pg/g	0.278	4.93
9227-28-6	1,2,3,4,7,8-HxCDD	JK ⋾	V	0.889	pg/g	0,365	4.93
57653-85-7	1.2.3.6,7,8-HxCDD	J	1.57		pg/g	0.355	4,93
19408-74-3	1,2,3,7,8,9-HxCDD	J_	2.35		pg/g	0.381	4.93
5822-46-9	1,2,3,4,6,7,8-HpCDD	5	60.3		pg/g	1.14	4.93
268-87-9	1,2,3,4,6,7,8,9-OCDD	5	3130		pg/g	2.52	9,86
51207-31-9	2,3,7,8-TCDF	J	0.418		pg/g	0.331	0.986
57117-41-6	1,2,3,7,8-PeCDF	,JK √	V ,	0.256	pg/g	0.229	4,93
57117-31-4	2,3,4,7,8-PeCDF	JK 🗹		0,272	pg/g	0.187	4.93
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.250		pg /g	0.221	4.93
57117-44-9	1.2.3,6,7,8-HxCDF	,JK √		0,274	pg/g	0.203	4.93
60851-34-5	2,3,4,6,7,8-HxCDF	1	0.317		pg/g	0.225	4.93
72918-21-9	1,2,3,7,8,9-HxCDF	υ	.312		pg/g	0.312	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	2.21		pg/g	0.219	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	υ	.347		pg/g	0.347	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF	1	3.00		pg/g	0.481	9.86
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.286	2.3	pg/g	0.286	0.986
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	2.04	3,41	€ pg/g	0.278	4.93
34465-46-8	Total Hexachlorodibenzo-p-dioxin		17.2	26.6	pg/g	0.355	4.93
37871-00-4	Total Heptachlorodibenzo-p-dioxin		182		pg/g	1.14	4.93
30402-14-3	Total Tetrachlorodibenzofuran		1.70	2.96	pg/g	0.331	0.986
30402-15-4	Total Pentachlorodibenzofuran	J	1.45	3,50	pg/g	0.106	4.93
55684-94-1	Total Hexachlorodibenzofuran	J	2.81	3,36	pg/g	0.203	4.93
38998-75-3	Total Heptachlorodibenzofuran	J	3.66		pg/g	0.219	4.93
3333-30-0	TEQ WHO2005 ND=0		2.48	2.69	pg/g		
3333-30-1	TEO WHO2005 ND=0.5		2.70	2.85	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		165	197	pg/g	83.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		184	197	pg/g	93.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	197	pg/g	80.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		155	197	pg/g	78.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		186	197	pg/g	94.4	(23%-140%)
13C-OCDD		433	394	pg/g	110	(17%-157%)
13C-2,3,7,8-TCDF		193	197	pg/g	98.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		183	197	pg/g	92.7	(24%-185%)
		206	197	pg/g	105	(21%-178%)
13C-2,3,4,7,8-PeCDF		167	197	pg/g	84.6	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		176	197	pg/g	89.5	(26%-123%)
13C-1,2,3,6,7,8-HxCDF		177	197	pg/g	89.6	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		182	197	pg/g	92.1	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		102	177	P5'5		- 50 F. W.

198

198

198

198

198

198

166

176

172

164

169

167

pg/g

pg/g

pg/g

pg/g

pg/g

pg/g

89.0

87.0

82.9

85.4

84.1

(24%-185%)

(21%-178%)

(26%-152%)

(26%-123%)

(28%-136%)

(29%-147%)

13C-1,2,3,7,8-PeCDF

13C-2,3,4,7,8-PeCDF

13C-1,2,3,4,7,8-HxCDF

13C-1,2,3,6,7,8-HxCDF

13C-2,3,4,6,7,8-HxCDF

13C-1,2,3,7,8,9-HxCDF

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260006 Lab Sample ID: 1613B Soil Client Sample:

YFSD02 Client ID: 26255 Batch ID: 06/28/2014 08:50 Run Date:

b27jun14a_2-9 Data File: P P

Client: Date Collected: Date Received:

Method:

Analyst:

TRCC001 06/17/2014 15:05 06/19/2014 10:05

EPA Method 1613B JTF

Project: Matrix: %Moisture: Prep Basis:

TRCC00314 **SOLID** 51.4

Dry Weight

HRP763 Instrument: Dilution:

Data File: Prep Batch: Prep Date:	b27jun14a_2-9 26253 24-JUN-14	Prep Method: Prep Aliquot:	SW846 3 21.6 g				noi	
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	.16		pg/g	0.160	0.952	
40321-76-4	1,2,3,7,8-PeCDD	πί	√,	0.187	pg/g	0.134	4.76	
39227-28-6	1,2,3,4,7,8-HxCDD	JK J	V	0.322	pg/g	0.196	4.76	
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.724		pg/g	0.204	4.76	
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.37		pg/g	0.213	4.76	
35822-46-9	1,2,3,4,6,7,8-HpCDD		24.0		pg/g	0.419	4.76	
3268-87-9	1,2,3,4,6,7,8,9-OCDD		610		pg/g	0.988	9.52	
51207-31-9	2,3,7,8-TCDF	1	0.213		pg/g	0.176	0.952	
57117-41-6	1,2,3,7,8-PeCDF	ប	.138		pg/g	0.138	4.76	
57117-31-4	2,3,4,7,8-PeCDF	U	.128		pg/g	0.128	4.76	
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.189		pg/g	0.167	4.76	
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.261		pg/g	0.159	4.76	
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.272		pg/g	0.166	4.76	
72918-21-9	1,2,3,7,8,9-HxCDF	ប	.253		pg/g	0.253	4.76	
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	2.76		pg/g	0.123	4.76	
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.204		pg/g	0.204	4.76	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	7.47		pg/g	0.642	9.52	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	0.301		pg/g	0.160	0.952	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	1.42	2.00	pg/g	0.134	4.76	
34465-46-8	Total Hexachlorodibenzo-p-dioxin		11.0	11.4	pg/g	0.196	4.76	
37871-00-4	Total Heptachlorodibenzo-p-dioxin		62.2		pg/g	0.419	4.76	
30402-14-3	Total Tetrachlorodibenzofuran	J	0.638	0.863	pg/g	0.176	0.952	
30402-14-5	Total Pentachlorodibenzofuran	Ţ	1.28		pg/g	0.0598	4.76	
55684-94-1	Total Hexachlorodibenzofuran	J	3.87		pg/g	0.159	4.76	
38998-75-3	Total Heptachlorodibenzofuran		7.75		pg/g	0.123	4.76	
3333-30-0	TEQ WHO2005 ND=0		0.756	0.975	pg/g			
3333-30-0	TEQ WHO2005 ND=0.5		0.948	1.09	pg/g			

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		159	190	pg/g	83.3	(25%-164%)
		158	190	pg/g	83.2	(25%-181%)
13C-1,2,3,7,8-PeCDD		171	190	pg/g	89.6	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		153	190	pg/g	80.4	(28%-130%)
13C-1,2,3,6,7,8-HxCDD		173	190	pg/g	90.7	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		313	381	pg/g	82.2	(17%-157%)
13C-OCDD		175	190	pg/g	92.1	(24%-169%)
13C-2,3,7,8-TCDF					84.2	(24%-185%)
13C-1,2,3,7,8-PeCDF		160	190	pg/g	92.0	(21%-178%)
13C-2,3,4,7,8-PeCDF		175	190	pg/g		(26%-152%)
13C-1,2,3,4,7,8-HxCDF		169	190	pg/g	89.0	•
13C-1,2,3,6,7,8-HxCDF		165	190	pg/g	86.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		169	190	pg/g	88.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	190	pg/g	82.2	(29%-147%)

171

164

168

167

185

185

185

185

pg/g

pg/g

pg/g

pg/g

92.2

88.2

90.8

89.9

(26%-152%)

(26%-123%)

(28%-136%)

(29%-147%)

13C-1,2,3,4,7,8-HxCDF

13C-1,2,3,6,7,8-HxCDF

13C-2,3,4,6,7,8-HxCDF

13C-1,2,3,7,8,9-HxCDF

			07 9	(25%-181%)	
169	193	pg/g			
174	193	pg/g	90.3	(32%-141%)	
167	193	pg/g	86.5	(28%-130%)	
		1997	04.9	(23%-140%)	
183	193	pg/g		1790	
374	386	pg/g	96.9	(17%-157%)	
176	193	ng/e	91.3	(24%-169%)	
		1.5%	90.0	(24%-185%)	
173	193	Pg/g		•	
187	193	pg/g	96.7	(21%-178%)	
189	193	pg/g	98.0	(26%-152%)	
			01-1	(26%-123%)	
176	193	PB/B		•	
180	193	pg/g	93.1	(28%-136%)	
178	193	pg/g	92.4	(29%-147%)	
36		-1			
	167 183 374 176 173 187 189	174 193 167 193 183 193 374 386 176 193 173 193 187 193 189 193 176 193 180 193	174 193 pg/g 167 193 pg/g 183 193 pg/g 374 386 pg/g 176 193 pg/g 173 193 pg/g 187 193 pg/g 189 193 pg/g 176 193 pg/g 176 193 pg/g 176 193 pg/g	174 193 pg/g 90.3 167 193 pg/g 86.5 183 193 pg/g 94.8 374 386 pg/g 96.9 176 193 pg/g 91.3 173 193 pg/g 99.7 187 193 pg/g 96.7 189 193 pg/g 98.0 176 193 pg/g 98.0 176 193 pg/g 91.1 180 193 pg/g 93.1	174 193 pg/g 90.3 (32%-141%) 167 193 pg/g 86.5 (28%-130%) 183 193 pg/g 94.8 (23%-140%) 374 386 pg/g 96.9 (17%-157%) 176 193 pg/g 91.3 (24%-169%) 173 193 pg/g 89.9 (24%-185%) 187 193 pg/g 96.7 (21%-178%) 189 193 pg/g 98.0 (26%-152%) 176 193 pg/g 91.1 (26%-123%) 180 193 pg/g 93.1 (28%-136%)

90.2

85.2

79.9

83.1

82.9

189

189

189

189

189

pg/g

pg/g

pg/g

pg/g

pg/g

171

161

151

157

157

(21%-178%)

(26%-152%)

(26%-123%)

(28%-136%)

(29%-147%)

13C-2,3,4,7,8-PeCDF

13C-1,2,3,4,7,8-HxCDF

13C-1,2,3,6,7,8-HxCDF

13C-2,3,4,6,7,8-HxCDF

13C-1,2,3,7,8,9-HxCDF

July 10, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: Lab Sample ID:

6260 6260010 1613B Solid

Client Sample: LFH02 Client ID: 26255 Batch ID:

06/27/2014 23:57 Run Date: Data File: Prep Batch:

b27jun14a-13 26253 24-JUN-14 Prep Date:

Client: Date Collected:

Method:

Analyst:

TRCC001 Date Received:

06/17/2014 08:25 06/19/2014 10:05

EPA Method 1613B

JTF

Project: Matrix: TRCC00314 **SOLID**

Prep Basis: As Received

HRP763 Instrument: Dilution:

SW846 3540C Prep Method: 10.95 g Prep Aliquot:

EDL PQL EMPC Units Result Qual Parmname CAS No. 0.913 0.144 .144 pg/g U 2,3,7,8-TCDD 1746-01-6 4.57 0.0995 pg/g U .0995 1,2,3,7,8-PeCDD 40321-76-4 4.57 0.133 pg/g U .133 39227-28-6 1,2,3,4,7,8-HxCDD 4.57 0.137 pg/g U .137 1,2,3,6,7,8-HxCDD 57653-85-7 4.57 0.143 .143 pg/g U 1,2,3,7,8,9-HxCDD 19408-74-3 0.245 4.57 pg/g 0.771 1,2,3,4,6,7,8-HpCDD 35822-46-9 9.13 0.610 pg/g 10.5 1,2,3,4,6,7,8,9-OCDD 3268-87-9 0.913 0.126 pg/g 0.170 51207-31-9 2,3,7,8-TCDF 4.57 0.074 pg/g .074 υ 1,2,3,7,8-PeCDF 57117-41-6 4.57 0.0663 0.0676 pg/g 2,3,4,7,8-PeCDF 57117-31-4 4.57 0.111 pg/g .111 U 1,2,3,4,7,8-HxCDF 70648-26-9 4.57 0.109 pg/g 109 U 1,2,3,6,7,8-HxCDF 57117-44-9 4.57 0.117 pg/g U .117 2,3,4,6,7,8-HxCDF 60851-34-5 4.57 0.178 pg/g .178 U 1,2,3,7,8,9-HxCDF 72918-21-9 4.57 0.106 0.148 pg/g IK U 1,2,3,4,6,7,8-HpCDF 67562-39-4 0.181 4.57 U .181 pg/g 1,2,3,4,7,8,9-HpCDF 55673-89-7 9.13 0.422 pg/g U .422 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.913 0.144 pg/g .144 υ Total Tetrachlorodibenzo-p-dioxin 41903-57-5 0.0995 4.57 pg/g U .0995 Total Pentachlorodibenzo-p-dioxin 36088-22-9 0.133 4.57 0.426 pg/g Total Hexachlorodibenzo-p-dioxin 34465-46-8 4.57 pg/g 0.245 1.94 Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.126 0.913 0.305 pg/g 0.170 1 Total Tetrachlorodibenzofuran 30402-14-3 0.0506 4.57 0.0676 pg/g Total Pentachlorodibenzofuran 30402-15-4 4.57 0.109 pg/g υ 109 55684-94-1 Total Hexachlorodibenzofuran 0.106 4.57 0.402 pg/g 0.254 Total Heptachlorodibenzofuran 38998-75-3 0.0481 0.0496 pg/g TEQ WHO2005 ND=0 3333-30-0 0.220 pg/g 0.219 TEQ WHO2005 ND=0.5 3333-30-1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		147	183	pg/g	80.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		155	183	pg/g	85.0	(25%-181%)
• • • •		164	183	pg/g	89.8	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		153	183	pg/g	84.0	(28%-130%)
13C-1,2,3,6,7,8-HxCDD		162	183	pg/g	88.4	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		288	365	pg/g	78.8	(17%-157%)
13C-OCDD		160	183	pg/g	87.8	(24%-169%)
13C-2,3,7,8-TCDF		-	183		84.2	(24%-185%)
13C-1,2,3,7,8-PeCDF		154		pg/g	90.5	(21%-178%)
13C-2,3,4,7,8-PeCDF		165	183	pg/g		(26%-152%)
13C-1,2,3,4,7,8-HxCDF		162	183	pg/g	88.9	(26%-123%)
13C-1,2,3,6,7,8-HxCDF		163	183	pg/g	89.5	•
13C-2,3,4,6,7,8-HxCDF		162	183	pg/g	88.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		151	183	pg/g	82.6	(29%-147%)

July 10, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6260 SDG Number: Lab Sample ID: 6260011 Client Sample:

Client ID:

1613B Solid LFH03

26255 Batch ID: 06/28/2014 00:45 Run Date: b27jun14a-14 Data File:

26253 Prep Batch: 24-JUN-14

TRCC001 Client: 06/17/2014 08:05 Date Collected: Date Received:

Method:

Analyst:

Prep Method:

06/19/2014 10:05

EPA Method 1613B

SW846 3540C

Prep Basis:

Project:

Matrix:

TRCC00314 **SOLID**

As Received

HRP763 Instrument: 1 **Dilution:**

Parmname TCDD 8-PeCDD 7,8-HxCDD 7,8-HxCDD 8,9-HxCDD 6,7,8-HpCDD	Qual U U U U U	.118 .0953 .122 .123	ЕМРС	Units Pg/g Pg/g Pg/g	0.118 0.0953	PQL 0.887 4.44	
TCDD 8-PeCDD 7,8-HxCDD ,7,8-HxCDD ,8,9-HxCDD ,6,7,8-HpCDD	บ . บ บ	.0953		pg/g	0.0953		
8-PeCDD ,7,8-HxCDD ,7,8-HxCDD ,8,9-HxCDD ,6,7,8-HpCDD	ប ប	.122				4.44	
,7,8-HxCDD ,7,8-HxCDD ,8,9-HxCDD ,6,7,8-HpCDD	U			pe/e			
,7,8-HxCDD ,8,9-HxCDD ,6,7,8-HpCDD		.123		10.0	0.122	4.44	
,8,9-HxCDD ,6,7,8-HpCDD	U			pg/g	0.123	4.44	
,6,7,8-HpCDD		.13		pg/g	0.130	4.44	
	j	0.495		pg/g	0.256	4.44	
	Ĵ	4.36		pg/g	0.531	8.87	
,6,7,8,9-OCDD	JK (1	0.108	pg/g	0.0932	0.887	
-TCDF	υ	.0681		pg/g	0.0681	4.44	
,8-PeCDF	υ	.0644		pg/g	0.0644	4.44	
,8-PeCDF	บ			pg/g	0.0838	4.44	
,7,8-HxCDF	บ	.0831		pg/g	0.0831	4.44	
5,7,8-HxCDF	บ	.0898		pg/g	0.0898	4.44	
5,7,8-HxCDF	U	138		pg/g	0.138	4.44	
7,8,9-HxCDF				pg/g	0.120	4.44	
1,6,7,8-HpCDF	U	.209		pg/g	0.209	4.44	
1,7,8,9-HpCDF				pg/g	0.369	8,87	
4,6,7,8,9-OCDF	U 	.369					
				- 20			
Pentachlorodibenzo-p-dioxin							
Hexachlorodibenzo-p-dioxin	_						
Heptachlorodibenzo-p-dioxin							
Tetrachlorodibenzofuran	_		0.108				
Pentachlorodibenzofuran	υ						
Hexachlorodibenzofuran	J						
Heptachlorodibenzofuran	1	0.398		pg/g	0.120	4.44	
WHO2005 ND=0		0.00796	0.0188	pg/g			
		0.169	0.176	pg/g			
1	Fetrachlorodibenzo-p-dioxin Pentachlorodibenzo-p-dioxin Hexachlorodibenzo-p-dioxin Heptachlorodibenzo-p-dioxin Fetrachlorodibenzofuran Pentachlorodibenzofuran Hexachlorodibenzofuran Heptachlorodibenzofuran	Tetrachlorodibenzo-p-dioxin Pentachlorodibenzo-p-dioxin Hexachlorodibenzo-p-dioxin Heptachlorodibenzo-p-dioxin J Tetrachlorodibenzo-p-dioxin U Pentachlorodibenzofuran U Hexachlorodibenzofuran U Hexachlorodibenzofuran J Heptachlorodibenzofuran J Heyachlorodibenzofuran J WHO2005 ND=0	Cetrachlorodibenzo-p-dioxin	Cetrachlorodibenzo-p-dioxin	Tetrachlorodibenzo-p-dioxin	Tetrachlorodibenzo-p-dioxin	Tetrachlorodibenzo-p-dioxin

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		138	177	pg/g	77.7	(25%-164%)
13C-1.2.3,7,8-PeCDD		130	177	pg/g	73.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	177	pg/g	89.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		145	177	pg/g	82.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		151	177	pg/g	84.9	(23%-140%)
13C-0CDD		261	355	pg/g	73.5	(17%-157%)
13C-2,3,7,8-TCDF		157	177	pg/g	88.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		130	177	pg/g	73.4	(24%-185%)
13C-2.3.4.7.8-PeCDF		140	177	pg/g	79.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		162	177	pg/g	91.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		158	177	pg/g	88.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		160	177	pg/g	90.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF	9	144	177	pg/g	81.2	(29%-147%)

July 10, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis

Sample Summary

Client: Date Collected:

Analyst:

TRCC001 06/17/2014 13:20 06/19/2014 10:05 Project: Matrix:

TRCC00314 SOLID

Page 1

SDG Number: Lab Sample ID: Client Sample:

6260012 1613B Solid

JFH01

26255

6260

Method:

EPA Method 1613B .ITF

Prep Basis:

As Received

Client ID: Batch ID: Run Date: Data File:

06/28/2014 10:25 b27jun14a_2-11

Prep Method:

Date Received:

Instrument: Dilution:

HRP763 1

Prep Batch: Prep Date:

3333-30-0

3333-30-1

TEQ WHO2005 ND=0

TEQ WHO2005 ND=0.5

26253 24-JUN-14 **Prep Aliquot:**

SW846 3540C

9.98 g

EDL PQL EMPC Units Qual Result CAS No. Parmname 1.00 0.163 pg/g U .163 2,3,7,8-TCDD 1746-01-6 0.121 5.01 pg/g U .121 40321-76-4 1,2,3,7,8-PeCDD 5.01 0.131 pg/g U 131 1,2,3,4,7,8-HxCDD 39227-28-6 5.01 pg/g 0.128 U .128 1,2,3,6,7,8-HxCDD 57653-85-7 0.138 5.01 pg/g .138 1,2,3,7,8,9-HxCDD 19408-74-3 Jide 4 5.01 0.220 0.689 pg/g 1,2,3,4,6,7,8-HpCDD 35822-46-9 10.0 pg/g 0.812 5.84 1,2,3,4,6,7,8,9-OCDD 3268-87-9 1.00 0.128 pg/g .128 U 2,3,7,8-TCDF 51207-31-9 0.0864 5.01 U .0864 pg/g 1,2,3,7,8-PeCDF 57117-41-6 5.01 0.0778 pg/g .0778 U 2,3,4,7,8-PeCDF 57117-31-4 5.01 0.0918 .0918 pg/g IJ 1,2,3,4,7,8-HxCDF 70648-26-9 5.01 0.0886 .0886 pg/g U 57117-44-9 1,2,3,6,7,8-HxCDF 5.01 0.0964 pg/g .0964 U 2,3,4,6,7,8-HxCDF 60851-34-5 5.01 0.147 .147 pg/g U 1,2,3,7,8,9-HxCDF 72918-21-9 0.120 5.01 0.162 pg/g JK W 67562-39-4 1,2,3,4,6,7,8-HpCDF 0.216 5.01 U .216 pg/g 1,2,3,4,7,8,9-HpCDF 55673-89-7 10.0 0.395 pg/g .395 U 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.163 1.00 pg/g U .163 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 0.121 5.01 pg/g υ .121 Total Pentachlorodibenzo-p-dioxin 36088-22-9 0.128 5.01 0.625 pg/g 0.285 j Total Hexachlorodibenzo-p-dioxin 34465-46-8 5.01 0.220 pg/g 1.52 J Total Heptachlorodibenzo-p-dioxin 37871-00-4 1.00 0.128 U .128 pg/g Total Tetrachlorodibenzofuran 30402-14-3 5.01 0.0515 pg/g U .0515 Total Pentachlorodibenzofuran 30402-15-4 0.0886 5.01 pg/g 0.140 Total Hexachlorodibenzofuran 55684-94-1 0.120 5.01 0.162 pg/g U .12 Total Heptachlorodibenzofuran 38998-75-3

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		169	200	pg/g	84.1	(25%-164%)	
		171	200	pg/g	85.4	(25%-181%)	
13C-1,2,3,7,8-PeCDD		179	200	pg/g	89.2	(32%-141%)	
13C-1,2,3,4,7,8-HxCDD		172	200	pg/g	85.7	(28%-130%)	
13C-1,2,3,6,7,8-HxCDD		186	200	pg/g	93.0	(23%-140%)	
13C-1,2,3,4,6,7,8-HpCDD		327	401		81.5	(17%-157%)	
13C-OCDD				pg/g	88.8	(24%-169%)	8
13C-2,3,7,8-TCDF		178	200	pg/g	85.5	(24%-185%)	
13C-1,2,3,7,8-PeCDF		171	200	pg/g		T. 1000	
13C-2,3,4,7,8-PeCDF		183	200	pg/g	91.5	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		191	200	pg/g	95.1	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		178	200	pg/g	88.8	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		185	200	pg/g	92.3	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		171	200	pg/g	85.3	(29%-147%)	

0.00865

0.213

0.0103

0.214

pg/g

pg/g

July 10, 2017

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6260 SDG Number: 6260013 Lab Sample 1D: Client Sample:

1613B Solid JFH02

Client ID: 26255 Batch ID: 06/28/2014 11:13 Run Date: b27jun14a_2-12 Data File:

TRCC001 Client: 06/17/2014 13:25 Date Collected: Date Received:

Method:

Analyst:

06/19/2014 10:05

EPA Method 1613B

Instrument:

Project:

Matrix:

Prep Basis:

SOLID As Received

TRCC00314

HRP763 Dilution:

Data File: Prep Batch: Prep Date:	b27jun14a_2-12 26253 24-JUN-14	Prep Method: Prep Aliquot:	SW846 35 10.15 g	540C				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	.13		pg/g	0.130	0.985	
40321-76-4	1,2,3,7,8-PeCDD	U	.119		pg/g	0.119	4.93	
39227-28-6	1,2,3,4,7,8-HxCDD	U	.148		pg/g	0.148	4.93	
57653-85 - 7	1,2,3,6,7,8-HxCDD	U	.15		pg/g	0.150	4.93	
19408-74-3	1,2,3,7,8,9-HxCDD	υ	.159		pg/g	0.159	4.93	
	1,2,3,4,6,7,8-HpCDD	j	0.717		pg/g	0.223	4.93	
35822-46-9 3268-87-9	1,2,3,4,6,7,8,9-OCDD	Ĵ	5.93		pg/g	0.510	9.85	
	2,3,7,8-TCDF	U	.102		pg/g	0.102	0.985	
51207-31-9	1,2,3,7,8-PeCDF	U	.0682		pg/g	0.0682	4.93	
57117-41-6	2,3,4,7,8-PeCDF	U	.0638		pg/g	0.0638	4.93	
57117-31-4	1,2,3,4,7,8-HxCDF	U	.0875		pg/g	0.0875	4.93	
70648-26-9	1,2,3,6,7,8-HxCDF	υ	.0843		pg/g	0.0843	4.93	
57117-44-9 60851-34-5	2,3,4,6,7,8-HxCDF	U	.0928		pg/g	0.0928	4.93	
72918-21-9	1,2,3,7,8,9-HxCDF	U	.138		pg/g	0.138	4.93	
	1,2,3,4,6,7,8-HpCDF	J	0.290		pg/g	0.100	4.93	
67562-39-4	1,2,3,4,7,8,9-HpCDF	U	.18		pg/g	0.180	4.93	
55673-89-7	1,2,3,4,6,7,8,9-OCDF	ប	.351		pg/g	0.351	9.85	
39001-02-0	Total Tetrachlorodibenzo-p-dioxin	U	.13		pg/g	0.130	0.985	
41903-57-5	Total Pentachlorodibenzo-p-dioxin	U	,119		pg/g	0.119	4.93	
36088-22-9	Total Hexachlorodibenzo-p-dioxin	J	0.564		pg/g	0.148	4.93	
34465-46-8	Total Heptachlorodibenzo-p-dioxin	J	1.58		pg/g	0.223	4.93	
37871-00-4 30402-14-3	Total Tetrachlorodibenzofuran	υ	.102		pg/g	0.102	0.985	
30402-14-3	Total Pentachlorodibenzofuran	J	0.106		pg/g	0.0467	4.93	
55684-94-1	Total Hexachlorodibenzofuran	J	0.140		pg/g	0.0843	4.93	
38998-75-3	Total Heptachlorodibenzofuran	J	0.290	0.493	pg/g	0.100	4.93	
3333-30-0	TEQ WHO2005 ND=0		0.0118	0.0118	pg/g			
3333-30-0	TEQ WHO2005 ND=0.5		0.196	0.196	pg/g			
JJJJ-JU-1								

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
		171	197	pg/g	86.6	(25%-164%)
13C-2,3,7,8-TCDD		158	197	pg/g	80.4	(25%-181%)
13C-1,2,3,7,8-PeCDD			197	pg/g	96.7	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		191				(28%-130%)
13C-1,2,3,6,7,8-HxCDD		171	197	pg/g	86.6	1000 MIN.
13C-1,2,3,4,6,7,8-HpCDD		189	197	pg/g	95.8	(23%-140%)
13C-OCDD		326	394	pg/g	82.7	(17%-157%)
13C-2,3,7,8-TCDF		182	197	pg/g	92.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		159	197	pg/g	80.7	(24%-185%)
		167	197	pg/g	85.0	(21%-178%)
13C-2,3,4,7,8-PeCDF		197	197	pg/g	100	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		185	197	pg/g	93.8	(26%-123%)
13C-1,2,3,6,7,8-HxCDF					96.3	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		190	197	pg/g		901
13C-1,2,3,7,8,9-HxCDF		173	197	pg/g	87.8	(29%-147%)

July 10, 2017

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6260 SDG Number: 6260014 Lab Sample ID:

1613B Solid Client Sample: MFH01 Client ID: 26255

Batch ID: 06/28/2014 12:01 Run Date: Data File: b27jun14a_2-13

24-JUN-14 Prep Date:

TRCC001 Client: Date Collected: Date Received:

Method:

Analyst:

06/18/2014 08:00 06/19/2014 10:05

EPA Method 1613B

Instrument: Dilution:

Prep Basis:

Project:

Matrix:

As Received

TRCC00314

SOLID

HRP763

1

SW846 3540C Prep Method: Prep Batch: 26253 Prep Aliquot: 10.74 g **PQL EDL** Units **EMPC** Qual Result Parmname CAS No. 0.931 0.125 .125 pg/g U 2,3,7,8-TCDD 1746-01-6 4.66 0.0926 pg/g U .0926 1,2,3,7,8-PeCDD 40321-76-4 4.66 0.121 pg/g υ .121 39227-28-6 1,2,3,4,7,8-HxCDD 4.66 0.126 pg/g U .126 1,2,3,6,7,8-HxCDD 57653-85-7 0.131 4.66 pg/g U .131 19408-74-3 1,2,3,7,8,9-HxCDD 4.66 0.139 pg/g 0.777 1,2,3,4,6,7,8-HpCDD 35822-46-9 9.31 0.223 9.16 pg/g J 1,2,3,4,6,7,8,9-OCDD 3268-87-9 0.931 0.108 pg/g υ .108 2,3,7,8-TCDF 51207-31-9 0.0622 4.66 pg/g U .0622 1,2,3,7,8-PeCDF 57117-41-6 0.0585 4,66 .0585 pg/g U 2,3,4,7,8-PeCDF 57117-31-4 4.66 0.067 .067 pg/g 11 1,2,3,4,7,8-HxCDF 70648-26-9 0.0642 4.66 .0642 pg/g U 1,2,3,6,7,8-HxCDF 57117-44-9 4.66 0.0685 pg/g .0685 2,3,4,6,7,8-HxCDF 60851-34-5 0.0987 4.66 0.121 JK V pg/g 1,2,3,7,8,9-HxCDF 72918-21-9 **√**0.156 0.0704 4.66 JW pg/g 67562-39-4 1,2,3,4,6,7,8-HpCDF 4.66 pg/g 0.118 U .118 1,2,3,4,7,8,9-HpCDF 55673-89-7 0.210 9.31 pg/g .21 U 39001-02-0 1,2,3,4,6,7,8,9-OCDF 0.931 0.125 pg/g U .125 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 0.0926 4.66 pg/g 0.192 Total Pentachlorodibenzo-p-dioxin 36088-22-9 4.66 0.121 1.07 pg/g J Total Hexachlorodibenzo-p-dioxin 34465-46-8 0.139 4.66 pg/g 2.02 J Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.108 0.931 U .108 pg/g Total Tetrachlorodibenzofuran 30402-14-3 4.66 0.0413 0.138 0.261 pg/g j Total Pentachlorodibenzofuran 30402-15-4 4.66 0.257 0.0642 0.136 pg/g 1 Total Hexachlorodibenzofuran 55684-94-1 0.0704 4.66 0.268 pg/g Total Heptachlorodibenzofuran 38998-75-3 0.0242 pg/g 0.0121 3333-30-0 TEQ WHO2005 ND=0 0.170 0.177 pg/g TEQ WHO2005 ND=0.5 3333-30-1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		156	186	pg/g	84.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		159	186	pg/g	85.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		175	186	pg/g	94.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		156	186	pg/g	83.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		187	186	pg/g	100	(23%-140%)
13C-0CDD		347	372	pg/g	93.3	(17%-157%)
13C-2,3,7,8-TCDF		173	186	pg/g	92.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		161 =	186	pg/g	86.6	(24%-185%)
85.5		170	186	pg/g	91.5	(21%-178%)
13C-2,3,4,7,8-PeCDF		181	186	pg/g	97.4	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		173	186	pg/g	92.7	(26%-123%)
13C-1,2,3,6,7,8-HxCDF		175	186	pg/g	93.8	(28%-136%)
13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,7,8,9-HxCDF		171	186	pg/g	91.7	(29%-147%)

July 21, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis

Sample Summary

Client: Date Collected:

Date Received:

TRCC001 06/17/2014 13:35 06/18/2014 10:50 Project: Matrix:

TRCC00314 MILK

Page 1

Client Sample: Client ID:

SDG Number:

Lab Sample ID: 6254008 1613B Liquid JFM01

6254

Method:

EPA Method 1613B

Prep Basis:

As Received

Run Date: Data File:

Batch ID: 26419 07/18/2014 23:46 b18jul14a-13

26417

Analyst:

Dilution:

HRP763

Prep Batch: Pren Date:

16-JUL-14

Prep Method: 100 mL Prep Aliquot:

SW846 3520C

Instrument:

rrep pate:	10-101514	• •						
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	19.7		pg/L	19.7	100	
40321-76-4	1,2,3,7,8-PeCDD	U	9.92		pg/L	9.92	500	
39227-28-6	1,2,3,4,7,8-HxCDD	U	13.2		pg/L	13.2	500	
57653-85-7	1,2,3,6,7,8-HxCDD	U	12.7		pg/L	12.7	500	
19408-74-3	1,2,3,7,8,9-HxCDD	υ	13.7		pg/L	13.7	500	
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	23.6		pg/L	23.6	500	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	Ĩ	118		pg/L	44.2	1000	
51207-31-9	2,3,7,8-TCDF	υ	12.6		pg/L	12.6	100	
57117-41-6	1,2,3,7,8-PeCDF	J	7.60		pg/L	7.08	500	
57117-31-4	2,3,4,7,8-PeCDF	υ	6.04		pg/L	6.04	500	
70648-26-9	1,2,3,4,7,8-HxCDF	ប	8.52		pg/L	8.52	500	
57117-44-9	1,2,3,6,7,8-HxCDF	ប	7.66		pg/L	7.66	500	
60851-34-5	2,3,4,6,7,8-HxCDF	ប	8.66		pg/L	8.66	500	
72918-21-9	1,2,3,7,8,9-HxCDF	ប	12.8		pg/L	12.8	500	
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	9.28		pg/L	9.28	500	
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	16.3		pg/L	16.3	500	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	53.2		pg/L	53.2	1000	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	υ	19.7		pg/L	19.7	100	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	9.92		pg/L	9.92	500	
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	12.7		pg/L	12.7	500	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	υ	23.6		pg/L	23.6	500	
30402-14-3	Total Tetrachlorodibenzofuran	U	12.6		pg/L	12.6	100	
30402-15-4	Total Pentachlorodibenzofuran	J	7.60		pg/L	6.04	500	
55684-94-1	Total Hexachlorodibenzofuran	U	7.66		pg/L	7.66	500	
38998-75-3	Total Heptachlorodibenzofuran	υ	9.28		pg/L	9.28	500	
3333-30-0	TEQ WHO2005 ND=0		0.263	0.263	pg/L			
3333-30-1	TEQ WHO2005 ND=0.5		20.7	20.7	pg/L			

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		16800	20000	pg/L	84.1	(25%-164%)	
13C-1,2,3,7,8-PeCDD		19300	20000	pg/L	96.7	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		16800	20000	pg/L	84.2	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		17000	20000	pg/L	85.0	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		19300	20000	pg/L	96.5	(23%-140%)	
13C-OCDD		35800	40000	pg/L	89.4	(17%-157%)	
13C-2,3,7,8-TCDF		18100	20000	pg/L	90.6	(24%-169%)	
13C-1,2,3,7,8-PeCDF		17800	20000	pg/L	89.1	(24%-185%)	
13C-2,3,4,7,8-PeCDF		20900	20000	pg/L	104	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		16400	20000	pg/L	81.9	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		17400	20000	pg/L	87.1	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		17200	20000	pg/L	86.1	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		16900	20000	pg/L	84.5	(29%-147%)	

July 21, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 Client:

06/17/2014 13:40 Date Collected: 06/18/2014 10:50 Project: Matrix:

TRCC00314 MILK

Page 1

Client Sample: Client ID:

SDG Number:

6254009 Lab Sample ID: 1613B Liquid JFM02

26307

6254

Method: Analyst:

Date Received:

EPA Method 1613B

EMPC

Units

pg/L

pg/L

Prep Basis:

EDL

71.2

38.8

As Received

PQL

100

500

Batch ID: Run Date: Data File:

37871-00-4

30402-14-3

30402-15-4

55684-94-1

38998-75-3

3333-30-0

3333-30-1

07/07/2014 18:58 b07jul14a-6 26305

Prep Method: Prep Aliquot:

Oual

U

U

SW846 3520C 100 mL

Result

71.2

38.8

HRP763 Instrument: 1 Dilution:

Prep Batch: 30-JUN-14 Prep Date:

CAS No. Parmname 1746-01-6 2,3,7,8-TCDD 1,2,3,7,8-PeCDD 40321-76-4 1,2,3,4,7,8-HxCDD 39227-28-6 1,2,3,6,7,8-HxCDD 57653-85-7 19408-74-3 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD 35822-46-9 1,2,3,4,6,7,8,9-OCDD 3268-87-9 2,3,7,8-TCDF 51207-31-9 57117-41-6 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF 57117-31-4 70648-26-9 1,2,3,4,7,8-HxCDF 57117-44-9 1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF 60851-34-5 72918-21-9 1,2,3,7,8,9-HxCDF 1,2,3,4,6,7,8-HpCDF 67562-39-4 1,2,3,4,7,8,9-HpCDF 55673-89-7 39001-02-0 1,2,3,4,6,7,8,9-OCDF Total Tetrachlorodibenzo-p-dioxin 41903-57-5 Total Pentachlorodibenzo-p-dioxin 36088-22-9 Total Hexachlorodibenzo-p-dioxin 34465-46-8

U 58.2 Total Heptachlorodibenzo-p-dioxin Total Tetrachlorodibenzofuran U 54.4 11 29 Total Pentachlorodibenzofuran υ 32.4 Total Hexachlorodibenzofuran U 32.8 Total Heptachlorodibenzofuran 0.0468 0.0468 TEO WHO2005 ND=0 79.1 79.1 TEQ WHO2005 ND=0.5 Units **Nominal** Qual Result

500 pg/L U 53.4 U 51.8 pg/L 51.8 500 55.6 500 U 55.6 pg/L 500 58.2 pg/L U 58.2 1000 A U 156 pg/L 82.8 54 4 100 pg/L U 54.4 500 34.4 pg/L U 34.4 30.0 500 U 30 pg/L 500 34.0 34 pg/L 32.4 500 pg/L U 32.4 35.2 500 pg/L 13 35.2 500 pg/L 50.4 U 50.4 32.8 500 U 32.8 pg/L pg/L 49.2 500 U 49.2 1000 υ 114 pg/L 114 71.2 100 U 71.2 pg/L pg/L 500 38.8 38.8 U 51.8 500 U 51.8 pg/L 58.2 500 pg/L 54.4 100 pg/L 29.0 500 pg/L 500 pg/L 32.4 32.8 500 pg/L pg/L pg/L

Acceptable Limits Recovery% Surrogate/Tracer recovery (25%-164%) 39.8 7960 20000 pg/L 13C-2,3,7,8-TCDD (25%-181%) 44.4 8880 20000 pg/L 13C-1,2,3,7,8-PeCDD 39.2 (32%-141%) 20000 pg/L 7840 13C-1,2,3,4,7,8-HxCDD pg/L (28%-130%) 20000 42.0 8400 13C-1,2,3,6,7,8-HxCDD 20000 pg/L 52.2 (23%-140%) 10400 13C-1,2,3,4,6,7,8-HpCDD 52.3 (17%-157%) 20900 40000 pg/L 13C-OCDD (24%-169%) 9090 20000 pg/L 45.5 13C-2,3,7,8-TCDF (24%-185%) 20000 43.9 8790 pg/L 13C-1,2,3,7,8-PeCDF (21%-178%) 10100 20000 pg/L 50.4 13C-2,3,4,7,8-PeCDF (26%-152%) 20000 45 6 9110 pg/L 13C-1,2,3,4,7,8-HxCDF (26%-123%) 48.9 20000 9780 pg/L 13C-1,2,3,6,7,8-HxCDF 47.4 (28%-136%) 9480 20000 pg/L 13C-2,3,4,6,7,8-HxCDF 20000 47.7 (29%-147%) 9530 pg/L 13C-1,2,3,7,8,9-HxCDF

July 21, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

SDG Number: Lab Sample ID: 6254010

6254 1613B Liquid

Client Sample: JFM03 Client ID: 26307 Batch ID:

Run Date: Data File:

07/07/2014 19:46 b07jul14a-7

Client:

Method:

Analyst:

TRCC001 06/17/2014 13:45 Date Collected: Date Received:

06/18/2014 10:50

EPA Method 1613B

Project: Matrix:

TRCC00314 MILK

Prep Basis:

As Received

Instrument: Dilution:

HRP763

Data File:	b07jul14a-7 26305	Prep Method:	SW846 35	520C	,	Ditution.	•	
Prep Batch: Prep Date:	30-JUN-14	Prep Aliquot:	100 mL					
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	46.8		pg/L	46.8	100	
40321-76-4	1,2,3,7,8-PeCDD	U	25.2		pg/L	25.2	500	
39227-28-6	1,2,3,4,7,8-HxCDD	ប	35.4		pg/L	35.4	500	
57653-85-7	1,2,3,6,7,8-HxCDD	U	34.4		pg/L	34.4	500	
19408-74-3	1,2,3,7,8,9-HxCDD	ប	37		pg/L	37.0	500	
35822-46-9	1,2,3,4,6,7,8-HpCDD	лк ⊐	1	37.8	pg/L	34.4	500	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	/ }\U	- #		pg/L	65.2	1000	
	2,3,7,8-TCDF	U	35.2		pg/L	35.2	100	
51207-31-9	1,2,3,7,8-PeCDF	U	23.8		pg/L	23.8	500	
57117-41-6		U	21.4		pg/L	21.4	500	
57117-31-4	2,3,4,7,8-PeCDF	U	19.3		pg/L	19.3	500	
70648-26-9	1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF	U	18.3		pg/L	18.3	500	
57117-44-9		υ ·	22.2		pg/L	22.2	500	
60851-34-5	2,3,4,6,7,8-HxCDF	บ	26.6		pg/L	26.6	500	
72918-21-9	1,2,3,7,8,9-HxCDF	U	18.8		pg/L	18.8	500	
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	29.8		pg/L	29.8	500	
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	69.2		pg/L	69.2	1000	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	บ	46.8		pg/L	46.8	100	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	υ	25.2		pg/L	25.2	500	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	34.4		pg/L	34.4	500	
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	34.4	37.8	pg/L	34.4	500	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	35.2	2.1.5	pg/L	35.2	100	
30402-14-3	Total Tetrachlorodibenzofuran	บ	21		pg/L	21.0	500	
30402-15-4	Total Pentachlorodibenzofuran		18.3		pg/L	18.3	500	
55684-94-1	Total Hexachlorodibenzofuran	U	18.8		pg/L	18.8	500	
38998-75-3	Total Heptachlorodibenzofuran	U	0.037	0.415	pg/L pg/L			
3333-30-0	TEQ WHO2005 ND=0		51.5	51.7	pg/L pg/L			
3333-30-1	TEQ WHO2005 ND=0.5		31.3	31.7	P. P.			

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2.3,7,8-TCDD		8480	20000	pg/L	42.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		9170	20000	pg/L	45.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		9220	20000	pg/L	46.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		9010	20000	pg/L	45.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		12100	20000	pg/L	60.5	(23%-140%)
13C-OCDD	#	22300	40000	pg/L	55.8	(17%-157%)
13C-2,3,7,8-TCDF		9490	20000	pg/L	47.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		9640	20000	pg/L	48.2	(24%-185%)
		10600	20000	pg/L	52.8	(21%-178%)
13C-2,3,4,7,8-PeCDF		10200	20000	pg/L	50.9	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		10800	20000	pg/L	54.2	(26%-123%)
13C-1,2,3,6,7,8-HxCDF		10100	20000	pg/L	50.5	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		10400	20000	pg/L	52.2	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		10400	20000	PB	7.57	•

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

6324 SDG Number: 6324001 Lab Sample ID: Client Sample:

Client 1D:

1613B Tissue

LFBG01 26413

Batch ID: 07/19/2014 04:40 Run Date: b18jul14a_2-4 Data File:

Client: Date Collected:

Date Received:

Method:

Analyst:

TRCC001 06/17/2014 11:00 07/10/2014 09:15

EPA Method 1613B

Project: Matrix: TRCC00314 TISSUE

Page 1

Prep Basis:

As Received

Instrument:

HRP763 1

Dilution:

Data File: Prep Batch: Prep Date:	b18jul14a_2-4 26411 17-JUL-14	Prep M Prep A		SW846 354 10.53 g					
CAS No.	Parmname	Qı	ıai	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD		U	.17		pg/g	0.170	0.950	
40321-76-4	1,2,3,7,8-PeCDD		U	.0826		pg/g	0.0826	4.75	
39227-28-6	1,2,3,4,7,8-HxCDD		U	.134		pg/g	0.134	4.75	
57653-85-7	1,2,3,6,7,8-HxCDD		U	.126		pg/g	0.126	4.75	
19408-74-3	1,2,3,7,8,9-HxCDD		U	.138		pg/g	0.138	4.75	
35822-46-9	1,2,3,4,6,7,8-HpCDD		J	0.270		pg/g	0.220	4.75	
3268-87-9	1,2,3,4,6,7,8,9-OCDD		J	4.57		pg/g	0.545	9.50	
51207-31-9	2,3,7,8-TCDF		J	0.313		pg/g	0.155	0.950	
57117-41-6	1,2,3,7,8-PeCDF		ប	.08		pg/g	0.080	4.75	
57117-31-4	2,3,4,7,8-PeCDF		บ	.0735		pg/g	0.0735	4.75	
70648-26-9	1,2,3,4,7,8-HxCDF		บ	.0944		pg/g	0.0944	4.75	
57117-44-9	1,2,3,6,7,8-HxCDF		U	.0864		pg/g	0.0864	4.75	
60851-34-5	2,3,4,6,7,8-HxCDF		U	.0976		pg/g	0.0976	4.75	
72918-21-9	1,2,3,7,8,9-HxCDF		U	.142		pg/g	0.142	4.75	
67562-39-4	1,2,3,4,6,7,8-HpCDF		υ	.0988		pg/g	0.0988	4.75	
55673-89-7	1,2,3,4,7,8,9-HpCDF		υ	.161		pg/g	0.161	4.75	
39001-02-0	1,2,3,4,6,7,8,9-OCDF		υ	367		pg/g	0.367	9.50	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		ับ	.17		pg/g	0.170	0.950	
36088-22-9	Total Pentachlorodibenzo-p-dioxin		ប	.0826		pg/g	0.0826	4.75	
34465-46-8	Total Hexachlorodibenzo-p-dioxin		U	.126		pg/g	0.126	4.75	
37871-00-4	Total Heptachlorodibenzo-p-dioxin		J	0.270	0.570	pg/g	0.220	4.75	
30402-14-3	Total Tetrachlorodibenzofuran		j	0.513		pg/g	0.155	0.950	
30402-14-3	Total Pentachlorodibenzofuran		ប	.0539		pg/g	0.0539	4.75	
	Total Hexachlorodibenzofuran		U	.0864		pg/g	0.0864	4.75	
55684-94-1	Total Heptachlorodibenzofuran		บ	.0988		pg/g	0.0988	4.75	
38998-75-3	TEQ WHO2005 ND=0			0.0354	0.0354	pg/g			
3333-30-0 3333-30-1	TEQ WHO2005 ND=0.5			0.216	0.216	pg/g			
1-06-6666	.22	Oual	Decult	Nominal	Units	Recovery%	Accept	able Limits	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		181	190	pg/g	95.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		208	190	pg/g	109	(25%-181%)
		166	190	pg/g	87.2	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		177	190	pg/g	93.4	(28%-130%)
13C-1,2,3,6,7,8-HxCDD		195	190	pg/g	103	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		360	380	pg/g	94.8	(17%-157%)
13C-OCDD			190		103	(24%-169%)
13C-2,3,7,8-TCDF		195		pg/g	104	(24%-185%)
13C-1,2,3,7,8-PeCDF		197	190	pg/g		(21%-178%)
13C-2,3,4,7,8-PeCDF		214	190	pg/g	113	
13C-1,2,3,4,7,8-HxCDF		173	190	pg/g	91.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		180	190	pg/g	94.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		182	190	pg/g	95.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		179	190	pg/g	94.2	(29%-147%)

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6324 SDG Number: 6324002 Lab Sample ID: Client Sample:

1613B Tissue LFBG02

Client ID: 26413 Batch ID: 07/19/2014 05:28 Run Date: b18jul14a_2-5 Data File:

TRCC001 Client: Date Collected: Date Received:

Method:

Analyst:

06/17/2014 12:00 07/10/2014 09:15

EPA Method 1613B

Matrix:

Project:

TRCC00314 TISSUE

As Received Prep Basis:

HRP763 Instrument: 1 Dilution:

Data File: Prep Batch: Prep Date:	b18jul14a_2-5 26411 17-JUL-14	Prep Method: Prep Aliquot:	SW846 35 10.53 g	540C				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	Ū	.213		pg/g	0.213	0.950	
40321-76-4	1,2,3,7,8-PeCDD	υ	.118		pg/g	0.118	4.75	
39227-28-6	1,2,3,4,7,8-HxCDD	υ	.131		pg/g	0.131	4.75	
	1,2,3,6,7,8-HxCDD	บ	.134		pg/g	0.134	4.75	
57653-85-7 19408-74-3	1,2,3,7,8,9-HxCDD	υ	.141		pg/g	0.141	4.75	
	1,2,3,4,6,7,8-HpCDD	J	0.475		pg/g	0.291	4.75	
35822-46-9	1,2,3,4,6,7,8,9-OCDD	J	5.12		pg/g	0.577	9.50	
3268-87-9		J	0.291		pg/g	0.174	0.950	
51207-31-9	2,3,7,8-TCDF	U	.0999		pg/g	0.0999	4.75	
57117-41-6	1,2,3,7,8-PeCDF	U	.0887		pg/g	0.0887	4.75	
57117-31-4	2,3,4,7,8-PeCDF	U	.0965		pg/g	0.0965	4.75	
70648-26-9	1,2,3,4,7,8-HxCDF	υ	.0942		pg/g	0.0942	4.75	
57117-44-9	1,2,3,6,7,8-HxCDF	บ	.0972		pg/g	0.0972	4.75	
60851-34-5	2,3,4,6,7,8-HxCDF	. บ	.153		pg/g	0.153	4.75	
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.131		pg/g	0.109	4.75	
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.182		pg/g	0.182	4.75	
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.475		pg/g	0.475	9.50	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.213		pg/g	0.213	0.950	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.118		pg/g	0.118	4.75	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	ប	.131		pg/g	0.131	4.75	
34465-46-8	Total Hexachlorodibenzo-p-dioxin		0,475		pg/g	0.291	4.75	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	. J	0,473		pg/g	0.174	0.950	
30402-14-3	Total Tetrachlorodibenzofuran	J	.0659		pg/g	0.0659	4.75	
30402-15-4	Total Pentachlorodibenzofuran	υ 			pg/g	0.0942	4.75	
55684-94-1	Total Hexachlorodibenzofuran	U	.0942		pg/g	0.109	4.75	
38998-75-3	Total Heptachlorodibenzofuran	J	0.131	0.03/3		0.107	***-	
3333-30-0	TEQ WHO2005 ND=0		0.0367	0.0367	pg/g			
3333-30-1	TEQ WHO2005 ND=0.5		0.260	0.260	pg/g			
						n/ Assemb	abla Limits	

C. The same management	Quai	Result	Nominal	Units	Recovery%	Acceptable Limits
Surrogate/Tracer recovery		185	190	pg/g	97.5	(25%-164%)
13C-2,3,7,8-TCDD		211	190	pg/g	111	(25%-181%)
13C-1,2,3,7,8-PeCDD						(32%-141%)
13C-1,2,3,4,7,8-HxCDD		180	190	pg/g	94.8	•
13C-1,2,3,6,7,8-HxCDD		174	190	pg/g	91.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		205	190	pg/g	108	(23%-140%)
		382	380	pg/g	101	(17%-157%)
I3C-OCDD		193	190	pg/g	102	(24%-169%)
13C-2,3,7,8-TCDF					108	(24%-185%)
13C-1,2,3,7,8-PeCDF		206	190	pg/g		
13C-2,3,4,7,8-PeCDF		219	190	pg/g	115	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		177	190	pg/g	93.0	(26%-152%)
		188	190	pg/g	98.9	(26%-123%)
13C-1,2,3,6,7,8-HxCDF			190	pg/g	99.5	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		189				(29%-147%)
13C-1,2,3,7,8,9-HxCDF		181	190	pg/g	95.4	(2770-14770)

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis

Sample Summary TRCC001 Client: 6324 06/17/2014 12:00

6324003 Lab Sample ID: 1613B Tissue Client Sample:

SDG Number:

LFBG02 Dup Client 1D: Batch ID: 26413

07/19/2014 06:16 Run Date: b18jul14a_2-6 Data File:

Date Received: Method:

Date Collected:

Analyst:

JTF

SW846 3540C

07/10/2014 09:15

EPA Method 1613B

Instrument: **Dilution:**

Project:

Matrix:

Prep Basis:

As Received

TISSUE

TRCC00314

HRP763

Data File: Prep Batch: Prep Date:	b18jul14a_2-6 26411 17-JUL-14	Prep Method: Prep Aliquot:	SW846 3540 10.38 g	OC			201	*
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	.316		pg/g	0.316	0.963 4.82	
40321-76-4	1,2,3,7,8-PeCDD	U	.148		pg/g	0.148		
39227-28-6	1,2,3,4,7,8-HxCDD	บ	.198		pg/g	0.198	4.82	
57653-85-7	1,2,3,6,7,8-HxCDD	U	.197		pg/g	0.197	4.82	
19408-74-3	1,2,3,7,8,9-HxCDD	υ	.208		pg/g	0.208	4.82	
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	0.522		pg/g	0.449	4.82	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	1	5.69		pg/g	0.865	9.63	
51207-31-9	2,3,7,8-TCDF	J	0.287		pg/g	0.225	0.963	
57117-41-6	1,2,3,7,8-PeCDF	U	.13		pg/g	0.130	4.82	
57117-31-4	2,3,4,7,8-PeCDF	U	.118		pg/g	0.118	4.82	
70648-26-9	1,2,3,4,7,8-HxCDF	υ	.121		pg/g	0.121	4.82	
57117-44-9	1,2,3,6,7,8-HxCDF	U	.117		pg/g	0.117	4.82	
60851-34-5	2,3,4,6,7,8-HxCDF	U	.128		pg/g	0.128	4.82	
72918-21-9	1,2,3,7,8,9-HxCDF	ប	.2		pg/g	0.200	4.82	
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.146		pg/g	0.146	4.82	
55673-89-7	1,2,3,4,7,8,9-HpCDF	υ	.231		pg/g	0.231	4.82	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	Ū	.711		pg/g	0.711	9.63	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	บ	.316		pg/g	0.316	0,963	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.148		pg/g	0.148	4.82	
34465-46-8	Total Hexachlorodibenzo-p-dioxin	υ	.197		pg/g	0.197	4.82	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.522		pg/g	0.449	4.82	
30402-14-3	Total Tetrachlorodibenzofuran	J	0.287		pg/g	0.225	0.963	
30402-14-3	Total Pentachlorodibenzofuran	U	.118		pg/g	0.118	4.82	
	Total Hexachlorodibenzofuran	U	.117		pg/g	0.117	4.82	
55684-94-1	Total Heptachlorodibenzofuran	U	.146		pg/g	0.146	4.82	
38998-75-3	TEQ WHO2005 ND=0		0.0356	0.0356	pg/g			
3333-30-0 3333-30-1	TEQ WHO2005 ND=0.5		0.348	0.348	pg/g			
1-96-666		n = t	Nominal	Ilnite	Recoverv%	Accep	table Limits	

	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
Surrogate/Tracer recovery	Quai	176	193	pg/g	91.3	(25%-164%)
13C-2,3,7,8-TCDD		202	193	pg/g	105	(25%-181%)
13C-1,2,3,7,8-PeCDD					89.1	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		172	193	pg/g		(28%-130%)
13C-1,2,3,6,7,8-HxCDD		177	193	pg/g	91.8	,
13C-1,2,3,4,6,7,8-HpCDD		203	193	pg/g	106	(23%-140%)
13C-OCDD		379	385	pg/g	98.4	(17%-157%)
13C-2,3,7,8-TCDF		191	193	pg/g	99.1	(24%-169%)
• • •		198	193	pg/g	103	(24%-185%)
13C-1,2,3,7,8-PeCDF		217	193	pg/g	113	(21%-178%)
13C-2,3,4,7,8-PeCDF		182	193	pg/g	94.3	(26%-152%)
13C-1,2,3,4,7,8-HxCDF			193	pg/g	95.8	(26%-123%)
13C-1,2,3,6,7,8-HxCDF		185			97.1	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		187	193	pg/g		(29%-147%)
13C-1,2,3,7,8,9-HxCDF		178	193	pg/g	92.2	(27/0-141/0)

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: Date Collected:

TRCC001 06/17/2014 08:40 07/10/2014 09:15 Project: Matrix:

TRCC00314 TISSUE

Page 1

Lab Sample ID: Client Sample: Client ID:

SDG Number:

6324004 1613B Tissue LFLMB01

Method: Analyst:

Date Received:

EPA Method 1613B

Instrument:

Prep Basis:

As Received **HRP763**

4 93

4.93

9.85

O ORS

4.93

Batch ID: Run Date: Data File:

07/19/2014 07:04 b18jul14a_2-7

26413

6324

Prep Method: **Prep Aliquot:**

SW846 3540C 10.15 g

Dilution:

Prep Batch: Prep Date:

67562-39-4

37871-00-4

26411 17-JUL-14

Qual Parmname CAS No. U 1746-01-6 2,3,7,8-TCDD U 1,2,3,7,8-PeCDD 40321-76-4 U 1,2,3,4,7,8-HxCDD 39227-28-6 U 1,2,3,6,7,8-HxCDD 57653-85-7 U 1,2,3,7,8,9-HxCDD 19408-74-3 1,2,3,4,6,7,8-HpCDD 35822-46-9 J 1,2,3,4,6,7,8,9-OCDD 3268-87-9 J 2,3,7,8-TCDF 51207-31-9 H 57117-41-6 1,2,3,7,8-PeCDF U 2,3,4,7,8-PeCDF 57117-31-4

70648-26-9 1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF 57117-44-9 2,3,4,6,7,8-HxCDF 60851-34-5 1,2,3,7,8,9-HxCDF 72918-21-9

1,2,3,4,7,8,9-HpCDF 55673-89-7 1,2,3,4,6,7,8,9-OCDF 39001-02-0 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 Total Pentachlorodibenzo-p-dioxin 36088-22-9 Total Hexachlorodibenzo-p-dioxin 34465-46-8

Total Heptachlorodibenzo-p-dioxin

1,2,3,4,6,7,8-HpCDF

Total Tetrachlorodibenzofuran 30402-14-3 Total Pentachlorodibenzofuran 30402-15-4 Total Hexachlorodibenzofuran 55684-94-1 Total Heptachlorodibenzofuran 38998-75-3

TEQ WHO2005 ND=0 3333-30-0 TEQ WHO2005 ND=0.5 3333-30-1

13C-1,2,3,7,8,9-HxCDF

PQL EDL Units **EMPC** Result 0.985 0.203 .203 pg/g 4.93 0.128 pg/g .128 4.93 0.151 .151 pg/g 4.93 0.149 pg/g .149

0.159 pg/g .159 0.292 pg/g 0.349 0.573 1.58 pg/g 0.205 0.384 pg/g 0.0971 .0971 pg/g

4.93 0.090 .09 pg/g 4.93 0.106 106 pg/g υ 0.102 4 93 pg/g υ 102 4.93 0.110 pg/g u .11 4.93 0.160 pg/g U .16 0.117 4.93 pg/g U .117

4.93 0.191 191 pg/g 9.85 0.487 pg/g 487 0.985 0.203 pg/g .203 4.93 0.128 pg/g 128 4.93 0.149

pg/g U .149 0.292 4,93 pg/g 0.349 0.205 0.985 pg/g 0.384 1 0.0804 4.93 U .0804 pg/g 4.93 0.102 pg/g .102 U 4.93 0.117 pg/g U .117 0.0424

pg/g

pg/g

0.271

Acceptable Limits Units Recovery% **Nominal** Result Qual Surrogate/Tracer recovery (25%-164%) 197 pg/g 173 13C-2,3,7,8-TCDD (25%-181%) 103 197 pg/g 203 13C-1,2,3,7,8-PeCDD (32%-141%) pg/g 86.8 197 171 13C-1,2,3,4,7,8-HxCDD (28%-130%) 88.9 175 197 pg/g 13C-1,2,3,6,7,8-HxCDD (23%-140%) 106 197 pg/g 209 13C-1,2,3,4,6,7,8-HpCDD (17%-157%) 97.7 385 394 pg/g 13C-OCDD (24%-169%) 99.1 197 pg/g 195 13C-2,3,7,8-TCDF (24%-185%) 103 204 197 pg/g 13C-1,2,3,7,8-PeCDF (21%-178%)197 110 pg/g 216 13C-2,3,4,7,8-PeCDF 89.0 (26%-152%) 197 pg/g 175 13C-1,2,3,4,7,8-HxCDF (26%-123%) 89.4 197 DR/R 176 13C-1,2,3,6,7,8-HxCDF (28%-136%) 91.9 197 pg/g 181 13C-2,3,4,6,7,8-HxCDF (29%-147%) 90.5 178 197 pg/g

U

υ

U

U

0.0424

0.271

July 30, 2014

of 2 Page 1

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6324 SDG Number: Lab Sample ID: 6324012

1613B Tissue Client Sample: LFLMB02 Client ID:

Batch 1D: 26413 07/19/2014 14:21 Run Date: b18jul14a_3-2 Data File:

26411 Prep Batch: Prep Date: 17-JUL-14

TRCC001 Client: Date Collected: Date Received:

Method:

Analyst:

Prep Method:

06/19/2014 09:30 07/10/2014 09:15

EPA Method 1613B

SW846 3540C

JTF

Prep Basis:

Project:

Matrix:

As Received

TRCC00314

TISSUE

HRP763 Instrument: 1 Dilution:

Prep Aliquot: 10.51 g **PQL EDL** Units **EMPC** Qual Result CAS No. Parmname 0.951 0.289 .289 pg/g U 2,3,7,8-TCDD 1746-01-6 4.76 0.171 pg/g U .171 40321-76-4 1,2,3,7,8-PeCDD 0.285 4.76 U .285 pg/g 1,2,3,4,7,8-HxCDD 39227-28-6 4.76 0.263 .263 pg/g 13 1,2,3,6,7,8-HxCDD 57653-85-7 0.287 4.76 .287 pg/g U 1,2,3,7,8,9-HxCDD 19408-74-3 4.76 0.419 pg/g J 0.668 1,2,3,4,6,7,8-HpCDD 35822-46-9 9.51 1.08 3.06 pg/g j 1,2,3,4,6,7,8,9-OCDD 3268-87-9 0.951 0.249 0.266 pg/g 2,3,7,8-TCDF 51207-31-9 0.148 4.76 pg/g .148 U 1,2,3,7,8-PeCDF 57117-41-6 4.76 .0.135 U .135 pg/g 2,3,4,7,8-PeCDF 57117-31-4 4.76 0.172 U .172 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF 0.163 4.76 pg/g U .163 1,2,3,6,7,8-HxCDF 57117-44-9 4.76 0.192 pg/g U .192 2,3,4,6,7,8-HxCDF 60851-34-5 4.76 0.301 pg/g U .301 1,2,3,7,8,9-HxCDF 72918-21-9 0.215 4.76 U .215 pg/g 1,2,3,4,6,7,8-HpCDF 67562-39-4 4.76 0.373 pg/g .373 U 55673-89-7 1,2,3,4,7,8,9-HpCDF 0.906 9.51 .906 pg/g U 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.951 0.289 υ pg/g .289 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 0.171 4.76 pg/g U .171 Total Pentachlorodibenzo-p-dioxin 36088-22-9 4.76 0.263 pg/g U .263 Total Hexachlorodibenzo-p-dioxin 34465-46-8 0.419 4.76 pg/g j 0.668 Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.249 0.951 pg/g j 0.266 Total Tetrachlorodibenzofuran 30402-14-3 4.76 pg/g 0.123 u .123 Total Pentachlorodibenzofuran 30402-15-4 0.163 4.76 pg/g U .163 Total Hexachlorodibenzofuran 55684-94-1 0.215 4.76 pg/g U .215 Total Heptachlorodibenzofuran 38998-75-3 0.0342 0.0342 pg/g TEQ WHO2005 ND=0 3333-30-0 0.373 0.373 pg/g 3333-30-1 TEQ WHO2005 ND=0.5

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		161	190	pg/g	84.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		184	190	pg/g	96.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		× 141	190	pg/g	74.1	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		174	190	pg/g	91.5	(28%-130%)
,,,,,		179	190	pg/g	94.1	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		288	381	pg/g	75.7	(17%-157%)
13C-OCDD		179	190	pg/g	94.1	(24%-169%)
13C-2,3,7,8-TCDF		181	190	pg/g	95.0	(24%-185%)
13C-1,2,3,7,8-PeCDF		194	190	pg/g	102	(21%-178%)
13C-2,3,4,7,8-PeCDF		158	190	pg/g	82.9	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		181	190	pg/g	95.4	(26%-123%)
13C-1,2,3,6,7,8-HxCDF			190		90.2	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		172		pg/g	82.8	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		158	190	pg/g	62.0	(2010-1117)

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client:

TRCC001 06/17/2014 13:40 07/10/2014 09:15

Project: Matrix:

TRCC00314 TISSUE

Page 1

Lab Sample ID: Client Sample: Client ID:

SDG Number:

6324005 1613B Tissue YFBG01

6324

26413

Method:

EPA Method 1613B

Prep Basis:

As Received

Batch ID: Run Date: Data File:

07/19/2014 07:51 b18jul14a 2-8

Parmname

Analyst:

Instrument: Dilution:

0.116

0.128

0.279

0.454

0.160

0.0931

0.0847

0.109

0.104

0.116

0.171

0.125

0.208

0.511

0.176

0.106

0.116

0.279

0.160

0.0588

0.104

0.125

HRP763 1

4.77

4.77

4 77

9.54

0.954

4.77

4.77

4.77

4.77

4.77

4.77

4.77

4.77

9.54

0.954

4.77

4.77

4.77

0.954

4.77

4.77

4.77

Prep Batch: Prep Date:

26411 17-JUL-14 Prep Method: **Prep Aliquot:**

Date Collected:

Date Received:

10.48 g

.116

.128

0.460

5.27

0.271

0931

J

I

υ

U

j

Result

170

204

166

169

197

346

194

201

212

Qual

SW846 3540C

CAS No. 2,3,7,8-TCDD 1746-01-6 40321-76-4 39227-28-6 57653-85-7 19408-74-3 35822-46-9 3268-87-9

37871-00-4

30402-14-3

1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDD U U

1,2,3,6,7,8-HxCDD 1,2,3,7,8,9-HxCDD 1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8,9-OCDD 2,3,7,8-TCDF 51207-31-9

1,2,3,7,8-PeCDF 57117-41-6 57117-31-4 2,3,4,7,8-PeCDF 1,2,3,4,7,8-HxCDF 70648-26-9 1,2,3,6,7,8-HxCDF 57117-44-9

60851-34-5 2,3,4,6,7,8-HxCDF 1,2,3,7,8,9-HxCDF 72918-21-9 1,2,3,4,6,7,8-HpCDF 67562-39-4 55673-89-7 1,2,3,4,7,8,9-HpCDF

1,2,3,4,6,7,8,9-OCDF 39001-02-0 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 Total Pentachlorodibenzo-p-dioxin 36088-22-9 Total Hexachlorodibenzo-p-dioxin 34465-46-8 Total Heptachlorodibenzo-p-dioxin

Total Tetrachlorodibenzofuran

Total Pentachlorodibenzofuran 30402-15-4 Total Hexachlorodibenzofuran 55684-94-1 Total Heptachlorodibenzofuran 38998-75-3

TEQ WHO2005 ND=0 3333-30-0 TEQ WHO2005 ND=0.5 3333-30-1

Surrogate/Tracer recovery

13C-2,3,7,8-TCDD

13C-1,2,3,7,8-PeCDD

13C-1,2,3,4,7,8-HxCDD

13C-1,2,3,6,7,8-HxCDD

13C-OCDD

13C-2,3,7,8-TCDF

13C-1,2,3,7,8-PeCDF

13C-2,3,4,7,8-PeCDF

13C-1,2,3,4,7,8-HxCDF

13C-1,2,3,6,7,8-HxCDF

13C-2,3,4,6,7,8-HxCDF

13C-1,2,3,7,8,9-HxCDF

13C-1,2,3,4,6,7,8-HpCDD

EDL PQL Units **EMPC** Quai Result 0.954 0.176 U pg/g .176 0.106 4.77 pg/g υ .106 4.77 0.127 pg/g υ .127

pg/g

107

86.8

88.6

103

U .0847 u .109 104 U 11 .116 U .171 j 0.235 IJ 208 υ .511

> U .176 U .106 U .116 0.460 0.481 11 .0588

> > Nominal

191

191

191

191

191

.104 0.235 0.0356 0.0356 0.236 0.236

0.147

Units

pg/g

DE/g

pg/g

pg/g

pg/g

pg/g Acceptable Limits Recovery% (25%-164%) 89.0

> (25%-181%) (32%-141%) (28%-130%) (23%-140%)

90.6 (17%-157%) 382 pg/g (24%-169%) 102 191 pg/g 105 (24%-185%) 191 pg/g (21%-178%)111 191 pg/g (26%-152%) pg/g 87.9 191

168 (26%-123%) 95.0 191 pg/g 181 (28%-136%) 191 pg/g 92.5 177 (29%-147%) 91.9 175 191 pg/g

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: Date Collected: TRCC001 06/17/2014 13:55 07/10/2014 09:15 Project: Matrix: TRCC00314 TISSUE

Page 1

Client Sample: Client ID:

SDG Number:

Lab Sample ID: 6324006 1613B Tissue YFBG02

6324

Method: Analyst:

Date Received:

EPA Method 1613B

Prep Basis: Instrument: Dilution:

As Received

Batch ID: Run Date: Data File:

26413 07/19/2014 08:39 b18jul14a_2-9

Prep Method:

SW846 3540C

HRP763

Prep Batch: Prep Date:

26411 17-JUL-14 Prep Aliquot:

10.62 g

JTF

CACN-	Parmname	Qual	Result	EMPC	Units	EDL .	PQL	
CAS No.		U	.18		pg/g	0.180	0.942	
1746-01-6	2,3,7,8-TCDD	U	.0985		pg/g	0.0985	4.71	
40321-76-4	1,2,3,7,8-PeCDD	U	.146		pg/g	0.146	4.71	
39227-28-6	1,2,3,4,7,8-HxCDD	U	.144		pg/g	0.144	4.71	
57653-85-7	1,2,3,6,7,8-HxCDD	บ	.154		pg/g	0.154	4.71	
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.311		pg/g	0.249	4.71	
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	9.31		pg/g	0.691	9.42	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	_ J	0.292		pg/g	0.154	0.942	
51207-31-9	2,3,7,8-TCDF	υ	.0893		pg/g	0.0893	4.71	
57117-41-6	1,2,3,7,8-PeCDF	U U	.084		pg/g	0.084	4.71	
57117-31-4	2,3,4,7,8-PeCDF	U	.0991		pg/g	0.0991	4.71	
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0945		pg/g	0.0945	4.71	
57117-44-9	1,2,3,6,7,8-HxCDF	U	.1		pg/g	0.100	4.71	
60851-34-5	2,3,4,6,7,8-HxCDF	Ū	.151	*	pg/g	0.151	4.71	
72918-21-9	1,2,3,7,8,9-HxCDF	лк	. /	0.134	pg/g	0.110	4.71	
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.182	••	pg/g	0.182	4.71	
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.411		pg/g	0.411	9.42	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.18		pg/g	0.180	0.942	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.0985		pg/g	0.0985	4.71	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	_	.144		pg/g	0.144	4.71	
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	0.311		pg/g	0.249	4.71	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J ,	0.311		pg/g	0.154	0.942	
30402-14-3	Total Tetrachlorodibenzofuran	J	.0601		pg/g	0.0601	4.71	
30402-15-4	Total Pentachlorodibenzofuran	U			pg/g	0.0945	4.71	
55684-94-1	Total Hexachlorodibenzofuran	U	.0945	0.134	pg/g	0.110	4.71	
38998-75-3	Total Heptachlorodibenzofuran	ប	.11	0.134	pg/g	V		
3333-30-0	TEQ WHO2005 ND=0		0.0351	0.235	Pg/g Pg/g			
3333-30-1	TEQ WHO2005 ND=0.5		0.234	0,233	PB/ 8			

S	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
Surrogate/Tracer recovery		161	188	pg/g	85.4	(25%-164%)	
13C-2,3,7,8-TCDD		182	188	pg/g	96.9	(25%-181%)	
13C-1,2,3,7,8-PeCDD		157	188	pg/g	83.2	(32%-141%)	11411
13C-1,2,3,4,7,8-HxCDD					83.0	(28%-130%)	
13C-1,2,3,6,7,8-HxCDD		156	188	pg/g		(23%-140%)	
13C-1,2,3,4,6,7,8-HpCDD		182	188	pg/g	96.9		
13C-OCDD		325	377	pg/g	86.3	(17%-157%)	
13C-2,3,7,8-TCDF		178	188	pg/g	94.3	(24%-169%)	
13C-1,2,3,7,8-PeCDF		184	188	pg/g	97.6	(24%-185%)	
13C-2,3,4,7,8-PeCDF		196	188	pg/g	104	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		156	188	pg/g	82.7	(26%-152%)	
		171	188	pg/g	90.6	(26%-123%)	
13C-1,2,3,6,7,8-HxCDF		166	188	pg/g	88.2	(28%-136%)	
13C-2,3,4,6,7,8-HxCDF		164	188	pg/g	87.3	(29%-147%)	
13C-1,2,3,7,8,9-HxCDF		104	100	786		,	

TEQ WHO2005 ND=0.5

3333-30-1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 Client: 06/18/2014 00:00 Date Collected: 07/10/2014 09:15 Date Received:

Project: Matrix:

TRCC00314 TISSUE

Page 1

Client Sample: Client ID:

SDG Number:

Lab Sample ID: 1613B Tissue CPBG01

6324

6324007

Method: Analyst: EPA Method 1613B

Prep Basis: Instrument: As Received

Batch ID: Run Date: Data File:

07/19/2014 09:27 b18jul14a_2-10

Prep Method:

SW846 3540C

Dilution:

HRP763 1

Prep Batch: Prep Date:

26411 17-JUL-14

26413

10.26 g Prep Aliquot:

Lich Daic.	17-000 14						DOI:
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.166		pg/g	0.166	0.975
40321-76-4	1,2,3,7,8-PeCDD	U	.102		pg/g	0.102	4.87
39227-28-6	1,2,3,4,7,8-HxCDD	U	.12		pg/g	0.120	4.87
57653-85-7	1,2,3,6,7,8-HxCDD	υ	.114		pg/g	0.114	4.87
19408-74-3	1,2,3,7,8,9-HxCDD	บ	.124		pg/g	0.124	4.87 4.87
35822-46-9	1,2,3,4,6,7,8-HpCDD	υ	.228	•	pg/g	0.228	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	2.04		pg/g	0.596	9.75 0.975
51207-31-9	2,3,7,8-TCDF	J	0.302		pg/g	0.137	0.975 4.87
57117-41-6	1,2,3,7,8-PeCDF	บ	.0758		pg/g	0.0758	4.87
57117-31-4	2,3,4,7,8-PeCDF	U	.0673		pg/g	0.0673	4.87
70648-26-9	1,2,3,4,7,8-HxCDF	υ	.0895		pg/g	0.0895	4.87 4.87
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0828		pg/g	0.0828	4.87
60851-34-5	2,3,4,6,7,8-HxCDF	υ	.0926		pg/g	0.0926	4.87
72918-21-9	1,2,3,7,8,9-HxCDF	U	.142		pg/g	0.142	4.87
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.122		pg/g	0.122	4.87
55673-89-7	1,2,3,4,7,8,9-HpCDF	ប	.205		pg/g	0.205	4.87 9.75
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.419		pg/g	0.419	0,975
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.166		pg/g	0.166	4.87
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	102		pg/g	0,102	4.87
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.114		pg/g	0.114	4.87
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.228		pg/g	0.228	0.975
30402-14-3	Total Tetrachlorodibenzofuran	J	0.302	0.474	pg/g	0.137	4.87
30402-15-4	Total Pentachlorodibenzofuran	υ	.0563		pg/g	0.0563	4.87
55684-94-1	Total Hexachlorodibenzofuran	υ	.0828		pg/g	0.0828	4.87
38998-75-3	Total Heptachlorodibenzofuran	ប	.122		pg/g	0.122	4.07
3333-30-0	TEQ WHO2005 ND=0		0.0308	0.0308	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.217	0.217	pg/g		

	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
Surrogate/Tracer recovery	- Yuai	181	195	pg/g	92.8	(25%-164%)
13C-2,3,7,8-TCDD			195	pg/g	106	(25%-181%)
13C-1,2,3,7,8-PeCDD		207			. 85.2	(32%-141%)
13C-1,2,3,4,7,8-HxCDD	4	166	195	pg/g		•
13C-1,2,3,6,7,8-HxCDD		171	195	pg/g	87.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		190	195	pg/g	97.7	(23%-140%)
13C-OCDD		346	390	pg/g	88.8	(17%-157%)
		195	195	pg/g	99.9	(24%-169%)
13C-2,3,7,8-TCDF	•	199	195	pg/g	102	(24%-185%)
13C-1,2,3,7,8-PeCDF			195	pg/g	110	(21%-178%)
13C-2,3,4,7,8-PeCDF		213			89.5	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		174	195	pg/g		
13C-1,2,3,6,7,8-HxCDF		173	195	pg/g	88.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		178	195	pg/g	91.2	(28%-136%)
		180	195	pg/g	92.2	(29%-147%)
13C-1,2,3,7,8,9-HxCDF						

July 30, 4017

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: 6324 6324008

Date Collected: Date Received: 1613B Tissue

Method:

Analyst:

Prep Method:

TRCC001 06/18/2014 00:00 07/10/2014 09:15

Project: Matrix:

Prep Basis:

TRCC00314 TISSUE

As Received

Page 1

Client ID: **Batch ID:**

SDG Number:

Lab Sample ID:

Client Sample:

CPBG02 26413

07/19/2014 10:15 Run Date: b18jul14a_2-11 Data File:

26411 Prep Batch: 17-JUL-14 Prep Date:

EPA Method 1613B **JTF**

SW846 3540C

Instrument:

Dilution:

HRP763 1

pg/g

pg/g

pg/g

0.0304

0.203

Prep Aliquot: 11.26 g EDL **PQL EMPC** Units Result Qual CAS No. **Parmname** 0.888 0.170 pg/g U .17 1746-01-6 2,3,7,8-TCDD 0.0847 4.44 U .0847 pg/g 1,2,3,7,8-PeCDD 40321-76-4 4.44 0.115 pg/g U .115 1,2,3,4,7,8-HxCDD 39227-28-6 4.44 0.114 .114 pg/g υ 1,2,3,6,7,8-HxCDD 57653-85-7 4.44 0.121 U .121 pg/g 1,2,3,7,8,9-HxCDD 19408-74-3 4.44 0.169 pg/g U .169 1,2,3,4,6,7,8-HpCDD 35822-46-9 8.88 0.506 pg/g 1.74 J 1,2,3,4,6,7,8,9-OCDD 3268-87-9 0.126 0.888 pg/g ī 0.298 2,3,7,8-TCDF 51207-31-9 0.0694 4.44 .0694 pg/g U 57117-41-6 1,2,3,7,8-PeCDF 4.44 0.062 pg/g .062 U 2,3,4,7,8-PeCDF 57117-31-4 0.0686 4.44 pg/g .0686 u 70648-26-9 1,2,3,4,7,8-HxCDF 0.0611 4.44 .0611 pg/g U 1,2,3,6,7,8-HxCDF 57117-44-9 4.44 0.0664 pg/g U .0664 2,3,4,6,7,8-HxCDF 60851-34-5 0.102 4.44 pg/g .102 Ħ 1,2,3,7,8,9-HxCDF 72918-21-9 0.0909 4.44 U .0909 pg/g 1,2,3,4,6,7,8-HpCDF 67562-39-4 4.44 0.148 pg/g 148 υ 1,2,3,4,7,8,9-HpCDF 55673-89-7 8.88 0.353 pg/g U .353 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.170 0.888 pg/g U .17 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 4.44 0.0847 pg/g υ .0847 Total Pentachlorodibenzo-p-dioxin 36088-22-9 4.44 0.114 pg/g .114 U Total Hexachlorodibenzo-p-dioxin 34465-46-8 0.169 4.44 U .169 pg/g Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.888 0.126 0.501 pg/g Total Tetrachlorodibenzofuran 30402-14-3 4 44 0.0533 pg/g .0533 υ Total Pentachlorodibenzofuran 30402-15-4 0.0611 4.44 pg/g .0611 Total Hexachlorodibenzofuran U 55684-94-1 0.0909 4.44

υ

.0909

0.0304

0.203

C	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
Surrogate/Tracer recovery		160	178	pg/g	89.9	(25%-164%)
13C-2,3,7,8-TCDD		183	178	pg/g	103	(25%-181%)
13C-1,2,3,7,8-PeCDD		-			84.6	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		150	178	pg/g		· · · · · · · · · · · · · · · · · · ·
13C-1,2,3,6,7,8-HxCDD		151	178	pg/g	85.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		174	178	pg/g	98.2	(23%-140%)
		324	355	pg/g	91.1	(17%-157%)
13C-OCDD		180	178	pg/g	102	(24%-169%)
13C-2,3,7,8-TCDF			178	pg/g	101	(24%-185%)
13C-1,2,3,7,8-PeCDF		180				(21%-178%)
13C-2,3,4,7,8-PeCDF		195	178	pg/g	110	
13C-1,2,3,4,7,8-HxCDF		157	178	pg/g	88.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		161	178	pg/g	90.5	(26%-123%)
		161	178	pg/g	90.6	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		159	178	pg/g	89.6	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		139	176	188	22.2	·

Total Heptachlorodibenzofuran

TEQ WHO2005 ND=0

TEQ WHO2005 ND=0.5

38998-75-3

3333-30-0

3333-30-1

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6324 SDG Number: Lab Sample ID: 6324009 Client Sample:

1613B Tissue

CPLMB01 Client ID: Batch ID: 26413 07/19/2014 11:02 Run Date:

b18jul14a_2-12 Data File: 2641 i Prep Batch:

Client: Date Collected: Date Received:

Method:

Analyst:

Prep Method:

TRCC001 06/18/2014 00:00

07/10/2014 09:15

EPA Method 1613B JTF

SW846 3540C

Prep Basis:

Project:

Matrix:

As Received

TRCC00314

TISSUE

HRP763 Instrument: 1 Dilution:

Prep Batch: Prep Date:	20411 17-JUL-14	Prep Aliqu	ot: 10.33 g					
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
	2,3,7,8-TCDD		J 0.244		pg/g	0.169	0.968	
1746-01-6 40321-76-4	1,2,3,7,8-PeCDD		U .0951		pg/g	0.0951	4.84	
	1,2,3,4,7,8-HxCDD		U .144		pg/g	0.144	4.84	
39227-28-6	1,2,3,6,7,8-HxCDD		U .137		pg/g	0.137	4.84	
57653-85-7	1,2,3,7,8,9-HxCDD		U .148		pg/g	0.148	4.84	
19408-74-3			J 0.321		pg/g	0.271	4.84	
35822-46-9	1,2,3,4,6,7,8-HpCDD		J 4,58		pg/g	0.598	9.68	
3268-87-9	1,2,3,4,6,7,8,9-OCDD		J 0,395		pg/g	0.172	0.968	
51207-31-9	2,3,7,8-TCDF		U .0931		pg/g	0.0931	4.84	
57117-41-6	1,2,3,7,8-PeCDF		U .0842		pg/g	0 0842	4.84	
57117-31-4	2,3,4,7,8-PeCDF		U .0829		pg/g	0.0829	4.84	
70648-26-9	1,2,3,4,7,8-HxCDF		ປ .0807		pg/g	0.0807	4.84	
57117-44-9	1,2,3,6,7,8-HxCDF		ປ .0838		pg/g	0.0838	4.84	
60851-34-5	2,3,4,6,7,8-HxCDF		U13		pg/g	0.130	4.84	
72918-21-9	1,2,3,7,8,9-HxCDF		J 0.108		pg/g	0.103	4.84	
67562-39-4	1,2,3,4,6,7,8-HpCDF					0.165	4.84	
55673-89-7	1,2,3,4,7,8,9-HpCDF		U .165		pg/g	0.350	9.68	(8)
39001-02-0	1,2,3,4,6,7,8,9-OCDF		U .35		pg/g	0.330	0.968	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		J 0.244		pg/g		4.84	
36088-22-9	Total Pentachlorodibenzo-p-dioxin		U .0951		pg/g	0.0951		
34465-46-8	Total Hexachlorodibenzo-p-dioxin		U .137		pg/g	0.137	4.84	
37871-00-4	Total Heptachlorodibenzo-p-dioxin		J 0.321		pg/g	0.271	4.84	
30402-14-3	Total Tetrachlorodibenzofuran		J 0.395		pg/g	0.172	0.968	
30402-15-4	Total Pentachlorodibenzofuran		U .0546		pg/g	0.0546	4.84	
55684-94-1	Total Hexachlorodibenzofuran		U .0807		pg/g	0.0807	4.84	
38998-75-3	Total Heptachlorodibenzofuran		J 0.108		pg/g	0.103	4.84	
3333-30-0	TEQ WHO2005 ND=0		0.289	0.289	pg/g			
3333-30-1	TEQ WHO2005 ND=0.5		0.392	0.392	bR/R			
		OI De	ault Nom	inal linite	Recoverv%	Accept	able Limits	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		177	194	pg/g	91.7	(25%-164%)	
13C-1,2,3,7,8-PeCDD	Si	204	194	pg/g	105	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		159	194	pg/g	82.1	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		177	194	pg/g	91.4	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		197	194	pg/g	102	(23%-140%)	
13C-OCDD		357	387	pg/g	92.3	(17%-157%)	
13C-2,3,7,8-TCDF		199	194	pg/g	103	(24%-169%)	
13C-1,2,3,7,8-PeCDF		199	194	pg/g	103	(24%-185%)	
13C-2.3.4,7.8-PeCDF		220	194	pg/g	114	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		170	194	pg/g	87.8	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		177	194	pg/g	91.6	(26%-123%)	
		180	194	pg/g	93.1	(28%-136%)	
13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,7,8,9-HxCDF		177	194	pg/g	91.5	(29%-147%)	
13C-1,4,3,7,0,7-11ACD1							

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001

6324 SDG Number: Lab Sample ID: 6324010

1613B Tissue Client Sample: CPLMB02 Client ID:

26413 Batch ID: 07/19/2014 11:50 Run Date:

Method: Analyst:

Date Collected:

Date Received:

Client:

EPA Method 1613B JTF

06/18/2014 00:00

07/10/2014 09:15

Matrix: Prep Basis:

Instrument:

Project:

TRCC00314 TISSUE

As Received

HRP763

Run Date: Data File: Prep Batch:	07/19/2014 11:50 b18jul14a_2-13 26411	Analyst: Prep Method:	J1F SW846 3	540C		Dilution:	1	
Prep Date:	17-JUL-14	Prep Aliquot:	10.14 g	PARC	Timidal	EDL	PQL	
CAS No.	Parmname	Qual	Result	EMPC	Units		0.986	
1746-01-6	2,3,7,8-TCDD	J	0.394		pg/g	0.223		
40321-76-4	1,2,3,7,8-PeCDD	ប	.122		pg/g	0.122	4.93	
39227-28-6	1,2,3,4,7,8-HxCDD	U	.14		pg/g	0.140	4.93	
57653-85-7	1,2,3,6,7,8-HxCDD	U	.135		pg/g	0.135	4.93	•
19408-74-3	1,2,3,7,8,9-HxCDD	ប	.146		pg/g	0.146	4.93	
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.286		pg/g	0.252	4.93	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	1.58		pg/g	0.521	9.86	
51207-31-9	2,3,7,8-TCDF	J	0.416		pg/g	0.171	0.986	
57117-41-6	1,2,3,7,8-PeCDF	υ	.104		pg/g	0.104	4.93	
57117-31-4	2,3,4,7,8-PeCDF	U	.0917		pg/g	0.0917	4.93	
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0998		pg/g	0.0998	4.93	
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0941		pg/g	0.0941	4.93	
60851-34-5	2,3,4,6,7,8-HxCDF	U	.103		pg/g	0.103	4.93	
72918-21-9	1,2,3,7,8,9-HxCDF	ប	.159		pg/g	0.159	4.93	
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.0921		pg/g	0.0921	4.93	
55673-89-7	1,2,3,4,7,8,9-HpCDF	บ	.146		pg/g	0.146	4.93	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	υ	.46		pg/g	0.460	9.86	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	0.394		pg/g	0.223	0.986	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	υ	.122		pg/g	0.122	4.93	
34465-46-8	Total Hexachlorodibenzo-p-dioxin	υ	.135		pg/g	0.135	4.93	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.286		pg/g	0.252	4.93	
30402-14-3	Total Tetrachlorodibenzofuran	J	0.416		pg/g	0.171	0.986	
30402-14-3	Total Pentachlorodibenzofuran	U	0655		pg/g	0.0655	4.93	
55684-94-1	Total Hexachlorodibenzofuran	U	.0941		pg/g	0.0941	4.93	
38998-75-3	Total Heptachlorodibenzofuran	U	.0921		pg/g	0.0921	4.93	
38998-75-3	TEQ WHO2005 ND=0		0.439	0.439	pg/g			
3333-30-1	TEQ WHO2005 ND=0.5		0.561	0.561	pg∕g			

	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
Surrogate/Tracer recovery	- Quan	173	197	pg/g	87.9	(25%-164%)	
13C-2,3,7,8-TCDD					98.5	(25%-181%)	
13C-1,2,3,7,8-PeCDD		194	197	pg/g			
13C-1,2,3,4,7,8-HxCDD		166	197	pg/g	84.0	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		165	197	pg/g	83.6	(28%-130%)	
		192	197	pg/g	97.5	(23%-140%)	
13C-1,2,3,4,6,7,8-HpCDD		347	394	pg/g	88.0	(17%-157%)	
13C-OCDD					97.7	(24%-169%)	
13C-2,3,7,8-TCDF		193	197	pg/g		•	
13C-1,2,3,7,8-PeCDF		193	197	pg/g	97.6	(24%-185%)	
의 이 전		206	197	pg/g	105	(21%-178%)	
13C-2,3,4,7,8-PeCDF		163	197	pg/g	82.5	(26%-152%)	
13C-1,2,3,4,7,8-HxCDF			197		91.5	(26%-123%)	
13C-1,2,3,6,7,8-HxCDF		180		pg/g		•	
13C-2,3,4,6,7,8-HxCDF		175	197	pg/g	88.9	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		173	197	pg/g	87.8	(29%-147%)	

191

19 l

191

191

191

129

100

115

109

107

pg/g

pg/g

pg/g

pg/g

pg/g

67.6

52.6

60.4

56.9

55.8

(21%-178%)

(26%-152%)

(26%-123%)

(28%-136%)

(29%-147%)

13C-2,3,4,7,8-PeCDF

13C-1,2,3,4,7,8-HxCDF

13C-1,2,3,6,7,8-HxCDF

13C-2,3,4,6,7,8-HxCDF

13C-1,2,3,7,8,9-HxCDF

July 30, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: Date Collected:

TRCC001 06/17/2014 11:00 07/10/2014 09:15 Project: Matrix: TRCC00314 TISSUE

Page 1

Client Sample: Client ID: Batch ID:

SDG Number:

6324013 Lab Sample ID: 1613B Tissue LFBG01-F

26413

6324

Method: Analyst:

Date Received:

EPA Method 1613B

Instrument:

As Received

Run Date: Data File: 07/19/2014 15:09 b18jul14a_3-3

Prep Method:

JTF

Dilution:

Prep Basis:

HRP763

4.51

Prep Batch: Prep Date:

55684-94-1

38998-75-3

3333-30-0

3333-30-1

26411 17-JUL-14

11.08 g **Prep Aliquot:**

SW846 3540C

EMPC Units Qual Result Parmname U .204 pg/g 2,3,7,8-TCDD

PQL EDL CAS No. 0.903 0.204 1746-01-6 0.101 4.51 pg/g .101 U 1,2,3,7,8-PeCDD 40321-76-4 4.51 0.154 pg/g .154 U 1,2,3,4,7,8-HxCDD 39227-28-6 4.51 0.144 υ .144 pg/g 1,2,3,6,7,8-HxCDD 57653-85-7 4.51 DR/R 0.157 .157 U 1,2,3,7,8,9-HxCDD 19408-74-3 4.51 0.220 pg/g .22 U 1,2,3,4,6,7,8-HpCDD 35822-46-9 9.03 0.480 1 1.17 pg/g 1,2,3,4,6,7,8,9-OCDD 3268-87-9 0.903 0.174 pg/g U .174 2,3,7,8-TCDF 51207-31-9 4.51 0.103 pg/g 103 U 1,2,3,7,8-PeCDF 57117-41-6 0.093 4.51 pg/g U .093 2,3,4,7,8-PeCDF 57117-31-4 4.51 0.106 pg/g U 106 1,2,3,4,7,8-HxCDF 70648-26-9 4.51 0.0996 .0996 pg/g u 57117-44-9 1,2,3,6,7,8-HxCDF 0.112 4.51 pg/g U .112 2,3,4,6,7,8-HxCDF 60851-34-5 4.51 0.158 pg/g U 158 1,2,3,7,8,9-HxCDF 72918-21-9 4.51 0.110 pg/g .11 U 1,2,3,4,6,7,8-HpCDF 67562-39-4 0.180 4.51 U .18 pg/g 55673-89-7 1,2,3,4,7,8,9-HpCDF 0.453 9.03 U .453 pg/g 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.903 0.204 pg/g .204 U Total Tetrachlorodibenzo-p-dioxin 41903-57-5 4.51 0.101 u .101 pg/g Total Pentachlorodibenzo-p-dioxin 36088-22-9 4.51 0.144 pg/g U .144 Total Hexachlorodibenzo-p-dioxin 34465-46-8 4.51 0.220 pg/g υ .22 Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.903 0.174 U pg/g .174 Total Tetrachlorodibenzofuran 30402-14-3 0.0704 4.51 .0704 pg/g U Total Pentachlorodibenzofuran 30402-15-4 4.51 0.0996 pg/g

υ

11

.0996

.11

0.000352

0.226

pg/g

pg/g

pg/g

0.000352

0.226

0.110

Acceptable Limits Recovery% Units Result **Nominal Oual** Surrogate/Tracer recovery (25%-164%) 181 78.5 pg/g 142 13C-2,3,7,8-TCDD (25%-181%) 89.0 181 pg/g 161 13C-1,2,3,7,8-PeCDD (32%-141%) 130 181 pg/g 71.8 13C-1,2,3,4,7,8-HxCDD (28%-130%) 77.6 181 140 pg/g 13C-1,2,3,6,7,8-HxCDD (23%-140%) 86.5 156 181 pg/g 13C-1,2,3,4,6,7,8-HpCDD (17%-157%) 74.4 361 pg/g 269 13C-OCDD (24%-169%) 88.9 161 181 pg/g 13C-2,3,7,8-TCDF 181 88.3 (24%-185%) pg/g 159 13C-1,2,3,7,8-PeCDF 99.9 (21%-178%) 181 180 pg/g 13C-2,3,4,7,8-PeCDF (26%-152%) 181 76.6 138 Dg/g 13C-1,2,3,4,7,8-HxCDF (26%-123%) 81.0 181 pg/g 146 13C-1,2,3,6,7,8-HxCDF (28%-136%) 79.4 143 181 pg/g 13C-2,3,4,6,7,8-HxCDF 78.8 (29%-147%) 142 181 pg/g 13C-1,2,3,7,8,9-HxCDF

Total Hexachlorodibenzofuran

Total Heptachlorodibenzofuran

TEQ WHO2005 ND=0

TEQ WHO2005 ND=0.5

July 30, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6324 SDG Number: 6324014 Lab Sample ID:

1613B Tissue

Client Sample: LFBG02-F Client ID: Batch ID: 26413

07/19/2014 15:56 Run Date: b18jul14a_3-4 Data File:

TRCC001 Client: 06/17/2014 12:00 Date Collected: Date Received:

Method:

Analyst:

07/10/2014 09:15

JTF

EPA Method 1613B

Prep Basis:

Project:

Matrix:

TISSUE

TRCC00314

As Received

HRP763

Instrument: Dilution:

Data File: Prep Batch: Prep Date:	b18jul14a_3-4 26411 17-JUL-14	Prep M Prep A	lethod: .liquot:	SW846 354 10.13 g	0C				
CAS No.	Parmname	Q	ual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	8.	U	.167		pg/g	0.167	0.987	
40321-76-4	1,2,3,7,8-PeCDD		U	.112		pg/g	0.112	4.94	
39227-28-6	1,2,3,4,7,8-HxCDD		U	.134		pg/g	0.134	4.94	
57653-85-7	1,2,3,6,7,8-HxCDD		υ	.132		pg/g	0.132	4.94	
19408-74-3	1,2,3,7,8,9-HxCDD		U	.141		pg/g	0.141	4.94	
35822-46-9	1,2,3,4,6,7,8-HpCDD		U	.185		pg/g	0.185	4.94	
3268-87-9	1,2,3,4,6,7,8,9-OCDD		JK W	V	0.650	pg/g	0.379	9.87	
51207-31-9	2,3,7,8-TCDF		J	0.298		pg/g	0.159	0.987	
57117-41-6	1,2,3,7,8-PeCDF		U	.0855		pg/g	0.0855	4.94	
57117-31-4	2,3,4,7,8-PeCDF		υ	.0744		pg/g	0.0744	4.94	
70648-26-9	1,2,3,4,7,8-HxCDF		U	.0853		pg/g	0.0853	4.94	
57117-44-9	1,2,3,6,7,8-HxCDF		U	.0815		pg/g	0.0815	4.94	
60851-34-5	2,3,4,6,7,8-HxCDF		U	.0888		pg/g	0.0888	4.94 .	
72918-21-9	1,2,3,7,8,9-HxCDF		U	.137		pg/g	0.137	4.94	
67562-39-4	1,2,3,4,6,7,8-HpCDF		\mathbf{U}_{i}	.0956		pg/g	0.0956	4.94	
55673-89-7	1,2,3,4,7,8,9-HpCDF		υ	.164		pg/g	0.164	4.94	
39001-02-0	1,2,3,4,6,7,8,9-OCDF		υ	.409		pg/g	0.409	9.87	·
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		υ	.167		pg/g	0.167	0.987	
36088-22-9	Total Pentachlorodibenzo-p-dioxin		U	.112		pg/g	0.112	4.94	
34465-46-8	Total Hexachlorodibenzo-p-dioxin		U	.132		pg/g	0.132	4.94	
37871-00-4	Total Heptachlorodibenzo-p-dioxin		U	185		pg/g	0.185	4.94	
30402-14-3	Total Tetrachlorodibenzofuran		J	0.298		pg/g	0.159	0.987	
30402-14-3	Total Pentachlorodibenzofuran		U	.0584		pg/g	0.0584	4.94	
	Total Hexachlorodibenzofuran		U	.0815		pg/g	0.0815	4.94	
55684-94-1	Total Heptachlorodibenzofuran		υ	.0956		pg/g	0.0956	4.94	
38998-75-3	TEQ WHO2005 ND=0			0.0298	0.030	pg/g			
3333-30-0 3333-30-1	TEO WHO2005 ND=0.5			0.224	0.224	pg/g			
1-00-000			Damile	Nominal	linite	Recovery%	Accept	able Limits	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
		173	197	pg/g	87.9	(25%-164%)
13C-2,3,7,8-TCDD		197	197	pg/g	99.7	(25%-181%)
13C-1,2,3,7,8-PeCDD			197	pg/g	79.4	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		157	-		83.7	(28%-130%)
13C-1,2,3,6,7,8-HxCDD		165	197	pg/g		1000
13C-1,2,3,4,6,7,8-HpCDD		187	197	pg/g	94.8	(23%-140%)
13C-OCDD		345	395	pg/g	87.3	(17%-157%)
13C-2,3,7,8-TCDF		194	197	pg/g	98.4	(24%-169%)
		199	197	pg/g	101	(24%-185%)
13C-1,2,3,7,8-PeCDF		212	197	pg/g	108	(21%-178%)
13C-2,3,4,7,8-PeCDF			197	pg/g	84.9	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		168		•		(26%-123%)
13C-1,2,3,6,7,8-HxCDF		171	197	pg/g	86.5	8
13C-2,3,4,6,7,8-HxCDF		171	197	pg/g	86.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		167	197	pg/g	84.5	(29%-147%)

July 30, 2014

of 2 Page 1

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: Lab Sample ID: Client Sample:

Client ID:

6324 6324015

1613B Tissue LFBG02-F Dup

Batch ID: 26413 07/19/2014 16:44 Run Date: Data File: b18jul14a_3-5

26411 Prep Batch: Prep Date: 17-JUL-14

TRCC001 Client: Date Collected: Date Received:

06/17/2014 12:00 07/10/2014 09:15

EPA Method 1613B

Instrument: Dilution:

Project:

Matrix:

Prep Basis:

As Received

TRCC00314

TISSUE

HRP763 1

SW846 3540C Prep Method: 10.25 g Prep Aliquot:

Method:

Analyst:

PQL EMPC Units **EDL** Qual Result CAS No. **Parmname** 0.151 0.976 U .151 pg/g 2,3,7,8-TCDD 1746-01-6 4.88 pg/g 0.0759 .0759 U 1,2,3,7,8-PeCDD 40321-76-4 0.108 4.88 .108 pg/g U 39227-28-6 1,2,3,4,7,8-HxCDD 4.88 0.105 U .105 pg/g 1,2,3,6,7,8-HxCDD 57653-85-7 4.88 0.112 pg/g U .112 1,2,3,7,8,9-HxCDD 19408-74-3 4 88 0.164 pg/g U 1.164 1,2,3,4,6,7,8-HpCDD 35822-46-9 9.76 0.345 0.628 pg/g 1,2,3,4,6,7,8,9-OCDD 3268-87-9 0.123 0.976 0.244 pg/g 2,3,7,8-TCDF 51207-31-9 4.88 0.0722 .0722 pg/g U 1,2,3,7,8-PeCDF 57117-41-6 0.0628 4.88 pg/g U .0628 57117-31-4 2,3,4,7,8-PeCDF 0.0716 4.88 pg/g U .0716 1,2,3,4,7,8-HxCDF 70648-26-9 4.88 0.0665 pg/g .0665 U 57117-44-9 1,2,3,6,7,8-HxCDF 0.0736 4.88 pg/g U .0736 2,3,4,6,7,8-HxCDF 60851-34-5 0.112 4.88 .112 pg/g 1,2,3,7,8,9-HxCDF 72918-21-9 4 88 0.072 .072 pg/g U 67562-39-4 1,2,3,4,6,7,8-HpCDF 0.125 4.88 U 125 pg/g 1,2,3,4,7,8,9-HpCDF 55673-89-7 9.76 0.349 U .349 pg/g 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.976 0.151 pg/g U .151 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 4.88 0.0759 .0759 pg/g υ Total Pentachlorodibenzo-p-dioxin 36088-22-9 0.105 4.88 pg/g U .105 Total Hexachlorodibenzo-p-dioxin 34465-46-8 0.164 4.88 U .164 pg/g 37871-00-4 Total Heptachlorodibenzo-p-dioxin 0.976 0.123 pg/g 0.394 J Total Tetrachlorodibenzofuran 30402-14-3 0.0542 4,88 pg/g U .0542 Total Pentachlorodibenzofuran 30402-15-4 0.0665 4.88 U .0665 pg/g Total Hexachlorodibenzofuran 55684-94-1 pg/g 0.072 4.88 .072 U Total Heptachlorodibenzofuran 38998-75-3 0.0246 0.0246 pg/g TEQ WHO2005 ND=0 3333-30-0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2.3,7,8-TCDD		175	195	pg/g	89.9	(25%-164%)	
		205	195	pg/g	105	(25%-181%)	
13C-1,2,3,7,8-PeCDD		153	195	pg/g	78.5	(32%-141%)	
13C-1,2,3,4,7,8-HxCDD		177	195	pg/g	90.6	(28%-130%)	
13C-1,2,3,6,7,8-HxCDD		191	195	pg/g	98.1	(23%-140%)	
13C-1,2,3,4,6,7,8-HpCDD		337	390	pg/g	86.3	(17%-157%)	
13C-OCDD		337 198	195	pg/g	102	(24%-169%)	
13C-2,3,7,8-TCDF				-	104	(24%-185%)	
13C-1,2,3,7,8-PeCDF		202	195	pg/g	112	(21%-178%)	
13C-2,3,4,7,8-PeCDF		219	195	pg/g		(26%-152%)	
13C-1,2,3,4,7,8-HxCDF		165	195	pg/g	84.6	(26%-123%)	
13C-1,2,3,6,7,8-HxCDF		184	195	pg/g	94.4		
13C-2,3,4,6,7,8-HxCDF		180	195	pg/g	92.1	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		178	195	pg/g	91.0	(29%-147%)	

0.183

0.183

pg/g

TEQ WHO2005 ND=0.5

3333-30-1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

Client:

Date Collected:

Date Received:

TRCC001 06/17/2014 08:40 07/10/2014 09:15

Project: Matrix:

Prep Basis:

EDL

0.186

0.0921

0.110

0.107

0.115

0.230

0.318

0.152

0.0838

0.0683

0.0725

0.0739

0.0769

0.120

0.102

0.169

0.354

0.186

0.0921

0.107

0.230

0.152

0.0567

0.0725

0.102

TRCC00314 TISSUE

Page 1

Client Sample: Client ID:

Batch ID:

Run Date:

SDG Number:

Lab Sample ID: 6324016 1613B Tissue

6324

LFLMB01-F 26413

Method: Analyst:

EPA Method 1613B

pg/g

pg/g

pg/g

pg/g

pg/g

0.034

0.220

PQL

0.957

4.78

4.78

4.78

4.78

4.78

9.57

0.957

4.78

4.78

4.78

4.78

4.78

4.78

4.78

4.78

9.57

0.957

4.78

4.78

4.78

0.957

4.78

4.78

4.78

As Received

Data File: Prep Batch:

38998-75-3

3333-30-0

3333-30-1

07/19/2014 17:32 b18jul14a_3-6 26411

Prep Method: Prep Aliquot:

SW846 3540C 10.45 g

Instrument: **HRP763** Dilution: 1

17-JUL-14 Prep Date:

2.00					
CAS No.	Parmname	Qual	Result	EMPC	Units
1746-01-6	2,3,7,8-TCDD	υ	.186		pg/g
40321-76-4	1,2,3,7,8-PeCDD	υ	.0921		pg/g
39227-28-6	1,2,3,4,7,8-HxCDD	U	.11		pg/g
57653-85-7	1,2,3,6,7,8-HxCDD	υ	.107		pg/g
19408-74-3	1,2,3,7,8,9-HxCDD	U	.115		pg/g
35822-46-9	1,2,3,4,6,7,8-HpCDD	Ti J	0.274		pg/g
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0.957		pg/g
51207-31-9	2,3,7,8-TCDF	J	0.310		pg/g
57117-41-6	1,2,3,7,8-PeCDF	U	.0838		pg/g
57117-31-4	2,3,4,7,8-PeCDF	ប	₋ 0683		pg/g
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0725		pg/g
57117-44-9	1,2,3,6,7,8-HxCDF	ប	.0739		pg/g
60851-34-5	2.3.4.6.7.8-HxCDF	ប	.0769		pg/g
72918-21-9	1,2,3,7,8,9-HxCDF	υ	.12		pg/g
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.102		pg/g
55673-89-7	1,2,3,4,7,8,9-HpCDF	ប	.169		pg/g
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.354		pg/g
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	บ	.186		pg/g
36088-22-9	Total Pentachlorodibenzo-p-dioxin	υ	.0921		pg/g
34465-46-8	Total Hexachlorodibenzo-p-dioxin	υ	.107		pg/g
37871-00-4	Total Heptachlorodibenzo-p-dioxin	j	0.274	0.547	pg/g
30402-14-3	Total Tetrachlorodibenzofuran	ΗЈ	0.501		pg/g
30402-14-5	Total Pentachlorodibenzofuran	υ	.0567		pg/g
55684-94-1	Total Hexachlorodibenzofuran	U	.0725		pg/g
33001-24-1			100		nala

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		167	191	pg/g	87.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		197	191	pg/g	103	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		156	191	pg/g	81.5	(32%-141%)
		162	191	pg/g	84.6	(28%-130%)
13C-1,2,3,6,7,8-HxCDD		182	191	pg/g	95.2	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		323	383	pg/g	84.3	(17%-157%)
13C-OCDD		192	191	pg/g	100	(24%-169%)
13C-2,3,7,8-TCDF		193	191	pg/g	101	(24%-185%)
13C-1,2,3,7,8-PeCDF		218	191	pg/g	114	(21%-178%)
13C-2,3,4,7,8-PeCDF		154	191	pg/g	80,3	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		176	191	pg/g	92.1	(26%-123%)
13C-1,2,3,6,7,8-HxCDF					89.3	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		171	191	pg/g	85.4	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		163	191	pg/g	05.4	(27/0 11/4)

U

.102

0.034

0.220

Total Heptachlorodibenzofuran

TEQ WHO2005 ND=0

TEQ WHO2005 ND=0.5

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: Date Collected:

Date Received:

Prep Method:

Method:

Analyst:

TRCC001 06/17/2014 13:40 07/10/2014 09:15

Project: Matrix:

TRCC00314 TISSUE

Page 1

Client Sample: Client ID:

SDG Number:

6324017 Lab Sample ID: 1613B Tissue

6324

YFBG01-F / YFBG02-F

26413 Batch ID: 07/19/2014 18:20 Run Date: b18jul14a_3-7 Data File:

26411 Prep Batch: 17-JUL-14 EPA Method 1613B

SW846 3540C

Prep Basis: Instrument: As Received **HRP763**

Dilution:

1

10.64 g **Prep Aliquot:** Prep Date: **EDL PQL** Units **EMPC** Qual Result **Parmname** CAS No. 0.940 0.164 υ pg/g .164 2,3,7,8-TCDD 1746-01-6 4.70 0.091 pg/g U .091 1,2,3,7,8-PeCDD 40321-76-4 4.70 0.122 pg/g U .122 39227-28-6 1,2,3,4,7,8-HxCDD 4.70 0.120 Ū٠ .12 pg/g 57653-85-7 1,2,3,6,7,8-HxCDD 4.70 0.128 pg/g U .128 1,2,3,7,8,9-HxCDD 19408-74-3 4.70 0.164 pg/g .164 U 1,2,3,4,6,7,8-HpCDD 35822-46-9 9.40 0.461 JU 0.476 pg/g 1,2,3,4,6,7,8,9-OCDD 3268-87-9 0.940 0.134 0.222 pg/g 2,3,7,8-TCDF 51207-31-9 4.70 0.0769 pg/g .0769 U 1,2,3,7,8-PeCDF 57117-41-6 0.0675 4.70 U .0675 pg/g 57117-31-4 2,3,4,7,8-PeCDF 0.081 4.70 .081 pg/g 1,2,3,4,7,8-HxCDF 70648-26-9 0.0771 4.70 pg/g U .0771 57117-44-9 1,2,3,6,7,8-HxCDF 4.70 0.0836 .0836 pg/g 11 60851-34-5 2,3,4,6,7,8-HxCDF 4.70 0.138 .138 pg/g U 1,2,3,7,8,9-HxCDF 72918-21-9 4.70 0.0808 U .0808 pg/g 1,2,3,4,6,7,8-HpCDF 67562-39-4 0.135 4.70 υ .135 pg/g 1,2,3,4,7,8,9-HpCDF 55673-89-7 9.40 0.329 U .329 pg/g 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.940 0.164 pg/g U .164 Total Tetrachlorodibenzo-p-dioxin 41903-57-5 4.70 0.091 .091 pg/g υ Total Pentachlorodibenzo-p-dioxin 36088-22-9 4.70 0.120 pg/g U .12 Total Hexachlorodibenzo-p-dioxin 34465-46-8 0.164 4.70 pg/g U .164 Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.940 pg/g 0.134 0.415 J 30402-14-3 Total Tetrachlorodibenzofuran 0.0547 4.70 pg/g п .0547 Total Pentachlorodibenzofuran 30402-15-4 0.0771 4.70 U .0771 pg/g Total Hexachlorodibenzofuran 55684-94-1 4.70 pg/g 0.0808 U .0808 Total Heptachlorodibenzofuran 38998-75-3 0.0223 pg/g 0.0223 TEQ WHO2005 ND=0 3333-30-0 0.200 0.200 pg/g TEQ WHO2005 ND=0.5 3333-30-1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
		169	188	pg/g	89.7	(25%-164%)
13C-2,3,7,8-TCDD		204	188	pg/g	108	(25%-181%)
13C-1,2,3,7,8-PeCDD		162	188	pg/g	86.3	(32%-141%)
13C-1,2,3,4,7,8-HxCDD					86.8	(28%-130%)
13C-1,2,3,6,7,8-HxCDD		163	188	pg/g		(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		193	188	pg/g	102	•
13C-OCDD		346	376	pg/g	92.0	(17%-157%)
13C-2,3,7,8-TCDF		193	188	pg/g	103	(24%-169%)
13C-1,2,3,7,8-PeCDF		203	188	pg/g	108	(24%-185%)
		218	188	pg/g	116	(21%-178%)
13C-2,3,4,7,8-PeCDF		162	188	pg/g	86.4	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		185	188	pg/g	98.6	(26%-123%)
13C-1,2,3,6,7,8-HxCDF					92.7	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		174	188	pg/g		(29%-147%)
13C-1,2,3,7,8,9-HxCDF	6	169	188	pg/g	90.0	(27/0-147/0)

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 Lab Sample ID: 6324018

1613B Tissue CPBG01-F

Client ID: 26413 Batch 1D: 07/19/2014 19:07 Run Date: b18jul14a_3-8 Data File:

26411 Prep Batch:

Client Sample:

TRCC001 Client: Date Collected: Date Received:

Method:

Analyst:

Prep Method:

06/17/2014 00:00 07/10/2014 09:15

EPA Method 1613B

SW846 3540C

Project: Matrix: TRCC00314 TISSUE

Page 1

As Received Prep Basis:

HRP763 Instrument: 1 **Dilution:**

Prep Date:	17-JUL-14	Prep Aliquot:	10.1 g					• 171
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	.176		pg/g	0.176	0.990	
40321-76-4	1,2,3,7,8-PeCDD	U	.095		pg/g	0.095	4.95	
	1,2,3,4,7,8-HxCDD	U	.128		pg/g	0.128	4.95	
39227-28-6	1,2,3,6,7,8-HxCDD	υ	115		pg/g	0.115	4.95	
57653-85-7	1,2,3,7,8,9-HxCDD	U	.128		pg/g	0.128	4.95	
19408-74-3		U	1.197		pg/g	0.197	4.95	
35822-46-9	1,2,3,4,6,7,8-HpCDD	, s \	0.648		pg/g	0.370	9.90	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0,240		pg/g	0.151	0.990	
51207-31-9	2,3,7,8-TCDF	υ	.0739		pg/g	0.0739	4.95	
57117-41-6	1,2,3,7,8-PeCDF	U	.0651		pg/g	0.0651	4.95	
57117-31-4	2,3,4,7,8-PeCDF	U	.076		pg/g	0.076	4.95	
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0739		pg/g	0.0739	4.95	
57117-44-9	1,2,3,6,7,8-HxCDF	υ	.0804		pg/g	0.0804	4.95	
60851-34-5	2,3,4,6,7,8-HxCDF	บ	.126		pg/g	0.126	4.95	
72918-21-9	1,2,3,7,8,9-HxCDF	U	.0931		pg/g	0.0931	4.95	
67562-39-4	1,2,3,4,6,7,8-HpCDF	v v	.16		pg/g	0.160	4.95	
55673-89-7	1,2,3,4,7,8,9-HpCDF		.38		pg/g	0.380	9.90	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U 			pg/g	0.176	0.990	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.176		pg/g	0.095	4.95	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.095			0.115	4.95	
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.115		pg/g	0.113	4.95	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.197		pg/g	0.151	0,990	
30402-14-3	Total Tetrachlorodibenzofuran	J	0.436		pg/g		4.95	
30402-15-4	Total Pentachlorodibenzofuran	υ	.0568		pg/g	0.0568	4.95	
55684-94-1	Total Hexachlorodibenzofuran	υ	.0739		pg/g	0.0739		
38998-75-3	Total Heptachlorodibenzofuran	U	.0931		pg/g	0.0931	4.95	
3333-30-0	TEQ WHO2005 ND=0		0.0242	0.0242	pg/g			
3333-30-1	TEQ WHO2005 ND=0.5		0.209	0.209	pg/g		40	
			Nominal	Ilmite	Decovery%	Accent	able Limits	

Company of AT manage was an array of the control of	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
Surrogate/Tracer recovery	- Q	177	198	pg/g	89.4	(25%-164%)	
13C-2,3,7,8-TCDD		217	198	pg/g	110	(25%-181%)	
13C-1,2,3,7,8-PeCDD		160	198	pg/g	80.8	(32%-141%)	
13C-1,2,3,4,7,8-HxCDD		170	198	pg/g	. 85.7	(28%-130%)	10
13C-1,2,3,6,7,8-HxCDD		178	198	pg/g	100	(23%-140%)	
13C-1,2,3,4,6,7,8-HpCDD		360	396	pg/g	90.8	(17%-157%)	
13C-OCDD			198		101	(24%-169%)	
13C-2,3,7,8-TCDF		201		pg/g	105	(24%-185%)	
13C-1,2,3,7,8-PeCDF		209	198	pg/g		(21%-178%)	
13C-2,3,4,7,8-PeCDF		229	198	pg/g	116	(26%-152%)	
13C-1,2,3,4,7,8-HxCDF		166	198	pg/g	84.0	\-	
13C-1,2,3,6,7,8-HxCDF		187	198	pg/g	94.3	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		178	198	pg/g	90.1	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		177	198	pg/g	89.5	(29%-147%)	

July 30, 2014

of 2Page 1

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6324 SDG Number: Lab Sample ID: 6324019

1613B Tissue Client Sample:

CPBG02-F Client ID: 26413 Batch 1D: 07/19/2014 19:55

Run Date: Data File: Prep Batch:

b18jul14a_3-9 26411

TRCC001 Client: Date Collected: Date Received:

Method:

Analyst:

Prep Method:

06/17/2014 00:00 07/10/2014 09:15

EPA Method 1613B

SW846 3540C

JTF

Project: Matrix:

TRCC00314 TISSUE

As Received Prep Basis:

Dilution:

Instrument: **HRP763**

Prep Date:	17-JUL-14	Prep Aliquot:	10.29 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.186		pg/g	0.186	0.972
40321-76-4	1,2,3,7,8-PeCDD	U	.103		pg/g	0.103	4.86
39227-28-6	1,2,3,4,7,8-H×CDD	U	.134		pg/g	0.134	4.86
57653-85-7	1,2,3,6,7,8-HxCDD	υ	.119		pg/g	0.119	4.86
19408-74-3	1,2,3,7,8,9-HxCDD	U	.133		pg/g	0.133	4.86
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.225		pg/g	0.225	4.86
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK V		0.507	pg/g	0.362	9.72
51207-31-9	2,3,7,8-TCDF	J	0.288		pg/g	0.140	0.972
57117-41-6	1,2,3,7,8-PeCDF	U	.0733		pg/g	0.0733	4.86
57117-41-0	2,3,4,7,8-PeCDF	U	.0641		pg/g	0.0641	4.86
	1,2,3,4,7,8-HxCDF	U	.0741		pg/g	0.0741	4.86
70648-26-9	1,2,3,6,7,8-HxCDF	U	.0702		pg/g	0.0702	4.86
57117-44-9	2,3,4,6,7,8-HxCDF	U	.0781		pg/g	0.0781	4.86
60851-34-5	1,2,3,7,8,9-HxCDF	υ	.125		pg/g	0.125	4.86
72918-21-9	1,2,3,4,6,7,8-HpCDF	υ	.0927		pg/g	0.0927	4.86
67562-39-4	1,2,3,4,7,8,9-HpCDF	* U	.154		pg/g	0.154	4.86
55673-89-7	1,2,3,4,6,7,8,9-OCDF	υ	.418		pg/g	0.418	9.72
39001-02-0	Total Tetrachlorodibenzo-p-dioxin	υ	186		pg/g	0.186	0.972
41903-57-5	Total Pentachlorodibenzo-p-dioxin	υ	.103		pg/g	0.103	4.86
36088-22-9	Total Hexachlorodibenzo-p-dioxin	υ	.119		pg/g	0.119	4.86
34465-46-8	Total Heptachlorodibenzo-p-dioxin	U	.225		pg/g	0.225	4.86
37871-00-4	Total Tetrachlorodibenzofuran	J	0.503		pg/g	0.140	0.972
30402-14-3	Total Pentachlorodibenzofuran	U	.0641		pg/g	0.0641	4.86
30402-15-4	Total Hexachlorodibenzofuran	บ	.0702		pg/g	0.0702	4.86
55684-94-1		U	.0927		pg/g	0.0927	4.86
38998-75-3	Total Heptachlorodibenzofuran	·	0.0288	0.0289	pg/g		
3333-30-0	TEQ WHO2005 ND=0 TEO WHO2005 ND=0.5		0.223	0.223	pg/g		
3333-30-1	LEG MUGOOD IND-0.3		See.				
						. Accomt	oble I imits

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		167	194	pg/g	85.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		197	194	pg/g	102	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		155	194	pg/g	79.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		167	194	pg/g	85.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		185	194	pg/g	95.4	(23%-140%)
13C-OCDD		327	389	pg/g	84.1	(17%-157%)
		191	194	pg/g	98.5	(24%-169%)
13C-2,3,7,8-TCDF		195	194	pg/g	100	(24%-185%)
13C-1,2,3,7,8-PeCDF		211	194	pg/g	109	(21%-178%)
13C-2,3,4,7,8-PeCDF		169	194	pg/g	87.2	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		173	194	pg/g	89.3	(26%-123%)
13C-1,2,3,6,7,8-HxCDF		171	194	pg/g	87.9	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		171	194	pg/g	87.9	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		1/1	174	766	2	• 0 2

July 30, 4014

of 2 Page 1

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: Lab Sample ID: Client Sample:

6324 6324020 1613B Tissue

CPLMB01-F 26413

Batch ID: Run Date: Data File:

Client ID:

07/19/2014 20:43 b18jul14a_3-10

Prep Batch: Prep Date:

26411 17-JUL-14 Client: Date Collected: Date Received:

Method:

Analyst:

TRCC001 06/17/2014 00:00 07/10/2014 09:15

EPA Method 1613B JTF

Prep Basis:

Project:

Matrix:

TRCC00314 TISSUE

As Received

HRP763 Instrument: **Dilution:**

SW846 3540C Prep Method: **Prep Aliquot:** 10.26 g

PQL EDL EMPC Units Result Qual **Parmname** CAS No. 0.975 pg/g 0.168 U .168 2,3,7,8-TCDD 1746-01-6 0.0947 4.87 .0947 pg/g U 1,2,3,7,8-PeCDD 40321-76-4 4.87 0.115 pg/g U .115 1,2,3,4,7,8-HxCDD 39227-28-6 4.87 0.111 U .111 DR/g 1,2,3,6,7,8-HxCDD 57653-85-7 4.87 0.119 .119 pg/g IJ 1,2,3,7,8,9-HxCDD 19408-74-3 0.174 4.87 pg/g U 1,2,3,4,6,7,8-HpCDD 35822-46-9 JK U 0.363 9.75 0.480 pg/g 1,2,3,4,6,7,8,9-OCDD 3268-87-9 0.975 0.140 0.248 pg/g J 2,3,7,8-TCDF 51207-31-9 4.87 0.0789 pg/g .0789 υ 1,2,3,7,8-PeCDF 57117-41-6 0.0686 4.87 pg/g U .0686 2,3,4,7,8-PeCDF 57117-31-4 4.87 0.0704 pg/g .0704 U 1,2,3,4,7,8-HxCDF 70648-26-9 4.87 0.0663 U 0663 pg/g 1,2,3,6,7,8-HxCDF 57117-44-9 0.0723 4.87 U .0723 pg/g 2,3,4,6,7,8-HxCDF 60851-34-5 4.87 0.110 pg/g υ .11 1,2,3,7,8,9-HxCDF 72918-21-9 0.0844 4.87 .0844 pg/g U 1,2,3,4,6,7,8-HpCDF 67562-39-4 4.87 0.141 U .141 pg/g 1,2,3,4,7,8,9-HpCDF 55673-89-7 9.75 0.376 pg/g U 376 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.975 0.168 pg/g .168 U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin 4.87 0.0947 pg/g U 0947 Total Pentachlorodibenzo-p-dioxin 36088-22-9 0.111 4.87 pg/g U .111 Total Hexachlorodibenzo-p-dioxin 34465-46-8 4.87 pg/g 0.174 .174 U Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.140 0.975 0.435 pg/g J Total Tetrachlorodibenzofuran 30402-14-3 0.0517 4.87 .0517 pg/g U Total Pentachlorodibenzofuran 30402-15-4 4.87 0.0663 U .0663 pg/g Total Hexachlorodibenzofuran 55684-94-1 0.0844 4.87 U .0844 pg/g Total Heptachlorodibenzofuran 38998-75-3 0.0248 0.0249 pg/g TEO WHO2005 ND=0 3333-30-0 0.203 pg/g 0.203

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		168	195	pg/g	86.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		203	195	pg/g	104	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		150	195	pg/g	77.1	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		174	195	pg/g	89.1	(28%-130%)
		195	195	pg/g	100	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		328	390	pg/g	84.0	(17%-157%)
13C-OCDD		198	195	pg/g	101	(24%-169%)
13C-2,3,7,8-TCDF		198	195	pg/g	102	(24%-185%)
13C-1,2,3,7,8-PeCDF		215	195	pg/g	110	(21%-178%)
13C-2,3,4,7,8-PeCDF		165	195	pg/g	84.8	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		186	195	pg/g	95.3	(26%-123%)
13C-1,2,3,6,7,8-HxCDF			195	pg/g	91.9	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		179			88.3	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		172	195	pg/g	.50	(== 15, 11, 15)

TEQ WHO2005 ND=0.5

3333-30-1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client:

Method:

Analyst:

TRCC001

06/17/2014 00:00 Date Collected: Date Received:

07/10/2014 09:15

Project: Matrix:

Prep Basis:

TRCC00314

Page 1

TISSUE

As Received

Client Sample: CPLMB02-F Client 1D:

Lab Sample ID: 6324021

SDG Number:

Batch ID: 26440 07/23/2014 09:17 Run Date:

6324

1613B Tissue

b22jul14a_3-4 Data File:

26438 Prep Batch: 18-JUL-14 Prep Date:

EPA Method 1613B

JTF

Instrument: Dilution:

HRP763

SW846 3540C Prep Method: Prep Aliquot: 10.49 g

Prep Date:	18-JUL-14	rich Andaoi.	10.47 6				701	
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	.233		pg/g	0.233	0.953	
40321-76-4	1,2,3,7,8-PeCDD	U	.153		pg/g	0.153	4.77	
39227-28-6	1,2,3,4,7,8-HxCDD	υ	.215		pg/g	0.215	4.77	
57653-85-7	1,2,3,6,7,8-HxCDD	U	.208		pg/g	0.208	4.77	
19408-74-3	1,2,3,7,8,9-HxCDD	. ປ	.225		pg/g	0.225	4.77	
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	261		pg/g	0.261	4.77	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	ا تد	₩.826		pg/g	0.690	9.53	
51207-31-9	2,3,7,8-TCDF	J	0.214		pg/g	0.190	0.953	
57117-41-6	1,2,3,7,8-PeCDF	υ	.0995		pg/g	0.0995	4.77	
57117-31-4	2,3,4,7,8-PeCDF	U	.0902		pg/g	0.0902	4.77	
70648-26-9	1,2,3,4,7,8-HxCDF	υ	.118		pg/g	0.118	4.77	
57117-44-9	1,2,3,6,7,8-HxCDF	υ	.115		pg/g	0.115	4.77	
60851-34-5	2,3,4,6,7,8-HxCDF	U	.122		pg/g	0.122	4.77	
72918-21-9	1,2,3,7,8,9-HxCDF	U	.186		pg/g	0.186	4.77	
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.194		pg/g	0.194	4.77	
55673-89-7	1,2,3,4,7,8,9-HpCDF	υ	.322		pg/g	0.322	4.77	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.601		pg/g	0.601	9.53	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	υ	.233		pg/g	0.233	0.953	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	บ	.153		pg/g	0.153 ′	4.77	
34465-46-8	Total Hexachlorodibenzo-p-dioxin	υ	.208		pg/g	0.208	4.77	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	υ	.261		pg/g	0.261	4.77	
30402-14-3	Total Tetrachlorodibenzofuran	J	0.214		pg/g	0.190	0.953	
30402-14-3	Total Pentachlorodibenzofuran	ະ ບ	.0902		pg/g	0.0902	4.77	
55684-94-1	Total Hexachlorodibenzofuran	U	.115		pg/g	0.115	4.77	
38998-75-3	Total Heptachlorodibenzofuran	บ	.194		pg/g	0.194	4.77	
	TEQ WHO2005 ND=0		0.0216	0.0216	pg/g			
3333-30-0 3333-30-1	TEO WHO2005 ND=0.5		0.293	0.293	pg/g			
1-06-6666	TEQ HIIOZOOS TIB 4.5							

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	191	pg/g	88.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		166	191	pg/g	87.1	(25%-181%)
		158	191	pg/g	83.1	(32%-141%)
3C-1,2,3,4,7,8-HxCDD		170	191	pg/g	89.3	(28%-130%)
3C-1,2,3,6,7,8-HxCDD		184	191	pg/g	96.5	(23%-140%)
3C-1,2,3,4,6,7,8-HpCDD		307	381	pg/g	80.6	(17%-157%)
3C-OCDD		179	191	pg/g	93.9	(24%-169%)
3C-2,3,7,8-TCDF		161	191	pg/g	84.4	(24%-185%)
13C-1,2,3,7,8-PeCDF		171	191	pg/g	89.8	(21%-178%)
3C-2,3,4,7,8-PeCDF		164	191	pg/g	86.2	(26%-152%)
3C-1,2,3,4,7,8-HxCDF		174	191	pg/g	91.5	(26%-123%)
3C-1,2,3,6,7,8-HxCDF			191	pg/g	88.6	(28%-136%)
3C-2,3,4,6,7,8-HxCDF		169			87.6	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		167	191	pg/g	67.0	(2000 - 110.00)

July 30, 2014

of 2 Page 1

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

6324 SDG Number: Lab Sample ID:

6324022 1613B Tissue Client Sample:

Client ID: Batch ID:

CPLMB02-F Dup 26440

07/23/2014 10:04 Run Date: Data File: 26438 Prep Batch:

b22jul14a_3-5

Client: Date Collected: Date Received:

Method:

Analyst:

TRCC001

06/17/2014 00:00 07/10/2014 09:15

EPA Method 1613B

Project: Matrix: TRCC00314 TISSUE

Prep Basis:

As Received

Instrument: Dilution:

HRP763 1

SW846 3540C Prep Method: **Prep Aliquot:** 10.4 g 18-JUL-14 Prep Date: **EDL PQL EMPC** Units Result Qual Parmname CAS No. 0.962 0.235 U .235 pg/g 1746-01-6 2,3,7,8-TCDD 4.81 0.124 U .124 pg/g 1,2,3,7,8-PeCDD 40321-76-4 0.179 4.81 pg/g .179 U 1,2,3,4,7,8-HxCDD 39227-28-6 4.81 0.174 pg/g U .174 1,2,3,6,7,8-HxCDD 57653-85-7 4.81 0.187 U .187 pg/g 1,2,3,7,8,9-HxCDD 19408-74-3 0.283 4.81 Dg/g u .283 1,2,3,4,6,7,8-HpCDD 35822-46-9 0.644 9.62 .644 pg/g U 1,2,3,4,6,7,8,9-OCDD 3268-87-9 0.173 0.962 J 0.235 pg/g 2,3,7,8-TCDF 51207-31-9 4.81 0.0846 U .0846 pg/g 1,2,3,7,8-PeCDF 57117-41-6 4.81 0.075 pg/g .075 U 57117-31-4 2,3,4,7,8-PeCDF 0.116 4.81 U .116 pg/g 1,2,3,4,7,8-HxCDF 70648-26-9 0.110 4.81 pg/g U .11 1,2,3,6,7,8-HxCDF 57117-44-9 0.119 4.81 pg/g u .119 2,3,4,6,7,8-HxCDF 60851-34-5 4.81 0.184 pg/g U .184 1,2,3,7,8,9-HxCDF 72918-21-9 0.160 4.81 pg/g U .16 1,2,3,4,6,7,8-HpCDF 67562-39-4 4.81 0.265 pg/g U .265 1,2,3,4,7,8,9-HpCDF 55673-89-7 9.62 0.625 pg/g U .625 1,2,3,4,6,7,8,9-OCDF 39001-02-0 0.962 0.235 U .235 pg/g Total Tetrachlorodibenzo-p-dioxin 41903-57-5 4.81 0.124 pg/g U 124 Total Pentachlorodibenzo-p-dioxin 36088-22-9 0.174 4.81 pg/g U .174 Total Hexachlorodibenzo-p-dioxin 34465-46-8 4.81 0.283 υ .283 pg/g Total Heptachlorodibenzo-p-dioxin 37871-00-4 0.962 0.421 pg/g 0.173 J 0.235 Total Tetrachlorodibenzofuran 30402-14-3 0.0656 4 81 pg/g U .0656 Total Pentachlorodibenzofuran 30402-15-4 4.81 0.110 U .11 pg/g Total Hexachlorodibenzofuran 55684-94-1 0.160 4.81 U .16 pg/g Total Heptachlorodibenzofuran 38998-75-3 0.0235 0.0235 pg/g TEQ WHO2005 ND=0 3333-30-0 0.272 0.272 pg/g

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	192	pg/g	88.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		170	192	pg/g	88.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	192	pg/g	83.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		166	192	pg/g	86.3	(28%-130%)
		177	192	pg/g	91.8	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		284	385	pg/g	73.9	(17%-157%)
13C-OCDD		178	192	pg/g	92.4	(24%-169%)
13C-2,3,7,8-TCDF	8	161	192	pg/g	84.0	(24%-185%)
13C-1,2,3,7,8-PeCDF		172	192	pg/g	89.6	(21%-178%)
13C-2,3,4,7,8-PeCDF			192		85.6	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		165		pg/g	89.6	(26%-123%)
13C-1,2,3,6,7,8-HxCDF		172	192	pg/g	87.4	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		168	192	pg/g		(29%-147%)
13C-1,2,3,7,8,9-HxCDF		160	192	i pg/g	83.4	(27/0-147/0)

TEQ WHO2005 ND=0.5

3333-30-1

July 30, 2014

Project:

Matrix:

Dilution:

of 2 Page 1

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: Lab Sample ID: 6324023 Client Sample:

Client ID:

6324

1613B Tissue LFLMB02-F

26440 Batch 1D: 07/23/2014 10:52 Run Date: b22jul14a_3-6 Data File:

26438 Prep Batch: 18-JUL-14 Prep Date:

Method: Analyst:

Prep Method:

Date Collected:

Date Received:

Client:

TRCC001 06/17/2014 09:30 07/10/2014 09:15

EPA Method 1613B

SW846 3540C

JTF

Prep Basis: Instrument: As Received

TISSUE

TRCC00314

HRP763 1

Prep Batch:	26438 18-JUL-14	Prep Aliquot:	10.05 g					
Prep Date:	Parmname	Oual	Result	EMPC	Units	EDL	PQL	
CAS No.		U	.275		pg/g	0.275	0.995	
1746-01-6	2,3,7,8-TCDD	Ū	.166		pg/g	0.166	4.98	
40321-76-4	1,2,3,7,8-PeCDD	บ	.227		pg/g	0.227	4.98	
39227-28-6	1,2,3,4,7,8-HxCDD	U	.219		pg/g	0.219	4.98	
57653-85-7	1,2,3,6,7,8-HxCDD	บ	.235		pg/g	0.235	4.98	
19408-74-3	1,2,3,7,8,9-HxCDD	υ	.376		pg/g	0.376	4.98	
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK S		0.852	pg/g	0.754	9.95	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	.241	-,	pg/g	0.241	0.995	
51207-31-9	2,3,7,8-TCDF	U	.144		pg/g	0.144	4.98	
57117-41-6	1,2,3,7,8-PeCDF	บ	.123		pg/g	0.123	4.98	
57117-31-4	2,3,4,7,8-PeCDF	บ	.172		pg/g	0.172	4,98	
70648-26-9	1,2,3,4,7,8-HxCDF		.172		pg/g	0.154	4.98	
57117-44-9	1,2,3,6,7,8-HxCDF	U	.174		pg/g	0.174	4.98	
60851-34-5	2,3,4,6,7,8-HxCDF	U			pg/g	0.263	4.98	
72918-21-9	1,2,3,7,8,9-HxCDF	U 	.263		pg/g	0.261	4.98	
67562-39-4	1,2,3,4,6,7,8-HpCDF	U 	.261			0.472	4.98	
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.472		pg/g	0.961	9.95	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.961		pg/g	0.275	0.995	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	υ	.275		pg/g	0.166	4.98	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.166		pg/g	0.100	4.98	
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.219		pg/g		4.98	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.376		pg/g	0.376	0.995	
30402-14-3	Total Tetrachlorodibenzofuran	บ	.241		pg/g	0.241		
30402-15-4	Total Pentachlorodibenzofuran	บ	.123		pg∕g	0.123	4.98	
55684-94-1	Total Hexachlorodibenzofuran	U	:154		pg/g	0.154	4.98	
38998-75-3	Total Heptachlorodibenzofuran	U	.261		pg/g	0.261	4.98	
3333-30-0	TEQ WHO2005 ND=0		0.00	0.000256	pg/g			
3333-30-1	TEQ WHO2005 ND=0.5		0.331	0.331	pg/g			
					_		-bl-Timita	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	199	pg/g	85.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		167	199	pg/g	83.8	(25%-181%)
		153	199	pg/g	76.7	(32%-141%)
13C-1,2,3,4,7,8-HxCDD		170	199	pg/g	85.2	(28%-130%)
13C-1,2,3,6,7,8-HxCDD		178	199	pg/g	89.2	(23%-140%)
13C-1,2,3,4,6,7,8-HpCDD		284	398	pg/g	71.2	(17%-157%)
13C-OCDD		183	199	pg/g	91.8	(24%-169%)
13C-2,3,7,8-TCDF		160	199	pg/g	80.4	(24%-185%)
13C-1,2,3,7,8-PeCDF		175	199	pg/g	88.2	(21%-178%)
13C-2,3,4,7,8-PeCDF			199	pg/g	80.2	(26%-152%)
13C-1,2,3,4,7,8-HxCDF		160			89.2	(26%-123%)
13C-1,2,3,6,7,8-HxCDF		177	199	pg/g	86.1	(28%-136%)
13C-2,3,4,6,7,8-HxCDF		171	199	pg/g	79.9	(29%-147%)
13C-1,2,3,7,8,9-HxCDF		159	199	pg/g	19.9	(27/6-171-19)

APPENDIX D

LABORATORY ANALYTICAL REPORTS



ANALYTICAL REPORT

Lab Number: L1413507

Client: TRC Environmental Consultants

> Wannalancit Mills 650 Suffolk Street

Lowell, MA 01854

ATTN: Liz Denly

Phone: (978) 656-3577

Project Name: MONTGOMERY COUNTY RRF

MONTGOMERY COUNTY Project Number:

Report Date: 07/11/14

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806 508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Number: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number:	L1413507
Report Date:	07/11/14

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1413507-01	EB01	WATER	DICKERSON, MD	06/17/14 09:00	06/18/14
L1413507-02	LFSW01	WATER	DICKERSON, MD	06/17/14 09:45	06/18/14
L1413507-03	LFSW02	WATER	DICKERSON, MD	06/17/14 10:20	06/18/14
L1413507-04	LFSW03	WATER	DICKERSON, MD	06/17/14 10:20	06/18/14
L1413507-05	LFSD01	SEDIMENT	DICKERSON, MD	06/17/14 10:00	06/18/14
L1413507-06	LFSD02	SEDIMENT	DICKERSON, MD	06/17/14 10:45	06/18/14
L1413507-07	JFM01	LIQUID	DICKERSON, MD	06/17/14 13:35	06/18/14
L1413507-08	JFM02	LIQUID	DICKERSON, MD	06/17/14 13:40	06/18/14
L1413507-09	JFM03	LIQUID	DICKERSON, MD	06/17/14 13:45	06/18/14
L1413507-10	LFSD03	SEDIMENT	DICKERSON, MD	06/17/14 10:45	06/18/14
L1413507-11	YFSW01	WATER	DICKERSON, MD	06/17/14 14:40	06/19/14
L1413507-12	YFSW02	WATER	DICKERSON, MD	06/17/14 15:00	06/19/14
L1413507-13	YFSD01	SEDIMENT	DICKERSON, MD	06/17/14 14:45	06/19/14
L1413507-14	YFSD02	SEDIMENT	DICKERSON, MD	06/17/14 15:05	06/19/14
L1413507-15	CPSW01	WATER	DICKERSON, MD	06/18/14 11:00	06/19/14
L1413507-16	CPSW02	WATER	DICKERSON, MD	06/18/14 11:30	06/19/14
L1413507-17	CPSD01	SEDIMENT	DICKERSON, MD	06/18/14 11:15	06/19/14
L1413507-18	CPSD02	SEDIMENT	DICKERSON, MD	06/18/14 11:45	06/19/14
L1413507-19	JFM01	LIQUID	DICKERSON, MD	06/17/14 13:35	06/18/14
L1413507-20	JFM02	LIQUID	DICKERSON, MD	06/17/14 13:40	06/18/14



Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.



Project Name:MONTGOMERY COUNTY RRFLab Number:L1413507Project Number:MONTGOMERY COUNTYReport Date:07/11/14

Case Narrative (continued)

Metals

Samples L1413507-07, -08, and -09 have elevated detection limits due to the dilution required by matrix interferences encountered during analysis.

The WG703170-4/-5 MS/MSD recoveries, performed on L1413507-07, are outside the acceptance criteria for Arsenic, Total (137%/137%); however, the associated LCS recoveries were within criteria. No further action was taken.

The WG704286-3 Laboratory Duplicate RPD, performed on L1413507-10, is outside the acceptance criteria for Arsenic, Total (23%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

Mercury

The WG703173-4/-5 MS/MSD recoveries, performed on L1413507-07, are outside the acceptance criteria for Mercury, Total (53%/51%); however, the associated LCS recovery was within criteria. No further action was taken.

The WG704291-4 MS recovery, performed on L1413507-17, is outside the acceptance criteria for Mercury, Total (75%); however, the associated LCS and MSD recoveries were within criteria. No further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Galle Por Elizabeth Porta

Authorized Signature:

Title: Technical Director/Representative

Date: 07/11/14



METALS



SAMPLE RESULTS

Lab ID: L1413507-01

Client ID: EB01

Sample Location: DICKERSON, MD

Matrix: Water

Date Collected: 06/17/14 09:00 Date Received: 06/18/14

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst		
Total Metals - Mansfield Lab													
Arsenic, Total	0.00102		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS		
Beryllium, Total	0.00009	J	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS		
Cadmium, Total	0.00005	J	mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS		
Chromium, Total	0.00251		mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS		
Lead, Total	0.00227		mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS		
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 09:40	EPA 7470A	1,7470A	AK		
Nickel, Total	0.00195		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS		
Total Hardness by S	Total Hardness by SM 2340B - Mansfield Lab												
Hardness	0.358	J	mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 13:03	EPA 3020A	1,6020A	BS		



SAMPLE RESULTS

Lab ID: L1413507-02 Client ID: LFSW01

Sample Location: DICKERSON, MD

Matrix: Water

Date Collected: 06/17/14 09:45

Date Received: 06/18/14
Field Prep: Not Specified

07/09/14 10:01

07/09/14 10:01

07/09/14 10:01

07/07/14 09:00 07/09/14 10:34 EPA 7470A

NA

NA

NA

1,6020A

1,6020A

1,7470A

1,6020A

PD

PD

ΑK

PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst		
Total Metals - Mansfield Lab													
Arsenic, Total	0.00171		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS		
Beryllium, Total	0.00011	J	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS		
Cadmium, Total	0.00003	J	mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS		
Chromium, Total	0.00070	J	mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS		
Lead, Total	0.00078	J	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS		
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 09:43	EPA 7470A	1,7470A	AK		
Nickel, Total	0.00301		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS		
Total Hardness by S	M 2340B	- Mansfield	Lab										
Hardness	61.3		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 11:49	EPA 3020A	1,6020A	BS		
Dissolved Metals - Mansfield Lab													
Arsenic, Dissolved	0.00150		mg/l	0.00050	0.00008	1		07/09/14 10:01	NA	1,6020A	PD		
Beryllium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:01	NA	1,6020A	PD		
Cadmium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:01	NA	1,6020A	PD		

0.00100 0.00029

0.00100 0.00006

0.00020 0.00007

0.00050 0.00015

mg/l

mg/l

mg/l

mg/l

J

1

1

1

1



Chromium, Dissolved

Lead, Dissolved

Mercury, Dissolved

Nickel, Dissolved

ND

ND

0.00037

0.00233

L1413507

Project Name: MONTGOMERY COUNTY RRF Lab Number:

Project Number: MONTGOMERY COUNT Report Date: 07/11/14

SAMPLE RESULTS

 Lab ID:
 L1413507-03
 Date Collected:
 06/17/14 10:20

 Client ID:
 LFSW02
 Date Received:
 06/18/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Arsenic, Total	0.00129		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:53	FPA 3020A	1,6020A	BS
Beryllium, Total	ND		mg/l		0.00008			07/09/14 11:53		1,6020A	BS
Cadmium, Total	0.00001	J	mg/l		0.00001	1		07/09/14 11:53		1,6020A	BS
Chromium, Total	0.00063	J	mg/l		0.00029			07/09/14 11:53		1,6020A	BS
Lead, Total	0.00065	J	mg/l		0.00029			07/09/14 11:53		1,6020A	BS
		J									
Mercury, Total	ND		mg/l		0.00007	1		07/09/14 09:45		1,7470A	AK
Nickel, Total	0.00266		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 11:53	EPA 3020A	1,6020A	BS
Total Hardness by S	SM 2340B	- Mansfiel	d Lab								
Hardness	50.7		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 11:53	EPA 3020A	1,6020A	BS
Dissolved Metals - I	Mansfield	Lab									
Arsenic, Dissolved	0.00103		mg/l	0.00050	0.00008	1		07/09/14 10:02	NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:02	NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:02	NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.00029	1		07/09/14 10:02	NA	1,6020A	PD
Lead, Dissolved	0.00038	J	mg/l	0.00100	0.00006	1		07/09/14 10:02	NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:37	EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00236		mg/l	0.00050	0.00015	1		07/09/14 10:02	NA	1,6020A	PD
			-								



Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT' **Report Date:**

L1413507 07/11/14

SAMPLE RESULTS

Lab ID: L1413507-04

Client ID: LFSW03

Sample Location: DICKERSON, MD

Matrix: Water Date Collected:

Lab Number:

06/17/14 10:20

Date Received: 06/18/14

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansf	ield Lab										
Arsenic, Total	0.00126		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Beryllium, Total	0.00010	J	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Cadmium, Total	ND		mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Chromium, Total	0.00063	J	mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Lead, Total	0.00061	J	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 09:48	EPA 7470A	1,7470A	AK
Nickel, Total	0.00268		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Total Hardness by S	M 2340B	- Mansfield	d Lab								
Hardness	51.2		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 11:54	EPA 3020A	1,6020A	BS
Dissolved Metals - M	1ansfield	Lab									
Arsenic, Dissolved	0.00090		mg/l	0.00050	0.00008	1		07/09/14 10:07	NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:07	NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:07	NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.00029	1		07/09/14 10:07	NA	1,6020A	PD
Lead, Dissolved	0.00037	J	mg/l	0.00100	0.00006	1		07/09/14 10:07	NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:39	EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00238		mg/l	0.00050	0.00015	1		07/09/14 10:07	NA	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413507-05
 Date Collected:
 06/17/14 10:00

 Client ID:
 LFSD01
 Date Received:
 06/18/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Sediment

Percent Solids: 53%

Dilution Date Date Prep Analytical

Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst
Total Metals - Man	sfield Lab										
Arsenic, Total	1.49		mg/kg	0.052	0.006	2	07/09/14 14:00	07/10/14 15:06	EPA 3050B	1,6020A	PD
Beryllium, Total	1.24		mg/kg	0.031	0.009	2	07/09/14 14:00	07/10/14 15:06	EPA 3050B	1,6020A	PD
Cadmium, Total	0.160		mg/kg	0.021	0.003	2	07/09/14 14:00	07/10/14 15:06	EPA 3050B	1,6020A	PD
Chromium, Total	22.6		mg/kg	0.208	0.049	2	07/09/14 14:00	07/10/14 15:06	EPA 3050B	1,6020A	PD
Lead, Total	17.6		mg/kg	0.312	0.100	10	07/09/14 14:00	07/10/14 16:10	EPA 3050B	1,6020A	PD
Mercury, Total	0.025		mg/kg	0.010	0.007	1	07/09/14 14:00	07/10/14 14:42	EPA 7471B	1,7471B	AK
Nickel, Total	15.4		mg/kg	0.104	0.016	2	07/09/14 14:00	07/10/14 15:06	EPA 3050B	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413507-06
 Date Collected:
 06/17/14 10:45

 Client ID:
 LFSD02
 Date Received:
 06/18/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Sediment

Percent Solids: 57%

Dilution Date Date Prep Analytical

Properties Discourse Prepared Analyzed Method Method Analyses

Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.914		mg/kg	0.047	0.006	2	07/09/14 14:00	0 07/10/14 15:07	EPA 3050B	1,6020A	PD
Beryllium, Total	0.883		mg/kg	0.028	0.008	2	07/09/14 14:00	0 07/10/14 15:07	EPA 3050B	1,6020A	PD
Cadmium, Total	0.067		mg/kg	0.019	0.002	2	07/09/14 14:00	0 07/10/14 15:07	EPA 3050B	1,6020A	PD
Chromium, Total	18.6		mg/kg	0.186	0.044	2	07/09/14 14:00	0 07/10/14 15:07	EPA 3050B	1,6020A	PD
Lead, Total	14.3		mg/kg	0.279	0.090	10	07/09/14 14:00	0 07/10/14 16:11	EPA 3050B	1,6020A	PD
Mercury, Total	0.017		mg/kg	0.010	0.007	1	07/09/14 14:00	0 07/10/14 14:45	EPA 7471B	1,7471B	AK
Nickel, Total	9.36		mg/kg	0.093	0.014	2	07/09/14 14:00	0 07/10/14 15:07	EPA 3050B	1,6020A	PD



Project Name:MONTGOMERY COUNTY RRFLab Number:L1413507Project Number:MONTGOMERY COUNT'Report Date:07/11/14

SAMPLE RESULTS

Lab ID: L1413507-07 Client ID: JFM01

Sample Location: DICKERSON, MD

Matrix: Liquid

Date Collected: 06/17/14 13:35

Date Received: 06/18/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Tatal Martala - Marta	C.I.I.										
Total Metals - Mans	TIEID LAD										
Arsenic, Total	0.00383	J	mg/l	0.00500	0.00085	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD
Beryllium, Total	ND		mg/l	0.00500	0.00086	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD
Cadmium, Total	0.00027	J	mg/l	0.00500	0.00015	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD
Chromium, Total	0.178		mg/l	0.0100	0.00298	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD
Lead, Total	0.00079	J	mg/l	0.0100	0.00065	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD
Mercury, Total	ND		mg/l	0.00040	0.00014	2	07/07/14 09:00	07/08/14 16:40	EPA 7470A	1,7470A	AK
Nickel, Total	0.01669		mg/l	0.00500	0.00152	10	07/07/14 09:00	07/10/14 17:45	EPA 3020A	1,6020A	PD



Project Name:MONTGOMERY COUNTY RRFLab Number:L1413507Project Number:MONTGOMERY COUNTYReport Date:07/11/14

SAMPLE RESULTS

Lab ID: L1413507-08

Client ID: JFM02

Sample Location: DICKERSON, MD

Matrix: Liquid

Date Collected: 06/17/14 13:40

Date Received: 06/18/14

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Arsenic, Total	0.00596		mg/l	0.00500	0.00085	10	07/07/14 09:0	0 07/10/14 17:40	EPA 3020A	1,6020A	PD
Beryllium, Total	ND		mg/l	0.00500	0.00086	10	07/07/14 09:0	0 07/10/14 17:40	EPA 3020A	1,6020A	PD
Cadmium, Total	ND		mg/l	0.00500	0.00015	10	07/07/14 09:0	0 07/10/14 17:40	EPA 3020A	1,6020A	PD
Chromium, Total	0.185		mg/l	0.0100	0.00298	10	07/07/14 09:0	0 07/10/14 17:40	EPA 3020A	1,6020A	PD
Lead, Total	ND		mg/l	0.0100	0.00065	10	07/07/14 09:00	0 07/10/14 17:40	EPA 3020A	1,6020A	PD
Mercury, Total	ND		mg/l	0.00040	0.00014	2	07/07/14 09:0	0 07/08/14 16:49	EPA 7470A	1,7470A	AK
Nickel, Total	0.01678		mg/l	0.00500	0.00152	10	07/07/14 09:0	0 07/10/14 17:40	EPA 3020A	1,6020A	PD



Project Name:MONTGOMERY COUNTY RRFLab Number:L1413507Project Number:MONTGOMERY COUNTYReport Date:07/11/14

SAMPLE RESULTS

Lab ID: L1413507-09

Client ID: JFM03

Sample Location: DICKERSON, MD

Matrix: Liquid

Date Collected: 06/17/14 13:45
Date Received: 06/18/14

Field Prep: Not Specified

Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
field I ah										
iicia Lab										
0.00402	J	mg/l	0.00500	0.00085	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
ND		mg/l	0.00500	0.00086	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
ND		mg/l	0.00500	0.00015	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
0.183		mg/l	0.0100	0.00298	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
ND		mg/l	0.0100	0.00065	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
ND		mg/l	0.00040	0.00014	2	07/07/14 09:00	07/08/14 16:21	EPA 7470A	1,7470A	AK
0.01648		mg/l	0.00500	0.00152	10	07/07/14 09:00	07/10/14 17:41	EPA 3020A	1,6020A	PD
	nD 0.00402 ND ND 0.183 ND ND	field Lab 0.00402 J ND ND 0.183 ND ND	field Lab 0.00402 J mg/l ND mg/l ND mg/l 0.183 mg/l ND mg/l ND mg/l ND mg/l	field Lab 0.00402 J mg/l 0.00500 ND mg/l 0.00500 ND mg/l 0.00500 0.183 mg/l 0.0100 ND mg/l 0.0100 ND mg/l 0.0100 ND mg/l 0.00040	field Lab 0.00402 J mg/l 0.00500 0.00085 ND mg/l 0.00500 0.00086 ND mg/l 0.00500 0.00015 0.183 mg/l 0.0100 0.00298 ND mg/l 0.0100 0.00065 ND mg/l 0.00040 0.00014	Result Qualifier Units RL MDL Factor field Lab 0.00402 J mg/l 0.00500 0.00085 10 ND mg/l 0.00500 0.00086 10 ND mg/l 0.00500 0.00015 10 0.183 mg/l 0.0100 0.00298 10 ND mg/l 0.0100 0.00065 10 ND mg/l 0.00040 0.00014 2	Result Qualifier Units RL MDL Factor Prepared field Lab 0.00402 J mg/l 0.00500 0.00085 10 07/07/14 09:00 ND mg/l 0.00500 0.00086 10 07/07/14 09:00 ND mg/l 0.0100 0.00298 10 07/07/14 09:00 ND mg/l 0.0100 0.00065 10 07/07/14 09:00 ND mg/l 0.00040 0.00014 2 07/07/14 09:00	Result Qualifier Units RL MDL Factor Prepared Analyzed field Lab 0.00402 J mg/l 0.00500 0.00085 10 07/07/14 09:00 07/10/14 17:41 ND mg/l 0.00500 0.00086 10 07/07/14 09:00 07/10/14 17:41 ND mg/l 0.00500 0.00015 10 07/07/14 09:00 07/10/14 17:41 ND mg/l 0.0100 0.00298 10 07/07/14 09:00 07/10/14 17:41 ND mg/l 0.0100 0.00065 10 07/07/14 09:00 07/10/14 17:41 ND mg/l 0.00040 0.00014 2 07/07/14 09:00 07/08/14 16:21	Result Qualifier Units RL MDL Factor Prepared Analyzed Method field Lab 0.00402 J mg/l 0.00500 0.00085 10 07/07/14 09:00 07/10/14 17:41 EPA 3020A ND mg/l 0.00500 0.00015 10 07/07/14 09:00 07/10/14 17:41 EPA 3020A ND mg/l 0.0100 0.00298 10 07/07/14 09:00 07/10/14 17:41 EPA 3020A ND mg/l 0.0100 0.00065 10 07/07/14 09:00 07/10/14 17:41 EPA 3020A ND mg/l 0.0100 0.00065 10 07/07/14 09:00 07/10/14 17:41 EPA 3020A ND mg/l 0.00040 0.00014 2 07/07/14 09:00 07/08/14 16:21 EPA 7470A	Result Qualifier Units RL MDL Factor Prepared Analyzed Method Method field Lab 0.00402 J mg/l 0.00500 0.00085 10 07/07/14 09:00 07/10/14 17:41 EPA 3020A 1,6020A ND mg/l 0.00500 0.00015 10 07/07/14 09:00 07/10/14 17:41 EPA 3020A 1,6020A ND mg/l 0.0100 0.00298 10 07/07/14 09:00 07/10/14 17:41 EPA 3020A 1,6020A ND mg/l 0.0100 0.00065 10 07/07/14 09:00 07/10/14 17:41 EPA 3020A 1,6020A ND mg/l 0.0100 0.00065 10 07/07/14 09:00 07/10/14 17:41 EPA 3020A 1,6020A ND mg/l 0.00040 0.00014 2 07/07/14 09:00 07/10/14 16:21 EPA 7470A 1,7470A



SAMPLE RESULTS

 Lab ID:
 L1413507-10
 Date Collected:
 06/17/14 10:45

 Client ID:
 LFSD03
 Date Received:
 06/18/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Sediment

Percent Solids: 60%

Dilution Date Date Prep Analytical

Preparet Prepared Analyzed Method Method Analyses

Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst
Total Metals - Mans	field Lab										
Arsenic, Total	1.31		mg/kg	0.046	0.006	2	07/09/14 14:00	0 07/10/14 15:11	EPA 3050B	1,6020A	PD
Beryllium, Total	1.10		mg/kg	0.028	0.008	2	07/09/14 14:00	0 07/10/14 15:11	EPA 3050B	1,6020A	PD
Cadmium, Total	0.087		mg/kg	0.018	0.002	2	07/09/14 14:00	0 07/10/14 15:11	EPA 3050B	1,6020A	PD
Chromium, Total	20.6		mg/kg	0.183	0.043	2	07/09/14 14:00	0 07/10/14 15:11	EPA 3050B	1,6020A	PD
Lead, Total	17.1		mg/kg	0.275	0.089	10	07/09/14 14:00	0 07/10/14 16:12	EPA 3050B	1,6020A	PD
Mercury, Total	0.018		mg/kg	0.010	0.007	1	07/09/14 14:00	0 07/10/14 14:48	EPA 7471B	1,7471B	AK
Nickel, Total	11.7		mg/kg	0.092	0.014	2	07/09/14 14:00	0 07/10/14 15:11	EPA 3050B	1,6020A	PD



MONTGOMERY COUNT'

SAMPLE RESULTS

Lab ID: L1413507-11 Client ID: YFSW01

DICKERSON, MD Sample Location:

Matrix: Water Date Collected: 06/17/14 14:40

Date Received: 06/19/14 Field Prep: Not Specified

Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
ield Lab										
0.00125		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
0.00023	J	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
0.00002	J	mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
0.00222		mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
0.00336		mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 09:56	EPA 7470A	1,7470A	AK
0.00251		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
M 2340B	- Mansfiel	d Lab								
72.5		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 11:59	EPA 3020A	1,6020A	BS
lansfield l	Lab									
0.00058		mg/l	0.00050	0.00008	1		07/09/14 10:08	NA	1,6020A	PD
ND		mg/l	0.00050	0.00008	1		07/09/14 10:08	NA	1,6020A	PD
ND		mg/l	0.00050	0.00008	1		07/09/14 10:08	NA	1,6020A	PD
ND		mg/l	0.00100	0.00029	1		07/09/14 10:08	NA	1,6020A	PD
0.00027	J	mg/l	0.00100	0.00006	1		07/09/14 10:08	NA	1,6020A	PD
ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:47	EPA 7470A	1,7470A	AK
0.00085		mg/l	0.00050	0.00015	1		07/09/14 10:08	NA	1,6020A	PD
	ield Lab 0.00125 0.00023 0.00002 0.00222 0.00336 ND 0.00251 M 2340B 72.5 flansfield I 0.00058 ND	ield Lab 0.00125 0.00023 J 0.00002 J 0.00222 0.00336 ND 0.00251 M 2340B - Mansfiel 72.5 flansfield Lab 0.00058 ND ND ND ND ND ND ND ND ND N	ield Lab 0.00125 mg/l 0.00023 J mg/l 0.00002 J mg/l 0.00222 mg/l 0.00336 mg/l ND mg/l 0.00251 mg/l M 2340B - Mansfield Lab 72.5 mg/l ND mg/l	ield Lab 0.00125 mg/l 0.00050 0.00023 J mg/l 0.00050 0.00002 J mg/l 0.00100 0.00222 mg/l 0.00100 ND mg/l 0.00020 0.00251 mg/l 0.00050 M 2340B - Mansfield Lab 72.5 mg/l 0.460 Mansfield Lab 0.00058 mg/l 0.00050 ND mg/l 0.00050 ND mg/l 0.00050 ND mg/l 0.00050 ND mg/l 0.00100 ND mg/l 0.00100 ND mg/l 0.00100	ield Lab 0.00125 mg/l 0.00050 0.00008 0.00023 J mg/l 0.00050 0.00008 0.00002 J mg/l 0.00100 0.00029 0.00222 mg/l 0.00100 0.00029 0.00336 mg/l 0.00100 0.00006 ND mg/l 0.00020 0.00007 0.00251 mg/l 0.00050 0.00015 M 2340B - Mansfield Lab 72.5 mg/l 0.460 0.230 Mansfield Lab 0.00058 mg/l 0.00050 0.00008 ND mg/l 0.00100 0.00029 0.00027 J mg/l 0.00100 0.00006 ND mg/l 0.00020 0.00007	ND	Result Qualifier Units RL MDL Factor Prepared ield Lab 0.00125 mg/l 0.00050 0.00008 1 07/07/14 09:00 0.00023 J mg/l 0.00050 0.00001 1 07/07/14 09:00 0.00022 mg/l 0.00100 0.00029 1 07/07/14 09:00 0.00336 mg/l 0.00100 0.00007 1 07/07/14 09:00 ND mg/l 0.00020 0.00007 1 07/07/14 09:00 M 2340B - Mansfield Lab Tansfield Lab 72.5 mg/l 0.460 0.230 1 07/07/14 09:00 Mansfield Lab 0.00058 mg/l 0.00050 0.00008 1 0.007/07/14 09:00 ND mg/l 0.00050 0.00008 1 0.00008 1 ND mg/l 0.00050 0.00008 1 0.00000 1 ND mg/l 0.00100 0.00000 1 0.007/07/14 09:00	Result Qualifier Units RL MDL Factor Prepared Analyzed	No	No. No.



SAMPLE RESULTS

Lab ID: L1413507-12 Date Collected: 06/17/14 15:00

Client ID: YFSW02 Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Arsenic, Total	0.00075		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Beryllium, Total	ND		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Cadmium, Total	ND		mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Chromium, Total	0.00047	J	mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Lead, Total	0.00060	J	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 09:59	EPA 7470A	1,7470A	AK
Nickel, Total	0.00112		mg/l		0.00015			07/09/14 12:00		1,6020A	BS
Total Hardness by S		- Mansfiel	<u> </u>				0.7017110000			,	
Hardness	73.2		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 12:00	EPA 3020A	1,6020A	BS
Dissolved Metals - N	Mansfield	Lab									
Arsenic, Dissolved	0.00046	J	mg/l	0.00050	0.00008	1		07/09/14 10:10	NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:10	NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:10	NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.00029	1		07/09/14 10:10	NA	1,6020A	PD
Lead, Dissolved	0.00017	J	mg/l	0.00100	0.00006	1		07/09/14 10:10	NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:50	EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00084		mg/l	0.00050	0.00015	1		07/09/14 10:10	NA	1,6020A	PD
·											



SAMPLE RESULTS

 Lab ID:
 L1413507-13
 Date Collected:
 06/17/14 14:45

 Client ID:
 YFSD01
 Date Received:
 06/19/14

Client ID: YFSD01 Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Sediment

Percent Solids: 65%

Dilution Date Date Prep Analytical

Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst
Total Metals - Mai	nsfield Lab										
Arsenic, Total	1.58		mg/kg	0.039	0.005	2	07/09/14 14:00	07/10/14 15:15	EPA 3050B	1,6020A	PD
Beryllium, Total	1.34		mg/kg	0.023	0.007	2	07/09/14 14:00	07/10/14 15:15	EPA 3050B	1,6020A	PD
Cadmium, Total	0.057		mg/kg	0.016	0.002	2	07/09/14 14:00	07/10/14 15:15	EPA 3050B	1,6020A	PD
Chromium, Total	11.5		mg/kg	0.156	0.037	2	07/09/14 14:00	07/10/14 15:15	EPA 3050B	1,6020A	PD
Lead, Total	15.9		mg/kg	0.233	0.075	10	07/09/14 14:00	07/10/14 16:16	EPA 3050B	1,6020A	PD
Mercury, Total	0.012		mg/kg	0.009	0.006	1	07/09/14 14:00	07/10/14 14:56	EPA 7471B	1,7471B	AK
Nickel, Total	5.31		mg/kg	0.078	0.012	2	07/09/14 14:00	07/10/14 15:15	EPA 3050B	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413507-14
 Date Collected:
 06/17/14 15:05

 Client ID:
 YFSD02
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Sediment

Percent Solids: 43%

Dilution Date Date Prep Analytical

Discrepance Prepared Analyzed Method Method Analyses

Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst
Total Metals - Man	efield I ah										
Total Mctais Mai	isiicia Lab										
Arsenic, Total	1.86		mg/kg	0.059	0.007	2	07/09/14 14:00	07/10/14 15:17	EPA 3050B	1,6020A	PD
Beryllium, Total	1.13		mg/kg	0.035	0.010	2	07/09/14 14:00	07/10/14 15:17	EPA 3050B	1,6020A	PD
Cadmium, Total	0.163		mg/kg	0.024	0.003	2	07/09/14 14:00	07/10/14 15:17	EPA 3050B	1,6020A	PD
Chromium, Total	17.2		mg/kg	0.236	0.055	2	07/09/14 14:00	07/10/14 15:17	EPA 3050B	1,6020A	PD
Lead, Total	29.1		mg/kg	0.354	0.114	10	07/09/14 14:00	07/10/14 16:17	EPA 3050B	1,6020A	PD
Mercury, Total	0.042		mg/kg	0.013	0.009	1	07/09/14 14:00	0 07/10/14 14:58	EPA 7471B	1,7471B	AK
Nickel, Total	11.2		mg/kg	0.118	0.018	2	07/09/14 14:00	0 07/10/14 15:17	EPA 3050B	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413507-15
 Date Collected:
 06/18/14 11:00

 Client ID:
 CPSW01
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Arsenic, Total	0.00090		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Beryllium, Total	0.00009	J	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Cadmium, Total	ND		mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Chromium, Total	0.00039	J	mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Lead, Total	0.00052	J	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:08	EPA 7470A	1,7470A	AK
Nickel, Total	0.00060		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Total Hardness by S	SM 2340B	- Mansfiel	d Lab								
Hardness	22.0		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 12:02	EPA 3020A	1,6020A	BS
Dissolved Metals - N	Mansfield	Lab									
Arsenic, Dissolved	0.00053		mg/l	0.00050	0.00008	1		07/09/14 10:11	NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:11	NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050	0.00008	1		07/09/14 10:11	NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.00029	1		07/09/14 10:11	NA	1,6020A	PD
Lead, Dissolved	0.00020	J	mg/l	0.00100	0.00006	1		07/09/14 10:11	NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:53	EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00040	J	mg/l	0.00050	0.00015	1		07/09/14 10:11	NA	1,6020A	PD



L1413507

07/11/14

Project Name: MONTGOMERY COUNTY RRF Lab Number: **Report Date:**

Project Number: MONTGOMERY COUNT'

SAMPLE RESULTS

Lab ID: L1413507-16 Client ID: CPSW02

Sample Location: DICKERSON, MD

Matrix: Water Date Collected: 06/18/14 11:30

> Date Received: 06/19/14 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansf	ield Lab										
Arsenic, Total	0.00088		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Beryllium, Total	ND		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Cadmium, Total	0.00003	J	mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Chromium, Total	0.00045	J	mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Lead, Total	0.00045	J	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Mercury, Total	ND		mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 10:18	EPA 7470A	1,7470A	AK
Nickel, Total	0.00103		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS
Total Hardness by S	M 2340B	- Mansfield	l Lab								
Hardness	21.7		mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 13:06	EPA 3020A	1,6020A	BS

Dissolved Metals - N	Mansfield La	ab						
Arsenic, Dissolved	0.00165		mg/l	0.00050 0.00008	1	07/09/14 10:18 NA	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050 0.00008	1	07/09/14 10:18 NA	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050 0.00008	1	07/09/14 10:18 NA	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100 0.00029	1	07/09/14 10:18 NA	1,6020A	PD
Lead, Dissolved	0.00086	J	mg/l	0.00100 0.00006	1	07/09/14 10:18 NA	1,6020A	PD
Mercury, Dissolved	ND		mg/l	0.00020 0.00007	1	07/07/14 09:00 07/09/14 11:14 EPA 7470A	1,7470A	AK
Nickel, Dissolved	0.00048	J	mg/l	0.00050 0.00015	1	07/09/14 10:18 NA	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413507-17
 Date Collected:
 06/18/14 11:15

 Client ID:
 CPSD01
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Sediment

Percent Solids: 73%

Dilution Date Date Prep Analytical

Percent Solids: 73%

Dilution Date Date Prep Analytical

Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst
Total Metals - Man	sfield Lab										
Arsenic, Total	2.34		mg/kg	0.037	0.005	2	07/09/14 14:00	0 07/10/14 15:18	EPA 3050B	1,6020A	PD
Beryllium, Total	1.61		mg/kg	0.022	0.006	2	07/09/14 14:00	0 07/10/14 15:18	EPA 3050B	1,6020A	PD
Cadmium, Total	0.104		mg/kg	0.015	0.002	2	07/09/14 14:00	0 07/10/14 15:18	EPA 3050B	1,6020A	PD
Chromium, Total	17.0		mg/kg	0.149	0.035	2	07/09/14 14:00	0 07/10/14 15:18	EPA 3050B	1,6020A	PD
Lead, Total	17.0		mg/kg	0.224	0.072	10	07/09/14 14:00	0 07/10/14 16:19	EPA 3050B	1,6020A	PD
Mercury, Total	0.023		mg/kg	0.008	0.005	1	07/09/14 14:00	0 07/10/14 15:01	EPA 7471B	1,7471B	AK
Nickel, Total	10.0		mg/kg	0.075	0.011	2	07/09/14 14:00	0 07/10/14 15:18	EPA 3050B	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413507-18
 Date Collected:
 06/18/14 11:45

 Client ID:
 CPSD02
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Sediment Percent Solids: 66%

Lead, Total

Mercury, Total

Nickel, Total

16.4

0.053

6.86

Dilution Date Date Prep Analytical Method Prepared Method **Factor Analyzed** Result Qualifier Units RL MDL **Parameter Analyst** Total Metals - Mansfield Lab Arsenic, Total 1.39 mg/kg 0.046 0.006 2 07/09/14 14:00 07/10/14 15:22 EPA 3050B 1,6020A PD Beryllium, Total 0.686 0.028 0.008 2 07/09/14 14:00 07/10/14 15:22 EPA 3050B 1,6020A PD mg/kg 0.034 0.002 2 1,6020A Cadmium, Total 0.018 07/09/14 14:00 07/10/14 15:22 EPA 3050B PD mg/kg 2 Chromium, Total 18.8 mg/kg 0.184 0.043 07/09/14 14:00 07/10/14 15:22 EPA 3050B 1,6020A PD

10

1

2

07/09/14 14:00 07/10/14 16:25 EPA 3050B

07/09/14 14:00 07/10/14 15:17 EPA 7471B

07/09/14 14:00 07/10/14 15:22 EPA 3050B

0.089

0.006

0.014

0.276

0.008

0.092

mg/kg

mg/kg

mg/kg



1,6020A

1,7471B

1,6020A

PD

ΑK

PD

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413507

Report Date: 07/11/14

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield	Lab for	sample(s):	01-04,11	-12,15-16	Batch	: WG7031	169-1			
Arsenic, Total	0.00027	J	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:44	1,6020A	BS
Beryllium, Total	ND		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/09/14 11:44	1,6020A	BS
Cadmium, Total	ND		mg/l	0.00050	0.00001	1	07/07/14 09:00	07/09/14 11:44	1,6020A	BS
Chromium, Total	ND		mg/l	0.00100	0.00029	1	07/07/14 09:00	07/09/14 11:44	1,6020A	BS
Lead, Total	0.00009	J	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/09/14 11:44	1,6020A	BS
Nickel, Total	ND		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/09/14 11:44	1,6020A	BS

Prep Information

Digestion Method: EPA 3020A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM	2340B - Mansfield Lal	b for sam	ple(s):	01-04,11	-12,15-16	Batch: WG70	3169-1		
Hardness	ND	mg/l	0.460	0.230	1	07/07/14 09:00	07/09/14 11:44	1,6020A	BS

Prep Information

Digestion Method: EPA 3020A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield	Lab for s	ample(s):	07-09 E	Batch: WC	G703170)-1				
Arsenic, Total	0.00017	J	mg/l	0.00050	0.00008	1	07/07/14 09:00	07/10/14 17:31	1,6020A	PD
Beryllium, Total	ND		mg/l	0.00050	0.00008	1	07/07/14 09:00	07/10/14 17:31	1,6020A	PD
Cadmium, Total	ND		mg/l	0.00050	0.00001	1	07/07/14 09:00	07/10/14 17:31	1,6020A	PD
Chromium, Total	ND		mg/l	0.00100	0.00029	1	07/07/14 09:00	07/10/14 17:31	1,6020A	PD
Lead, Total	0.00006	J	mg/l	0.00100	0.00006	1	07/07/14 09:00	07/10/14 17:31	1,6020A	PD
Nickel, Total	ND		mg/l	0.00050	0.00015	1	07/07/14 09:00	07/10/14 17:31	1,6020A	PD

Prep Information

Digestion Method: EPA 3020A



Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413507

Report Date:

07/11/14

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	
Total Metals - Ma	ansfield Lab for sample(s):	01-04,11	-12,15-16	Batch	: WG7031	71-1			
Mercury, Total	ND	mg/l	0.00020	0.00007	1	07/07/14 09:00	07/09/14 09:33	1,7470A	AK

Prep Information

Digestion Method: EPA 7470A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytica Method	
Total Metals - Mans	field Lab for sample(s):	07-09	Batch: WC	370317	3-1				
Mercury, Total	ND	mg/l	0.00020	0.00007	7 1	07/07/14 09:00	07/08/14 16:15	1,7470A	AK

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mans	field Lab	for sample(s): 02-04	1,11-12,1	I5-16 I	Batch: WG7	703174-1			
Mercury, Dissolved	ND		mg/l	0.00020	0.00007	7 1	07/07/14 09:00	07/09/14 10:27	1,7470A	AK

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Ma	ansfield Lab	for sample	e(s): 02-0)4,11-12,	15-16	Batch: WG	704282-1			
Arsenic, Dissolved	ND		mg/l	0.00050	0.0000	3 1		07/09/14 09:58	1,6020A	PD
Beryllium, Dissolved	ND		mg/l	0.00050	0.0000	3 1		07/09/14 09:58	1,6020A	PD
Cadmium, Dissolved	ND		mg/l	0.00050	0.0000	3 1		07/09/14 09:58	1,6020A	PD
Chromium, Dissolved	ND		mg/l	0.00100	0.0002	9 1		07/09/14 09:58	1,6020A	PD
Lead, Dissolved	ND		mg/l	0.00100	0.0000	6 1		07/09/14 09:58	1,6020A	PD
Nickel, Dissolved	ND		mg/l	0.00050	0.0001	5 1		07/09/14 09:58	1,6020A	PD



L1413507

Project Name: Lab Number: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT **Report Date:** 07/11/14

Method Blank Analysis Batch Quality Control

Prep Information

Digestion Method: NA

Parameter	Result 0	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfiel	d Lab for sa	ample(s):	05-06,10,	13-14,17	′-18 Ba	atch: WG70	04286-1			
Arsenic, Total	0.025	J	mg/kg	0.050	0.006	2	07/09/14 14:00	07/10/14 15:03	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.030	0.009	2	07/09/14 14:00	07/10/14 15:03	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.020	0.003	2	07/09/14 14:00	07/10/14 15:03	1,6020A	PD
Chromium, Total	ND		mg/kg	0.200	0.047	2	07/09/14 14:00	07/10/14 15:03	1,6020A	PD
Lead, Total	ND		mg/kg	0.060	0.019	2	07/09/14 14:00	07/10/14 15:03	1,6020A	PD
Nickel, Total	ND		mg/kg	0.100	0.015	2	07/09/14 14:00	07/10/14 15:03	1,6020A	PD

Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab for sample(s):	05-06,10	,13-14,17	7-18 Ba	atch: WG70	04291-1			
Mercury, Total	ND	mg/kg	0.005	0.004	1	07/09/14 14:00	07/10/14 14:36	5 1,7471B	AK

Prep Information

Digestion Method: EPA 7471B



Lab Control Sample Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number:

L1413507

Report Date:

07/11/14

Parameter	LCS %Recovery	LCSD Qual %Recovery	%Recovery Qual Limits	RPD	Qual RPD Limits
Total Metals - Mansfield Lab Associated sample	(s): 01-04,11-12	,15-16 Batch: WG703169-2	SRM Lot Number: A2METS	PIKE	
Arsenic, Total	106	-	80-120	-	20
Beryllium, Total	107	-	80-120	-	20
Cadmium, Total	103	-	80-120	-	20
Chromium, Total	113	-	80-120	-	20
Lead, Total	111	-	80-120	-	20
Nickel, Total	103	-	80-120	-	20
Hardness Total Metals - Mansfield Lab Associated sample	101 (s): 07-09 Bato	ch: WG703170-2 SRM Lot N	80-120 umber: A2METSPIKE		20
Arsenic, Total	104		80-120	-	20
Beryllium, Total	102	-	80-120	-	20
Cadmium, Total	103	-	80-120	-	20
Chromium, Total	110	-	80-120	-	20
Lead, Total	111	-	80-120	-	20
Nickel, Total	104	-	80-120	-	20
Fotal Metals - Mansfield Lab Associated sample	(s): 01-04,11-12	,15-16 Batch: WG703171-2	SRM Lot Number: HPHGAA	١	
Mercury, Total	96		80-120	-	20



Lab Control Sample Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number:

L1413507

Report Date:

07/11/14

arameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
otal Metals - Mansfield Lab Associated s	ample(s): 07-09 Batch: WG	703173-2 SRM Lot Numb	er: HPHGAA		
Mercury, Total	105	-	80-120	-	20
issolved Metals - Mansfield Lab Associa	ted sample(s): 02-04,11-12,15	5-16 Batch: WG703174-2	SRM Lot Number: HPI	HGAA	
Mercury, Dissolved	92	-	80-120	-	20
issolved Metals - Mansfield Lab Associa	ted sample(s): 02-04,11-12,15	5-16 Batch: WG704282-2	SRM Lot Number: A2M	METSPIKE	
Arsenic, Dissolved	99	-	80-120	-	20
Beryllium, Dissolved	98	-	80-120	-	20
Cadmium, Dissolved	99	-	80-120	-	20
Chromium, Dissolved	106	-	80-120	-	20
Lead, Dissolved	108	-	80-120	-	20
Nickel, Dissolved	100	-	80-120	-	20
otal Metals - Mansfield Lab Associated s	ample(s): 05-06,10,13-14,17-	18 Batch: WG704286-2	SRM Lot Number: A2ME	ETSPIKE	
Arsenic, Total	103	-	75-125	-	20
Beryllium, Total	100	-	75-125	-	20
Cadmium, Total	111	-	75-125	-	20
Chromium, Total	118	-	75-125	-	20
Lead, Total	107	-	75-125	-	20
Nickel, Total	110	-	75-125	-	20



Lab Control Sample Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number:

L1413507

Report Date:

07/11/14

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab	Associated sample(s): 05-06,10,13-14,17-18	Batch: WG704291-2	SRM Lot Number: HPHG	AA	
Mercury, Total	109	-	80-120	-	20



Matrix Spike Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number:

L1413507

Report Date: 07/11/14

ırameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery	Recove Qual Limit	•	RPD Qual Limits
otal Metals - Mansfield Lab As PSW01	ssociated sam	nple(s): 01-0	4,11-12,15-	16 QC Batch	h ID: WG703169-	4 WG703169-5	QC Sample: I	_1413507	'-15 Client ID:
Arsenic, Total	0.00090	1	1.022	102	1.072	107	75-125	5	20
Beryllium, Total	0.00009J	0.5	0.5250	105	0.5432	109	75-125	3	20
Cadmium, Total	ND	0.5	0.5199	104	0.5293	106	75-125	2	20
Chromium, Total	0.00039J	1	1.05	105	1.12	112	75-125	6	20
Lead, Total	0.00052J	1	1.06	106	1.12	112	75-125	6	20
Nickel, Total	0.00060	1	1.009	101	1.061	106	75-125	5	20
otal Hardness by SM 2340B - 5 Client ID: CPSW01 Hardness	Mansfield Lal	b Associated	d sample(s) 51.9	90	15-16 QC Batc 54.8	n ID: WG703169	9-4 WG703169 75-125		ample: L141350
5 Client ID: CPSW01 Hardness	22.0	33.1	51.9	90	54.8	99	75-125	5	
5 Client ID: CPSW01	22.0	33.1	51.9	90		99		5 Client I	
5 Client ID: CPSW01 Hardness otal Metals - Mansfield Lab As	22.0 ssociated sam	33.1 nple(s): 07-0	51.9 9 QC Bate	⁹⁰ ch ID: WG703	^{54.8} 170-4 WG70317	99 0-5 QC Sample	75-125 ə: L1413507-07	Client I	20 D: JFM01
5 Client ID: CPSW01 Hardness otal Metals - Mansfield Lab As Arsenic, Total	22.0 ssociated sam 0.00383J	33.1 nple(s): 07-0 1	51.9 9 QC Bate 1.369	90 ch ID: WG703 137	54.8 170-4 WG70317 Q 1.368	99 0-5 QC Sample	75-125 e: L1413507-07 Q 75-125	Client I	D: JFM01
5 Client ID: CPSW01 Hardness otal Metals - Mansfield Lab As Arsenic, Total Beryllium, Total	22.0 ssociated sam 0.00383J ND	33.1 nple(s): 07-0 1 0.5	51.9 9 QC Bate 1.369 0.4787	90 ch ID: WG703 137 96	54.8 170-4 WG70317 Q 1.368 0.5168	99 0-5 QC Sample 137 103	75-125 9: L1413507-07 Q 75-125 75-125	5 Client I 6 0 8 4	D: JFM01 20 20
5 Client ID: CPSW01 Hardness otal Metals - Mansfield Lab As Arsenic, Total Beryllium, Total Cadmium, Total	22.0 ssociated sam 0.00383J ND 0.00027J	33.1 nple(s): 07-0 1 0.5 0.5	51.9 9 QC Bate 1.369 0.4787 0.4816	90 ch ID: WG703 137 96 96	54.8 170-4 WG70317 Q 1.368 0.5168 0.5003	99 0-5 QC Sample 137 103 100	75-125 e: L1413507-07 Q 75-125 75-125	5 Client I 0 8 4 3	20 D: JFM01 20 20 20
5 Client ID: CPSW01 Hardness otal Metals - Mansfield Lab As Arsenic, Total Beryllium, Total Cadmium, Total Chromium, Total	22.0 ssociated sam 0.00383J ND 0.00027J 0.178	33.1 nple(s): 07-0 1 0.5 0.5	51.9 9 QC Bate 1.369 0.4787 0.4816 1.13	90 ch ID: WG703 137 96 96 96	54.8 170-4 WG70317 Q 1.368 0.5168 0.5003 1.16	99 0-5 QC Sample 137 103 100 98	75-125 e: L1413507-07 Q 75-125 75-125 75-125	5 Client I 0 8 4 3 3 2	20 D: JFM01 20 20 20 20 20
Hardness otal Metals - Mansfield Lab As Arsenic, Total Beryllium, Total Cadmium, Total Chromium, Total Lead, Total	22.0 ssociated sam 0.00383J ND 0.00027J 0.178 0.00079J 0.01669	33.1 nple(s): 07-0 1 0.5 0.5 1 1	51.9 9 QC Bate 1.369 0.4787 0.4816 1.13 0.951 0.9645	90 ch ID: WG703 137 96 96 95 95	54.8 170-4 WG70317 Q 1.368 0.5168 0.5003 1.16 0.973	99 0-5 QC Sample 137 103 100 98 97 101	75-125 e: L1413507-07 Q 75-125 75-125 75-125 75-125 75-125	5 Client I 0 8 4 3 3 2 6	20 D: JFM01 20 20 20 20 20 20 20 20



Matrix Spike Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number:

L1413507

Report Date: 07/11/14

Parameter	Native Sample	MS Added	MS Found %	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield La	ab Associated sam	ple(s): 07-09	QC Batch	n ID: WG703	173-4 WG703173-5	QC Sample:	L1413507-07 C	Client ID: JFN	<i>I</i> /01
Mercury, Total	ND	0.005	0.00264	53	Q 0.00253	51	Q 75-125	4	20
Dissolved Metals - Mansfield ID: CPSW01	eld Lab Associated	sample(s):	02-04,11-12,	15-16 QC	Batch ID: WG70317	4-4 WG70317	'4-5 QC Sample:	L1413507-1	5 Client
Mercury, Dissolved	ND	0.005	0.00458	92	0.00472	94	75-125	3	20
Dissolved Metals - Mansfid ID: CPSW01	eld Lab Associated	sample(s):	02-04,11-12,	15-16 QC	Batch ID: WG70428	2-4 WG70428	32-5 QC Sample:	L1413507-1	5 Client
Arsenic, Dissolved	0.00053	1	0.9205	92	0.9384	94	75-125	2	20
Beryllium, Dissolved	ND	0.5	0.5147	103	0.5116	102	75-125	1	20
Cadmium, Dissolved	ND	0.5	0.5017	100	0.4981	100	75-125	1	20
Chromium, Dissolved	ND	1	1.02	102	1.00	100	75-125	2	20
Lead, Dissolved	0.00020J	1	1.02	102	1.02	102	75-125	0	20
Nickel, Dissolved	0.00040J	1	0.9592	96	0.9524	95	75-125	1	20
Γotal Metals - Mansfield La CPSD01	ab Associated sam	ple(s): 05-06	5,10,13-14,1 ⁻	7-18 QC B	atch ID: WG704286-	-4 WG704286	-5 QC Sample: L	.1413507-17	Client ID
Arsenic, Total	2.34	144	130	89	141	91	75-125	8	20
Beryllium, Total	1.61	71.8	74.0	101	78.8	101	75-125	6	20
Cadmium, Total	0.104	71.8	76.2	106	81.5	107	75-125	7	20
Chromium, Total	17.0	144	173	109	191	114	75-125	10	20
Lead, Total	17.0	144	148	91	147	85	75-125	1	20
Nickel, Total	10.0	144	157	102	163	100	75-125	4	20

Matrix Spike Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number:

MONTGOMERY COUNTY

Lab Number:

L1413507

Report Date: 07/11/14

Parameter	Native Sample	MS Added	MS Found	MS %Recover	ту	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab A CPSD01	ssociated san	nple(s): 05-0	6,10,13-14,	17-18 QC	Batch ID:	: WG704291	-4 WG704291-5	QC Sample: L	.1413507-17	Client ID:
Mercury, Total	0.023	0.184	0.161	75	Q	0.177	80	80-120	9	20



Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY CO

Lab Number:

L1413507

Report Date: 07/11/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
otal Metals - Mansfield Lab Associated sample(s):	01-04,11-12,15-16	QC Batch ID: WG703169-3	QC Sample:	L1413507-04	Client ID:	LFSW03
Arsenic, Total	0.00126	0.00127	mg/l	1		20
Beryllium, Total	0.00010J	0.00012J	mg/l	NC		20
Cadmium, Total	ND	0.00002J	mg/l	NC		20
Chromium, Total	0.00063J	0.00066J	mg/l	NC		20
Lead, Total	0.00061J	0.00067J	mg/l	NC		20
Nickel, Total	0.00268	0.00281	mg/l	5		20
FSW03 Hardness Total Metals - Mansfield Lab Associated sample(s):	51.2 07-09 QC Batch ID:	53.8 WG703170-3 QC Sample	mg/l : L1413507-0	5 9 Client ID: J	FM03	20
Arsenic, Total	0.00402J	0.00314J	mg/l	NC		20
Beryllium, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.183	0.176	mg/l	4		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.01648	0.01586	mg/l	4		20
otal Metals - Mansfield Lab Associated sample(s):	01-04,11-12,15-16	QC Batch ID: WG703171-3	QC Sample:	L1413507-04	Client ID:	LFSW03
Mercury, Total	ND	ND	mg/l	NC		20



Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY CO

Lab Number:

L1413507

Report Date:

07/11/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
otal Metals - Mansfield Lab Associated sample(s): 07-0	09 QC Batch ID: V	VG703173-3 QC Sample: L	1413507-09	Client ID: JFI	M03
Mercury, Total	ND	ND	mg/l	NC	20
Dissolved Metals - Mansfield Lab Associated sample(s):	02-04,11-12,15-16	QC Batch ID: WG703174-3	QC Sample	e: L1413507-	04 Client ID: LFSW03
Mercury, Dissolved	ND	ND	mg/l	NC	20
Dissolved Metals - Mansfield Lab Associated sample(s):	02-04,11-12,15-16	QC Batch ID: WG704282-3	QC Sample	e: L1413507-	04 Client ID: LFSW03
Arsenic, Dissolved	0.00090	0.00079	mg/l	13	20
Beryllium, Dissolved	ND	0.00011J	mg/l	NC	20
Cadmium, Dissolved	ND	ND	mg/l	NC	20
Chromium, Dissolved	ND	ND	mg/l	NC	20
Lead, Dissolved	0.00037J	0.00037J	mg/l	NC	20
Nickel, Dissolved	0.00238	0.00239	mg/l	1	20
otal Metals - Mansfield Lab Associated sample(s): 05-0	06,10,13-14,17-18	QC Batch ID: WG704286-3	QC Sample:	L1413507-1	0 Client ID: LFSD03
Arsenic, Total	1.31	1.04	mg/kg	23	Q 20
Beryllium, Total	1.10	1.07	mg/kg	3	20
Cadmium, Total	0.087	0.082	mg/kg	5	20
Chromium, Total	20.6	18.7	mg/kg	10	20
Nickel, Total	11.7	12.0	mg/kg	3	20
otal Metals - Mansfield Lab Associated sample(s): 05-0	06,10,13-14,17-18	QC Batch ID: WG704286-3	QC Sample:	L1413507-1	0 Client ID: LFSD03
Lead, Total	17.1	17.0	mg/kg	1	20



Lab Number: **Project Name:** MONTGOMERY COUNTY RRF L1413507

07/11/14 Project Number: Report Date: MONTGOMERY CO

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab A	Associated sample(s): 05-06,10,13-14,17-18	QC Batch ID: WG704291-3	QC Sample:	L1413507-10	Client ID: LFSD03
Mercury, Total	0.018	0.018	mg/kg	4	20



INORGANICS & MISCELLANEOUS



Date Collected:

Date Received:

Field Prep:

Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413507

RL

0.050

0.050

0.100

Project Number: MONTGOMERY COUNT' Report Date: 07/11/14

SAMPLE RESULTS

MDL

0.050

0.050

0.100

Dilution Factor

1

1

1

Lab ID: L1413507-05

Client ID: LFSD01

Total Organic Carbon - Mansfield Lab

General Chemistry - Mansfield Lab

Parameter

Solids, Total

Total Organic Carbon (Rep1)

Total Organic Carbon (Rep2)

Sample Location: DICKERSON, MD

2.12

2.05

53.1

Result Qualifier Units

%

%

%

Matrix: Sediment

Date	Date	Analytical	Analys
Prepared	Analyzed	Method	
			Allalys

07/09/14 11:37

07/09/14 11:37

07/07/14 10:00

06/17/14 10:00

Not Specified

13,-

13,-

30,2540G

YX

ΥX

MS

06/18/14



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413507

Project Number: MONTGOMERY COUNT' Report Date: 07/11/14

SAMPLE RESULTS

Lab ID: L1413507-06

Client ID: LFSD02

Sample Location: DICKERSON, MD

Matrix: Sediment

Date Collected: 06/17/14 10:45

Date Received: 06/18/14

Field Prep: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Ma	ansfield Lab									
Total Organic Carbon (Rep1)	0.874		%	0.050	0.050	1	-	07/09/14 11:42	13,-	YX
Total Organic Carbon (Rep2)	0.946		%	0.050	0.050	1	-	07/09/14 11:42	13,-	YX
General Chemistry - Mans	field Lab									
Solids, Total	56.9		%	0.100	0.100	1	-	07/07/14 10:00	30,2540G	MS



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413507

Project Number: MONTGOMERY COUNT' Report Date: 07/11/14

SAMPLE RESULTS

Lab ID: L1413507-10

Client ID: LFSD03

Sample Location: DICKERSON, MD

Matrix: Sediment

Date Collected:	06/17/14 10:45
Date Received:	06/18/14

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Ma	nsfield Lab									
Total Organic Carbon (Rep1)	0.900		%	0.050	0.050	1	-	07/09/14 09:32	13,-	YX
Total Organic Carbon (Rep2)	1.01		%	0.050	0.050	1	-	07/09/14 09:32	13,-	YX
General Chemistry - Mans	field Lab									
Solids, Total	59.6		%	0.100	0.100	1	-	07/07/14 10:00	30,2540G	MS



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413507

Project Number: MONTGOMERY COUNT Report Date: 07/11/14

SAMPLE RESULTS

Lab ID: L1413507-13

Client ID: YFSD01

Sample Location: DICKERSON, MD

Matrix: Sediment

Date Collected: 06/17/14 14:45

Date Received: 06/19/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Ma	ansfield Lab									
Total Organic Carbon (Rep1)	1.11		%	0.050	0.050	1	-	07/09/14 09:43	13,-	YX
Total Organic Carbon (Rep2)	1.15		%	0.050	0.050	1	-	07/09/14 09:43	13,-	YX
General Chemistry - Mans	field Lab									
Solids, Total	64.9		%	0.100	0.100	1	-	07/07/14 10:00	30,2540G	MS



06/17/14 15:05

Not Specified

13,-

30,2540G

ΥX

MS

06/19/14

Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413507

0.050

0.100

0.050

0.100

1

1

Project Number: MONTGOMERY COUNT' Report Date: 07/11/14

SAMPLE RESULTS

Lab ID: L1413507-14

Client ID: YFSD02

Sample Location: DICKERSON, MD

2.91

3.34

43.4

%

%

Matrix: Sediment

Total Organic Carbon - Mansfield Lab

General Chemistry - Mansfield Lab

Parameter

Solids, Total

Total Organic Carbon (Rep1)

Total Organic Carbon (Rep2)

iment									
Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
eld Lab									
91		%	0.050	0.050	1	_	07/09/14 09:21	13 -	YX

Date Collected:

Date Received:

07/09/14 09:21

07/07/14 10:00

Field Prep:



06/18/14 11:15

Not Specified

30,2540G

MS

06/19/14

Date Collected:

Date Received:

07/07/14 10:00

Field Prep:

Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413507

Project Number: MONTGOMERY COUNT' Report Date: 07/11/14

SAMPLE RESULTS

Lab ID: L1413507-17

Client ID: CPSD01

Sample Location: DICKERSON, MD

72.9

Matrix: Sediment

Solids, Total

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Ma	nsfield Lab									
Total Organic Carbon (Rep1)	0.787		%	0.050	0.050	1	-	07/09/14 09:53	13,-	YX
Total Organic Carbon (Rep2)	0.800		%	0.050	0.050	1	-	07/09/14 09:53	13,-	YX
General Chemistry - Mans	field Lab									

0.100

1

0.100

%



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413507

Project Number: MONTGOMERY COUNT' Report Date: 07/11/14

SAMPLE RESULTS

Lab ID: L1413507-18

Client ID: CPSD02

Sample Location: DICKERSON, MD

Matrix: Sediment

Date Collected: 06/18/14 11:45

Date Received: 06/19/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Ma	nsfield Lab									
Total Organic Carbon (Rep1)	0.437		%	0.050	0.050	1	-	07/09/14 10:04	13,-	YX
Total Organic Carbon (Rep2)	0.443		%	0.050	0.050	1	-	07/09/14 10:04	13,-	YX
General Chemistry - Mans	field Lab									
Solids, Total	65.9		%	0.100	0.100	1	-	07/07/14 10:00	30,2540G	MS



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413507

Project Number: MONTGOMERY COUNT' **Report Date:** 07/11/14

SAMPLE RESULTS

Lab ID: L1413507-19

JFM01 Client ID:

DICKERSON, MD Sample Location:

Matrix: Liquid Date Collected: 06/17/14 13:35

Date Received: 06/18/14

Not Specified Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Man	sfield Lab									
Percent Lipids	3.25		%	0.100	NA	1	-	07/01/14 14:00	111,-	AK



06/17/14 13:40

Not Specified

111,-

 AK

06/18/14

Date Collected:

07/01/14 14:00

Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413507

Project Number: Report Date: MONTGOMERY COUNT' 07/11/14

SAMPLE RESULTS

Lab ID: L1413507-20

JFM02 Client ID:

Date Received: DICKERSON, MD Sample Location: Field Prep:

%

Matrix: Liquid

Percent Lipids

Analytical Method **Dilution** Date Date Factor Prepared Result Qualifier Units Analyzed RL MDL **Parameter Analyst** General Chemistry - Mansfield Lab

NA

1

0.100



Project Name: MONTGOMERY COUNTY RRF **Lab Number:** L1413507

Project Number: MONTGOMERY COUNT Report Date: 07/11/14

Method Blank Analysis Batch Quality Control

Parameter	Result Qua	lifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mar	nsfield Lab for sa	ample(s): 19-20	Batch:	WG702	2532-1				
Percent Lipids	ND	%	0.100	NA	1	-	07/01/14 14:00	111,-	AK
Total Organic Carbon - M	Mansfield Lab for	sample(s): 05-0	06,10,13	3-14,17-1	18 Batch:	WG704371-			
Total Organic Carbon (Rep1)	ND	%	0.050	0.050	1	-	07/08/14 22:35	13,-	YX
Total Organic Carbon (Rep2)	ND	%	0.050	0.050	1	-	07/08/14 22:35	13,-	YX



Matrix Spike Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number:

L1413507

Report Date: 07/11/14

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery		Recovery Limits	RPD	Qual	RPD Limits
Total Organic Carbon - Mansfi Client ID: CPSD01	ield Lab Assoc	iated sampl	le(s): 05-06,	10,13-14,17-18	QC E	Batch ID: \	WG704371-4 V	VG70437	1-5 QC	Sample	: L1413	3507-17
Total Organic Carbon (Rep1)	0.787	1.22	2.14	110		2.11	92		75-125	1		25
Total Organic Carbon (Rep2)	0.800	1.22	2.16	112		2.46	108		75-125	13		25



Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY CO

Lab Number:

L1413507

Report Date:

07/11/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual RPD Limits
General Chemistry - Mansfield Lab Associated sample(s	s): 19-20 QC Batch ID: \	NG702532-2 QC Sa	ample: L14135	07-19 Clie	nt ID: JFM01
Percent Lipids	3.25	3.39	%	4	20
General Chemistry - Mansfield Lab Associated sample(s	s): 05-06,10,13-14,17-18	QC Batch ID: WG70)3540-1 QC S	Sample: L1	413507-05 Client ID:
Solids, Total	53.1	52.4	%	1	10
Total Organic Carbon - Mansfield Lab Associated samp LFSD03	le(s): 05-06,10,13-14,17-1	8 QC Batch ID: WG	9704371-3 Q0	C Sample:	L1413507-10 Client ID:
Total Organic Carbon (Rep1)	0.900	0.983	%	9	25
Total Organic Carbon (Rep2)	1.01	0.837	%	19	25

Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413507

Project Number: MONTGOMERY COUN Report Date: 07/11/14

S.R.M. Standard Quality Control

Standard Reference Material (SRM): WG704371-2

Parameter	% Recovery	Qual	QC Criteria
Total Organic Carbon (Rep1)	97		75-125
Total Organic Carbon (Rep2)	93		75-125



Project Name:MONTGOMERY COUNTY RRFLab Number: L1413507Project Number:MONTGOMERY COUNTYReport Date: 07/11/14

Sample Receipt and Container Information

Were project specific reporting limits specified?

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler

A Absent B Absent

Container Info	ormation		Temp				
Container ID	Container Type	Cooler	рΗ	deg C	Pres	Seal	Analysis(*)
L1413507-01A	Plastic 250ml HNO3 preserved	A	<2	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HARDT(180)
L1413507-02A	Plastic 250ml HNO3 preserved	A	<2	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HARDT(180)
L1413507-02B	Plastic 500ml unpreserved	А	7	4.6	Y	Absent	A2-AS-6020S(180),A2-CR- 6020S(180),A2-HG- 7470S(28),A2-NI- 6020S(180),A2-PB- 6020S(180),A2-BE- 6020S(180),A2-CD-6020S(180)
L1413507-02X	Plastic 500ml HNO3 preserved	А	<2	4.6	Y	Absent	A2-AS-6020S(180),A2-CR- 6020S(180),A2-HG- 7470S(28),A2-NI- 6020S(180),A2-PB- 6020S(180),A2-BE- 6020S(180),A2-CD-6020S(180)
L1413507-03A	Plastic 250ml HNO3 preserved	A	<2	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HARDT(180)
L1413507-03B	Plastic 500ml unpreserved	Α	7	4.6	Y	Absent	A2-AS-6020S(180),A2-CR- 6020S(180),A2-HG- 7470S(28),A2-NI- 6020S(180),A2-PB- 6020S(180),A2-BE- 6020S(180),A2-CD-6020S(180)



Lab Number: L1413507

Report Date: 07/11/14

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Container Info	ormation			T			
Container ID	Container Type	Cooler	рН	Temp deg C	Pres	Seal	Analysis(*)
L1413507-03X	Plastic 500ml HNO3 preserved	A	<2	4.6	Y	Absent	A2-AS-6020S(180),A2-CR- 6020S(180),A2-HG- 7470S(28),A2-NI- 6020S(180),A2-PB- 6020S(180),A2-BE- 6020S(180),A2-CD-6020S(180)
L1413507-04A	Plastic 250ml HNO3 preserved	A	<2	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HARDT(180)
L1413507-04B	Plastic 500ml unpreserved	Α	7	4.6	Y	Absent	A2-AS-6020S(180),A2-CR- 6020S(180),A2-HG- 7470S(28),A2-NI- 6020S(180),A2-PB- 6020S(180),A2-BE- 6020S(180),A2-CD-6020S(180)
L1413507-04X	Plastic 500ml HNO3 preserved	Α	<2	4.6	Y	Absent	A2-AS-6020S(180),A2-CR- 6020S(180),A2-HG- 7470S(28),A2-NI- 6020S(180),A2-PB- 6020S(180),A2-BE- 6020S(180),A2-CD-6020S(180)
L1413507-05A	Amber 120ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413507-06A	Amber 120ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413507-07A	Plastic 250ml HNO3 preserved	Α	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180)
L1413507-07B	Plastic 250ml HNO3 preserved	Α	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180)
L1413507-07C	Plastic 250ml HNO3 preserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180)



Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number: L1413507 Report Date: 07/11/14

Container Information Temp												
Container ID	Container Type	Cooler	рΗ	deg C	Pres	Seal	Analysis(*)					
L1413507-08A	Plastic 250ml HNO3 preserved	A	N/A	4.6	Υ	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180)					
L1413507-09A	Plastic 250ml HNO3 preserved	Α	<2	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180)					
L1413507-10A	Amber 120ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)					
L1413507-11A	Plastic 250ml HNO3 preserved	В	<2	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HARDT(180)					
L1413507-11B	Plastic 500ml unpreserved	В	7	5.2	Y	Absent	A2-AS-6020S(180),A2-CR-6020S(180),A2-HG-7470S(28),A2-NI-6020S(180),A2-PB-6020S(180),A2-BE-6020S(180),A2-CD-6020S(180)					
L1413507-11X	Plastic 500ml HNO3 preserved	В	<2	5.2	Y	Absent	A2-AS-6020S(180),A2-CR-6020S(180),A2-HG-7470S(28),A2-NI-6020S(180),A2-PB-6020S(180),A2-BE-6020S(180),A2-CD-6020S(180)					
L1413507-12A	Plastic 250ml HNO3 preserved	В	<2	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HARDT(180)					
L1413507-12B	Plastic 500ml unpreserved	В	7	5.2	Y	Absent	A2-AS-6020S(180),A2-CR-6020S(180),A2-HG-7470S(28),A2-NI-6020S(180),A2-PB-6020S(180),A2-BE-6020S(180),A2-CD-6020S(180)					
L1413507-12X	Plastic 500ml HNO3 preserved	В	<2	5.2	Y	Absent	A2-AS-6020S(180),A2-CR-6020S(180),A2-HG-7470S(28),A2-NI-6020S(180),A2-PB-6020S(180),A2-BE-6020S(180),A2-CD-6020S(180)					



Container Info				Temp	_		
Container ID	Container Type	Cooler	рН	deg C	Pres	Seal	Analysis(*)
L1413507-13A	Amber 120ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413507-14A	Amber 120ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413507-15A	Plastic 250ml HNO3 preserved	В	<2	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HARDT(180)
L1413507-15B	Plastic 250ml HNO3 preserved	В	<2	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HARDT(180)
L1413507-15C	Plastic 250ml HNO3 preserved	В	<2	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HARDT(180)
L1413507-15D	Plastic 500ml unpreserved	В	7	5.2	Y	Absent	A2-AS-6020S(180),A2-CR-6020S(180),A2-HG-7470S(28),A2-NI-6020S(180),A2-PB-6020S(180),A2-BE-6020S(180),A2-CD-6020S(180)
L1413507-15E	Plastic 500ml unpreserved	В	7	5.2	Y	Absent	A2-AS-6020S(180),A2-CR-6020S(180),A2-HG-7470S(28),A2-NI-6020S(180),A2-PB-6020S(180),A2-BE-6020S(180),A2-CD-6020S(180)
L1413507-15F	Plastic 500ml unpreserved	В	7	5.2	Y	Absent	A2-AS-6020S(180),A2-CR-6020S(180),A2-HG-7470S(28),A2-NI-6020S(180),A2-PB-6020S(180),A2-BE-6020S(180),A2-CD-6020S(180)
L1413507-15X	Plastic 500ml HNO3 preserved	В	<2	5.2	Y	Absent	A2-AS-6020S(180),A2-CR-6020S(180),A2-HG-7470S(28),A2-NI-6020S(180),A2-PB-6020S(180),A2-BE-6020S(180),A2-CD-6020S(180)



Container Info	ormation						
Container ID	Container Type	Cooler	рН	Temp deg C	Pres	Seal	Analysis(*)
L1413507-16A	Plastic 250ml HNO3 preserved	В	<2	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-HG-7470T(28),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HARDT(180)
L1413507-16B	Plastic 500ml unpreserved	В	7	5.2	Y	Absent	A2-AS-6020S(180),A2-CR- 6020S(180),A2-HG- 7470S(28),A2-NI- 6020S(180),A2-PB- 6020S(180),A2-BE- 6020S(180),A2-CD-6020S(180)
L1413507-16X	Plastic 500ml HNO3 preserved	В	<2	5.2	Y	Absent	A2-AS-6020S(180),A2-CR-6020S(180),A2-HG-7470S(28),A2-NI-6020S(180),A2-PB-6020S(180),A2-BE-6020S(180),A2-CD-6020S(180)
L1413507-17A	Amber 120ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413507-17B	Amber 120ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413507-17C	Amber 120ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413507-18A	Amber 120ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413507-19A	Plastic 500ml unpreserved	Α	N/A	4.6	Υ	Absent	A2-LIPIDS(7)
L1413507-20A	Plastic 500ml unpreserved	Α	N/A	4.6	Υ	Absent	A2-LIPIDS(7)



GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes
or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI - Not Ignitable.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A Spectra identified as "Aldol Condensation Product".
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

Report Format: DU Report with 'J' Qualifiers



Data Qualifiers

- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- The lower value for the two columns has been reported due to obvious interference.
- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- ${f P}$ The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers



REFERENCES

- Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I IV, 2007.
- 13 Determination of Total Organic Carbon in Sediment. U.S. EPA, Region II. July 27, 1988.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
- NOAA Technical Memorandum NOS ORCA 130: Sampling and Analytical Methods of the National Status and Trends Program Mussel Watch Project: 1993-196 Update.

 March 1998.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

Last revised April 15, 2014

The following analytes are not included in our NELAP Scope of Accreditation:

Westborough Facility

EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

EPA 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, lodomethane (methyl iodide), Methyl methacrylate,

Azobenzene.

EPA 8330A/B: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 625: 4-Chloroaniline. 4-Methylphenol.

SM4500: Soil: Total Phosphorus, TKN, NO2, NO3.

EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility

EPA 8270D: Biphenyl. EPA 2540D: TSS

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene,

Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water

EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1**: Mercury;

EPA 300.0: Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C,

SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.

Non-Potable Water

EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;

EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mq,Mn,Mo,Ni,K,Se,Aq,Na,Sr,Ti,Tl,V,Zn;

EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC,

SM426C, SM4500NH3-BH, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, SM4500NO3-F,

EPA 353.2: Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,

SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,

Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

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VF BG 01	6-17-14 1340	-							1_			ı
FF BG 02	6-17-14 1355	T SJH							1			1
Container Type Preservative P= Plastic A= None		Container Type					r	P G	ОР			
A= Amber glass B= HCl V= Vial C= HNO ₃		Preservative					C	A A	A			
B= Bacteria cup E≃ NaOH C= Cube F= MeOH	Relinquished By:	Date/Time			ved By:			Date/Tin		All came	oles submitted are subje	ct to
O= Other G= NaHSO ₄ E= Encore H = Na ₂ S ₂ O ₃ D= BOD Bottle I= Ascorbic Acid J = NH ₄ Cl K= Zn Acetate O= Other	1 Har	6-18-14/1500 6-18-14/1500 6-18-14/1500	Fed	Bul	1		6-18	-14/15 V1+9	13)	Alpha's See rev	Terms and Conditions. erse side. : 01-01 (rev. 12-Mar-2012)	J. 10



ANALYTICAL REPORT

Lab Number: L1413508

Client: TRC Environmental Consultants

Wannalancit Mills 650 Suffolk Street Lowell, MA 01854

ATTN: Liz Denly

Phone: (978) 656-3577

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Report Date: 07/28/14

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Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806 508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: MONTGOMERY COUNTY RRF Project Number:

MONTGOMERY COUNTY

Lab Number: L1413508 Report Date: 07/28/14

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1413508-01	LFH01	TISSUE	DICKERSON, MD	06/17/14 08:05	06/18/14
L1413508-02	LFH02	TISSUE	DICKERSON, MD	06/17/14 08:25	06/18/14
L1413508-03	LFH03	TISSUE	DICKERSON, MD	06/17/14 08:10	06/18/14
L1413508-04	LFBG01	TISSUE	DICKERSON, MD	06/17/14 11:00	06/18/14
L1413508-05	LFBG02	TISSUE	DICKERSON, MD	06/17/14 12:00	06/18/14
L1413508-06	LFLMB01	TISSUE	DICKERSON, MD	06/17/14 08:40	06/18/14
L1413508-07	JFH01	TISSUE	DICKERSON, MD	06/17/14 13:20	06/18/14
L1413508-08	JFH02	TISSUE	DICKERSON, MD	06/17/14 13:25	06/18/14
L1413508-09	YFBG01	TISSUE	DICKERSON, MD	06/17/14 13:40	06/19/14
L1413508-10	YFBG02	TISSUE	DICKERSON, MD	06/17/14 13:55	06/19/14
L1413508-11	CPBG01	TISSUE	DICKERSON, MD	06/18/14 00:00	06/19/14
L1413508-12	CPBG02	TISSUE	DICKERSON, MD	06/18/14 00:00	06/19/14
L1413508-13	CPLMB01	TISSUE	DICKERSON, MD	06/18/14 00:00	06/19/14
L1413508-14	CPLMB02	TISSUE	DICKERSON, MD	06/18/14 00:00	06/19/14
L1413508-15	LFLMB02	TISSUE	DICKERSON, MD	06/19/14 09:30	06/20/14
L1413508-16	MFH01	TISSUE	DICKERSON, MD	06/18/14 00:00	06/19/14
L1413508-17	LFBG01-F	TISSUE	DICKERSON, MD	06/17/14 11:00	06/18/14
L1413508-18	LFBG02-F	TISSUE	DICKERSON, MD	06/17/14 12:00	06/18/14
L1413508-19	LFLMB01-F	TISSUE	DICKERSON, MD	06/17/14 08:40	06/18/14
L1413508-20	YFBG01-F / YFBG02-F	TISSUE	DICKERSON, MD	06/17/14 13:40	06/19/14
L1413508-21	YFBG02-F	TISSUE	DICKERSON, MD	06/17/14 13:55	06/19/14
L1413508-22	CPBG01-F	TISSUE	DICKERSON, MD	06/18/14 00:00	06/19/14
L1413508-23	CPBG02-F	TISSUE	DICKERSON, MD	06/18/14 00:00	06/19/14
Paga3508824	CPLMB01-F	TISSUE	DICKERSON, MD	06/18/14 00:00	06/19/14



Alpha Sample ID Client ID L1413508-25 CPLMB02-F			Sample	Collection	Serial_No:07281413:09
	Matrix	Location	Date/Time	·	
L1413508-25	CPLMB02-F	TISSUE	DICKERSON, MD	06/18/14 (00:00 06/19/14
L1413508-26	LFLMB02-F	TISSUE	DICKERSON, MD	06/19/14 (09:30 06/20/14



Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.



Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Metals

The WG706876-1 Method Blank, associated with L1413508-04, -05, -06, -09, -10, -11, -12, -13, -14 and -15 has a concentration above the reporting limit for Chromium. Since the associated sample concentrations are greater than 10x the blank concentration for this analyte, no qualification of the results was performed.

The WG704425-5/-6 MS/MSD recovery, performed on L1413508-14, is outside the acceptance criteria for Mercury, total (68% / 54%); however, the associated LCS recovery was within criteria. No further action was taken.

The WG706581-5/-6 MS/MSD recovery, performed on L1413508-25, is outside the acceptance criteria for Mercury, total (51% / 32%); however, the associated LCS recovery was within criteria. No further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Galle Por Elizabeth Porta

Authorized Signature:

Title: Technical Director/Representative

Date: 07/28/14

METALS



SAMPLE RESULTS

Lab ID: L1413508-01 Date Collected: 06/17/14 08:05

Client ID: LFH01 Date Received: 06/18/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Percent Solids: Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	ND		mg/kg	0.588	0.033	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.294	0.023	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD
Cadmium, Total	0.026	J	mg/kg	0.118	0.011	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD
Chromium, Total	0.535		mg/kg	0.294	0.064	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD
Lead, Total	0.079	J	mg/kg	0.118	0.014	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD
Mercury, Total	ND		mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 15:54	EPA 7471B	1,7471B	AK
Nickel, Total	0.164	J	mg/kg	0.294	0.069	10	07/15/14 12:00	07/17/14 13:31	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

Lab ID: L1413508-02 Date Collected: 06/17/14 08:25

Client ID: LFH02 Date Received: 06/18/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Arsenic, Total	0.230	J	mg/kg	0.510	0.029	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.255	0.020	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD
Cadmium, Total	0.016	J	mg/kg	0.102	0.009	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD
Chromium, Total	0.991		mg/kg	0.255	0.056	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD
Lead, Total	0.355		mg/kg	0.102	0.012	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD
Mercury, Total	ND		mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 15:56	EPA 7471B	1,7471B	AK
Nickel, Total	0.520		mg/kg	0.255	0.060	10	07/15/14 12:00	07/17/14 13:33	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

Lab ID: L1413508-03 Date Collected: 06/17/14 08:10

Client ID: LFH03 Date Received: 06/18/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.031	J	mg/kg	0.521	0.029	10	07/15/14 12:00	07/17/14 13:34	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.260	0.021	10	07/15/14 12:00	07/17/14 13:34	EPA 3051A	1,6020A	PD
Cadmium, Total	0.028	J	mg/kg	0.104	0.009	10	07/15/14 12:00	07/17/14 13:34	EPA 3051A	1,6020A	PD
Chromium, Total	0.487		mg/kg	0.260	0.057	10	07/15/14 12:00	07/17/14 13:34	EPA 3051A	1,6020A	PD
Lead, Total	0.051	J	mg/kg	0.104	0.013	10	07/15/14 12:00	07/17/14 13:34	EPA 3051A	1,6020A	PD
Mercury, Total	ND		mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 15:59	EPA 7471B	1,7471B	AK
Nickel, Total	0.160	J	mg/kg	0.260	0.061	10	07/15/14 12:00	07/17/14 13:34	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-04
 Date Collected:
 06/17/14 11:00

 Client ID:
 LFBG01
 Date Received:
 06/18/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.223		mg/kg	0.108	0.006	2	07/18/14 14:00	0 07/27/14 09:43	EPA 3051A	1,6020A	PD
Beryllium, Total	0.0090	J	mg/kg	0.054	0.004	2	07/18/14 14:00	0 07/27/14 09:43	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.108	0.010	10	07/18/14 14:00	0 07/27/14 10:58	EPA 3051A	1,6020A	PD
Chromium, Total	14.7		mg/kg	0.054	0.012	2	07/18/14 14:00	0 07/27/14 09:43	EPA 3051A	1,6020A	PD
Lead, Total	0.094	J	mg/kg	0.108	0.013	10	07/18/14 14:00	0 07/27/14 10:58	EPA 3051A	1,6020A	PD
Mercury, Total	0.016		mg/kg	0.005	0.004	1	07/09/14 14:00	07/15/14 11:40	EPA 7471B	1,7471B	AK
Nickel, Total	9.76		mg/kg	0.054	0.013	2	07/18/14 14:00	0 07/27/14 09:43	EPA 3051A	1,6020A	PD



Serial_No:07281413:09

Project Name:MONTGOMERY COUNTY RRFLab Number:L1413508Project Number:MONTGOMERY COUNT'Report Date:07/28/14

SAMPLE RESULTS

 Lab ID:
 L1413508-05
 Date Collected:
 06/17/14 12:00

 Client ID:
 LFBG02
 Date Received:
 06/18/14

Client ID: Date Received: 06/18/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.109		mg/kg	0.108	0.006	2	07/18/14 14:00	07/27/14 09:44	EPA 3051A	1,6020A	PD
Beryllium, Total	0.006	J	mg/kg	0.054	0.004	2	07/18/14 14:00	07/27/14 09:44	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.108	0.010	10	07/18/14 14:00	0 07/27/14 10:32	EPA 3051A	1,6020A	PD
Chromium, Total	1.08		mg/kg	0.054	0.012	2	07/18/14 14:00	07/27/14 09:44	EPA 3051A	1,6020A	PD
Lead, Total	0.088	J	mg/kg	0.108	0.013	10	07/18/14 14:00	0 07/27/14 10:32	EPA 3051A	1,6020A	PD
Mercury, Total	0.005	J	mg/kg	0.005	0.004	1	07/09/14 14:00	07/15/14 11:42	EPA 7471B	1,7471B	AK
Nickel, Total	0.838		mg/kg	0.054	0.013	2	07/18/14 14:00	0 07/27/14 09:44	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-06
 Date Collected:
 06/17/14 08:40

 Client ID:
 LFLMB01
 Date Received:
 06/18/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Arsenic, Total	0.083	J	mg/kg	0.562	0.032	10	07/18/14 14:00	07/27/14 10:38	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.056	0.004	2	07/18/14 14:00	07/27/14 09:51	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.112	0.010	10	07/18/14 14:00	07/27/14 10:38	EPA 3051A	1,6020A	PD
Chromium, Total	1.43		mg/kg	0.281	0.061	10	07/18/14 14:00	07/27/14 10:38	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.112	0.014	10	07/18/14 14:00	07/27/14 10:38	EPA 3051A	1,6020A	PD
Mercury, Total	0.036		mg/kg	0.006	0.004	1	07/09/14 14:00	07/15/14 11:50	EPA 7471B	1,7471B	AK
Nickel, Total	0.772		mg/kg	0.281	0.066	10	07/18/14 14:00	07/27/14 10:38	EPA 3051A	1,6020A	PD



Serial_No:07281413:09

Project Name:MONTGOMERY COUNTY RRFLab Number:L1413508Project Number:MONTGOMERY COUNT'Report Date:07/28/14

SAMPLE RESULTS

Lab ID: L1413508-07 Date Collected: 06/17/14 13:20

Client ID: JFH01 Date Received: 06/18/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	ND		mg/kg	0.581	0.033	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD
Beryllium, Total	0.057	J	mg/kg	0.291	0.023	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD
Cadmium, Total	0.033	J	mg/kg	0.116	0.010	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD
Chromium, Total	0.352		mg/kg	0.291	0.063	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD
Lead, Total	0.060	J	mg/kg	0.116	0.014	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD
Mercury, Total	0.005	J	mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 16:07	EPA 7471B	1,7471B	AK
Nickel, Total	0.575		mg/kg	0.291	0.068	10	07/15/14 12:00	07/17/14 13:38	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

Lab ID: L1413508-08 Date Collected: 06/17/14 13:25

Client ID: JFH02 Date Received: 06/18/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.044	J	mg/kg	0.556	0.031	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD
Beryllium, Total	0.028	J	mg/kg	0.278	0.022	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD
Cadmium, Total	0.058	J	mg/kg	0.111	0.010	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD
Chromium, Total	0.327		mg/kg	0.278	0.060	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD
Lead, Total	0.062	J	mg/kg	0.111	0.014	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD
Mercury, Total	ND		mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 16:10	EPA 7471B	1,7471B	AK
Nickel, Total	0.640		mg/kg	0.278	0.065	10	07/15/14 12:00	07/17/14 13:39	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

Lab ID: L1413508-09 Date Collected: 06/17/14 13:40

Client ID: YFBG01 Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield I ah										
Total Metals Ivial	isiicia Lab										
Arsenic, Total	0.162		mg/kg	0.118	0.007	2	07/18/14 14:00	07/27/14 09:52	EPA 3051A	1,6020A	PD
Beryllium, Total	0.007	J	mg/kg	0.059	0.005	2	07/18/14 14:00	07/27/14 09:52	EPA 3051A	1,6020A	PD
Cadmium, Total	0.011	J	mg/kg	0.118	0.011	10	07/18/14 14:00	07/27/14 10:40	EPA 3051A	1,6020A	PD
Chromium, Total	0.976		mg/kg	0.059	0.013	2	07/18/14 14:00	07/27/14 09:52	EPA 3051A	1,6020A	PD
Lead, Total	0.269		mg/kg	0.118	0.014	10	07/18/14 14:00	07/27/14 10:40	EPA 3051A	1,6020A	PD
Mercury, Total	0.023		mg/kg	0.006	0.004	1	07/09/14 14:00	07/15/14 11:54	EPA 7471B	1,7471B	AK
Nickel, Total	0.872		mg/kg	0.059	0.014	2	07/18/14 14:00	07/27/14 09:52	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-10
 Date Collected:
 06/17/14 13:55

 Client ID:
 YFBG02
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Arsenic, Total	0.098	J	mg/kg	0.111	0.006	2	07/18/14 14:00	0 07/27/14 09:53	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.056	0.004	2	07/18/14 14:00	0 07/27/14 09:53	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.111	0.010	10	07/18/14 14:00	0 07/27/14 10:41	EPA 3051A	1,6020A	PD
Chromium, Total	0.708		mg/kg	0.056	0.012	2	07/18/14 14:00	0 07/27/14 09:53	EPA 3051A	1,6020A	PD
Lead, Total	0.079	J	mg/kg	0.111	0.014	10	07/18/14 14:00	0 07/27/14 10:41	EPA 3051A	1,6020A	PD
Mercury, Total	0.040		mg/kg	0.006	0.004	1	07/09/14 14:00	0 07/15/14 11:56	EPA 7471B	1,7471B	AK
Nickel, Total	0.741		mg/kg	0.056	0.013	2	07/18/14 14:00	0 07/27/14 09:53	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-11
 Date Collected:
 06/18/14 00:00

 Client ID:
 CPBG01
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Arsenic, Total	0.079	J	mg/kg	0.105	0.006	2	07/18/14 14:00	07/27/14 09:55	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.053	0.004	2	07/18/14 14:00	07/27/14 09:55	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.105	0.009	10	07/18/14 14:00	07/27/14 10:42	EPA 3051A	1,6020A	PD
Chromium, Total	3.19		mg/kg	0.053	0.011	2	07/18/14 14:00	07/27/14 09:55	EPA 3051A	1,6020A	PD
Lead, Total	0.029	J	mg/kg	0.105	0.013	10	07/18/14 14:00	07/27/14 10:42	EPA 3051A	1,6020A	PD
Mercury, Total	0.037		mg/kg	0.005	0.004	1	07/09/14 14:00	07/15/14 12:00	EPA 7471B	1,7471B	AK
Nickel, Total	2.32		mg/kg	0.053	0.012	2	07/18/14 14:00	07/27/14 09:55	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-12
 Date Collected:
 06/18/14 00:00

 Client ID:
 CPBG02
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Arsenic, Total	0.091	J	mg/kg	0.575	0.032	10	07/18/14 14:00	0 07/27/14 10:44	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.058	0.005	2	07/18/14 14:00	07/27/14 09:56	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.115	0.010	10	07/18/14 14:00	07/27/14 10:44	EPA 3051A	1,6020A	PD
Chromium, Total	4.55		mg/kg	0.287	0.063	10	07/18/14 14:00	0 07/27/14 10:44	EPA 3051A	1,6020A	PD
Lead, Total	0.028	J	mg/kg	0.115	0.014	10	07/18/14 14:00	0 07/27/14 10:44	EPA 3051A	1,6020A	PD
Mercury, Total	0.051		mg/kg	0.005	0.004	1	07/09/14 14:00	0 07/15/14 12:08	EPA 7471B	1,7471B	AK
Nickel, Total	3.05		mg/kg	0.287	0.067	10	07/18/14 14:00	0 07/27/14 10:44	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-13
 Date Collected:
 06/18/14 00:00

 Client ID:
 CPLMB01
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.047	J	mg/kg	0.575	0.032	10	07/18/14 14:00	07/27/14 10:45	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.058	0.005	2	07/18/14 14:00	0 07/27/14 09:57	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.115	0.010	10	07/18/14 14:00	0 07/27/14 10:45	EPA 3051A	1,6020A	PD
Chromium, Total	1.67		mg/kg	0.287	0.063	10	07/18/14 14:00	0 07/27/14 10:45	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.115	0.014	10	07/18/14 14:00	0 07/27/14 10:45	EPA 3051A	1,6020A	PD
Mercury, Total	0.140		mg/kg	0.006	0.004	1	07/09/14 14:00	0 07/15/14 12:12	EPA 7471B	1,7471B	AK
Nickel, Total	1.10		mg/kg	0.287	0.067	10	07/18/14 14:00	0 07/27/14 10:45	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-14
 Date Collected:
 06/18/14 00:00

 Client ID:
 CPLMB02
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.041	J	mg/kg	0.575	0.032	10	07/19/14 14:00	07/27/14 10:46	EDA 3051A	1,6020A	PD
·	ND	<u> </u>	- 0 0	0.287	0.032	10		07/27/14 10:46		1,6020A	PD
Beryllium, Total			mg/kg							,	
Cadmium, Total	ND		mg/kg	0.115	0.010	10		07/27/14 10:46		1,6020A	PD
Chromium, Total	1.41		mg/kg	0.287	0.063	10	07/18/14 14:00	07/27/14 10:46	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.115	0.014	10	07/18/14 14:00	07/27/14 10:46	EPA 3051A	1,6020A	PD
Mercury, Total	0.164		mg/kg	0.006	0.004	1	07/09/14 14:00	07/15/14 12:16	EPA 7471B	1,7471B	AK
Nickel, Total	0.783		mg/kg	0.287	0.067	10	07/18/14 14:00	07/27/14 10:46	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-15
 Date Collected:
 06/19/14 09:30

 Client ID:
 LFLMB02
 Date Received:
 06/20/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.078	J	mg/kg	0.521	0.029	10	07/18/14 14:00	07/27/14 10:59	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.052	0.004	2	07/18/14 14:00	07/27/14 10:00	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.104	0.009	10	07/18/14 14:00	07/27/14 10:59	EPA 3051A	1,6020A	PD
Chromium, Total	3.56		mg/kg	0.260	0.057	10	07/18/14 14:00	07/27/14 10:59	EPA 3051A	1,6020A	PD
Lead, Total	0.037	J	mg/kg	0.104	0.013	10	07/18/14 14:00	07/27/14 10:59	EPA 3051A	1,6020A	PD
Mercury, Total	0.008		mg/kg	0.006	0.004	1	07/09/14 14:00	07/15/14 12:31	EPA 7471B	1,7471B	AK
Nickel, Total	2.53		mg/kg	0.260	0.061	10	07/18/14 14:00	07/27/14 10:59	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

Lab ID: L1413508-16 Date Collected: 06/18/14 00:00

Client ID: MFH01 Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Arsenic, Total	0.270	J	mg/kg	0.510	0.029	10	07/15/14 12:00	07/17/14 13:43	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.255	0.020	10	07/15/14 12:00	07/17/14 13:43	EPA 3051A	1,6020A	PD
Cadmium, Total	0.036	J	mg/kg	0.102	0.009	10	07/15/14 12:00	07/17/14 13:43	EPA 3051A	1,6020A	PD
Chromium, Total	0.385		mg/kg	0.255	0.056	10	07/15/14 12:00	07/17/14 13:43	EPA 3051A	1,6020A	PD
Lead, Total	0.10	J	mg/kg	0.102	0.012	10	07/15/14 12:00	07/17/14 13:43	EPA 3051A	1,6020A	PD
Mercury, Total	ND		mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 16:28	EPA 7471B	1,7471B	AK
Nickel, Total	0.718		mg/kg	0.255	0.060	10	07/15/14 12:00	07/17/14 13:43	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-17
 Date Collected:
 06/17/14 11:00

 Client ID:
 LFBG01-F
 Date Received:
 06/18/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Arsenic, Total	0.029	J	mg/kg	0.116	0.007	2	07/15/14 16:00	0 07/27/14 11:33	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.058	0.005	2	07/15/14 16:00	0 07/27/14 11:33	EPA 3051A	1,6020A	PD
Cadmium, Total	0.002	J	mg/kg	0.023	0.002	2	07/15/14 16:00	0 07/27/14 11:33	EPA 3051A	1,6020A	PD
Chromium, Total	5.85		mg/kg	0.058	0.013	2	07/15/14 16:00	0 07/27/14 11:33	EPA 3051A	1,6020A	PD
Lead, Total	0.006	J	mg/kg	0.023	0.003	2	07/15/14 16:00	0 07/27/14 11:33	EPA 3051A	1,6020A	PD
Mercury, Total	0.025		mg/kg	0.005	0.004	1	07/17/14 14:00	0 07/21/14 12:03	EPA 7471B	1,7471B	AK
Nickel, Total	2.94		mg/kg	0.058	0.014	2	07/15/14 16:00	0 07/27/14 11:33	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-18
 Date Collected:
 06/17/14 12:00

 Client ID:
 LFBG02-F
 Date Received:
 06/18/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.031	J	mg/kg	0.109	0.006	2	07/15/14 16:00	0 07/27/14 11:35	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.054	0.004	2	07/15/14 16:00	0 07/27/14 11:35	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.022	0.002	2	07/15/14 16:00	0 07/27/14 11:35	EPA 3051A	1,6020A	PD
Chromium, Total	1.30		mg/kg	0.054	0.012	2	07/15/14 16:00	0 07/27/14 11:35	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.022	0.003	2	07/15/14 16:00	0 07/27/14 11:35	EPA 3051A	1,6020A	PD
Mercury, Total	0.014		mg/kg	0.005	0.004	1	07/17/14 14:00	0 07/21/14 12:06	EPA 7471B	1,7471B	AK
Nickel, Total	0.449		mg/kg	0.054	0.013	2	07/15/14 16:00	0 07/27/14 11:35	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-19
 Date Collected:
 06/17/14 08:40

 Client ID:
 LFLMB01-F
 Date Received:
 06/18/14

Client ID: LFLMB01-F Date Received: 06/18/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.023	J	mg/kg	0.112	0.006	2	07/15/14 16:00	0 07/27/14 11:38	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.056	0.004	2	07/15/14 16:00	0 07/27/14 11:38	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.023	0.002	2	07/15/14 16:00	0 07/27/14 11:38	EPA 3051A	1,6020A	PD
Chromium, Total	1.77		mg/kg	0.056	0.012	2	07/15/14 16:00	0 07/27/14 11:38	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.023	0.003	2	07/15/14 16:00	0 07/27/14 11:38	EPA 3051A	1,6020A	PD
Mercury, Total	0.033		mg/kg	0.006	0.004	1	07/17/14 14:00	0 07/21/14 12:14	EPA 7471B	1,7471B	AK
Nickel, Total	0.799		mg/kg	0.056	0.013	2	07/15/14 16:00	0 07/27/14 11:38	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

Lab ID: Date Collected: 06/17/14 13:40

Client ID: YFBG01-F / YFBG02-F Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Arsenic, Total	0.063	J	mg/kg	0.108	0.006	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.054	0.004	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.022	0.002	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD
Chromium, Total	0.893		mg/kg	0.054	0.012	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD
Lead, Total	0.004	J	mg/kg	0.022	0.003	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD
Mercury, Total	0.044		mg/kg	0.006	0.004	1	07/17/14 14:00	07/21/14 12:17	EPA 7471B	1,7471B	AK
Nickel, Total	0.162		mg/kg	0.054	0.013	2	07/15/14 16:00	07/27/14 11:40	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-22
 Date Collected:
 06/18/14 00:00

 Client ID:
 CPBG01-F
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.037	J	mg/kg	0.505	0.028	10	07/15/14 16:00	0 07/27/14 11:16	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.051	0.004	2	07/15/14 16:00	0 07/27/14 11:41	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.020	0.002	2	07/15/14 16:00	0 07/27/14 11:41	EPA 3051A	1,6020A	PD
Chromium, Total	1.14		mg/kg	0.252	0.055	10	07/15/14 16:00	0 07/27/14 11:16	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.020	0.002	2	07/15/14 16:00	0 07/27/14 11:41	EPA 3051A	1,6020A	PD
Mercury, Total	0.048		mg/kg	0.006	0.004	1	07/17/14 14:00	0 07/21/14 12:21	EPA 7471B	1,7471B	AK
Nickel, Total	0.339		mg/kg	0.252	0.059	10	07/15/14 16:00	0 07/27/14 11:16	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-23
 Date Collected:
 06/18/14 00:00

 Client ID:
 CPBG02-F
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Arsenic, Total	0.039	J	mg/kg	0.521	0.029	10	07/15/14 16:00	07/27/14 11:17	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.052	0.004	2	07/15/14 16:00	07/27/14 11:42	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.021	0.002	2	07/15/14 16:00	07/27/14 11:42	EPA 3051A	1,6020A	PD
Chromium, Total	0.924		mg/kg	0.260	0.057	10	07/15/14 16:00	07/27/14 11:17	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.021	0.003	2	07/15/14 16:00	07/27/14 11:42	EPA 3051A	1,6020A	PD
Mercury, Total	0.040		mg/kg	0.005	0.004	1	07/17/14 14:00	07/21/14 12:24	EPA 7471B	1,7471B	AK
Nickel, Total	0.235	J	mg/kg	0.260	0.061	10	07/15/14 16:00	07/27/14 11:17	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-24
 Date Collected:
 06/18/14 00:00

 Client ID:
 CPLMB01-F
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.019	J	mg/kg	0.103	0.006	2	07/15/14 16:00	07/27/14 11:47	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.052	0.004	2	07/15/14 16:00	07/27/14 11:47	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.021	0.002	2	07/15/14 16:00	07/27/14 11:47	EPA 3051A	1,6020A	PD
Chromium, Total	1.73		mg/kg	0.052	0.011	2	07/15/14 16:00	07/27/14 11:47	EPA 3051A	1,6020A	PD
Lead, Total	0.003	J	mg/kg	0.021	0.003	2	07/15/14 16:00	07/27/14 11:47	EPA 3051A	1,6020A	PD
Mercury, Total	0.148		mg/kg	0.005	0.004	1	07/17/14 14:00	07/21/14 12:39	EPA 7471B	1,7471B	AK
Nickel, Total	0.631		mg/kg	0.052	0.012	2	07/15/14 16:00	07/27/14 11:47	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-25
 Date Collected:
 06/18/14 00:00

 Client ID:
 CPLMB02-F
 Date Received:
 06/19/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Arsenic, Total	0.024	J	mg/kg	0.106	0.006	2	07/15/14 16:00	0 07/27/14 11:48	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.053	0.004	2	07/15/14 16:00	0 07/27/14 11:48	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.021	0.002	2	07/15/14 16:00	0 07/27/14 11:48	EPA 3051A	1,6020A	PD
Chromium, Total	0.796		mg/kg	0.053	0.012	2	07/15/14 16:00	0 07/27/14 11:48	EPA 3051A	1,6020A	PD
Lead, Total	ND		mg/kg	0.021	0.003	2	07/15/14 16:00	0 07/27/14 11:48	EPA 3051A	1,6020A	PD
Mercury, Total	0.164		mg/kg	0.006	0.004	1	07/17/14 14:00	0 07/21/14 12:44	EPA 7471B	1,7471B	AK
Nickel, Total	0.025	J	mg/kg	0.053	0.012	2	07/15/14 16:00	0 07/27/14 11:48	EPA 3051A	1,6020A	PD



SAMPLE RESULTS

 Lab ID:
 L1413508-26
 Date Collected:
 06/19/14 09:30

 Client ID:
 LFLMB02-F
 Date Received:
 06/20/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Arsenic, Total	0.035	J	mg/kg	0.110	0.006	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.055	0.004	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.022	0.002	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD
Chromium, Total	0.946		mg/kg	0.055	0.012	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD
Lead, Total	0.003	J	mg/kg	0.022	0.003	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD
Mercury, Total	0.022		mg/kg	0.005	0.004	1	07/17/14 14:00	07/21/14 13:02	EPA 7471B	1,7471B	AK
Nickel, Total	0.616		mg/kg	0.055	0.013	2	07/15/14 16:00	07/27/14 11:56	EPA 3051A	1,6020A	PD



Serial_No:07281413:09

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413508

Report Date: 07/28/14

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytica Method	
Total Metals - Mansfie	eld Lab for sample(s):	04-06,09-	·15 Bate	ch: WG	704425-1				
Mercury, Total	ND	mg/kg	0.005	0.004	1	07/09/14 14:00	07/15/14 11:33	1,7471B	AK

Prep Information

Digestion Method: EPA 7471B

Parameter	Result 0	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytica Method	l Analyst
Total Metals - Mansfiel	d Lab for sa	ample(s):	01-03,07-	08,16	Batch: V	VG705785-	-1			
Arsenic, Total	0.024	J	mg/kg	0.100	0.006	2	07/15/14 12:00	07/17/14 12:16	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.050	0.004	2	07/15/14 12:00	07/17/14 12:16	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.020	0.002	2	07/15/14 12:00	07/17/14 12:16	1,6020A	PD
Chromium, Total	ND		mg/kg	0.050	0.011	2	07/15/14 12:00	07/17/14 12:16	1,6020A	PD
Lead, Total	ND		mg/kg	0.020	0.002	2	07/15/14 12:00	07/17/14 12:16	1,6020A	PD
Nickel, Total	ND		mg/kg	0.050	0.012	2	07/15/14 12:00	07/17/14 12:16	1,6020A	PD

Prep Information

Digestion Method: EPA 3051A

Parameter	Result C	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield	Lab for sa	ample(s):	17-20,22-	26 Bato	ch: WG	705829-1				
Arsenic, Total	ND		mg/kg	0.100	0.006	2	07/15/14 16:00	07/27/14 11:00	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.050	0.004	2	07/15/14 16:00	07/27/14 11:00	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.020	0.002	2	07/15/14 16:00	07/27/14 11:00	1,6020A	PD
Chromium, Total	0.029	J	mg/kg	0.050	0.011	2	07/15/14 16:00	07/27/14 11:00	1,6020A	PD
Lead, Total	ND		mg/kg	0.020	0.002	2	07/15/14 16:00	07/27/14 11:00	1,6020A	PD
Nickel, Total	0.012	J	mg/kg	0.050	0.012	2	07/15/14 16:00	07/27/14 11:00	1,6020A	PD

Prep Information

Digestion Method: EPA 3051A



Serial_No:07281413:09

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNT

Lab Number:

L1413508

Report Date:

07/28/14

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared		Analytical Method	
Total Metals - Mansfi	eld Lab for sample(s):	01-03,07-	-08,16	Batch: \	NG706579-	1			
Mercury, Total	ND	mg/kg	0.005	0.004	1	07/17/14 14:00	07/18/14 15:47	1,7471B	AK

Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytica Method	
Total Metals - Man	sfield Lab for sample(s):	17-20,22	-26 Bat	ch: WG	706581-1				
Mercury, Total	ND	mg/kg	0.005	0.004	1	07/17/14 14:00	07/21/14 11:56	5 1,7471B	AK

Prep Information

Digestion Method: EPA 7471B

Parameter	Result (Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield	d Lab for sa	ample(s):	04-06,09-	15 Bato	ch: WG	706876-1				
Arsenic, Total	0.014	J	mg/kg	0.100	0.006	2	07/18/14 14:00	07/27/14 09:40	1,6020A	PD
Beryllium, Total	ND		mg/kg	0.050	0.004	2	07/18/14 14:00	07/27/14 09:40	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.020	0.002	2	07/18/14 14:00	07/27/14 09:40	1,6020A	PD
Chromium, Total	0.056		mg/kg	0.050	0.011	2	07/18/14 14:00	07/27/14 09:40	1,6020A	PD
Lead, Total	ND		mg/kg	0.020	0.002	2	07/18/14 14:00	07/27/14 09:40	1,6020A	PD
Nickel, Total	ND		mg/kg	0.050	0.012	2	07/18/14 14:00	07/27/14 09:40	1,6020A	PD

Prep Information

Digestion Method: EPA 3051A



Lab Control Sample Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number:

L1413508

Report Date:

arameter	LCS %Recovery	LCSD Qual %Recovery	%Recovery / Qual Limits	/ RPD	Qual RPD Limits
otal Metals - Mansfield Lab Associated sampl	e(s): 04-06,09-15	Batch: WG704425-2	SRM Lot Number: HPHGAA		
Mercury, Total	118	-	80-120	-	20
otal Metals - Mansfield Lab Associated sampl	e(s): 01-03,07-08,	16 Batch: WG705785-2	2 SRM Lot Number: A2ME	TSPIKE	
Arsenic, Total	86	-	75-125	-	20
Beryllium, Total	83	-	75-125	-	20
Cadmium, Total	82	-	75-125	-	20
Chromium, Total	90	-	75-125	-	20
Lead, Total	89	-	75-125	-	20
Nickel, Total	87	-	75-125	-	20
otal Metals - Mansfield Lab Associated sampl	e(s): 17-20,22-26	Batch: WG705829-2	SRM Lot Number: A2METSR	PIKE	
Arsenic, Total	89	-	75-125	-	20
Beryllium, Total	90	-	75-125	-	20
Cadmium, Total	88	-	75-125	-	20
Chromium, Total	117	-	75-125	-	20
Lead, Total	107	-	75-125	-	20
Nickel, Total	94	-	75-125	-	20
otal Metals - Mansfield Lab Associated sampl	e(s): 01-03,07-08,	16 Batch: WG706579-2	2 SRM Lot Number: HPHG	AA	
Mercury, Total	110	-	80-120	-	20



Lab Control Sample Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number: L1413508

Report Date: 07/28/14

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab	Associated sample(s): 17-20,22-26	6 Batch: WG706581-2	SRM Lot Number: HPHGAA		
Mercury, Total	113	-	80-120	-	20
Total Metals - Mansfield Lab	Associated sample(s): 04-06,09-1	5 Batch: WG706876-2	SRM Lot Number: A2METSPIKE		
Arsenic, Total	94	-	75-125	-	20
Beryllium, Total	92	-	75-125	-	20
Cadmium, Total	95	-	75-125	-	20
Chromium, Total	111	-	75-125	-	20
Lead, Total	115	-	75-125	-	20
Nickel, Total	92	-	75-125	-	20

Matrix Spike Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number:

L1413508

Report Date:

arameter	Native Sample	MS Added	MS Found %	MS %Recovery	MSD Qual Found	MSD %Recover	Recovery y Qual Limits	RPD	RPD Qual Limits
otal Metals - Mansfield CPLMB02	Lab Associated sam	ple(s): 04-0	06,09-15 QC	Batch ID: W	/G704425-5 WG	704425-6 QC	Sample: L1413508-	14 C	lient ID:
Mercury, Total	0.164	0.149	0.265	68	Q 0.241	54	Q 80-120	9	20
otal Metals - Mansfield	Lab Associated sam	ple(s): 01-0	3,07-08,16	QC Batch ID): WG705785-4 \	NG705785-5	QC Sample: L14135	08-08	Client ID: JFH02
Arsenic, Total	0.044J	109	113	104	112	104	75-125	1	20
Beryllium, Total	0.028J	54.3	56.9	105	53.1	99	75-125	7	20
Cadmium, Total	0.058J	54.3	55.7	102	53.8	100	75-125	3	20
Chromium, Total	0.327	109	106	97	105	97	75-125	1	20
Lead, Total	0.062J	109	112	103	106	98	75-125	6	20
Nickel, Total	0.640	109	108	99	107	99	75-125	1	20
otal Metals - Mansfield PLMB02-F	Lab Associated sam	ple(s): 17-2	20,22-26 QC	Batch ID: W	/G705829-5 WG	705829-6 QC	Sample: L1413508-	25 C	lient ID:
Arsenic, Total	0.024J	108	104	97	115	101	75-125	10	20
Beryllium, Total	ND	53.8	46.6	87	47.6	84	75-125	2	20
Cadmium, Total	ND	53.8	45.1	84	51.7	91	75-125	14	20
Chromium, Total	0.796	108	126	116	131	114	75-125	4	20
Lead, Total	ND	108	111	103	118	104	75-125	6	20
Nickel, Total	0.025J	108	98.5	92	108	95	75-125	9	20
otal Metals - Mansfield	Lab Associated sam	ple(s): 01-0	03,07-08,16	QC Batch ID): WG706579-4 \	NG706579-5	QC Sample: L14135	08-08	Client ID: JFH02
Mercury, Total	ND	0.134	0.117	87	0.124	92	80-120	6	20



Matrix Spike Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number:

L1413508

Report Date:

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab A CPLMB02-F	Associated sam	ple(s): 17-2	20,22-26 C	QC Batch ID: W	G706581-5 WG70)6581-6 QC S	Sample: L1413508-	25 CI	ient ID:
Mercury, Total	0.164	0.14	0.236	51	Q 0.207	32	Q 80-120	13	20
Total Metals - Mansfield Lab A CPLMB02 Arsenic, Total	Associated sam	ple(s): 04-0	06,09-15 C	QC Batch ID: W	G706876-5 WG70	06876-6 QC S	Sample: L1413508-	14 CI	ient ID:
Beryllium, Total	ND	52.1	48.4	93	53.7	96	75-125	10	20
Cadmium, Total	ND	52.1	47.7	92	55.2	98	75-125	15	20
Chromium, Total	1.41	104	103	98	113	99	75-125	9	20
Lead, Total	ND	104	101	97	113	100	75-125	11	20
Nickel, Total	0.783	104	106	101	116	102	75-125	9	20

Lab Duplicate Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY CO

Lab Number:

L1413508

Report Date:

Parameter	Native Sample	Duplicate Samp	ole Units	RPD	Qual	RPD Limits
otal Metals - Mansfield Lab Associated sample(s):	04-06,09-15 QC Batch ID	WG704425-3 Q	C Sample: L141350	8-05 Clie	ent ID: LFE	3G02
Mercury, Total	0.005J	0.008	mg/kg	NC		20
otal Metals - Mansfield Lab Associated sample(s):	04-06,09-15 QC Batch ID	WG704425-4 Q	C Sample: L141350	8-14 Clie	ent ID: CP	LMB02
Mercury, Total	0.164	0.163	mg/kg	1		20
otal Metals - Mansfield Lab Associated sample(s):	01-03,07-08,16 QC Batch	ID: WG705785-3	QC Sample: L1413	3508-03	Client ID:	LFH03
Arsenic, Total	0.031J	0.034J	mg/kg	NC		20
Beryllium, Total	ND	ND	mg/kg	NC		20
Cadmium, Total	0.028J	0.023J	mg/kg	NC		20
Chromium, Total	0.487	0.569	mg/kg	16		20
Lead, Total	0.051J	0.056J	mg/kg	NC		20
Nickel, Total	0.160J	0.176J	mg/kg	NC		20
Total Metals - Mansfield Lab Associated sample(s):	17-20,22-26 QC Batch ID	WG705829-3 Q	C Sample: L141350	8-18 Clie	ent ID: LFE	3G02-F
Arsenic, Total	0.031J	0.020J	mg/kg	NC		20
Beryllium, Total	ND	ND	mg/kg	NC		20
Cadmium, Total	ND	ND	mg/kg	NC		20
Chromium, Total	1.30	1.24	mg/kg	5		20
Lead, Total	ND	ND	mg/kg	NC		20
Nickel, Total	0.449	0.450	mg/kg	0		20



Lab Duplicate Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY CO

Lab Number:

L1413508

Report Date: 07/28/14

arameter		Native S	Sample	Duplicate San	nple Units	RPD	RPD Limits
otal Metals - Mansfield Lab	Associated sample(s):	17-20,22-26	QC Batch ID:	WG705829-4	QC Sample: L1413	3508-25 Client	ID: CPLMB02-F
Arsenic, Total		0.02	4J	0.015J	mg/kg	NC	20
Beryllium, Total		NE)	ND	mg/kg	NC	20
Cadmium, Total		NE)	ND	mg/kg	NC	20
Chromium, Total		0.79	96	0.700	mg/kg	13	20
Lead, Total		NE)	0.004J	mg/kg	NC	20
Nickel, Total		0.02	5J	0.037J	mg/kg	NC	20
otal Metals - Mansfield Lab	Associated sample(s):	01-03,07-08,1	6 QC Batch	ID: WG706579-3	3 QC Sample: L1	413508-03 Cli	ent ID: LFH03
Mercury, Total		NE)	ND	mg/kg	NC	20
otal Metals - Mansfield Lab	Associated sample(s):	17-20,22-26	QC Batch ID:	WG706581-3	QC Sample: L1413	3508-18 Client	ID: LFBG02-F
Mercury, Total		0.0	14	0.015	mg/kg	10	20
otal Metals - Mansfield Lab	Associated sample(s):	17-20,22-26	QC Batch ID:	WG706581-4	QC Sample: L1413	3508-25 Client	ID: CPLMB02-F
Mercury, Total		0.16	64	0.154	mg/kg	6	20
otal Metals - Mansfield Lab	Associated sample(s):	04-06,09-15	QC Batch ID:	WG706876-3	QC Sample: L1413	3508-05 Client	ID: LFBG02
Arsenic, Total		0.10	09	0.079J	mg/kg	NC	20
Beryllium, Total		0.00	6J	0.007J	mg/kg	NC	20
Chromium, Total		1.0	8	0.984	mg/kg	9	20
Nickel, Total		0.83	38	0.969	mg/kg	14	20



Lab Duplicate Analysis Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY CO

Lab Number:

L1413508

Report Date:

Parameter	Native Sample	Duplicate Sar	mple Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s)	: 04-06,09-15 QC Batch ID:	WG706876-3	QC Sample: L141350	08-05 Clier	nt ID: LFBG02
Cadmium, Total	ND	ND	mg/kg	NC	20
Lead, Total	0.088J	0.112	mg/kg	NC	20
Total Metals - Mansfield Lab Associated sample(s)	: 04-06,09-15 QC Batch ID:	WG706876-4	QC Sample: L141350)8-14 Clier	nt ID: CPLMB02
Arsenic, Total	0.041J	0.033J	mg/kg	NC	20
Beryllium, Total	ND	ND	mg/kg	NC	20
Cadmium, Total	ND	ND	mg/kg	NC	20
Chromium, Total	1.41	1.15	mg/kg	20	20
Lead, Total	ND	ND	mg/kg	NC	20
Nickel, Total	0.783	0.747	mg/kg	5	20

INORGANICS & MISCELLANEOUS



Serial_No:07281413:09

06/17/14 08:05

Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-01 Date Collected:

Client ID: LFH01 Date Received: 06/18/14 Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab									
Percent Lipids	0.801		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Serial_No:07281413:09

06/17/14 08:25

Date Collected:

Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Report Date: **Project Number:** MONTGOMERY COUNT' 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-02

LFH02 Client ID:

Date Received: 06/18/14 Sample Location: DICKERSON, MD Not Specified Field Prep:

Matrix: Tissue

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab									
Percent Lipids	0.857		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-04

Client ID: LFBG01

Sample Location: DICKERSON, MD

Matrix: Tissue

Date Collected: 06/17/14 11:00

Date Received: 06/18/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab									
Percent Lipids	3.54		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



06/17/14 12:00

Date Collected:

Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-05

Client ID: LFBG02 Date Received: 06/18/14 Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Mansfield Lab									
Percent Lipids	2.15		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-06 Date Collected: 06/17/14 08:40

Client ID: LFLMB01 Date Received: 06/18/14 Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab									
Percent Lipids	2.90		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-07 Date Collected: 06/17/14 13:20

Client ID: JFH01 Date Received: 06/18/14

Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	- Mansfield Lab									
Percent Lipids	2.61		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-08

Client ID: JFH02

Sample Location: DICKERSON, MD

Matrix: Tissue

Date Collected: 06/17/14 13:25

Date Received: 06/18/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - N	Mansfield Lab									
Percent Lipids	2.74		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



06/17/14 13:40

Not Specified

06/19/14

Date Collected:

Date Received:

Field Prep:

Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-09

Client ID: YFBG01

Sample Location: DICKERSON, MD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab									
Percent Lipids	1.10		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



06/17/14 13:55

Date Collected:

Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Report Date: Project Number: 07/28/14 MONTGOMERY COUNT'

SAMPLE RESULTS

Lab ID: L1413508-10

YFBG02 Client ID:

Date Received: 06/19/14 Sample Location: DICKERSON, MD Not Specified Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Mansfield Lab									
Percent Lipids	0.823		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-11 Date Collected: 06/18/14 00:00

Client ID: CPBG01 Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Spec

Sample Location: DICKERSON, MD Field Prep: Not Specified Matrix: Tissue

Analytical Method **Dilution** Date Date Factor Prepared Result Qualifier Units Analyzed RL MDL **Parameter Analyst** General Chemistry - Mansfield Lab Percent Lipids % 0.100 NA 1 07/23/14 09:00 111,- AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-12 Date Collected: 06/18/14 00:00

Client ID: CPBG02 Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab									
Percent Lipids	2.31		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-13 Date Collected: 06/18/14 00:00

Client ID: CPLMB01 Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Analytical Method **Dilution** Date Date Factor Prepared Result Qualifier Units Analyzed RL MDL **Parameter Analyst** General Chemistry - Mansfield Lab Percent Lipids 3.29 % 0.100 NA 1 07/23/14 09:00 111,- AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-14 Date Collected: 06/18/14 00:00

Client ID: CPLMB02 Date Received: 06/19/14 Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	- Mansfield Lab									
Percent Lipids	3.03		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-15 Date Collected: 06/19/14 09:30

Client ID: LFLMB02 Date Received: 06/20/14 Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Analytical Method **Dilution** Date Date Factor Prepared Result Qualifier Units Analyzed RL MDL **Parameter Analyst** General Chemistry - Mansfield Lab Percent Lipids 2.06 % 0.100 NA 1 07/23/14 09:00 111,- AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-16

Client ID: MFH01

Sample Location: DICKERSON, MD

Matrix: Tissue

Date Collected: 06/18/14 00:00

Date Received: 06/19/14

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - M	ansfield Lab									
Percent Lipids	1.61		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-17 Date Collected: 06/17/14 11:00

Client ID: LFBG01-F Date Received: 06/18/14

Client ID: LFBG01-F Date Received: 06/18/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Matrix: Tissue

Analytical Method **Dilution** Date Date Factor Prepared Result Qualifier Units Analyzed RL MDL **Parameter Analyst** General Chemistry - Mansfield Lab Percent Lipids 0.744 % 0.100 NA 1 07/23/14 09:00 111,- AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

 Lab ID:
 L1413508-18
 Date Collected:
 06/17/14 12:00

 Client ID:
 LFBG02-F
 Date Received:
 06/18/14

Client ID: LFBG02-F Date Received: 06/18/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - N	Mansfield Lab									
Percent Lipids	0.245		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-19 Date Collected: 06/17/14 08:40

Client ID: LFLMB01-F Date Received: 06/18/14 Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Mansfield Lab									
Percent Lipids	0.289		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-20 Date Collected: 06/17/14 13:40

Client ID: YFBG01-F / YFBG02-F Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Mansfield Lab									
Percent Lipids	0.293		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-22 Date Collected: 06/18/14 00:00

Client ID: CPBG01-F Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab									
Percent Lipids	0.688		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

 Lab ID:
 L1413508-23
 Date Collected:
 06/18/14 00:00

 Client ID:
 CPBG02-F
 Date Received:
 06/19/14

Client ID: CPBG02-F Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab									
Percent Lipids	0.406		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-24 Date Collected: 06/18/14 00:00

Client ID: CPLMB01-F Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Mansfield Lab									
Percent Lipids	0.773		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-25 Date Collected: 06/18/14 00:00

Client ID: CPLMB02-F Date Received: 06/19/14
Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Mansfield Lab									
Percent Lipids	0.738		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name: MONTGOMERY COUNTY RRF Lab Number: L1413508

Project Number: MONTGOMERY COUNT' Report Date: 07/28/14

SAMPLE RESULTS

Lab ID: L1413508-26 Date Collected: 06/19/14 09:30

Client ID: LFLMB02-F Date Received: 06/20/14 Sample Location: DICKERSON, MD Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Mansfield Lab									
Percent Lipids	0.429		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK



Project Name:MONTGOMERY COUNTY RRFLab Number:L1413508

Project Number: MONTGOMERY COUNT Report Date: 07/28/14

Method Blank Analysis Batch Quality Control

Parameter	Result Qu	alifier (Jnits	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - M	ansfield Lab for s	ample(s)	: 01-02	,07-08,16	Batch	: WG7086	19-1			
Percent Lipids	ND		%	0.100	NA	1	-	07/23/14 09:00	111,-	AK
General Chemistry - M	ansfield Lab for s	ample(s)	: 04-06	,09-15,17	-20,22-	26 Batch:	WG708749-	1		
Percent Lipids	ND		%	0.100	NA	1	_	07/23/14 09:00	111,-	AK



Lab Duplicate Analysis
Batch Quality Control

Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY CO

Lab Number:

L1413508

Report Date:

07/28/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual RPD Limits	
General Chemistry - Mansfield Lab Associated sa CPLMB01	mple(s): 04-06,09-15,17-20,22-	26 QC Batch ID: W	G708749-2	QC Sample:	L1413508-13 Client ID:	
Percent Lipids	3.29	3.57	%	8	20	



Project Name:MONTGOMERY COUNTY RRFLab Number: L1413508Project Number:MONTGOMERY COUNTYReport Date: 07/28/14

Sample Receipt and Container Information

Were project specific reporting limits specified?

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler

A Absent
C Absent
B Absent

Container Info	ormation		Temp				
Container ID	Container Type	Cooler	рН	deg C	Pres	Seal	Analysis(*)
L1413508-01A	Bag	Α	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-02A	Bag	Α	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-03A	Bag	Α	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-CR-6020T(180),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-04A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-04B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-05A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)



Project Name:MONTGOMERY COUNTY RRFLab Number:L1413508Project Number:MONTGOMERY COUNTYReport Date:07/28/14

Container Info	ormation			Temp			
Container ID	Container Type	Cooler	рΗ	deg C	Pres	Seal	Analysis(*)
L1413508-05B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-06A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-06B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-07A	Bag	А	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-08A	Bag	Α	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-08B	Bag	Α	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-09A	Bag	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-09B	Amber 500ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)



Project Name:MONTGOMERY COUNTY RRFLab Number: L1413508Project Number:MONTGOMERY COUNTYReport Date: 07/28/14

Container Information Temp											
Container ID	Container Type	Cooler	рΗ	deg C	Pres	Seal	Analysis(*)				
L1413508-10A	Bag	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-10B	Amber 500ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-11A	Bag	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-11B	Amber 500ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-12A	Bag	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-12B	Amber 500ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-13A	Bag	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-13B	Amber 500ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				



Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number: L1413508 Report Date: 07/28/14

Container Information Temp											
Container ID	Container Type	Cooler	рΗ	deg C	Pres	Seal	Analysis(*)				
L1413508-14A	Bag	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-14B	Amber 500ml unpreserved	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-15A	Bag	С	N/A	4.9	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-15B	Amber 500ml unpreserved	С	N/A	4.9	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-16A	Bag	В	N/A	5.2	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-17A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-17B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				
L1413508-18A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)				



Project Name:MONTGOMERY COUNTY RRFLab Number:L1413508Project Number:MONTGOMERY COUNTYReport Date:07/28/14

Container Info	ormation			Temp			
Container ID	Container Type	Cooler	рН	deg C	Pres	Seal	Analysis(*)
L1413508-18B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-19A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-19B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-20A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-20B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-21A	Bag	Α	N/A	4.6	Υ	Absent	CANCELLED()
L1413508-22A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-22B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-23A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)



Project Name: MONTGOMERY COUNTY RRF

Project Number: MONTGOMERY COUNTY

Lab Number: L1413508 **Report Date:** 07/28/14

Container Info	ormation			Temp			
Container ID	Container Type	Cooler	рН	deg C	Pres	Seal	Analysis(*)
L1413508-23B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-24A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-24B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-25A	Bag	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-MS/MSD(),A2-HG-7471T(28)
L1413508-25B	Amber 500ml unpreserved	A	N/A	4.6	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-MS/MSD(),A2-HG-7471T(28)
L1413508-26A	Bag	С	N/A	4.9	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)
L1413508-26B	Amber 500ml unpreserved	С	N/A	4.9	Y	Absent	A2-PB-6020T(180),A2-NI-6020T(180),A2-LIPIDS(7),A2-CR-6020T(180),A2-TISSUE_PREP(),A2-AS-6020T(180),A2-BE-6020T(180),A2-CD-6020T(180),A2-HG-7471T(28)



Project Name:MONTGOMERY COUNTY RRFLab Number:L1413508Project Number:MONTGOMERY COUNTYReport Date:07/28/14

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes
or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

 Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI - Not Ignitable.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

SRM

- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A Spectra identified as "Aldol Condensation Product".
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations
 of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

Report Format: DU Report with 'J' Qualifiers



Project Name:MONTGOMERY COUNTY RRFLab Number:L1413508Project Number:MONTGOMERY COUNTYReport Date:07/28/14

Data Qualifiers

- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- The lower value for the two columns has been reported due to obvious interference.
- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- ${f P}$ The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- RE Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers



Project Name:MONTGOMERY COUNTY RRFLab Number:L1413508Project Number:MONTGOMERY COUNTYReport Date:07/28/14

REFERENCES

Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

NOAA Technical Memorandum NOS ORCA 130: Sampling and Analytical Methods of the National Status and Trends Program Mussel Watch Project: 1993-196 Update. March 1998.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

Last revised April 15, 2014

The following analytes are not included in our NELAP Scope of Accreditation:

Westborough Facility

EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

EPA 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate,

Azobenzene.

EPA 8330A/B: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 625: 4-Chloroaniline, 4-Methylphenol.

SM4500: Soil: Total Phosphorus, TKN, NO2, NO3.

EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility

EPA 8270D: Biphenyl. EPA 2540D: TSS

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene,

Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water

EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1**: Mercury;

EPA 300.0: Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C,

SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.

Non-Potable Water

EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;

EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mq,Mn,Mo,Ni,K,Se,Aq,Na,Sr,Ti,Tl,V,Zn;

EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC,

SM426C, SM4500NH3-BH, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, SM4500NO3-F,

EPA 353.2: Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,

SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,

Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

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		1	pt /)te	• • • • • • • • • • • • • • • • • • • •	6-20	14/1	238		(A)	ue	<u> </u>	767	<u>کرار</u>	ļ. —	يكا	38	resolved. All samples
FORM NO; 101-09(LNJ) (rov. 5-JAN-12)		<u> </u> \	1 Um		(d	wild.	-140	نار	مرا	W	sl	4			6/lc	MF	14:00	Alpha's Payment Terms.
						L	· · - <u>- · · · ·</u>		L						L			



an affiliate of The GEL Group INC

www.capefearanalytical.com

July 10, 2014

Ms. Elizabeth Denly TRC Companies, Incorporated Wannalancit Mills 650 Suffolk Street Suite 200 Lowell, Massachusetts 01854

Re: Montgomery County RRF DXN Work Order: 6260

Dear Ms. Denly:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on June 19, 2014. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421 Ext. 4485.

Cyrole Larkins

Cynthia Larkins Project Manager

Enclosures

Page 1 of 64 problem solved

Page: 0f 2.	Cape Fear Analytical, LLC	al, LLC	Cape Fear Analytical, LLC 3306 Kitty Hawk Rd. Suite 120
COC Number (0).	Chain of Custody and Analytical Request	lytical Request	Wilmington, NC 28405 Phone: (910) 795-0421
PO Number:	0070		
Client Name: TRC Environmental	Phone #:	Sample Analysis Requested ⁽⁵⁾ (Fil	(Fill in the number of containers for each test)
Project/Site Name: Mont 9 omic y Counts	RRF Fax#:		< Preservative Type (6)
so suffell st.	E 7 31	יייג	
4/AW	0: Liz De. (y	7.4/ 2.2y .	Comments Note: extra sample is
🖺	C Code Field Sample num (3) Filtered (3) Matrix (4)	**/X*!Q	required for sample specific QC
VFSWOI	WS N N Oppl 41-71-90	2	
YF SWOZ	WS N N 06-17-14 1500 N N SW	2	
CP Swoi	WS N N 0011 11-81-90	2	
CP SW OZ	W N N N 0511 11-90	2	
VF SDOI	08 N >44 1445		
FF SD 02	06-17-14 1505 N SD		
CPSD01	08-18-14 1115 N SD		
CPSDOZ	QS N SHII 41-81-90		
LFHOI	0805 N		
70H37	106-17-14 0825 N Hay		
TAT Requested: Normal: X Rush: Specify:	(Subject to Surcharge) Fax Results: (Res / No	Circle Deliverable: C of A / QC Summary /	mmary / Level 1 / Level 2 / Level 3 / Level 4
Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards			Sample Collec
			Eastern Pacific Central Other
			Mountain
		ddiyS əldws	Sample Shipping and Delivery Details
Relinquished By (Signed) Date Time	Received by (signed) Date Time	CFA PM:	
Cat () Hew 6-18-14 1500	1 FedEx 6-18-14 1500	Method of Shipment: Fod Ex	Date Shipped: 6-18-19
really 194014 1005	Ankins 1974014 1005	Airbill #: 8641 9325 7626	5 0215
	3	Airbill#;	and delineates and the second
1.) Chain of Custody Number = Client Determined			For Lab Receiving Use Only
OC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate,	2.) QC Codes: N = Normal Sample, TB = Trip Biank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite	sate Sample, $G = Grab$, $C = Composite$	· -

Custody Seal

4) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, WW=Waste, WL/=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Soild Waste, O-Oil, F=Filter, P-Wipc, U=Urine, F=Fecal, N=Nasal

6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Suffuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave fiteld blank

YELLOW = FILE

5.) Sample Analysis Requested: Analytical method requested (1.e.8290B, 1668B) and number of containers provided for each (i.e.8290B - 3, 1668B - 1).

WHITE = LABORATORY

3.) Field Filtered: For liquid matrices, indicate with a. Y - for yes the sample was field filtered or- N - for sample was not field filtered.

PINK = CLIENT

Page: 2 of 2	Long	Joan A not			Cape Fear Analytical, LLC	al, LLC
Project #:		cal Allal	Cape real Allalytical, LLC		3306 Kitty Hawk Rd. Suite 120	d. Suite 120
CFA Quote #:	Chain of Cust	ody and	Analytical Reque	st	Wilmington, NC 28405	8405
COC Number (¹⁾ . PO Number:	CFA Work Order Number:	200	(62100 °		Phone: (910) 795-0421	421
Client Name: TR C Environmental	Phone #:		Sample Analysis	s Requested ⁽⁵⁾ (Fill	in the number of c	Sample Analysis Requested (5) (Fill in the number of containers for each test)
Project/Site Name: Mant gom ery County	, RRF Fax#:	-	iners			< Preservative Type (6)
50 Sufferly St.,	Lowell, MA					
/mm	7.7		עני.			Comments Note: extra sample is
Sample ID * For composites - indicate start and stop date/time	*Time *Date Collected Collected QC Code (Military) (3) (hmm-dd-yy) (bhmm)	de Field Sample Filtered (3) Matrix (4)	mun letoT - E13\ z^ixoiQ			required for sample specific QC
LF HO3	06-17-14 0 805 FD	Hay				
SFHOI	06-17-14 1320 N	Hay				
JFH 02	N 325 W-17-10	Hay	-			
MFHOI	N 0080 H-81-90	May	-			
		-				
	1000					
The contract of the contract o						
		,				
TAT Requested: Normal: X Rush: Specify:	(Subject to Surcharge) Fax Results;	Yes.	(No) Circle Deliverabl	Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3	mary / Level 1 /	Level 2 / Level 3 / Level 4
Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards	o these samples? If so, please lii	it the hazards			Sample	
					Eastern	
					Mountain	tain Outer
	ody Signatures			Sample Shippir	Sample Shipping and Delivery Details	etails
Relinquished By (Signed) Date Time	Received by (signed) Date	Time	CFA PM:			
1 Last 1. Han 6-18-14 1500	1 Fed Ex 6-18-14	1560	Method of Shipment:	Finter	Date Shipped: 6	11-81-9
2 Fed Ex 19JUNIY 1005	2 Carde Latins	ahins 197414	1605 Airbill #: 86 41 9	9325 7626		te delen en en en en de en de elle delen del
3	3 0		Airbill #;			
1.) Chain of Custody Number = Client Determined 2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Trield Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite	B = Equipment Blank, MS = Matrix Spike Sam	ple, MSD = Matrix Spil	ke Dupficate Sample, $G = Grab$, $C = Comp$	osite		For Lab Receiving Use Only

6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank 5.) Sample Analysis Requested: Analytical method requested (i.e.8290B, 1668B) and number of containers provided for each (i.e.8290B - 3, 1668B - 1). WHITE = LABORATORY

3.) Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or- N - for sample was not field filtered.

PINK = CLIENT

4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Water, WE-Water, ML=Mise Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Soild Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal

YELLOW = FILE

Custody Seal Intac YES

SAMPLE RECEIPT CHECKLIST

Cope Fear Analytical 6260 Work Order: Client: Ex Date/Time Received: Shipping Company: . Yes NA No* DOE Site Sample Packages Suspected Hazard Information Yes NA No Screened < 0.5 mR/hr? Shipped as BOT Hazardous? Samples < 2x background? Samples identified as Foreign Soil? * Notify RSO of any responses in this column immediately. No Air Sample Receipt Specifics Yes NΑ Air Witness: Air sample in shipment? Comments/Qualifiers (required for Non-Conforming Items) NA No Sample Receipt Criteria Yes seals broken damaged container leaking container other(describe) Shipping containers received intact and sealed? Chain of Custody documents included with shipment? ice bags) blue ice dry ice none other (describe) Samples requiring cold preservation within 0-6°C? Aqueous samples found to have visible solids? sample IDs, containers affected and pH observed: PH=7 on all water samples Samples requiring chemical preservation at proper pH? Samples requiring preservation have no residual chlorine? If preservative added, Lo1#: ample IDs. tests affected 7 | Samples received within holding time? Sample IDs, containers affected: Sample IDs on COC match IDs on 8 containers? Collection times not noted on CPSWOI and CPSWOI lakels (4 containers) CPSDOI or CPSDO2 Date & time of COC match date & time 9 on containers? Number of containers received match 10 number indicated on COC? COC form is properly signed in relinquished/received sections? YFSWOI and YFSWOZ - On sample lakels of each Second containers the "I" and "2" of the sample ID's have been written over with a "2" and "I". The Collection dates are incorrect: YFSWO 12 has 1500 and Comments: YFSNO 2 has 1440. YFSDOI has collection time on label of 1440, cochas 1445. YFSDOZ has collection time on label of 1500, COC has 1505 Checklist performed by: Initials:

Page 4 of 64

```
Subject: RE: CFA receipt Mont. Co. RRF
From: "Heim, Scott" < SHeim@trcsolutions.com>
Date: 6/20/2014 9:41 AM
To: "Denly, Elizabeth" <edenly@trcsolutions.com>, Cynde Larkins <cynde.larkins@cfanalytical.com>
CC: Valerie Davis <Valerie.Davis@cfanalytical.com>, Chris <chris.cornwell@cfanalytical.com>,
"Vetrano, Karen" < KVetrano@trcsolutions.com>
Hi Cynde,
        Answers to your issues are as follows:

    Collection times on the COC are correct for those samples.

        2. Collection time of 1445 on COC is correct.
        Collection time of 1505 on COC is correct.
        4. Sample is YFSW01.
        5. Sample is YFSW02.
Let me know if you have any additional questions. Thanks.
Scott Heim
Senior Ecologist
Wannalancit Mills, 650 Suffolk Street, Lowell, MA 01854
T: 978.656.3583 | F: 978.453.1995 | C: 508.320.2678
Follow us on LinkedIn or Twitter | www.trcsolutions.com
----Original Message-----
From: Denly, Elizabeth
Sent: Thursday, June 19, 2014 2:44 PM
To: Cynde Larkins
Cc: Valerie Davis; Chris; Heim, Scott; Vetrano, Karen
Subject: RE: CFA receipt Mont. Co. RRF
Thanks Cynde. I am cc'ing Scott Heim and he will resolve these issues/discrepancies.
Elizabeth Denly
Senior QA Chemist
RMD Practice Quality Coordinator
650 Suffolk Street, Lowell, MA 01854
T: 978.656.3577 | F: 978.453.1995 | C: 978.328.2551 LinkedIn | Twitter | Blog | Flickr
www.trcsolutions.com
----Original Message-----
From: Cynde Larkins [mailto:cynde.larkins@cfanalytical.com]
Sent: Thursday, June 19, 2014 2:40 PM
To: Denly, Elizabeth
Cc: Valerie Davis; Chris
Subject: CFA receipt Mont. Co. RRF
Good afternoon,
```

Page 5 of 64

CFA received some samples today for the Montgomery County RRF project and there are a few issues that I need to bring to your attention.

1. There are no collection times on the following samples:

CPSW01

CPSW02

CPSD01

CPSD02

I will use the collection times listed on the COC for these samples unless told otherwise.

- 2. YFSD01 has a collection time on the label of 14:40 while the COC has 14:45. Please let me know the correct collection time to use.
- 3. YFSD02 has a collection time on the label of 15:00 while the COC has 15:05. Please let me know the correct collection time to use.
- 4. The label on the second container of YFSW01 has the "1" written in bold over a 2. The collection time on this label reads 1500, but the COC has a collection time of 14:40 for sample YFSW01. (Picture attached as 038.) The lid has the sample ID of YFSW01. Please let me know if I should label this sample as YFSW01.
- 5. The label on the second container of YFSW02 has the "2" written in bold over a 1. The collection time on this label reads 1440, but the COC has a collection time of 15:00 for sample YFSW02. (Picture attached as 044.) The lid has the sample ID of YFSW02. Please let me know if I should label this sample as YFSW02.

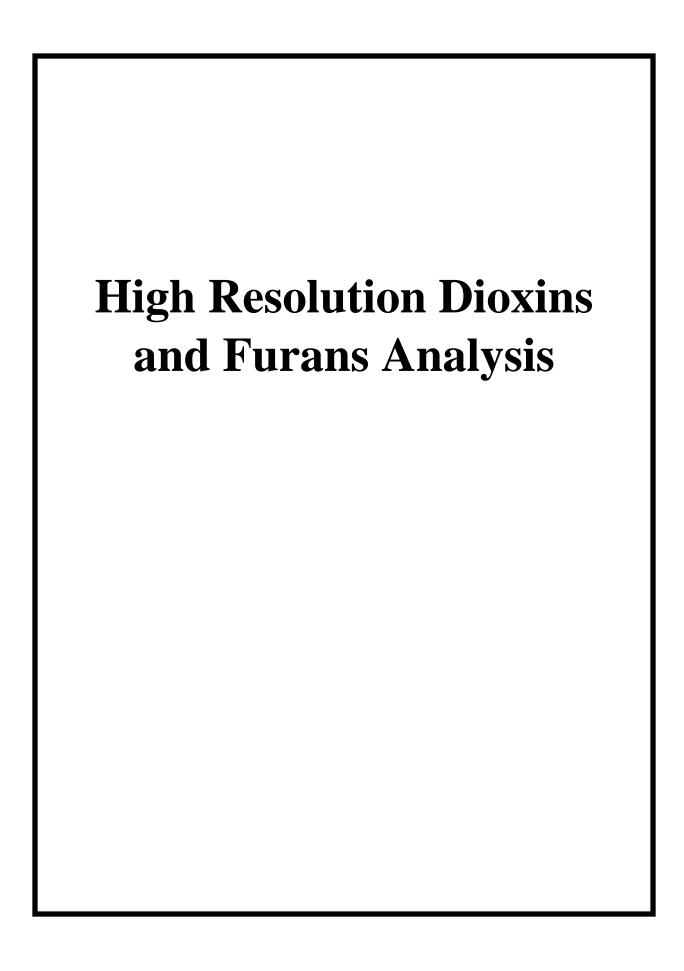
Thank you,

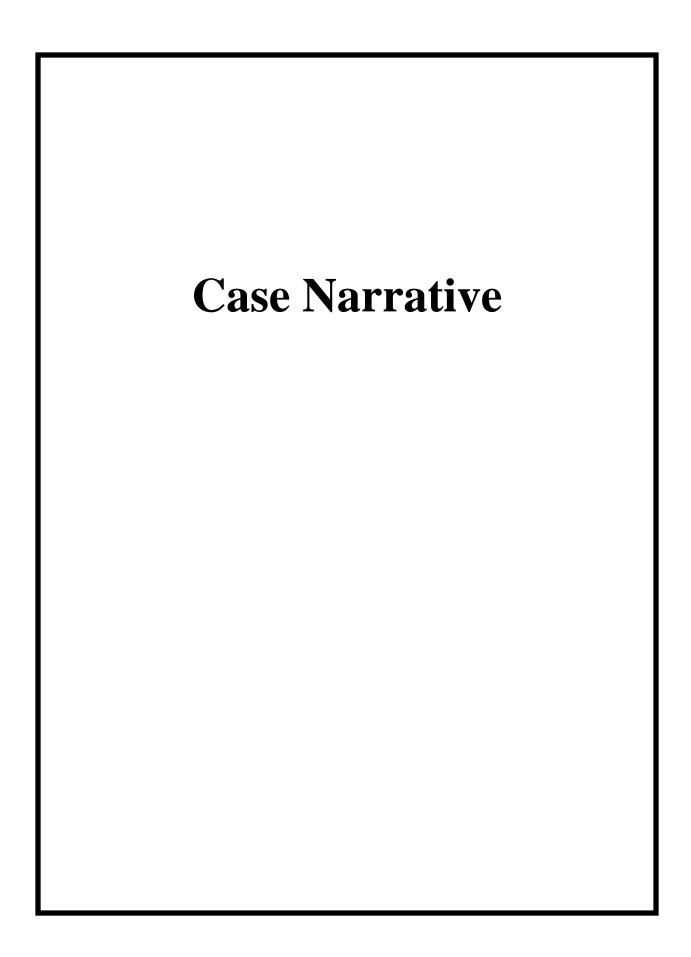
- -

Cynde Larkins
Project Manager Assistant
Cape Fear Analytical
3306 Kitty Hawk Road
Suite 120
Wilmington, NC 28405
(910) 795-0421

How was your customer experience? Customer service is a high priority for us, so we listen to what our customers have to say! Thank you for taking time to email us your thoughts and opinions at feedback@cfanalytical.com

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HDOX Case Narrative TRC Environmental Corporation (TRCC) SDG 6260

Method/Analysis Information

Product: Dioxins/Furans by EPA Method 1613B

Analytical Method: EPA Method 1613B Extraction Method: SW846 3520C, 3540C

Analytical Batch Number: 26223, 26255 Clean Up Batch Number: 26221, 26254 Extraction Batch Number: 26220, 26253

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1613B:

Sample ID	Client ID
6260001	YFSW01
6260002	YFSW02
6260003	CPSW01
6260004	CPSW02
6260005	YFSD01
6260006	YFSD02
6260007	CPSD01
6260008	CPSD02
6260009	LFH01
6260010	LFH02
6260011	LFH03
6260012	JFH01
6260013	JFH02
6260014	MFH01
12010724	Method Blank (MB)
12010725	Laboratory Control Sample (LCS)
12010726	Laboratory Control Sample Duplicate (LCSD)
12010756	Method Blank (MB)
12010757	Laboratory Control Sample (LCS)
12010758	Laboratory Control Sample Duplicate (LCSD)

Samples 6260 005, 006, 007 and 008 in this SDG were analyzed on a "dry weight" basis. Samples 6260 001, 002, 003 and 004 in this SDG were analyzed on an "as received" basis.

Samples 6260 009, 010, 011, 012, 013 and 014 were analyzed on an "as received" basis due to the sample matrix.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 13.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement

The test results presented in this document are certified to meet all requirements of the 2003 NELAC Standard.

Method Blank (MB) Statement

The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery

The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement

The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation

A sample of similar matrix, not associated with this SDG, was selected for analysis as the matrix spike and matrix spike duplicate. Batch 26255.

Technical Information

Holding Time Specifications

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation

A NCR was not required for this SDG.

Manual Integrations

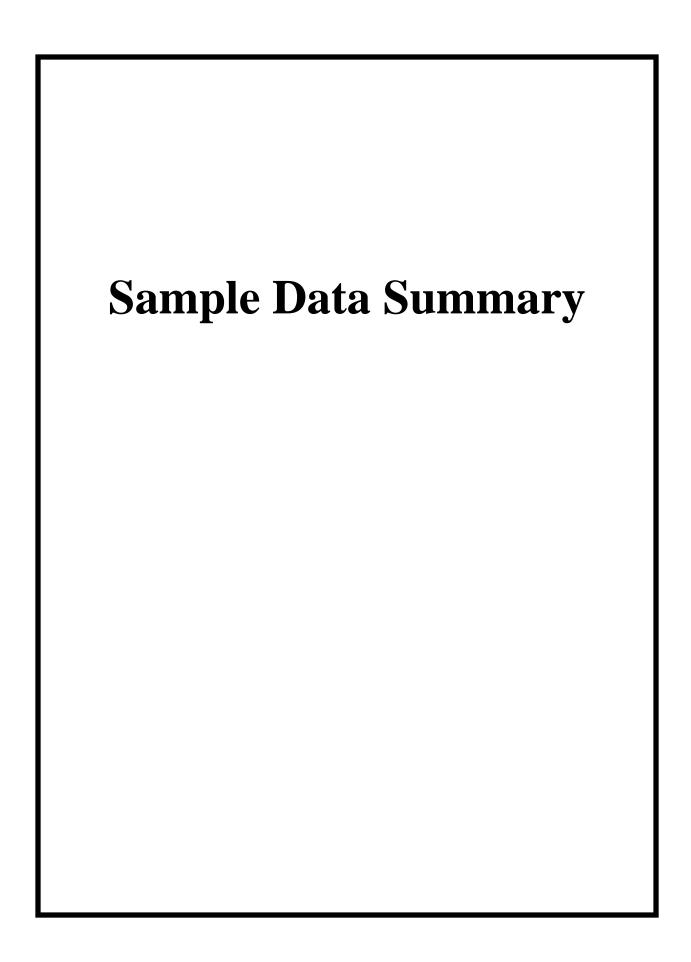
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample Preparation

No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.



Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report for

TRCC001 TRC Environmental Corporation Client SDG: 6260 CFA Work Order: 6260

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- J Value is estimated
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Suhrie Name: Erin Suhrie

Date: 10 JUL 2014 Title: Data Validator

Page 1

July 10, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

SDG Number: 6260 6260001 Lab Sample ID: 1613B Water **Client Sample:**

06/24/2014 19:32

Client: **Date Collected:** Date Received:

TRCC001 06/17/2014 14:40 06/19/2014 10:05 **Project:** Matrix: TRCC00314 WATER

Client ID: Batch ID:

YFSW01

26223

Method: **Analyst:** EPA Method 1613B

Prep Basis:

As Received

Run Date: Data File: Prep Batch:

A23JUN14A_4-7 26220

Prep Method:

SW846 3520C

Instrument: HRP750 Dilution: 1

985.2 mI

CAS No.							
	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	1.03		pg/L	1.03	10.2
40321-76-4	1,2,3,7,8-PeCDD	U	1.21		pg/L	1.21	50.8
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.93		pg/L	1.93	50.8
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.97		pg/L	1.97	50.8
19408-74-3	1,2,3,7,8,9-HxCDD	U	2.07		pg/L	2.07	50.8
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	12.5		pg/L	2.50	50.8
3268-87-9	1,2,3,4,6,7,8,9-OCDD		173		pg/L	7.75	102
51207-31-9	2,3,7,8-TCDF	U	1.14		pg/L	1.14	10.2
57117-41-6	1,2,3,7,8-PeCDF	U	.897		pg/L	0.897	50.8
57117-31-4	2,3,4,7,8-PeCDF	JK		1.20	pg/L	0.899	50.8
70648-26-9	1,2,3,4,7,8-HxCDF	U	1.34		pg/L	1.34	50.8
57117-44-9	1,2,3,6,7,8-HxCDF	JK		1.30	pg/L	1.25	50.8
60851-34-5	2,3,4,6,7,8-HxCDF	U	1.34		pg/L	1.34	50.8
72918-21-9	1,2,3,7,8,9-HxCDF	J	1.99		pg/L	1.91	50.8
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		2.68	pg/L	1.21	50.8
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.94		pg/L	1.94	50.8
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	7.39		pg/L	3.82	102
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1.03		pg/L	1.03	10.2
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	1.21		pg/L	1.21	50.8
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	1.93		pg/L	1.93	50.8
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	26.3		pg/L	2.50	50.8
30402-14-3	Total Tetrachlorodibenzofuran	U	1.14		pg/L	1.14	10.2
30402-15-4	Total Pentachlorodibenzofuran	U	.641	1.20	pg/L	0.641	50.8
55684-94-1	Total Hexachlorodibenzofuran	J	1.99	3.29	pg/L	1.25	50.8
38998-75-3	Total Heptachlorodibenzofuran	J	2.13	4.81	pg/L	1.21	50.8
3333-30-0	TEQ WHO2005 ND=0		0.378	0.894	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		2.21	2.53	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1480	2030	pg/L	73.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		1650	2030	pg/L	81.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1470	2030	pg/L	72.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1610	2030	pg/L	79.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1710	2030	pg/L	84.4	(23%-140%)
13C-OCDD		3250	4060	pg/L	80.0	(17%-157%)
13C-2,3,7,8-TCDF		1680	2030	pg/L	82.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		1790	2030	pg/L	88.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		1750	2030	pg/L	86.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1490	2030	pg/L	73.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1520	2030	pg/L	75.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1590	2030	pg/L	78.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1510	2030	pg/L	74.2	(29%-147%)

Cape Fear Analytical LLC Report Date: July 10, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC001 TRCC00314 Client: **Project:** 06/17/2014 14:40 **Date Collected:** Matrix: WATER

Page 2

of 2

6260001 Lab Sample ID: 1613B Water **Date Received:** 06/19/2014 10:05 **Client Sample:**

Prep Basis: Client ID: YFSW01 As Received **Batch ID:** 26223 Method: EPA Method 1613B

Instrument: HRP750 Run Date: 06/24/2014 19:32 **Analyst: JTF** Data File: A23JUN14A_4-7 Dilution: 1 SW846 3520C

Prep Method: Prep Aliquot: 985.2 mL **Prep Date:** 20-JUN-14 CAS No. **EMPC EDL PQL Parmname** Qual Result Units

Surrogate/Tracer recovery Units Recovery% **Acceptable Limits** Qual Result Nominal 13C-1,2,3,4,6,7,8-HpCDF 1680 2030 pg/L 83.0 (28%-143%) pg/L 13C-1,2,3,4,7,8,9-HpCDF 1700 2030 83.9 (26%-138%) 37Cl-2,3,7,8-TCDD 175 203 (35%-197%) pg/L 86.1

Comments:

SDG Number:

Prep Batch:

6260

26220

Value is estimated

Estimated Maximum Possible Concentration \mathbf{K}

Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 Client: 6260002 **Date Collected:** Lab Sample ID: 1613B Water **Client Sample:**

Date Received: YFSW02

Method:

Analyst:

TRCC001 06/17/2014 15:00 06/19/2014 10:05

JTF

EPA Method 1613B

SW846 3520C

991.9 mL

Project: Matrix: TRCC00314 WATER

Prep Basis: As Received

Instrument: HRP750 Dilution: 1

Data File: A23JUN14A_4-8 26220 Prep Batch: **Prep Date:**

26223

06/24/2014 20:20

Client ID:

Batch ID:

Run Date:

Prep Method: Prep Aliquot: 20-JUN-14

rrep Date:	20-JUN-14	Trep Anquot.))1.) IIIL	•			
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	1.05		pg/L	1.05	10.1
40321-76-4	1,2,3,7,8-PeCDD	U	.962		pg/L	0.962	50.4
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.3		pg/L	1.30	50.4
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.34		pg/L	1.34	50.4
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.4		pg/L	1.40	50.4
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK		3.61	pg/L	2.08	50.4
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	46.8		pg/L	5.30	101
51207-31-9	2,3,7,8-TCDF	U	1.03		pg/L	1.03	10.1
57117-41-6	1,2,3,7,8-PeCDF	U	.879		pg/L	0.879	50.4
57117-31-4	2,3,4,7,8-PeCDF	U	.841		pg/L	0.841	50.4
70648-26-9	1,2,3,4,7,8-HxCDF	U	.657		pg/L	0.657	50.4
57117-44-9	1,2,3,6,7,8-HxCDF	U	.625		pg/L	0.625	50.4
60851-34-5	2,3,4,6,7,8-HxCDF	U	.633		pg/L	0.633	50.4
72918-21-9	1,2,3,7,8,9-HxCDF	U	.917		pg/L	0.917	50.4
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.803		pg/L	0.803	50.4
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.24		pg/L	1.24	50.4
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	2.62		pg/L	2.62	101
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1.05		pg/L	1.05	10.1
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.962		pg/L	0.962	50.4
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	1.3		pg/L	1.30	50.4
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	2.08	6.59	pg/L	2.08	50.4
30402-14-3	Total Tetrachlorodibenzofuran	U	1.03		pg/L	1.03	10.1
30402-15-4	Total Pentachlorodibenzofuran	U	.728		pg/L	0.728	50.4
55684-94-1	Total Hexachlorodibenzofuran	U	.625		pg/L	0.625	50.4
38998-75-3	Total Heptachlorodibenzofuran	U	.803		pg/L	0.803	50.4
3333-30-0	TEQ WHO2005 ND=0		0.014	0.0501	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		1.57	1.60	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1330	2020	pg/L	66.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		1610	2020	pg/L	79.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1420	2020	pg/L	70.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1570	2020	pg/L	78.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1770	2020	pg/L	87.9	(23%-140%)
13C-OCDD		3290	4030	pg/L	81.6	(17%-157%)
13C-2,3,7,8-TCDF		1470	2020	pg/L	72.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		1690	2020	pg/L	84.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		1670	2020	pg/L	82.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1370	2020	pg/L	68.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1520	2020	pg/L	75.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1500	2020	pg/L	74.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1450	2020	pg/L	72.1	(29%-147%)

Cape Fear Analytical LLC Report Date: July 10, 2014

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HRP750

1

Instrument:

Dilution:

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

991.9 mL

TRCC001 TRCC00314 SDG Number: 6260 Client: **Project:** 06/17/2014 15:00 6260002 WATER Lab Sample ID: **Date Collected:** Matrix:

1613B Water Date Received: 06/19/2014 10:05 **Client Sample:**

Client ID: YFSW02 **Prep Basis:** As Received **Batch ID:** 26223 Method: EPA Method 1613B

Analyst:

Data File: A23JUN14A_4-8 SW846 3520C **Prep Method:** Prep Batch: 26220

Prep Aliquot: CAS No. **EMPC** Units **EDL PQL Parmname** Qual Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		1660	2020	pg/L	82.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		1730	2020	pg/L	85.9	(26%-138%)
37Cl-2,3,7,8-TCDD		182	202	pg/L	90.5	(35%-197%)

Comments:

Run Date:

Prep Date:

Value is estimated

Estimated Maximum Possible Concentration

06/24/2014 20:20

20-JUN-14

Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 Client: 6260003 **Date Collected:** Lab Sample ID: 1613B Water Date Received: **Client Sample:**

TRCC001 06/18/2014 11:00 06/19/2014 10:05 Project: Matrix: TRCC00314 WATER

As Received

Client ID: Batch ID:

Run Date:

CPSW01 26223

06/24/2014 21:08

Method: Analyst:

EPA Method 1613B **JTF**

SW846 3520C

Prep Basis: Instrument:

1.53

1.49

1.60

1.75

4.70

1.31

0.836

0.840

0.789

0.740

0.821

1.24

0.669

1.11

3.23

1.64

1.49

1.49

1.75

1.31

0.797

0.740

0.669

Data File: A23JUN14A_4-9 Prep Batch: 26220

Prep Method:

Dilution:

pg/L

0.00557

2.20

HRP750 1

PQL

10.7

53.4

53.4

53.4

53.4

53.4

107

10.7

53.4

53.4

53.4

53.4

53.4

53.4

53.4

53.4

107

10.7

53.4

53.4

53.4

10.7

53.4

53.4

53.4

n Date

Prep Date:	20-JUN-14	Prep Aliquot:	935.6 mL	
CAS No.	Parmname	Qual	Result	E
1746-01-6	2,3,7,8-TCDD	U	1.64	
40321-76-4	1,2,3,7,8-PeCDD	U	1.49	
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.53	

EMPC Units **EDL** pg/L 1.64 pg/L 1.49

U 57653-85-7 1,2,3,6,7,8-HxCDD 1.49 1,2,3,7,8,9-HxCDD 19408-74-3 U 1.6 U 35822-46-9 1,2,3,4,6,7,8-HpCDD 1.75 1,2,3,4,6,7,8,9-OCDD 18.6

3268-87-9 51207-31-9 2,3,7,8-TCDF U 1.31 57117-41-6 1,2,3,7,8-PeCDF U .836 57117-31-4 2,3,4,7,8-PeCDF U .84

70648-26-9 1,2,3,4,7,8-HxCDF U .789 U 57117-44-9 1,2,3,6,7,8-HxCDF .74 U 60851-34-5 2.3.4.6.7.8-HxCDF .821 1.24

72918-21-9 1,2,3,7,8,9-HxCDF U U 67562-39-4 1,2,3,4,6,7,8-HpCDF .669 55673-89-7 1,2,3,4,7,8,9-HpCDF U 1.11 1,2,3,4,6,7,8,9-OCDF U 39001-02-0 3.23 U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin 1.64

U 36088-22-9 Total Pentachlorodibenzo-p-dioxin 1.49 U 34465-46-8 Total Hexachlorodibenzo-p-dioxin 1.49 37871-00-4 Total Heptachlorodibenzo-p-dioxin 2.20 U 30402-14-3 Total Tetrachlorodibenzofuran 1.31 30402-15-4 Total Pentachlorodibenzofuran U .797 55684-94-1 Total Hexachlorodibenzofuran U .74

Total Heptachlorodibenzofuran 3333-30-0 TEQ WHO2005 ND=0 3333-30-1 TEQ WHO2005 ND=0.5

38998-75-3

Acceptable Limits Surrogate/Tracer recovery Qual Result Units Recovery% Nominal 13C-2,3,7,8-TCDD 1300 2140 pg/L 60.9 (25%-164%) 13C-1,2,3,7,8-PeCDD 1640 2140 pg/L 76.6 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 1390 2140 pg/L 64.8(32%-141%) 13C-1,2,3,6,7,8-HxCDD 2140 1620 pg/L 75.6 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 1700 2140 79.7 (23%-140%) pg/L 13C-OCDD 3260 4280 pg/L 76.2 (17%-157%) pg/L 13C-2,3,7,8-TCDF 1490 2140 69.9 (24%-169%) 13C-1,2,3,7,8-PeCDF 1660 2140 pg/L 77.6 (24%-185%) 13C-2,3,4,7,8-PeCDF 1650 2140 pg/L 77.1 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 1410 2140 pg/L 65.8 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 1540 2140 72.2 (26%-123%) pg/L 13C-2,3,4,6,7,8-HxCDF 1510 2140 pg/L 70.8 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 1450 2140 pg/L 67.8 (29%-147%)

U

.669

0.00557

2.20

Cape Fear Analytical LLC Report Date: July 10, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

Client: TRCC001 TRCC00314 **Project:** 06/18/2014 11:00 **Date Collected:** Matrix: WATER

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of 2

6260003 Lab Sample ID: 1613B Water **Date Received:** 06/19/2014 10:05 **Client Sample:**

Client ID: CPSW01 **Prep Basis:** As Received **Batch ID:** 26223 Method: EPA Method 1613B

Instrument: HRP750 Run Date: 06/24/2014 21:08 **Analyst: JTF** Data File: A23JUN14A_4-9 Dilution: 1

Prep Method: 935.6 mL **Prep Aliquot: Prep Date:** 20-JUN-14 CAS No. **EMPC EDL PQL Parmname** Qual Result Units

Surrogate/Tracer recovery Units Recovery% **Acceptable Limits** Qual Result Nominal 1600 2140 74.6 13C-1,2,3,4,6,7,8-HpCDF pg/L (28%-143%) pg/L 13C-1,2,3,4,7,8,9-HpCDF 1640 2140 76.8 (26%-138%) 37Cl-2,3,7,8-TCDD 184 (35%-197%) 214 pg/L 86.0

SW846 3520C

Comments:

SDG Number:

Prep Batch:

6260

26220

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

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July 10, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 Client: 6260004 Lab Sample ID: 1613B Water **Client Sample:**

Date Collected: Date Received:

TRCC001 06/18/2014 11:30 06/19/2014 10:05 Project: Matrix:

TRCC00314 WATER

Client ID:

35822-46-9

CPSW02

1,2,3,4,6,7,8-HpCDD

Batch ID: 26223 Run Date: 06/24/2014 21:56 Data File: A23JUN14A_4-10 Method: Analyst:

EPA Method 1613B **JTF**

SW846 3520C

Instrument:

EDL

1.26

0.915

Prep Basis:

As Received **HRP750**

PQL

10.5

52.7

Prep Batch: 26220

Prep Method:

Dilution: 1

Prep Date:	20-JUN-14	Prep Aliquot:	948.6 mL	,
CAS No.	Parmname	Qual	Result	EMPC
1746-01-6	2,3,7,8-TCDD	U	1.26	
40321-76-4	1,2,3,7,8-PeCDD	U	.915	
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.5	
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.5	
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.59	

pg/L 1.50 52.7 pg/L 1.50 52.7 pg/L 1.59 52.7 JK 2.17 pg/L 1.81 52.7

Units

pg/L

pg/L

3268-87-9 1,2,3,4,6,7,8,9-OCDD 31.5 pg/L 4.53 105 51207-31-9 2,3,7,8-TCDF U 1.3 pg/L 1.30 10.5 57117-41-6 1,2,3,7,8-PeCDF U .826 pg/L 0.826 52.7 57117-31-4 2,3,4,7,8-PeCDF U 0.816 52.7 .816 pg/L 70648-26-9 1,2,3,4,7,8-HxCDF U .687 0.687 52.7 pg/L U 57117-44-9 1,2,3,6,7,8-HxCDF .687 pg/L 0.687 52.7 U 0.719 60851-34-5 2.3.4.6.7.8-HxCDF .719 pg/L 52.7 72918-21-9 1,2,3,7,8,9-HxCDF U .98 0.980 52.7 pg/L U 67562-39-4 1,2,3,4,6,7,8-HpCDF .869 pg/L 0.869 52.7 55673-89-7 1,2,3,4,7,8,9-HpCDF U 1.43 1.43 52.7 pg/L U 39001-02-0 1,2,3,4,6,7,8,9-OCDF 2.93 pg/L 2.93 105

U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin 1.26 pg/L 1.26 10.5 U 36088-22-9 Total Pentachlorodibenzo-p-dioxin .915 pg/L 0.915 52.7 U pg/L 34465-46-8 Total Hexachlorodibenzo-p-dioxin 1.5 1.50 52.7 37871-00-4 Total Heptachlorodibenzo-p-dioxin U 1.81 5.33 pg/L 1.81 52.7 30402-14-3 U 1.30 Total Tetrachlorodibenzofuran 1.3 pg/L 10.5 30402-15-4 Total Pentachlorodibenzofuran U .816 pg/L 0.816 52.7 55684-94-1 Total Hexachlorodibenzofuran U .687 pg/L 0.687 52.7 0.869 52.7

Total Heptachlorodibenzofuran U 38998-75-3 .869 pg/L 3333-30-0 TEQ WHO2005 ND=0 0.00944 0.0312 pg/L 3333-30-1 TEQ WHO2005 ND=0.5 1.70 1.71 pg/L

Acceptable Limits Surrogate/Tracer recovery Qual Result Nominal Units Recovery% 13C-2,3,7,8-TCDD 1490 2110 pg/L 70.7 (25%-164%) 13C-1,2,3,7,8-PeCDD 1860 2110 pg/L 88.1 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 2110 1550 pg/L 73.6 (32%-141%) 13C-1,2,3,6,7,8-HxCDD 1690 2110 pg/L 80.1 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 1780 2110 pg/L 84 3 (23%-140%) 13C-OCDD 3260 4220 77.2 (17%-157%) pg/L 13C-2,3,7,8-TCDF 1790 2110 84.7 (24%-169%) pg/L 13C-1,2,3,7,8-PeCDF 1920 2110 pg/L 91.1 (24%-185%) 2110 13C-2,3,4,7,8-PeCDF 1920 pg/L 91.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 1540 2110 pg/L 72.8 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 1700 2110 pg/L 80.6 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 1640 2110 pg/L 77.6 (28%-136%) (29%-147%) 13C-1,2,3,7,8,9-HxCDF 2110 1590 pg/L 75.5

Cape Fear Analytical LLC Report Date: July 10, 2014

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: TRCC001 Project: TRCC00314
Date Collected: 06/18/2014 11:30 Matrix: WATER

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 Lab Sample ID:
 6260004
 Date Collected:
 06/18/2014 11:30
 Matrix

 Client Sample:
 1613B Water
 Date Received:
 06/19/2014 10:05

Client ID: CPSW02 Prep Basis: As Received Batch ID: 26223 Method: EPA Method 1613B

 Run Date:
 06/24/2014 21:56
 Analyst:
 JTF
 Instrument:
 HRP750

 Data File:
 A23JUN14A_4-10
 Dilution:
 1

 Prep Batch:
 26220
 Prep Method:
 SW846 3520C

Prep Date: 20-JUN-14 Prep Aliquot: 948.6 mL

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery Units Recovery% **Acceptable Limits** Qual Result Nominal 1730 2110 82.0 13C-1,2,3,4,6,7,8-HpCDF (28%-143%) pg/L pg/L 13C-1,2,3,4,7,8,9-HpCDF 1720 2110 81.4 (26%-138%) 37Cl-2,3,7,8-TCDD 172 211 (35%-197%) pg/L 81.6

Comments:

SDG Number:

6260

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 6260005 Lab Sample ID: 1613B Soil **Client Sample: Client ID:**

YFSD01

Batch ID: 26255 06/28/2014 08:02 **Run Date:** Data File: b27jun14a_2-8

26253 Prep Batch: P

Client: **Date Collected:** Date Received:

Method:

Analyst:

Prep Method:

TRCC001 06/17/2014 14:45 06/19/2014 10:05

EPA Method 1613B **JTF**

SW846 3540C

Project: Matrix: %Moisture: **Prep Basis:**

Dilution:

TRCC00314 SOLID 47.5

Dry Weight

Instrument: HRP763 1

Prep Date:	24-JUN-14	Prep Aliquot:	19.25 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.168		pg/g	0.168	0.990
40321-76-4	1,2,3,7,8-PeCDD	U	.166		pg/g	0.166	4.95
39227-28-6	1,2,3,4,7,8-HxCDD	JK		0.335	pg/g	0.275	4.95
57653-85-7	1,2,3,6,7,8-HxCDD	JK		0.519	pg/g	0.261	4.95
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.897		pg/g	0.285	4.95
35822-46-9	1,2,3,4,6,7,8-HpCDD		18.7		pg/g	0.402	4.95
3268-87-9	1,2,3,4,6,7,8,9-OCDD		541		pg/g	0.844	9.90
51207-31-9	2,3,7,8-TCDF	J	0.232		pg/g	0.160	0.990
57117-41-6	1,2,3,7,8-PeCDF	J	0.105		pg/g	0.0893	4.95
57117-31-4	2,3,4,7,8-PeCDF	JK		0.133	pg/g	0.0846	4.95
70648-26-9	1,2,3,4,7,8-HxCDF	U	.125		pg/g	0.125	4.95
57117-44-9	1,2,3,6,7,8-HxCDF	JK		0.230	pg/g	0.118	4.95
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.232		pg/g	0.125	4.95
72918-21-9	1,2,3,7,8,9-HxCDF	U	.184		pg/g	0.184	4.95
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	2.06		pg/g	0.132	4.95
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.226		pg/g	0.226	4.95
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	5.72		pg/g	0.384	9.90
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.168		pg/g	0.168	0.990
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.723	1.04	pg/g	0.166	4.95
34465-46-8	Total Hexachlorodibenzo-p-dioxin		7.57	8.42	pg/g	0.261	4.95
37871-00-4	Total Heptachlorodibenzo-p-dioxin		47.7		pg/g	0.402	4.95
30402-14-3	Total Tetrachlorodibenzofuran	J	0.402		pg/g	0.160	0.990
30402-15-4	Total Pentachlorodibenzofuran	J	0.864	1.19	pg/g	0.0487	4.95
55684-94-1	Total Hexachlorodibenzofuran	J	1.40	2.61	pg/g	0.118	4.95
38998-75-3	Total Heptachlorodibenzofuran		5.78		pg/g	0.132	4.95
3333-30-0	TEQ WHO2005 ND=0		0.511	0.659	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.740	0.843	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		155	198	pg/g	78.0	(25%-164%)	
13C-1,2,3,7,8-PeCDD		160	198	pg/g	80.8	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		168	198	pg/g	84.8	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		157	198	pg/g	79.2	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		180	198	pg/g	90.8	(23%-140%)	
13C-OCDD		336	396	pg/g	84.7	(17%-157%)	
13C-2,3,7,8-TCDF		173	198	pg/g	87.1	(24%-169%)	
13C-1,2,3,7,8-PeCDF		166	198	pg/g	83.6	(24%-185%)	
13C-2,3,4,7,8-PeCDF		176	198	pg/g	89.0	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		172	198	pg/g	87.0	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		164	198	pg/g	82.9	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		169	198	pg/g	85.4	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		167	198	pg/g	84.1	(29%-147%)	

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 Client: 06/17/2014 14:45 **Date Collected:** Date Received: 06/19/2014 10:05 **Project:** Matrix: %Moisture:

TRCC00314 SOLID

Page 2

of 2

Prep Basis: Dry Weight

Instrument: HRP763 1

Dilution:

SW846 3540C

JTF

EPA Method 1613B

Prep Method:

Method:

Analyst:

19.25 g

26253 **Prep Aliquot:** 24-JUN-14

6260

6260005

YFSD01

26255

1613B Soil

06/28/2014 08:02

b27jun14a_2-8

CAS No. **EMPC** Units **EDL PQL Parmname** Qual Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		173	198	pg/g	87.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		172	198	pg/g	87.0	(26%-138%)
37Cl-2,3,7,8-TCDD		18.6	19.8	pg/g	94.0	(35%-197%)

Comments:

SDG Number:

Lab Sample ID:

Client Sample: Client ID:

Batch ID:

Run Date:

Data File:

Prep Batch:

Prep Date:

Value is estimated

Estimated Maximum Possible Concentration K

Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

SDG Number: 6260 **Client:** 6260006 Lab Sample ID: 1613B Soil **Client Sample: Client ID:** YFSD02

Date Collected: Date Received:

Method:

Analyst:

TRCC001 06/17/2014 15:05 06/19/2014 10:05

EPA Method 1613B

Project: Matrix: %Moisture: TRCC00314 **SOLID** 51.4

Prep Basis:

Dry Weight

Data File: b27jun14a_2-9

26255

06/28/2014 08:50

Batch ID:

Run Date:

Prep Batch: 26253 **Prep Date:** 24-JUN-14 Prep Method:

21.6 g**Prep Aliquot:**

SW846 3540C

Instrument: HRP763 Dilution: 1

PQL CAS No. **Parmname** Qual Result **EMPC** Units **EDL** 1746-01-6 2,3,7,8-TCDD U .16 0.160 0.952 pg/g JK 40321-76-4 1,2,3,7,8-PeCDD 0.187pg/g 0.134 4.76 39227-28-6 1,2,3,4,7,8-HxCDD JK 0.322 0.196 4.76 pg/g 57653-85-7 1,2,3,6,7,8-HxCDD J 0.724 0.204 4.76 pg/g 19408-74-3 1,2,3,7,8,9-HxCDD J 1.37 pg/g 0.213 4.76 35822-46-9 1,2,3,4,6,7,8-HpCDD 24.0 0.419 4.76 pg/g 3268-87-9 1,2,3,4,6,7,8,9-OCDD 610 0.988 9.52 pg/g 51207-31-9 2,3,7,8-TCDF J 0.213 0.176 0.952 pg/g U 57117-41-6 1,2,3,7,8-PeCDF .138 pg/g 0.138 4.76 57117-31-4 2,3,4,7,8-PeCDF U .128 0.128 4.76 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF 0.189 0.167 4.76 pg/g 57117-44-9 1,2,3,6,7,8-HxCDF 0.261 pg/g 0.159 4.76 60851-34-5 2.3.4.6.7.8-HxCDF 0.272 0.166 4.76 pg/g 72918-21-9 1,2,3,7,8,9-HxCDF U .253 0.253 4.76 pg/g 67562-39-4 1,2,3,4,6,7,8-HpCDF 2.76 pg/g 0.1234.76 55673-89-7 1,2,3,4,7,8,9-HpCDF U .204 0.204 4.76 pg/g 39001-02-0 1,2,3,4,6,7,8,9-OCDF 7.47 pg/g 0.642 9.52 41903-57-5 Total Tetrachlorodibenzo-p-dioxin J 0.301 0.160 0.952 pg/g 36088-22-9 Total Pentachlorodibenzo-p-dioxin 1.42 2.00 0.134 4.76 pg/g 34465-46-8 Total Hexachlorodibenzo-p-dioxin 11.0 11.4 0.196 4.76 pg/g Total Heptachlorodibenzo-p-dioxin 37871-00-4 62.2 pg/g 0.419 4.76 30402-14-3 0.638 0.863 0.952 Total Tetrachlorodibenzofuran 1 pg/g 0.176 30402-15-4 Total Pentachlorodibenzofuran 1.28 0.0598 4.76 pg/g 55684-94-1 Total Hexachlorodibenzofuran 3.87 0.159 4.76 pg/g 38998-75-3 Total Heptachlorodibenzofuran 7.75 pg/g 0.1234.76 3333-30-0 TEQ WHO2005 ND=0 0.756 0.975 pg/g 3333-30-1 TEQ WHO2005 ND=0.5 0.948 1.09 pg/g

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		159	190	pg/g	83.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		158	190	pg/g	83.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		171	190	pg/g	89.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		153	190	pg/g	80.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		173	190	pg/g	90.7	(23%-140%)
3C-OCDD		313	381	pg/g	82.2	(17%-157%)
3C-2,3,7,8-TCDF		175	190	pg/g	92.1	(24%-169%)
3C-1,2,3,7,8-PeCDF		160	190	pg/g	84.2	(24%-185%)
3C-2,3,4,7,8-PeCDF		175	190	pg/g	92.0	(21%-178%)
3C-1,2,3,4,7,8-HxCDF		169	190	pg/g	89.0	(26%-152%)
3C-1,2,3,6,7,8-HxCDF		165	190	pg/g	86.7	(26%-123%)
3C-2,3,4,6,7,8-HxCDF		169	190	pg/g	88.6	(28%-136%)
3C-1,2,3,7,8,9-HxCDF		156	190	pg/g	82.2	(29%-147%)

Page 2

TRCC00314

Dry Weight

HRP763

SOLID

51.4

1

Instrument:

Dilution:

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 SDG Number: 6260 Client: **Project:** 06/17/2014 15:05 6260006 Lab Sample ID: **Date Collected:** Matrix: %Moisture: 1613B Soil Date Received: 06/19/2014 10:05 **Client Sample:** Client ID: YFSD02 **Prep Basis: Batch ID:** 26255 Method: EPA Method 1613B

Run Date: 06/28/2014 08:50 Analyst: JTF
Data File: b27jun14a_2-9

Prep Batch: 26253 Prep Method: SW846 3540C Prep Date: 24-JUN-14 Prep Aliquot: 21.6 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		170	190	pg/g	89.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		165	190	pg/g	86.6	(26%-138%)
37Cl-2,3,7,8-TCDD		18.6	19.0	pg/g	97.9	(35%-197%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

15.89 g

SDG Number: 6260 Client:
Lab Sample ID: 6260007 Date Collected:
Client Sample: 1613B Soil Date Received:
Client ID: CPSD01

TRCC001 06/18/2014 11:15 06/19/2014 10:05

EPA Method 1613B

SW846 3540C

Project: Matrix: %Moisture: TRCC00314 SOLID

Prep Basis: Dry Weight

Instrument:

HRP763

Dilution:

Data File: b27jun14a_2-10
Prep Batch: 26253

Batch ID:

Run Date:

3 Prep Method: UN-14 Prep Aliquot:

Method:

Analyst:

Prep Date: 24-JUN-14

26255

06/28/2014 09:37

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.134		pg/g	0.134	0.926
40321-76-4	1,2,3,7,8-PeCDD	JK		0.119	pg/g	0.113	4.63
39227-28-6	1,2,3,4,7,8-HxCDD	U	.164		pg/g	0.164	4.63
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.319		pg/g	0.169	4.63
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.309		pg/g	0.176	4.63
35822-46-9	1,2,3,4,6,7,8-HpCDD		11.8		pg/g	0.367	4.63
3268-87-9	1,2,3,4,6,7,8,9-OCDD		767		pg/g	0.799	9.26
51207-31-9	2,3,7,8-TCDF	J	0.148		pg/g	0.118	0.926
57117-41-6	1,2,3,7,8-PeCDF	U	.0926		pg/g	0.0926	4.63
57117-31-4	2,3,4,7,8-PeCDF	U	.0849		pg/g	0.0849	4.63
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0852		pg/g	0.0852	4.63
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0856		pg/g	0.0856	4.63
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0889		pg/g	0.0889	4.63
72918-21-9	1,2,3,7,8,9-HxCDF	U	.127		pg/g	0.127	4.63
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.330		pg/g	0.141	4.63
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.243		pg/g	0.243	4.63
39001-02-0	1,2,3,4,6,7,8,9-OCDF	JK		0.447	pg/g	0.341	9.26
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	0.204		pg/g	0.134	0.926
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.454	0.823	pg/g	0.113	4.63
34465-46-8	Total Hexachlorodibenzo-p-dioxin		5.87		pg/g	0.164	4.63
37871-00-4	Total Heptachlorodibenzo-p-dioxin		32.8		pg/g	0.367	4.63
30402-14-3	Total Tetrachlorodibenzofuran	J	0.313		pg/g	0.118	0.926
30402-15-4	Total Pentachlorodibenzofuran	J	0.371		pg/g	0.0409	4.63
55684-94-1	Total Hexachlorodibenzofuran	U	.0852	0.372	pg/g	0.0852	4.63
38998-75-3	Total Heptachlorodibenzofuran	J	0.330		pg/g	0.141	4.63
3333-30-0	TEQ WHO2005 ND=0		0.429	0.548	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.596	0.658	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	185	pg/g	80.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		152	185	pg/g	81.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		170	185	pg/g	91.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	185	pg/g	81.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		173	185	pg/g	93.4	(23%-140%)
13C-OCDD		322	371	pg/g	86.8	(17%-157%)
13C-2,3,7,8-TCDF		160	185	pg/g	86.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		156	185	pg/g	84.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		168	185	pg/g	90.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		171	185	pg/g	92.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		164	185	pg/g	88.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		168	185	pg/g	90.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		167	185	pg/g	89.9	(29%-147%)

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 Client: 06/18/2014 11:15 **Date Collected:** Date Received: 06/19/2014 10:05

JTF

EPA Method 1613B

TRCC00314 **Project:** Matrix: **SOLID** %Moisture:

Prep Basis: Dry Weight

PQL

Page 2

of 2

Instrument: HRP763

EDL

Dilution: 1

Data File: b27jun14a_2-10 SW846 3540C **Prep Method:** Prep Batch: 26253

Prep Aliquot: 15.89 g **Prep Date:** 24-JUN-14 CAS No. **EMPC** Units **Parmname** Qual Result

Method:

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		171	185	pg/g	92.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		164	185	pg/g	88.5	(26%-138%)
37Cl-2,3,7,8-TCDD		17.6	18.5	pg/g	95.0	(35%-197%)

Comments:

SDG Number:

Lab Sample ID:

Client Sample: Client ID:

Batch ID:

Run Date:

6260

6260007

CPSD01

26255

1613B Soil

06/28/2014 09:37

Value is estimated J

Estimated Maximum Possible Concentration K

Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 Client: Lab Sample ID: 6260008 1613B Soil **Client Sample: Client ID:** CPSD02

TRCC001 06/18/2014 11:45 **Date Collected:** 06/19/2014 10:05 Date Received:

JTF

Project: Matrix: %Moisture:

EDL

0.222

TRCC00314 **SOLID** 30.4

Prep Basis: Dry Weight

PQL

0.965

Instrument: HRP763 Dilution: 1

Batch ID: 26255 Run Date: 06/27/2014 22:21 Data File: b27jun14a-11

Prep Batch: 26253 **Prep Date:** 24-JUN-14

Prep Method: **Prep Aliquot:**

Method:

Analyst:

SW846 3540C 14.89 g

J

J

U

U

JK

U

IJ

J

U

Result

162

169

174

167

183

374

176

173

187

189

0.108

0.114

.112

.158

.205

0.454

18.2

.118

1.13

1.47

Nominal

193

193

193

193

pg/g

CAS No. **Parmname** Qual 1746-01-6 2,3,7,8-TCDD U .222 U 40321-76-4 1,2,3,7,8-PeCDD .336 39227-28-6 1,2,3,4,7,8-HxCDD U .425 57653-85-7 1,2,3,6,7,8-HxCDD 0.486 19408-74-3 1,2,3,7,8,9-HxCDD 0.78035822-46-9 1,2,3,4,6,7,8-HpCDD 30.9 3268-87-9 1,2,3,4,6,7,8,9-OCDD 2260 U .128

51207-31-9 2,3,7,8-TCDF 57117-41-6 1,2,3,7,8-PeCDF 57117-31-4 2,3,4,7,8-PeCDF JK 70648-26-9 1,2,3,4,7,8-HxCDF IK

57117-44-9 1,2,3,6,7,8-HxCDF 60851-34-5 2.3.4.6.7.8-HxCDF 72918-21-9 1,2,3,7,8,9-HxCDF 67562-39-4 1,2,3,4,6,7,8-HpCDF 55673-89-7 1,2,3,4,7,8,9-HpCDF 1,2,3,4,6,7,8,9-OCDF 39001-02-0

41903-57-5 Total Tetrachlorodibenzo-p-dioxin 36088-22-9 Total Pentachlorodibenzo-p-dioxin 34465-46-8 Total Hexachlorodibenzo-p-dioxin 37871-00-4 Total Heptachlorodibenzo-p-dioxin 30402-14-3 Total Tetrachlorodibenzofuran 30402-15-4 Total Pentachlorodibenzofuran

Total Hexachlorodibenzofuran

38998-75-3 Total Heptachlorodibenzofuran 3333-30-0 TEQ WHO2005 ND=0 3333-30-1 TEQ WHO2005 ND=0.5

Surrogate/Tracer recovery

55684-94-1

13C-OCDD

13C-2,3,7,8-TCDF

13C-1,2,3,7,8,9-HxCDF

13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD

13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF

176 193 180 193 178 193

Qual

Result **EMPC** Units

EPA Method 1613B

pg/g 0.336 4.82 0.425 4.82 pg/g 0.411 4.82 pg/g pg/g 0.442 4.82 0.602 4.82 pg/g 1.32 9.65 pg/g 0.128 0.965 pg/g

pg/g

pg/g 0.0766 4.82 0.135 0.0693 4.82 pg/g 0.104 4.82 pg/g 0.104 pg/g 0.103 4.82 0.112 4.82 pg/g

0.158 4.82 pg/g 0.351 pg/g 0.1184.82 0.205 4.82 pg/g pg/g 0.344 9.65 18.6 0.222 0.965 pg/g

95.4 0.336 4.82 pg/g 700 0.411 4.82 pg/g 238 pg/g 0.602 4.82 .128 pg/g 0.128 0.965 0.220 0.481 0.0384 4.82 pg/g 0.623 0.728 0.103 4.82 pg/g

0.351 pg/g 1.18 pg/g 1.50 pg/g

> **Acceptable Limits** Units Recovery% pg/g 83.7 (25%-164%) 87.8 (25%-181%) pg/g 90.3 pg/g (32%-141%)

0.118

4.82

(28%-130%)

193 94.8 (23%-140%) pg/g 96.9 (17%-157%) 386 pg/g 193 91.3 (24%-169%) pg/g 193 89.9 (24%-185%) pg/g 193 pg/g 96.7 (21%-178%) 193 98.0 (26%-152%) pg/g

86.5

91.1 (26%-123%) pg/g pg/g 93.1 (28%-136%) pg/g 92.4 (29%-147%) **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC001 Client: 06/18/2014 11:45 **Date Collected:** Date Received: 06/19/2014 10:05

EPA Method 1613B

Project: Matrix: %Moisture:

TRCC00314 **SOLID** 30.4

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of 2

Dry Weight **Prep Basis:**

HRP763 1

Instrument:

Dilution:

Data File: b27jun14a-11

06/27/2014 22:21

26253 Prep Batch: **Prep Date:** 24-JUN-14

6260

6260008

CPSD02

26255

1613B Soil

Prep Method:

SW846 3540C

JTF

Prep Aliquot: 14.89 g

PQL CAS No. **EMPC** Units **EDL Parmname** Qual Result

Method:

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		180	193	pg/g	93.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		177	193	pg/g	91.7	(26%-138%)
37Cl-2,3,7,8-TCDD		18.8	19.3	pg/g	97.4	(35%-197%)

Comments:

SDG Number:

Lab Sample ID:

Client Sample: Client ID:

Batch ID:

Run Date:

Value is estimated J

Estimated Maximum Possible Concentration K

Analyte was analyzed for, but not detected above the specified detection limit.

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July 10, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

Client: SDG Number: 6260 6260009 **Date Collected:** Lab Sample ID: 1613B Solid Date Received: **Client Sample:**

TRCC001 06/17/2014 08:05 06/19/2014 10:05 **Project:** Matrix: TRCC00314 SOLID

Client ID: Batch ID:

LFH01 26255

Method: **Analyst:** EPA Method 1613B

Prep Basis:

As Received

Run Date: Data File: Prep Batch:

b27jun14a-12 26253

06/27/2014 23:09

SW846 3540C **Prep Method:**

Instrument: HRP763 Dilution: 1

Prep Aliquot: 10.56 g **Prep Date:** 24-JUN-14

Prep Date:	24-JUN-14	Prep Anquot:	10.50 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.136		pg/g	0.136	0.947
40321-76-4	1,2,3,7,8-PeCDD	U	.082		pg/g	0.082	4.73
39227-28-6	1,2,3,4,7,8-HxCDD	U	.132		pg/g	0.132	4.73
57653-85-7	1,2,3,6,7,8-HxCDD	U	.135		pg/g	0.135	4.73
19408-74-3	1,2,3,7,8,9-HxCDD	U	.142		pg/g	0.142	4.73
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.420		pg/g	0.254	4.73
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	5.94		pg/g	0.464	9.47
51207-31-9	2,3,7,8-TCDF	J	0.127		pg/g	0.0983	0.947
57117-41-6	1,2,3,7,8-PeCDF	J	0.0795		pg/g	0.053	4.73
57117-31-4	2,3,4,7,8-PeCDF	U	.0489		pg/g	0.0489	4.73
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0811		pg/g	0.0811	4.73
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0777		pg/g	0.0777	4.73
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0869		pg/g	0.0869	4.73
72918-21-9	1,2,3,7,8,9-HxCDF	U	.12		pg/g	0.120	4.73
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.155		pg/g	0.0847	4.73
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.142		pg/g	0.142	4.73
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.341		pg/g	0.341	9.47
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.136		pg/g	0.136	0.947
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.082		pg/g	0.082	4.73
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	0.477		pg/g	0.132	4.73
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.960		pg/g	0.254	4.73
30402-14-3	Total Tetrachlorodibenzofuran	J	0.127		pg/g	0.0983	0.947
30402-15-4	Total Pentachlorodibenzofuran	J	0.0795		pg/g	0.0377	4.73
55684-94-1	Total Hexachlorodibenzofuran	U	.0777		pg/g	0.0777	4.73
38998-75-3	Total Heptachlorodibenzofuran	J	0.305		pg/g	0.0847	4.73
3333-30-0	TEQ WHO2005 ND=0		0.0226	0.0226	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.178	0.178	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		143	189	pg/g	75.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		153	189	pg/g	80.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		155	189	pg/g	81.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	189	pg/g	79.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		163	189	pg/g	86.0	(23%-140%)
13C-OCDD		286	379	pg/g	75.6	(17%-157%)
13C-2,3,7,8-TCDF		157	189	pg/g	83.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		156	189	pg/g	82.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		171	189	pg/g	90.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		161	189	pg/g	85.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		151	189	pg/g	79.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		157	189	pg/g	83.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		157	189	pg/g	82.9	(29%-147%)

Cape Fear Analytical LLC Report Date: July 10, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

> > **JTF**

10.56 g

TRCC001 TRCC00314 Client: **Project:** 06/17/2014 08:05 SOLID **Date Collected:** Matrix:

Instrument:

Dilution:

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6260009 Lab Sample ID: 1613B Solid Date Received: 06/19/2014 10:05 **Client Sample:**

Client ID: LFH01 **Prep Basis:** As Received **Batch ID:** 26255 Method: EPA Method 1613B

Data File: b27jun14a-12 SW846 3540C 26253 **Prep Method:** Prep Batch:

Prep Aliquot: PQL CAS No. Qual **EMPC** Units **EDL Parmname** Result

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		156	189	pg/g	82.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		155	189	pg/g	81.6	(26%-138%)
37Cl-2,3,7,8-TCDD		16.8	18.9	pg/g	88.9	(35%-197%)

Comments:

SDG Number:

Run Date:

Prep Date:

6260

06/27/2014 23:09

24-JUN-14

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 6260010 Lab Sample ID: 1613B Solid **Client Sample: Client ID:**

LFH02

Batch ID: 26255 Run Date: 06/27/2014 23:57 Data File: b27jun14a-13

Prep Batch: 26253 **Prep Date:** 24-JUN-14

Client: TRCC001 06/17/2014 08:25 **Date Collected:** Date Received:

Method:

Analyst:

Prep Method:

06/19/2014 10:05

EPA Method 1613B **JTF**

SW846 3540C

Matrix: **Prep Basis:**

Project:

TRCC00314 SOLID

As Received

HRP763 Instrument: Dilution: 1

Prep Aliquot: $10.95 \mathrm{g}$ **EDL PQL** CAS No. **Parmname** Qual Result **EMPC** Units 1746-01-6 2,3,7,8-TCDD U .144 0.144 0.913 pg/g U 0.0995 40321-76-4 1,2,3,7,8-PeCDD .0995 pg/g 4.57 U 39227-28-6 1,2,3,4,7,8-HxCDD .133 0.133 4.57 pg/g 1,2,3,6,7,8-HxCDD U 57653-85-7 .137 pg/g 0.137 4.57 19408-74-3 U 1,2,3,7,8,9-HxCDD .143 pg/g 0.1434.57 35822-46-9 1,2,3,4,6,7,8-HpCDD 1 0.771 0.245 4.57 pg/g 3268-87-9 1,2,3,4,6,7,8,9-OCDD 10.5 0.610 9.13 pg/g 51207-31-9 2,3,7,8-TCDF J 0.170 0.126 0.913 pg/g U 57117-41-6 1,2,3,7,8-PeCDF .074 pg/g 0.074 4.57 57117-31-4 2,3,4,7,8-PeCDF 0.0676 0.0663 4.57 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF U .111 0.111 4.57 pg/g U 57117-44-9 1,2,3,6,7,8-HxCDF .109 0.109 4.57 60851-34-5 2,3,4,6,7,8-HxCDF U 0.117 4.57 .117 pg/g 72918-21-9 1,2,3,7,8,9-HxCDF U .178 0.178 4.57 pg/g JK 0.148 67562-39-4 1,2,3,4,6,7,8-HpCDF pg/g 0.1064.57 55673-89-7 1,2,3,4,7,8,9-HpCDF U .181 0.181 4.57 pg/g 39001-02-0 1,2,3,4,6,7,8,9-OCDF U .422 0.422 pg/g 9.13 U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin .144 0.144 0.913 pg/g U 36088-22-9 Total Pentachlorodibenzo-p-dioxin .0995 0.0995 4.57 pg/g 34465-46-8 Total Hexachlorodibenzo-p-dioxin 0.426 0.133 4.57 pg/g 37871-00-4 Total Heptachlorodibenzo-p-dioxin 1.94 pg/g 0.245 4.57 30402-14-3 0.170 0.305 0.913 Total Tetrachlorodibenzofuran pg/g 0.126 30402-15-4 Total Pentachlorodibenzofuran 0.0676 0.0506 4.57 pg/g U 55684-94-1 Total Hexachlorodibenzofuran .109 0.109 4.57 pg/g 38998-75-3 0.106 4.57 Total Heptachlorodibenzofuran 0.2540.402pg/g 3333-30-0 TEQ WHO2005 ND=0 0.0481 0.0496 pg/g 3333-30-1 TEQ WHO2005 ND=0.5 0.219 0.220 pg/g

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		147	183	pg/g	80.5	(25%-164%)	
13C-1,2,3,7,8-PeCDD		155	183	pg/g	85.0	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		164	183	pg/g	89.8	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		153	183	pg/g	84.0	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		162	183	pg/g	88.4	(23%-140%)	
13C-OCDD		288	365	pg/g	78.8	(17%-157%)	
13C-2,3,7,8-TCDF		160	183	pg/g	87.8	(24%-169%)	
13C-1,2,3,7,8-PeCDF		154	183	pg/g	84.2	(24%-185%)	
13C-2,3,4,7,8-PeCDF		165	183	pg/g	90.5	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		162	183	pg/g	88.9	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		163	183	pg/g	89.5	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		162	183	pg/g	88.9	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		151	183	pg/g	82.6	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 10, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC001 TRCC00314 Client: **Project:** 06/17/2014 08:25 SOLID **Date Collected:** Matrix:

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6260010 Lab Sample ID: 1613B Solid Date Received: 06/19/2014 10:05 **Client Sample:**

Client ID: LFH02 **Prep Basis:** As Received **Batch ID:** 26255 Method: EPA Method 1613B

Instrument: Run Date: 06/27/2014 23:57 **Analyst: JTF** Data File: b27jun14a-13 Dilution: SW846 3540C 26253 **Prep Method:** Prep Batch:

Prep Aliquot: PQL CAS No. Qual **EMPC** Units **EDL Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		165	183	pg/g	90.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		155	183	pg/g	84.9	(26%-138%)
37Cl-2,3,7,8-TCDD		17.1	18.3	pg/g	93.8	(35%-197%)

10.95 g

Comments:

Prep Date:

SDG Number:

6260

24-JUN-14

Value is estimated

Estimated Maximum Possible Concentration

Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 6260011 Lab Sample ID: 1613B Solid **Client Sample:**

Date Collected: Date Received:

TRCC001 06/17/2014 08:05 06/19/2014 10:05 **Project:** Matrix: TRCC00314 SOLID

Client ID: Batch ID: **Run Date:** LFH03 26255

06/28/2014 00:45

Method: EPA Method 1613B **Analyst: JTF**

Prep Basis: As Received HRP763

Data File: b27jun14a-14 **Prep Batch:** 26253 **Prep Date:**

Prep Method:

Client:

Instrument: Dilution: 1

SW846 3540C Prep Aliquot: 11.27 g 24-JUN-14

Trep Date.	24-JUN-14	Trep inquot.	11.27 g	11.27 g			
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.118		pg/g	0.118	0.887
40321-76-4	1,2,3,7,8-PeCDD	U	.0953		pg/g	0.0953	4.44
39227-28-6	1,2,3,4,7,8-HxCDD	U	.122		pg/g	0.122	4.44
57653-85-7	1,2,3,6,7,8-HxCDD	U	.123		pg/g	0.123	4.44
19408-74-3	1,2,3,7,8,9-HxCDD	U	.13		pg/g	0.130	4.44
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.495		pg/g	0.256	4.44
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	4.36		pg/g	0.531	8.87
51207-31-9	2,3,7,8-TCDF	JK		0.108	pg/g	0.0932	0.887
57117-41-6	1,2,3,7,8-PeCDF	U	.0681		pg/g	0.0681	4.44
57117-31-4	2,3,4,7,8-PeCDF	U	.0644		pg/g	0.0644	4.44
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0838		pg/g	0.0838	4.44
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0831		pg/g	0.0831	4.44
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0898		pg/g	0.0898	4.44
72918-21-9	1,2,3,7,8,9-HxCDF	U	.138		pg/g	0.138	4.44
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.170		pg/g	0.120	4.44
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.209		pg/g	0.209	4.44
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.369		pg/g	0.369	8.87
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.118		pg/g	0.118	0.887
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.0953		pg/g	0.0953	4.44
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	0.206		pg/g	0.122	4.44
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	1.14		pg/g	0.256	4.44
30402-14-3	Total Tetrachlorodibenzofuran	U	.0932	0.108	pg/g	0.0932	0.887
30402-15-4	Total Pentachlorodibenzofuran	U	.0465		pg/g	0.0465	4.44
55684-94-1	Total Hexachlorodibenzofuran	J	0.103		pg/g	0.0831	4.44
38998-75-3	Total Heptachlorodibenzofuran	J	0.398		pg/g	0.120	4.44
3333-30-0	TEQ WHO2005 ND=0		0.00796	0.0188	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.169	0.176	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		138	177	pg/g	77.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		130	177	pg/g	73.3	(25%-181%)
3C-1,2,3,4,7,8-HxCDD		159	177	pg/g	89.5	(32%-141%)
3C-1,2,3,6,7,8-HxCDD		145	177	pg/g	82.0	(28%-130%)
C-1,2,3,4,6,7,8-HpCDD		151	177	pg/g	84.9	(23%-140%)
C-OCDD		261	355	pg/g	73.5	(17%-157%)
C-2,3,7,8-TCDF		157	177	pg/g	88.4	(24%-169%)
C-1,2,3,7,8-PeCDF		130	177	pg/g	73.4	(24%-185%)
2-2,3,4,7,8-PeCDF		140	177	pg/g	79.0	(21%-178%)
C-1,2,3,4,7,8-HxCDF		162	177	pg/g	91.4	(26%-152%)
C-1,2,3,6,7,8-HxCDF		158	177	pg/g	88.8	(26%-123%)
-2,3,4,6,7,8-HxCDF		160	177	pg/g	90.0	(28%-136%)
-1,2,3,7,8,9-HxCDF		144	177	pg/g	81.2	(29%-147%)

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

TRCC001 TRCC00314 Client: **Project:** 06/17/2014 08:05 SOLID **Date Collected:** Matrix:

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Instrument:

Dilution:

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6260011 Lab Sample ID: 1613B Solid Date Received: 06/19/2014 10:05 **Client Sample:**

Client ID: LFH03 **Prep Basis:** As Received **Batch ID:** 26255 Method: EPA Method 1613B

Data File: b27jun14a-14 SW846 3540C 26253 **Prep Method:** Prep Batch: **Prep Aliquot:** 11.27 g

PQL CAS No. Qual **EMPC** Units **EDL Parmname** Result

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		154	177	pg/g	87.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		146	177	pg/g	82.4	(26%-138%)
37Cl-2,3,7,8-TCDD		16.4	17.7	pg/g	92.7	(35%-197%)

Comments:

SDG Number:

Run Date:

Prep Date:

6260

06/28/2014 00:45

24-JUN-14

Value is estimated

Estimated Maximum Possible Concentration

Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6260 6260012 Lab Sample ID: 1613B Solid **Client Sample:**

Date Collected: Date Received:

TRCC001 06/17/2014 13:20 06/19/2014 10:05

EPA Method 1613B

Project: Matrix:

TRCC00314

SOLID

Prep Basis: As Received

Instrument: HRP763 Dilution: 1

Batch ID: 26255 06/28/2014 10:25 **Run Date:** Data File: b27jun14a_2-11

JFH01

26253 Prep Batch: **Prep Date:** 24-JUN-14

Client ID:

3333-30-0

3333-30-1

TEQ WHO2005 ND=0

TEQ WHO2005 ND=0.5

Prep Method: Prep Aliquot:

Method:

Analyst:

SW846 3540C

JTF

9.98 g

rep Dute.	24-9011-14							
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	.163		pg/g	0.163	1.00	
40321-76-4	1,2,3,7,8-PeCDD	U	.121		pg/g	0.121	5.01	
39227-28-6	1,2,3,4,7,8-HxCDD	U	.131		pg/g	0.131	5.01	
57653-85-7	1,2,3,6,7,8-HxCDD	U	.128		pg/g	0.128	5.01	
19408-74-3	1,2,3,7,8,9-HxCDD	U	.138		pg/g	0.138	5.01	
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.689		pg/g	0.220	5.01	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	5.84		pg/g	0.812	10.0	
51207-31-9	2,3,7,8-TCDF	U	.128		pg/g	0.128	1.00	
57117-41-6	1,2,3,7,8-PeCDF	U	.0864		pg/g	0.0864	5.01	
57117-31-4	2,3,4,7,8-PeCDF	U	.0778		pg/g	0.0778	5.01	
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0918		pg/g	0.0918	5.01	
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0886		pg/g	0.0886	5.01	
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0964		pg/g	0.0964	5.01	
72918-21-9	1,2,3,7,8,9-HxCDF	U	.147		pg/g	0.147	5.01	
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		0.162	pg/g	0.120	5.01	
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.216		pg/g	0.216	5.01	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.395		pg/g	0.395	10.0	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.163		pg/g	0.163	1.00	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.121		pg/g	0.121	5.01	
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	0.285	0.625	pg/g	0.128	5.01	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	1.52		pg/g	0.220	5.01	
30402-14-3	Total Tetrachlorodibenzofuran	U	.128		pg/g	0.128	1.00	
30402-15-4	Total Pentachlorodibenzofuran	U	.0515		pg/g	0.0515	5.01	
55684-94-1	Total Hexachlorodibenzofuran	J	0.140		pg/g	0.0886	5.01	
38998-75-3	Total Heptachlorodibenzofuran	U	.12	0.162	pg/g	0.120	5.01	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	200	pg/g	84.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		171	200	pg/g	85.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		179	200	pg/g	89.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		172	200	pg/g	85.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		186	200	pg/g	93.0	(23%-140%)
13C-OCDD		327	401	pg/g	81.5	(17%-157%)
13C-2,3,7,8-TCDF		178	200	pg/g	88.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		171	200	pg/g	85.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		183	200	pg/g	91.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		191	200	pg/g	95.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		178	200	pg/g	88.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		185	200	pg/g	92.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		171	200	pg/g	85.3	(29%-147%)

0.00865

0.213

0.0103

0.214

pg/g

pg/g

Cape Fear Analytical LLC Report Date: July 10, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 TRCC00314 SDG Number: 6260 Client: **Project:** 06/17/2014 13:20 6260012 SOLID Lab Sample ID: **Date Collected:** Matrix:

1613B Solid Date Received: 06/19/2014 10:05 **Client Sample:**

Client ID: JFH01 **Prep Basis:** As Received **Batch ID:** 26255 Method: EPA Method 1613B

Instrument: HRP763 Run Date: 06/28/2014 10:25 **Analyst: JTF** Data File: b27jun14a_2-11 Dilution: 1 SW846 3540C **Prep Method:**

Prep Aliquot: 9.98 g **Prep Date:** 24-JUN-14 **PQL** CAS No. Qual **EMPC** Units **EDL Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		182	200	pg/g	90.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		173	200	pg/g	86.3	(26%-138%)
37Cl-2,3,7,8-TCDD		19.3	20.0	pg/g	96.3	(35%-197%)

Comments:

Prep Batch:

Value is estimated

Estimated Maximum Possible Concentration

26253

Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 6260013 Lab Sample ID: 1613B Solid

Client: **Date Collected:** Date Received:

TRCC001 06/17/2014 13:25 06/19/2014 10:05 **Project:** Matrix: TRCC00314 SOLID

Client Sample: Client ID:

Run Date:

Data File:

JFH02 Batch ID: 26255

> 06/28/2014 11:13 b27jun14a_2-12

Method: EPA Method 1613B **Analyst: JTF**

Prep Basis: As Received

Instrument: Dilution:

HRP763 1

Prep Batch:	26253	Prep Method:	SW846 3	540C
Prep Date:	24-JUN-14	Prep Aliquot:	10.15 g	
CAS No.	Parmname	Qual	Result	EM

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.13		pg/g	0.130	0.985
40321-76-4	1,2,3,7,8-PeCDD	U	.119		pg/g	0.119	4.93
39227-28-6	1,2,3,4,7,8-HxCDD	U	.148		pg/g	0.148	4.93
57653-85-7	1,2,3,6,7,8-HxCDD	U	.15		pg/g	0.150	4.93
19408-74-3	1,2,3,7,8,9-HxCDD	U	.159		pg/g	0.159	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.717		pg/g	0.223	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	5.93		pg/g	0.510	9.85
51207-31-9	2,3,7,8-TCDF	U	.102		pg/g	0.102	0.985
57117-41-6	1,2,3,7,8-PeCDF	U	.0682		pg/g	0.0682	4.93
57117-31-4	2,3,4,7,8-PeCDF	U	.0638		pg/g	0.0638	4.93
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0875		pg/g	0.0875	4.93
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0843		pg/g	0.0843	4.93
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0928		pg/g	0.0928	4.93
72918-21-9	1,2,3,7,8,9-HxCDF	U	.138		pg/g	0.138	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.290		pg/g	0.100	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.18		pg/g	0.180	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.351		pg/g	0.351	9.85
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.13		pg/g	0.130	0.985
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.119		pg/g	0.119	4.93
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	0.564		pg/g	0.148	4.93
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	1.58		pg/g	0.223	4.93
30402-14-3	Total Tetrachlorodibenzofuran	U	.102		pg/g	0.102	0.985
30402-15-4	Total Pentachlorodibenzofuran	J	0.106		pg/g	0.0467	4.93
55684-94-1	Total Hexachlorodibenzofuran	J	0.140		pg/g	0.0843	4.93
38998-75-3	Total Heptachlorodibenzofuran	J	0.290	0.493	pg/g	0.100	4.93
3333-30-0	TEQ WHO2005 ND=0		0.0118	0.0118	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.196	0.196	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		171	197	pg/g	86.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		158	197	pg/g	80.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		191	197	pg/g	96.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		171	197	pg/g	86.6	(28%-130%)
3C-1,2,3,4,6,7,8-HpCDD		189	197	pg/g	95.8	(23%-140%)
3C-OCDD		326	394	pg/g	82.7	(17%-157%)
8C-2,3,7,8-TCDF		182	197	pg/g	92.2	(24%-169%)
C-1,2,3,7,8-PeCDF		159	197	pg/g	80.7	(24%-185%)
C-2,3,4,7,8-PeCDF		167	197	pg/g	85.0	(21%-178%)
C-1,2,3,4,7,8-HxCDF		197	197	pg/g	100	(26%-152%)
3C-1,2,3,6,7,8-HxCDF		185	197	pg/g	93.8	(26%-123%)
C-2,3,4,6,7,8-HxCDF		190	197	pg/g	96.3	(28%-136%)
C-1,2,3,7,8,9-HxCDF		173	197	pg/g	87.8	(29%-147%)

Cape Fear Analytical LLC Report Date: July 10, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 TRCC00314 SDG Number: 6260 Client: **Project:** 06/17/2014 13:25 6260013 SOLID Lab Sample ID: **Date Collected:** Matrix:

1613B Solid Date Received: 06/19/2014 10:05 **Client Sample:**

Client ID: JFH02 **Prep Basis:** As Received **Batch ID:** 26255 Method: EPA Method 1613B

Instrument: HRP763 Run Date: 06/28/2014 11:13 **Analyst: JTF** Data File: b27jun14a_2-12 Dilution: 1 SW846 3540C **Prep Method:** Prep Batch: 26253

Prep Aliquot: CAS No. Qual **EMPC** Units **EDL PQL Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		187	197	pg/g	94.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		170	197	pg/g	86.3	(26%-138%)
37Cl-2,3,7,8-TCDD		19.5	19.7	pg/g	98.7	(35%-197%)

10.15 g

Comments:

Prep Date:

Value is estimated

Estimated Maximum Possible Concentration

24-JUN-14

Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6260 6260014 **Date Collected:** Lab Sample ID: 1613B Solid Date Received: **Client Sample:**

TRCC001 06/18/2014 08:00 06/19/2014 10:05 **Project:** Matrix:

TRCC00314 SOLID

Client ID: Batch ID:

Run Date:

MFH01 26255

Method: 06/28/2014 12:01

EPA Method 1613B **Analyst: JTF**

10.74 g

Prep Basis:

As Received

HRP763

1

Data File: **Prep Batch:**

b27jun14a_2-13 26253 24-JUN-14

SW846 3540C **Prep Method:**

Prep Aliquot:

Instrument:

Dilution:

Prep Date:

F	2.00.11.	• •	Ü				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.125		pg/g	0.125	0.931
40321-76-4	1,2,3,7,8-PeCDD	U	.0926		pg/g	0.0926	4.66
39227-28-6	1,2,3,4,7,8-HxCDD	U	.121		pg/g	0.121	4.66
57653-85-7	1,2,3,6,7,8-HxCDD	U	.126		pg/g	0.126	4.66
19408-74-3	1,2,3,7,8,9-HxCDD	U	.131		pg/g	0.131	4.66
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.777		pg/g	0.139	4.66
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	9.16		pg/g	0.223	9.31
51207-31-9	2,3,7,8-TCDF	U	.108		pg/g	0.108	0.931
57117-41-6	1,2,3,7,8-PeCDF	U	.0622		pg/g	0.0622	4.66
57117-31-4	2,3,4,7,8-PeCDF	U	.0585		pg/g	0.0585	4.66
70648-26-9	1,2,3,4,7,8-HxCDF	U	.067		pg/g	0.067	4.66
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0642		pg/g	0.0642	4.66
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0685		pg/g	0.0685	4.66
72918-21-9	1,2,3,7,8,9-HxCDF	JK		0.121	pg/g	0.0987	4.66
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.156		pg/g	0.0704	4.66
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.118		pg/g	0.118	4.66
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.21		pg/g	0.210	9.31
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.125		pg/g	0.125	0.931
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.192		pg/g	0.0926	4.66
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	1.07		pg/g	0.121	4.66
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	2.02		pg/g	0.139	4.66
30402-14-3	Total Tetrachlorodibenzofuran	U	.108		pg/g	0.108	0.931
30402-15-4	Total Pentachlorodibenzofuran	J	0.138	0.261	pg/g	0.0413	4.66
55684-94-1	Total Hexachlorodibenzofuran	J	0.136	0.257	pg/g	0.0642	4.66
38998-75-3	Total Heptachlorodibenzofuran	J	0.268		pg/g	0.0704	4.66
3333-30-0	TEQ WHO2005 ND=0		0.0121	0.0242	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.170	0.177	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		156	186	pg/g	84.0	(25%-164%)	
13C-1,2,3,7,8-PeCDD		159	186	pg/g	85.3	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		175	186	pg/g	94.1	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		156	186	pg/g	83.6	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		187	186	pg/g	100	(23%-140%)	
13C-OCDD		347	372	pg/g	93.3	(17%-157%)	
13C-2,3,7,8-TCDF		173	186	pg/g	92.9	(24%-169%)	
13C-1,2,3,7,8-PeCDF		161	186	pg/g	86.6	(24%-185%)	
13C-2,3,4,7,8-PeCDF		170	186	pg/g	91.5	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		181	186	pg/g	97.4	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		173	186	pg/g	92.7	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		175	186	pg/g	93.8	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		171	186	pg/g	91.7	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 10, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 TRCC00314 SDG Number: 6260 Client: **Project:** 06/18/2014 08:00 6260014 SOLID Lab Sample ID: **Date Collected:** Matrix:

1613B Solid Date Received: 06/19/2014 10:05 **Client Sample:**

Client ID: MFH01 **Prep Basis:** As Received **Batch ID:** 26255 Method: EPA Method 1613B **Instrument: HRP763 Run Date:** 06/28/2014 12:01 **Analyst: JTF**

Data File: b27jun14a_2-13 SW846 3540C **Prep Method:** Prep Batch: 26253 **Prep Aliquot:** 10.74 g

CAS No. **EMPC** Units **EDL PQL Parmname** Qual Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		181	186	pg/g	97.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		178	186	pg/g	95.7	(26%-138%)
37Cl-2,3,7,8-TCDD		17.8	18.6	pg/g	95.8	(35%-197%)

Comments:

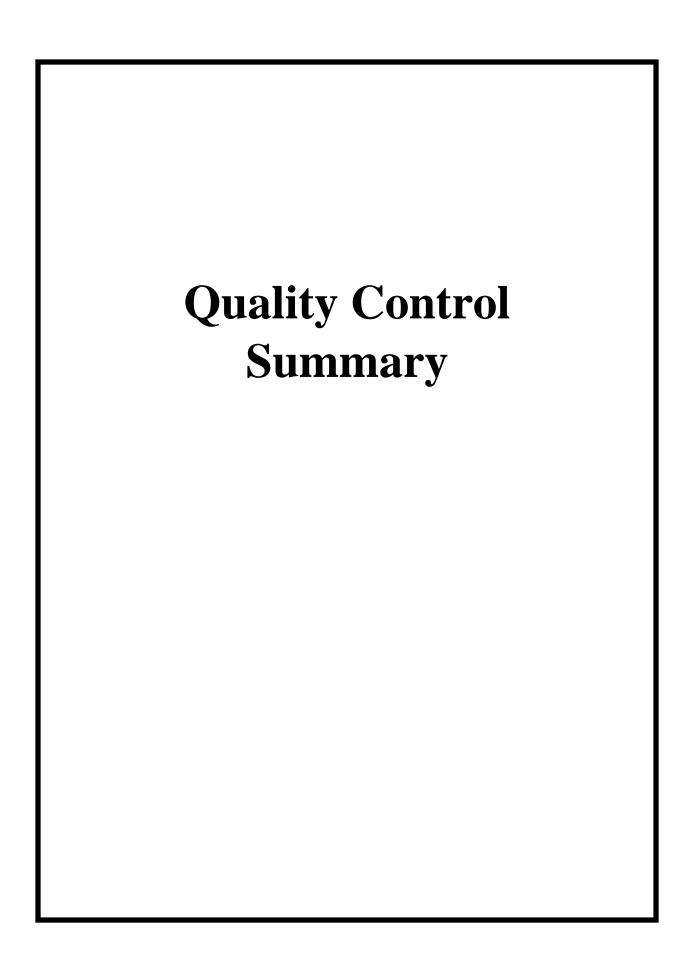
Prep Date:

Value is estimated

Estimated Maximum Possible Concentration \mathbf{K}

24-JUN-14

Analyte was analyzed for, but not detected above the specified detection limit.



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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
2010725	LCS for batch 26220	13C-2,3,7,8-TCDD		85.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		88.6	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		83.6	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		94.3	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		68.9	(22%-166%)
		13C-OCDD		29.6	(13%-199%)
		13C-2,3,7,8-TCDF		97.2	(22%-152%)
		13C-1,2,3,7,8-PeCDF		96.4	(21%-192%)
		13C-2,3,4,7,8-PeCDF		93.1	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		92.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		94.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		91.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		73.8	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		80.6	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		57.7	(20%-186%)
		37Cl-2,3,7,8-TCDD		102	(31%-191%)
2010726	LCSD for batch 26220	13C-2,3,7,8-TCDD		87.0	(20%-175%)
		13C-1,2,3,7,8-PeCDD		89.2	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		86.1	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		94.4	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		65.0	(22%-166%)
		13C-OCDD		43.9	(13%-199%)
		13C-2,3,7,8-TCDF		101	(22%-152%)
		13C-1,2,3,7,8-PeCDF		93.5	(21%-192%)
		13C-2,3,4,7,8-PeCDF		91.3	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		94.9	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		98.1	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		90.2	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		70.5	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		67.3	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		56.5	(20%-186%)
		37Cl-2,3,7,8-TCDD		96.2	(31%-191%)
2010724	MB for batch 26220	13C-2,3,7,8-TCDD		86.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		82.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		83.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		90.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		93.3	(23%-140%)
		13C-OCDD		57.9	(17%-157%)
		13C-2,3,7,8-TCDF		98.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		111	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		106	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		89.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		77.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		97.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		79.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		100	(35%-197%)
260001	YFSW01	13C-2,3,7,8-TCDD		73.1	(25%-164%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
6260001	YFSW01	13C-1,2,3,7,8-PeCDD		81.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		72.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		84.4	(23%-140%)
		13C-OCDD		80.0	(17%-157%)
		13C-2,3,7,8-TCDF		82.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		88.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		86.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		74.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		83.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		86.1	(35%-197%)
5260002	YFSW02	13C-2,3,7,8-TCDD		66.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		79.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		70.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		78.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		87.9	(23%-140%)
		13C-OCDD		81.6	(17%-157%)
		13C-2,3,7,8-TCDF		72.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		68.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		72.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		85.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.5	(35%-197%)
5260003	CPSW01	13C-2,3,7,8-TCDD		60.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		76.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		64.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		79.7	(23%-140%)
		13C-OCDD		76.2	(17%-157%)
		13C-2,3,7,8-TCDF		69.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		77.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		77.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		65.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		70.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		67.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		86.0	(35%-197%)
5260004	CPSW02	13C-2,3,7,8-TCDD		70.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		88.1	(25%-181%)
		13C-1,2,3,7,6-FECDD		00.1	(2370-16170)

Hi-Res Dioxins/Furans Surrogate Recovery Report

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Report Date: July 10, 2014

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Sample ID	Client ID Surrogate		QUAL	Recovery (%)	Acceptance Limits
6260004	CPSW02	13C-1,2,3,4,7,8-HxCDD		73.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		84.3	(23%-140%)
		13C-OCDD		77.2	(17%-157%)
		13C-2,3,7,8-TCDF		84.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		91.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		72.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		80.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		81.6	(35%-197%)

^{*} Recovery outside Acceptance Limits

[#] Column to be used to flag recovery values

D Sample Diluted

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
2010757	LCS for batch 26253	13C-2,3,7,8-TCDD		85.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		81.4	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		95.7	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		83.9	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		93.8	(22%-166%)
		13C-OCDD		79.9	(13%-199%)
		13C-2,3,7,8-TCDF		90.6	(22%-152%)
		13C-1,2,3,7,8-PeCDF		83.7	(21%-192%)
		13C-2,3,4,7,8-PeCDF		90.3	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		96.7	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		92.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		93.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		88.3	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		92.4	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		88.8	(20%-186%)
		37Cl-2,3,7,8-TCDD		97.0	(31%-191%)
2010758	LCSD for batch 26253	13C-2,3,7,8-TCDD		84.5	(20%-175%)
		13C-1,2,3,7,8-PeCDD		82.4	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		89.4	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		87.4	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		87.1	(22%-166%)
		13C-OCDD		74.8	(13%-199%)
		13C-2,3,7,8-TCDF		90.8	(22%-152%)
		13C-1,2,3,7,8-PeCDF		83.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		91.2	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		95.7	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		91.6	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		91.3	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		84.4	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		89.7	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		81.2	(20%-186%)
		37Cl-2,3,7,8-TCDD		98.1	(31%-191%)
010756	MB for batch 26253	13C-2,3,7,8-TCDD		77.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		80.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.0	(23%-140%)
		13C-OCDD		80.8	(17%-157%)
		13C-2,3,7,8-TCDF		83.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		88.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		85.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		84.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		86.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		86.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		96.8	(35%-197%)
260008	CPSD02	13C-2,3,7,8-TCDD		83.7	(25%-164%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
6260008	CPSD02	13C-1,2,3,7,8-PeCDD		87.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		90.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		94.8	(23%-140%)
		13C-OCDD		96.9	(17%-157%)
		13C-2,3,7,8-TCDF		91.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		96.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		98.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		91.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		93.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		92.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		93.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		91.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.4	(35%-197%)
6260009	LFH01	13C-2,3,7,8-TCDD		75.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		80.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.0	(23%-140%)
		13C-OCDD		75.6	(17%-157%)
		13C-2,3,7,8-TCDF		83.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		82.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		90.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		85.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		88.9	(35%-197%)
5260010	LFH02	13C-2,3,7,8-TCDD		80.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		85.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		89.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		88.4	(23%-140%)
		13C-OCDD		78.8	(17%-157%)
		13C-2,3,7,8-TCDF		87.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		90.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		88.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		89.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		88.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		90.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		84.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.8	(35%-197%)
6260011	LFH03	13C-2,3,7,8-TCDD		77.7	(25%-164%)
				73.3	(25%-181%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
6260011	LFH03	13C-1,2,3,4,7,8-HxCDD		89.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		84.9	(23%-140%)
		13C-OCDD		73.5	(17%-157%)
		13C-2,3,7,8-TCDF		88.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		73.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		79.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		91.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		88.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		90.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		87.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		82.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.7	(35%-197%)
5260005	YFSD01	13C-2,3,7,8-TCDD		78.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		80.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		90.8	(23%-140%)
		13C-OCDD		84.7	(17%-157%)
		13C-2,3,7,8-TCDF		87.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		89.0	(21%-178%)
		13C-1,2,3,4,7,8-1 CCDF		87.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		85.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.1	(29%-147%)
				87.5	
		13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,7,8,9-HpCDF		87.0	(28%-143%) (26%-138%)
		37Cl-2,3,7,8-TCDD		94.0	(35%-197%)
5260006	YFSD02	12C 2 2 7 9 TODD		83.3	(250/ 1640/)
200000	1 FSD02	13C-2,3,7,8-TCDD		83.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		89.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD			(32%-141%)
		13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HpCDD		80.4 90.7	(28%-130%)
					(23%-140%)
		13C-OCDD		82.2	(17%-157%)
		13C-2,3,7,8-TCDF		92.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		89.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		86.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		88.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		89.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		86.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.9	(35%-197%)
5260007	CPSD01	13C-2,3,7,8-TCDD		80.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		81.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		91.6	(32%-141%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5260007	CPSD01	13C-1,2,3,6,7,8-HxCDD		81.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		93.4	(23%-140%)
		13C-OCDD		86.8	(17%-157%)
		13C-2,3,7,8-TCDF		86.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		90.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		92.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		88.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		90.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		89.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		92.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		88.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		95.0	(35%-197%)
5260012	JFH01	13C-2,3,7,8-TCDD		84.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		85.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		89.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		93.0	(23%-140%)
		13C-OCDD		81.5	(17%-157%)
		13C-2,3,7,8-TCDF		88.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		85.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		91.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		95.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		88.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		92.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		90.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		86.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		96.3	(35%-197%)
260013	JFH02	13C-2,3,7,8-TCDD		86.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		80.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		96.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.8	(23%-140%)
		13C-OCDD		82.7	(17%-157%)
		13C-2,3,7,8-TCDF		92.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		80.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		85.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		100	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		93.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		96.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		94.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		86.3	(26%-138%)
		37C1-2,3,7,8-TCDD		98.7	(35%-197%)
5260014	MFH01	13C-2,3,7,8-TCDD		84.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		85.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		94.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.6	(28%-130%)

Hi-Res Dioxins/Furans Surrogate Recovery Report Page 8 of 8

Report Date: July 10, 2014

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
6260014	MFH01	13C-1,2,3,4,6,7,8-HpCDD		100	(23%-140%)
		13C-OCDD		93.3	(17%-157%)
		13C-2,3,7,8-TCDF		92.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		86.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		91.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		97.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		92.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		93.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		91.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		97.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		95.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		95.8	(35%-197%)

^{*} Recovery outside Acceptance Limits

[#] Column to be used to flag recovery values

D Sample Diluted

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6260 Sample Type: Laboratory Control Sample

Client ID: LCS for batch 26220 Matrix: WATER

Lab Sample ID: 12010725

Instrument: HRP750 Analysis Date: 06/24/2014 04:44 Dilution: 1

Analyst: JTF Prep Batch ID:26220

			Amount Added	Spike Conc.	Recovery	Acceptance
CAS No.		Parmname	pg/L	pg/L	%	Limits
1746-01-6	LCS	2,3,7,8-TCDD	200	217	109	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	1000	1040	104	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	1000	1020	102	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	1000	1050	105	74-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	1000	1030	103	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	1000	1030	103	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	2000	2120	106	78-144
51207-31-9	LCS	2,3,7,8-TCDF	200	188	93.9	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	1000	999	99.9	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	1000	1000	100	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	1000	1030	103	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	1000	1040	104	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	1000	1030	103	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	1000	1050	105	78-130
57562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	1000	993	99.3	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	1000	1030	103	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	2000	2080	104	63-170

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6260 Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 26220 Matrix: WATER

Lab Sample ID: 12010726

Instrument: HRP750 Analysis Date: 06/24/2014 05:32 Dilution: 1

Analyst: JTF Prep Batch ID:26220

			Amount Added	Spike Conc.	Recovery	Acceptance	RPD	Acceptance
CAS No.		Parmname	pg/L	pg/L	%	Limits	%	Limits
1746-01-6	LCSD	2,3,7,8-TCDD	200	213	106	67-158	2.20	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	1000	1010	101	70-142	2.50	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	1000	1020	102	70-164	0.0216	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	1000	1020	102	74-134	2.62	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	1000	1010	101	64-162	1.51	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	1000	994	99.4	70-140	4.00	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	2000	2080	104	78-144	2.08	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	200	185	92.7	75-158	1.35	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	1000	1040	104	80-134	3.88	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	1000	1040	104	68-160	3.17	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	1000	1050	105	72-134	2.22	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	1000	1060	106	84-130	1.74	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	1000	1060	106	70-156	2.52	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	1000	1110	111	78-130	5.62	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	1000	1030	103	82-122	3.25	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	1000	1040	104	78-138	0.527	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	2000	1930	96.7	63-170	7.06	0-20

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6260 Sample Type: Laboratory Control Sample

Client ID: LCS for batch 26253 Matrix: SOLID

Lab Sample ID: 12010757

Instrument: HRP763 Analysis Date: 06/27/2014 15:12 Dilution: 1

Analyst: JTF Prep Batch ID:26253

			Amount Added	Spike Conc.	Recovery	Acceptance
CAS No.		Parmname	pg/g	pg/g	%	Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	21.9	109	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	108	108	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	109	109	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	110	110	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	107	107	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	103	103	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	202	101	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	20.9	104	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	106	106	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	104	104	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	109	109	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	109	109	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	111	111	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	115	115	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	108	108	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	107	107	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	216	108	63-170

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6260 Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 26253 Matrix: SOLID

Lab Sample ID: 12010758

Instrument: HRP763 Analysis Date: 06/27/2014 15:59 Dilution: 1

Analyst: JTF Prep Batch ID:26253

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	21.8	109	67-158	0.422	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	107	107	70-142	0.504	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	109	109	70-164	0.308	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	108	108	76-134	1.44	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	109	109	64-162	1.98	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	104	104	70-140	0.623	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	209	105	78-144	3.41	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	21.1	105	75-158	1.15	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	109	109	80-134	2.78	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	106	106	68-160	1.50	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	109	109	72-134	0.224	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	108	108	84-130	0.411	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	110	110	70-156	0.796	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	113	113	78-130	2.47	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	108	108	82-122	0.410	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	111	111	78-138	3.24	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	213	107	63-170	1.21	0-20

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Method Blank Summary

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SDG Number: 6260 **Client ID:**

MB for batch 26220

Lab Sample ID: 12010724

Client: Instrument ID:

TRCC001 HRP750

Matrix:

WATER Data File: A23JUN14A_3-3

Column:

Prep Date: 20-JUN-14 Analyzed: 06/24/14 06:20

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed	
01 LCS for batch 26220	12010725	A23JUN14A_3-1	06/24/14	0444	
02 LCSD for batch 26220	12010726	A23JUN14A_3-2	06/24/14	0532	
03 YFSW01	6260001	A23JUN14A_4-7	06/24/14	1932	
04 YFSW02	6260002	A23JUN14A_4-8	06/24/14	2020	
05 CPSW01	6260003	A23JUN14A_4-9	06/24/14	2108	
06 CPSW02	6260004	A23JUN14A_4-10	06/24/14	2156	

6260

Report Date:

July 10, 2014

Method Blank Summary

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SDG Number: **Client ID:** Lab Sample ID: 12010756

Column:

MB for batch 26253

TRCC001 **Client:** Instrument ID: HRP763 **Prep Date:** 24-JUN-14 Matrix: **SOLID** Data File: b27jun14a-4 Analyzed: 06/27/14 16:47

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 26253	12010757	b27jun14a-2	06/27/14	1512
02 LCSD for batch 26253	12010758	b27jun14a-3	06/27/14	1559
03 CPSD02	6260008	b27jun14a-11	06/27/14	2221
04 LFH01	6260009	b27jun14a-12	06/27/14	2309
05 LFH02	6260010	b27jun14a-13	06/27/14	2357
06 LFH03	6260011	b27jun14a-14	06/28/14	0045
07 YFSD01	6260005	b27jun14a_2-8	06/28/14	0802
08 YFSD02	6260006	b27jun14a_2-9	06/28/14	0850
09 CPSD01	6260007	b27jun14a_2-10	06/28/14	0937
10 JFH01	6260012	b27jun14a_2-11	06/28/14	1025
11 JFH02	6260013	b27jun14a_2-12	06/28/14	1113
12 MFH01	6260014	b27jun14a_2-13	06/28/14	1201

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

.87

.9

3.64

2.52

.812

4.36

6.28

2.02

1.76

3.16

J

U

U

J

J

U

1540

2000

pg/L

SDG Number: 6260

12010724 Lab Sample ID:

QC for batch 26220 MB for batch 26220

Batch ID: 26223

Client Sample: Client ID:

Run Date: 06/24/2014 06:20 Data File: A23JUN14A_3-3

Prep Batch: 26220 **Prep Date:** 20-JUN-14

TRCC001 **Client:**

Project: Matrix: TRCC00314 WATER

Prep Basis:

As Received

Instrument:

EDL

Dilution:

HRP750

1

PQL

Prep Method: **Prep Aliquot:**

Method:

Analyst:

1000 mL

CAS No. **Parmname** Qual Result **EMPC** 1746-01-6 2,3,7,8-TCDD U .87 JK 40321-76-4 1,2,3,7,8-PeCDD 1.84 39227-28-6 1,2,3,4,7,8-HxCDD U 2.46 JK 57653-85-7 1,2,3,6,7,8-HxCDD 3.90 19408-74-3 1,2,3,7,8,9-HxCDD J 3.64 JK 1,2,3,4,6,7,8-HpCDD 3.78

35822-46-9 3268-87-9 1,2,3,4,6,7,8,9-OCDD J 12.5 51207-31-9 2,3,7,8-TCDF U .812 57117-41-6 1,2,3,7,8-PeCDF J 2.02

57117-31-4 2,3,4,7,8-PeCDF J 2.34 70648-26-9 1,2,3,4,7,8-HxCDF JK 57117-44-9 1,2,3,6,7,8-HxCDF J 2.50 J 3.78 60851-34-5 2.3.4.6.7.8-HxCDF

72918-21-9 1,2,3,7,8,9-HxCDF JK 67562-39-4 1,2,3,4,6,7,8-HpCDF JK 55673-89-7 1,2,3,4,7,8,9-HpCDF JK 1,2,3,4,6,7,8,9-OCDF JK 39001-02-0 U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin U

34465-46-8 Total Hexachlorodibenzo-p-dioxin 37871-00-4 Total Heptachlorodibenzo-p-dioxin 30402-14-3 Total Tetrachlorodibenzofuran 30402-15-4 Total Pentachlorodibenzofuran 55684-94-1 Total Hexachlorodibenzofuran

Total Pentachlorodibenzo-p-dioxin

Total Heptachlorodibenzofuran 38998-75-3 3333-30-0 TEQ WHO2005 ND=0 3333-30-1 TEQ WHO2005 ND=0.5

Surrogate/Tracer recovery

13C-2,3,7,8-TCDD

13C-1,2,3,7,8,9-HxCDF

36088-22-9

13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 1670 2000 13C-1,2,3,6,7,8-HxCDD 1820 2000 13C-1,2,3,4,6,7,8-HpCDD 1870 2000 13C-OCDD 2310 4000 13C-2,3,7,8-TCDF 1970 2000 13C-1,2,3,7,8-PeCDF 1830 2000 13C-2,3,4,7,8-PeCDF 1740 2000 13C-1,2,3,4,7,8-HxCDF 2230 2000 13C-1,2,3,6,7,8-HxCDF 2110 2000 13C-2,3,4,6,7,8-HxCDF

2.90

5.42

Units

SW846 3520C

EPA Method 1613B

pg/L 0.870 10.0 pg/L 0.900 50.0 pg/L 2.46 50.0 pg/L 2.42 50.0 pg/L 2.60 50.0 pg/L 2.52 50.0 9.50 100 pg/L

pg/L 0.812 10.0 pg/L 0.958 50.0 pg/L 0.992 50.0 1.20 50.0 pg/L pg/L 1.33 50.0 1.64 50.0

pg/L 4.16 pg/L 2.60 50.0 3.10 pg/L 2.02 50.0 5.80 pg/L 3.82 50.0 pg/L 8.74 100

8.86 pg/L 0.870 10.0 1.84 pg/L 0.900 50.0 7.54 pg/L 2.42 50.0 3.78 pg/L 2.52 50.0 0.812 pg/L 10.0

pg/L 0.688 50.0 13.3 pg/L 1.20 50.0 8.90 pg/L 2.02 50.0 4.82 pg/L

Acceptable Limits Qual Result Nominal Units Recovery% 1720 2000 pg/L 86.2 (25%-164%) 1640 2000 pg/L 82.1 (25%-181%) 83.5 pg/L (32%-141%) pg/L 90.9 (28%-130%) pg/L 93.3 (23%-140%) 57.9 (17%-157%) pg/L 98.3 (24%-169%) pg/L pg/L 91.6 (24%-185%) pg/L 87.2 (21%-178%) pg/L 111 (26%-152%) pg/L 106 (26%-123%) 1780 2000 pg/L 89.2 (28%-136%)

77.2

(29%-147%)

pg/L

Cape Fear Analytical LLC Report Date: July 10, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC001 TRCC00314 Client: **Project:**

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12010724 Lab Sample ID: Matrix: WATER QC for batch 26220 **Client Sample:**

Client ID: MB for batch 26220 **Prep Basis:** As Received **Batch ID:** 26223 Method: EPA Method 1613B

Instrument: HRP750 Run Date: 06/24/2014 06:20 **Analyst: JTF** Data File: A23JUN14A_3-3 Dilution: 1

Prep Method: Prep Aliquot: 1000 mL**Prep Date:** 20-JUN-14 CAS No. **EMPC EDL PQL Parmname** Qual Result Units

Surrogate/Tracer recovery Units Recovery% **Acceptable Limits** Qual Result Nominal 13C-1,2,3,4,6,7,8-HpCDF 1950 97.3 2000 pg/L (28%-143%) pg/L 13C-1,2,3,4,7,8,9-HpCDF 1590 2000 79.6 (26%-138%) 37Cl-2,3,7,8-TCDD 200 200 100 (35%-197%) pg/L

SW846 3520C

Comments:

SDG Number:

Prep Batch:

6260

26220

Value is estimated

Estimated Maximum Possible Concentration \mathbf{K}

Analyte was analyzed for, but not detected above the specified detection limit.

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HRP750

1

Instrument:

Dilution:

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

TRCC001 Client: TRCC00314 SDG Number: 6260 **Project:** 12010725 WATER Lab Sample ID: Matrix: QC for batch 26220 **Client Sample:** As Received **Client ID:** LCS for batch 26220 **Prep Basis: Batch ID:** 26223 Method: EPA Method 1613B

Analyst:

Data File:A23JUN14A_3-1Prep Batch:26220Prep Method:SW846 3520CPrep Date:20-JUN-14Prep Aliquot:1000 mL

06/24/2014 04:44

Run Date:

Prep Date:	20-JUN-14	Frep Anquot.	1000 IIIL					
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD		217		pg/L	1.60	10.0	
40321-76-4	1,2,3,7,8-PeCDD		1040		pg/L	3.28	50.0	
39227-28-6	1,2,3,4,7,8-HxCDD		1020		pg/L	6.42	50.0	
57653-85-7	1,2,3,6,7,8-HxCDD		1050		pg/L	6.64	50.0	
19408-74-3	1,2,3,7,8,9-HxCDD		1030		pg/L	6.92	50.0	
35822-46-9	1,2,3,4,6,7,8-HpCDD		1030		pg/L	8.78	50.0	
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2120		pg/L	37.0	100	
51207-31-9	2,3,7,8-TCDF		188		pg/L	1.42	10.0	
57117-41-6	1,2,3,7,8-PeCDF		999		pg/L	3.10	50.0	
57117-31-4	2,3,4,7,8-PeCDF		1000		pg/L	3.04	50.0	
70648-26-9	1,2,3,4,7,8-HxCDF		1030		pg/L	6.62	50.0	
57117-44-9	1,2,3,6,7,8-HxCDF		1040		pg/L	7.04	50.0	
60851-34-5	2,3,4,6,7,8-HxCDF		1030		pg/L	7.34	50.0	
72918-21-9	1,2,3,7,8,9-HxCDF		1050		pg/L	12.3	50.0	
67562-39-4	1,2,3,4,6,7,8-HpCDF		993		pg/L	4.94	50.0	
55673-89-7	1,2,3,4,7,8,9-HpCDF		1030		pg/L	11.6	50.0	
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2080		pg/L	55.0	100	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1700	2000	pg/L	85.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		1770	2000	pg/L	88.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		1670	2000	pg/L	83.6	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		1890	2000	pg/L	94.3	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		1380	2000	pg/L	68.9	(22%-166%)
13C-OCDD		1190	4000	pg/L	29.6	(13%-199%)
13C-2,3,7,8-TCDF		1940	2000	pg/L	97.2	(22%-152%)
13C-1,2,3,7,8-PeCDF		1930	2000	pg/L	96.4	(21%-192%)
13C-2,3,4,7,8-PeCDF		1860	2000	pg/L	93.1	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		1860	2000	pg/L	92.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		1900	2000	pg/L	94.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		1840	2000	pg/L	91.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		1480	2000	pg/L	73.8	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		1610	2000	pg/L	80.6	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		1150	2000	pg/L	57.7	(20%-186%)
37Cl-2,3,7,8-TCDD		204	200	pg/L	102	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

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As Received

HRP750

1

Prep Basis:

Instrument:

Dilution:

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 12010726 Matrix: WATER
Client Sample: QC for batch 26220

Client ID: LCSD for batch 26220

Client ID: LCSD for batch 26220

Batch ID: 26223 Method: EPA Method 1613B

Run Date: 06/24/2014 05:32 Analyst: JTF
Data File: A23JUN14A_3-2

Prep Batch: 26220 Prep Method: SW846 3520C Prep Date: 20-JUN-14 Prep Aliquot: 1000 mL

Trep Date.	20-3011-14	rrep imquot.	1000 IIIL					
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD		213		pg/L	1.12	10.0	
40321-76-4	1,2,3,7,8-PeCDD		1010		pg/L	3.16	50.0	
39227-28-6	1,2,3,4,7,8-HxCDD		1020		pg/L	6.26	50.0	
57653-85-7	1,2,3,6,7,8-HxCDD		1020		pg/L	6.12	50.0	
19408-74-3	1,2,3,7,8,9-HxCDD		1010		pg/L	6.56	50.0	
35822-46-9	1,2,3,4,6,7,8-HpCDD		994		pg/L	10.5	50.0	
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2080		pg/L	29.6	100	
51207-31-9	2,3,7,8-TCDF		185		pg/L	1.34	10.0	
57117-41-6	1,2,3,7,8-PeCDF		1040		pg/L	3.00	50.0	
57117-31-4	2,3,4,7,8-PeCDF		1040		pg/L	2.90	50.0	
70648-26-9	1,2,3,4,7,8-HxCDF		1050		pg/L	6.90	50.0	
57117-44-9	1,2,3,6,7,8-HxCDF		1060		pg/L	6.64	50.0	
60851-34-5	2,3,4,6,7,8-HxCDF		1060		pg/L	7.90	50.0	
72918-21-9	1,2,3,7,8,9-HxCDF		1110		pg/L	14.5	50.0	
67562-39-4	1,2,3,4,6,7,8-HpCDF		1030		pg/L	7.44	50.0	
55673-89-7	1,2,3,4,7,8,9-HpCDF		1040		pg/L	14.3	50.0	
39001-02-0	1,2,3,4,6,7,8,9-OCDF		1930		pg/L	60.2	100	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1740	2000	pg/L	87.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		1780	2000	pg/L	89.2	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		1720	2000	pg/L	86.1	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		1890	2000	pg/L	94.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		1300	2000	pg/L	65.0	(22%-166%)
13C-OCDD		1760	4000	pg/L	43.9	(13%-199%)
13C-2,3,7,8-TCDF		2010	2000	pg/L	101	(22%-152%)
13C-1,2,3,7,8-PeCDF		1870	2000	pg/L	93.5	(21%-192%)
13C-2,3,4,7,8-PeCDF		1830	2000	pg/L	91.3	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		1900	2000	pg/L	94.9	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		1960	2000	pg/L	98.1	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		1800	2000	pg/L	90.2	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		1410	2000	pg/L	70.5	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		1350	2000	pg/L	67.3	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		1130	2000	pg/L	56.5	(20%-186%)
37Cl-2,3,7,8-TCDD		192	200	pg/L	96.2	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 10, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

Client: SDG Number: 6260 Lab Sample ID:

12010756

QC for batch 26253 **Client Sample: Client ID:** MB for batch 26253

Batch ID: 26255

06/27/2014 16:47 **Run Date:**

Data File: b27jun14a-4

Prep Batch: 26253

Prep Method:

Method:

Analyst:

TRCC001

EPA Method 1613B

SW846 3540C

Project: Matrix:

Prep Basis:

TRCC00314

SOLID

As Received

Instrument: HRP763

Dilution: 1

Prep Date:	24-JUN-14	Prep Aliquot:	10 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.0994		pg/g	0.0994	1.00
40321-76-4	1,2,3,7,8-PeCDD	J	0.198		pg/g	0.0714	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	JK		0.198	pg/g	0.0966	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.208		pg/g	0.103	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	JK		0.210	pg/g	0.106	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.380		pg/g	0.140	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	2.09		pg/g	0.220	10.0
51207-31-9	2,3,7,8-TCDF	U	.0668		pg/g	0.0668	1.00
57117-41-6	1,2,3,7,8-PeCDF	J	0.242		pg/g	0.0432	5.00
57117-31-4	2,3,4,7,8-PeCDF	J	0.176		pg/g	0.040	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	JK		0.188	pg/g	0.069	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	JK		0.176	pg/g	0.0654	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.180		pg/g	0.0704	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.322		pg/g	0.096	5.00
57562-39-4	1,2,3,4,6,7,8-HpCDF	JK		0.220	pg/g	0.0656	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.194		pg/g	0.108	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	JK		0.396	pg/g	0.234	10.0
11903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.0994		pg/g	0.0994	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.198		pg/g	0.0714	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	0.208	0.616	pg/g	0.0966	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.704		pg/g	0.140	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	.0668		pg/g	0.0668	1.00
30402-15-4	Total Pentachlorodibenzofuran	J	0.528	0.670	pg/g	0.033	5.00
55684-94-1	Total Hexachlorodibenzofuran	J	1.07	1.43	pg/g	0.0654	5.00
38998-75-3	Total Heptachlorodibenzofuran	J	0.336	0.556	pg/g	0.0656	5.00
3333-30-0	TEQ WHO2005 ND=0		0.335	0.415	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.406	0.468	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		156	200	pg/g	77.8	(25%-164%)	
13C-1,2,3,7,8-PeCDD		160	200	pg/g	80.0	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		174	200	pg/g	87.2	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		151	200	pg/g	75.4	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		178	200	pg/g	89.0	(23%-140%)	
13C-OCDD		323	400	pg/g	80.8	(17%-157%)	
13C-2,3,7,8-TCDF		168	200	pg/g	83.8	(24%-169%)	
13C-1,2,3,7,8-PeCDF		162	200	pg/g	81.1	(24%-185%)	
13C-2,3,4,7,8-PeCDF		177	200	pg/g	88.7	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		171	200	pg/g	85.5	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		164	200	pg/g	82.2	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		170	200	pg/g	84.9	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		174	200	pg/g	87.2	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 10, 2014

Page 2

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6260 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 12010756 Matrix: SOLID

Client Sample: QC for batch 26253
Client ID: MB for batch 26253
Prep Basi

Client ID: MB for batch 26253 Prep Basis: As Received Batch ID: 26255 Method: EPA Method 1613B

Run Date: 06/27/2014 16:47 Analyst: JTF Instrument: HRP763
Data File: b27jun14a-4 Dilution: 1
Prep Batch: 26253 Prep Method: SW846 3540C

Prep Date: 24-JUN-14 Prep Aliquot: 10 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		173	200	pg/g	86.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		173	200	pg/g	86.3	(26%-138%)
37Cl-2,3,7,8-TCDD		19.4	20.0	pg/g	96.8	(35%-197%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Cape Fear Analytical LLC Report Date: July 10, 2014

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

EPA Method 1613B

Page 1

As Received

HRP763

1

Prep Basis:

Instrument:

Dilution:

of 1

SDG Number: 6260 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 12010757 Matrix: SOLID

Client Sample: QC for batch 26253

Client ID: LCS for batch 26253

Batch ID: 26255

Run Date: 06/27/2014 15:12 Data File: b27jun14a-2

/27/2014 15:12 Analyst: JTF 7jun14a-2

Method:

Prep Batch: 26253 Prep Method: SW846 3540C

Prep Date:	24-JUN-14	Prep Aliquot:	10 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		21.9		pg/g	0.161	1.00
40321-76-4	1,2,3,7,8-PeCDD		108		pg/g	0.168	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		109		pg/g	0.244	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		110		pg/g	0.258	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		107		pg/g	0.266	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		103		pg/g	0.344	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		202		pg/g	0.520	10.0
51207-31-9	2,3,7,8-TCDF		20.9		pg/g	0.0984	1.00
57117-41-6	1,2,3,7,8-PeCDF		106		pg/g	0.228	5.00
57117-31-4	2,3,4,7,8-PeCDF		104		pg/g	0.210	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		109		pg/g	0.364	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		109		pg/g	0.372	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		111		pg/g	0.374	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		115		pg/g	0.572	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		108		pg/g	0.292	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		107		pg/g	0.514	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		216		pg/g	0.600	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	200	pg/g	85.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		163	200	pg/g	81.4	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		191	200	pg/g	95.7	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		168	200	pg/g	83.9	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		188	200	pg/g	93.8	(22%-166%)
13C-OCDD		320	400	pg/g	79.9	(13%-199%)
13C-2,3,7,8-TCDF		181	200	pg/g	90.6	(22%-152%)
13C-1,2,3,7,8-PeCDF		167	200	pg/g	83.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		181	200	pg/g	90.3	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		193	200	pg/g	96.7	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		186	200	pg/g	92.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		187	200	pg/g	93.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		177	200	pg/g	88.3	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		185	200	pg/g	92.4	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		178	200	pg/g	88.8	(20%-186%)
37Cl-2,3,7,8-TCDD		19.4	20.0	pg/g	97.0	(31%-191%)

Comments:

K Estimated Maximum Possible Concentration

Cape Fear Analytical LLC Report Date: July 10, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC001 Client: **Project:** TRCC00314 SDG Number: 6260 12010758 SOLID Lab Sample ID: Matrix:

QC for batch 26253 **Client Sample:**

Client ID: LCSD for batch 26253

Batch ID: 26255

06/27/2014 15:59 **Run Date:**

Data File: b27jun14a-3

Prep Batch: 26253

Prep Date: 24-JUN-14

Method: EPA Method 1613B **Analyst: JTF**

Prep Method:

Prep Aliquot: 10 g

SW846 3540C

HRP763

As Received

Page 1

of 1

Instrument: Dilution: 1

Prep Basis:

r rep Date.	21001111		8				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		21.8		pg/g	0.156	1.00
40321-76-4	1,2,3,7,8-PeCDD		107		pg/g	0.121	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		109		pg/g	0.180	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		108		pg/g	0.186	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		109		pg/g	0.194	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		104		pg/g	0.354	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		209		pg/g	0.594	10.0
51207-31-9	2,3,7,8-TCDF		21.1		pg/g	0.0828	1.00
57117-41-6	1,2,3,7,8-PeCDF		109		pg/g	0.150	5.00
57117-31-4	2,3,4,7,8-PeCDF		106		pg/g	0.133	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		109		pg/g	0.322	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		108		pg/g	0.314	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		110		pg/g	0.354	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		113		pg/g	0.538	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		108		pg/g	0.338	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		111		pg/g	0.612	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		213		pg/g	0.682	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	200	pg/g	84.5	(20%-175%)
13C-1,2,3,7,8-PeCDD		165	200	pg/g	82.4	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		179	200	pg/g	89.4	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		175	200	pg/g	87.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		174	200	pg/g	87.1	(22%-166%)
13C-OCDD		299	400	pg/g	74.8	(13%-199%)
13C-2,3,7,8-TCDF		182	200	pg/g	90.8	(22%-152%)
13C-1,2,3,7,8-PeCDF		166	200	pg/g	83.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		182	200	pg/g	91.2	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		191	200	pg/g	95.7	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		183	200	pg/g	91.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		183	200	pg/g	91.3	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		169	200	pg/g	84.4	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		179	200	pg/g	89.7	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		162	200	pg/g	81.2	(20%-186%)
37Cl-2,3,7,8-TCDD		19.6	20.0	pg/g	98.1	(31%-191%)

Comments:

Estimated Maximum Possible Concentration



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	ξ	֖֖֓֞֞֓֞֓֓֓֓֓֞֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֝֝֓֓֓֓֝֝֓֡֝֝֡֓֡֝֝֡֓֡֝֓֡֓֡֝֡֓֡֝֝֡֓֡֝֝֡֡֝֝֡֓֡֝֡֡֝֡	CFA Work Order Number:		L.	01854	Send Results To: Liz Denly	*Date Collected	(mm-dd-yy)	H - CI-90	yı - (1-90	41 - CI - 90	¥1 - C1 - 90	Y1 - C1-30	N - C1 -90	h1 - CI -90	h1- C1-90	h1-C1-90	h1-41-70	(Subject to Surcharge) Fax Results:	these sample			ly Signatures	Received by (signed)	I FENEY	2 Cynd	3 6	=- = Eouipment Blan
Page: of	Project #: CFA Onote #:	(0)		Client Name: TRC Environmenta)	Project/Site Name: Montjonicy County RRF	Address: 650 Siff 14 St. Lowell, A.A	Collected by: S. Hein /M. Wyant Send Resul		* For composites - indicate start and stop date/time	E801	LFSWOI	LF SW 02	LF 5w 03	LF SD 01	2F5002	LF SD 03	JFMOI	JFM 02	SFMO3	TAT Requested: Normal: X Rush: Specify:	Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards				Reinquished By (Signed) Date Time	Lest & The 6-17-14 1830	Fediex IBJUNIY 1050		.) Chain of Custody Number = Client Determined). QC Codes: N = Normal Sample, TB = Trip Blank, FB = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Dunlicate Sample, G = Grah, C = Commonsite

Rci g'4 qh8;

4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal 5.) Sample Analysis Requested: Analytical method requested (i.e.82908, 1668B) and number of containers provided for each (i.e.8290B - 3, 1668B - 1).

6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, HA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

WHITE = LABORATORY

YELLOW = FILE

PINK = CLIENT

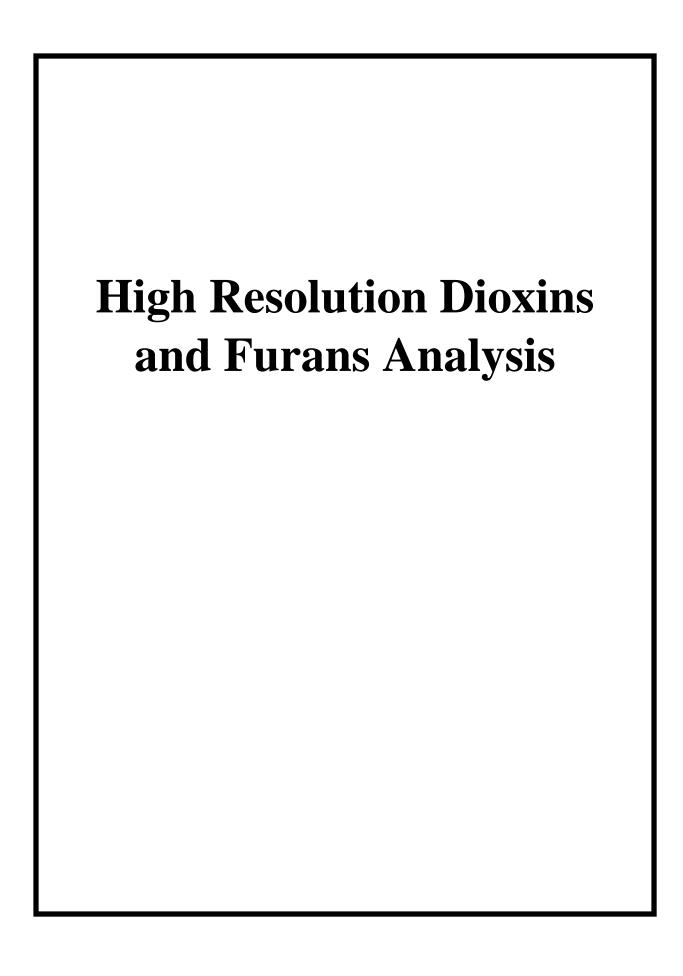
3.) Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.

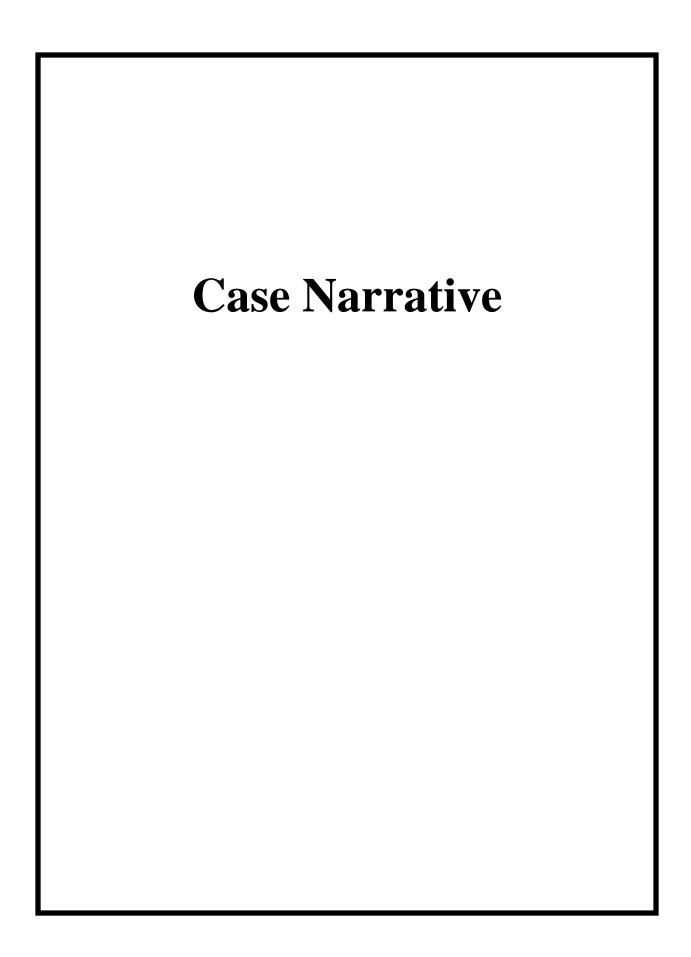
SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client:	RC				Work Order: 6254
Shipping Company:	FedEx				Date/Time Received: 18JUN14 1050
Suspected Hazard In Shipped as DOT Haza Samples identified as	irdous?	Yes	NA	No	DOE Site Sample Packages Yes NA Not Screened < 0.5 mR/hr? Samples < 2x background?
Air Sample Receipt S Air sample in shipme		Yes	NA	No	* Notify RSO of any responses in this column immediately. Air Witness:
	ceipt Criteria ers received intact	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items) Circle Applicable: seals broken damaged container leaking container other(describe)
Chain of Custody with shipment?	documents included	⁄ر			
Samples requirir within 0-6°C?	ng cold preservation	J			Proservation Method: (e bags) blue ice dry ice none other (describe) 3.0°C
Aqueous sample solids?	s found to have visible			_	Sample IDs, containers affected:
5 Samples requirir preservation at p			/		Sample IDs, containers affected and pH observed: PH=7 on all liguid samples II preservative added, LOTA:
6 Samples requirir no residual chlor	ng preservation have line?	V			Sample IDs, containers affected: If preservative added, Lot#:
7 Samples receive	d within holding time?	~			Sample IDs, tests affected:
8 Sample IDs on Containers?	OC match IDs on	V			Sample IDs, containers affected:
Date & time of C on containers?	OC match date & time	~			Sample IDs, containers affected:
Number of continumber indicate	ainers received match d on COC?				Sample IDs, containers affected:
COC form is propreted/red	_				
Comments:					
	Checklist performed	bv: In	nitials:		Cf Date: 18 JUN 14







HDOX Case Narrative TRC Environmental Corporation (TRCC) SDG 6254

Method/Analysis Information

Product: Dioxins/Furans by EPA Method 1613B

Analytical Method: EPA Method 1613B Extraction Method: SW846 3520C, 3540C

Analytical Batch Number: 26223, 26255, 26307, 26419 Clean Up Batch Number: 26221, 26306, 26418, 26254 Extraction Batch Number: 26220, 26253, 26305, 26417

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1613B:

Sample ID	Client ID
6254001	EB01
6254002	LFSW01
6254003	LFSW02
6254004	LFSW03
6254005	LFSD01
6254006	LFSD02
6254007	LFSD03
6254008	JFM01
6254009	JFM02
6254010	JFM03
12010724	Method Blank (MB)
12010725	Laboratory Control Sample (LCS)
12010726	Laboratory Control Sample Duplicate (LCSD)
12010756	Method Blank (MB)
12010757	Laboratory Control Sample (LCS)
12010758	Laboratory Control Sample Duplicate (LCSD)
12010819	Method Blank (MB)
12010820	Laboratory Control Sample (LCS)
12010821	Laboratory Control Sample Duplicate (LCSD)
12010925	Method Blank (MB)
12010926	Laboratory Control Sample (LCS)
12010927	Laboratory Control Sample Duplicate (LCSD)

Samples 6254 005, 006 and 007 in this SDG were analyzed on a "dry weight" basis. Samples 6254 001, 002, 003, 004, 008, 009 and 010 in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 13.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement

The test results presented in this document are certified to meet all requirements of the 2003 NELAC Standard.

Method Blank (MB) Statement

The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery

The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement

The RPD(s) between the LCS and LCSD met the acceptance limits.

Technical Information

Holding Time Specifications

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of

expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation

A NCR was not required for this SDG.

Manual Integrations

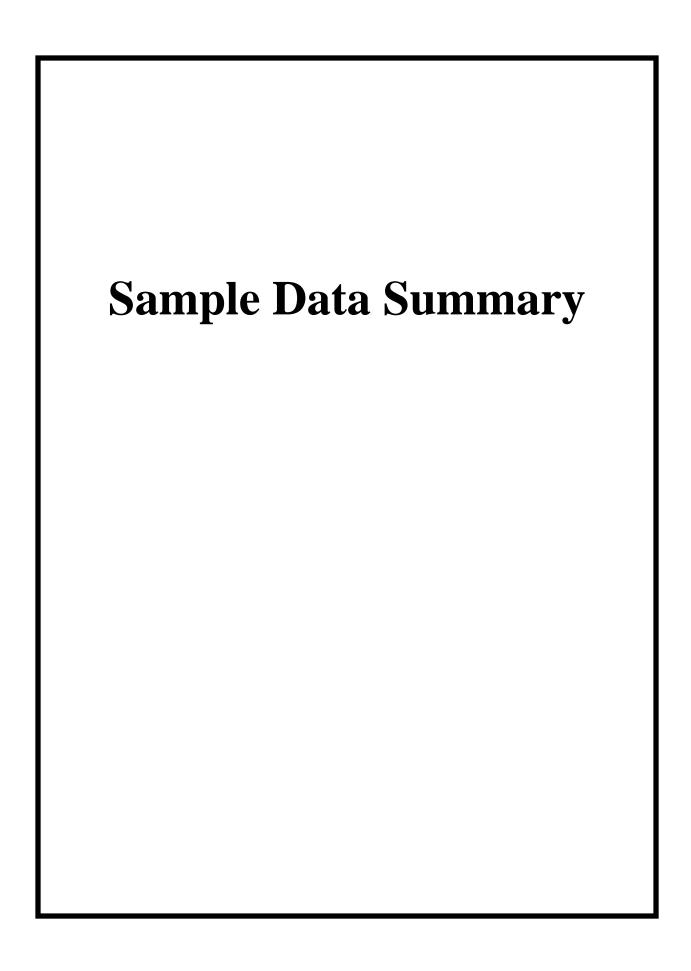
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample preparation

No difficulties were encountered during sample preparation.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.



Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report for

VTEE223"VTE'Gpxktqpo gpvcn'Eqtr qtcvkqp Erkgpv'UFI <8476""EHC"Y qtm'Qtf gt<8476

The Qualifiers in this report are defined as follows:

, """"C"'s works{ "eqpstqri'cpon{ vg"t geqxgt { "ku"qwulst g"qh'ur gelshligf "ceegr vcpeg"et kigt kc

, , '"""Cpcn(vg'ku'c'uwttqi cvg'eqo r qwpf

L'"""Xcnwg'ku'guvko cvgf

M"""Gurko cvgf 'O czko wo 'Rquukdrg'Eqpegpytcykqp

 $W"""Cpcn{\ \ \ } vg'y\ cu''cpcn{\ \ \ } gf''hqt."dw''pqv''f\ gvgevgf''cdqxg''yj\ g''ur\ gelkhlgf'''f\ gvgevkqp''hlo\ k0$

TG""""Kof kecvgu'vj cv'uco r ng'ku'tg/gzvtcevgf 0"

Review/Validation

Ecr g"Hgct 'Cpcn(ween't gs wkt gu"cmi'cpcn(ween't cvc 'vq "dg 'xgt khlgf "d{ "c"s werkhlgf "f cvc 'tgxlgy gt0

Vj g'hqmqy kpi 'f cvc'xcnkf cvqt'xgtkhkgf 'vj g'kphqto cvkqp'r tgugpvgf 'kp''yj ku'ecug'pcttcvkxg<'

Signature: Heather Patterson

Date: 21 JUL 2014 Title: Data Validator

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client:

Method:

Date Collected:

Date Received:

SDG Number: 6254 6254001 Lab Sample ID: 1613B Water **Client Sample:**

Client ID: EB01 26223

Batch ID: 06/24/2014 12:57 **Run Date:**

Data File: 26220 Prep Batch: **Prep Date:** 20-JUN-14

Analyst: A23JUN14A_3-11 **Prep Method:** TRCC001 06/17/2014 09:00

06/18/2014 10:50

EPA Method 1613B

JTF

SW846 3520C 904.4 mL

TRCC00314 **Project:** WATER Matrix:

As Received **Prep Basis:**

Instrument: HRP750 Dilution: 1

Prep Date:	20-JUN-14	Prep Aliquot:	904.4 mL				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.818		pg/L	0.818	11.1
40321-76-4	1,2,3,7,8-PeCDD	U	.889		pg/L	0.889	55.3
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.14		pg/L	1.14	55.3
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.17		pg/L	1.17	55.3
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.23		pg/L	1.23	55.3
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	1.41		pg/L	1.41	55.3
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK		9.84	pg/L	4.36	111
51207-31-9	2,3,7,8-TCDF	U	1.01		pg/L	1.01	11.1
57117-41-6	1,2,3,7,8-PeCDF	U	.809		pg/L	0.809	55.3
57117-31-4	2,3,4,7,8-PeCDF	U	.803		pg/L	0.803	55.3
70648-26-9	1,2,3,4,7,8-HxCDF	U	.579		pg/L	0.579	55.3
57117-44-9	1,2,3,6,7,8-HxCDF	U	.573		pg/L	0.573	55.3
60851-34-5	2,3,4,6,7,8-HxCDF	U	.568		pg/L	0.568	55.3
72918-21-9	1,2,3,7,8,9-HxCDF	U	.871		pg/L	0.871	55.3
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.845		pg/L	0.845	55.3
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.42		pg/L	1.42	55.3
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	2.45		pg/L	2.45	111
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.818		pg/L	0.818	11.1
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.889		pg/L	0.889	55.3
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	1.14		pg/L	1.14	55.3
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	1.41		pg/L	1.41	55.3
30402-14-3	Total Tetrachlorodibenzofuran	J	1.28		pg/L	1.01	11.1
30402-15-4	Total Pentachlorodibenzofuran	U	.803		pg/L	0.803	55.3
55684-94-1	Total Hexachlorodibenzofuran	U	.568		pg/L	0.568	55.3
38998-75-3	Total Heptachlorodibenzofuran	U	.845		pg/L	0.845	55.3
3333-30-0	TEQ WHO2005 ND=0		0.00	0.00295	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		1.36	1.36	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1780	2210	pg/L	80.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		1990	2210	pg/L	90.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1810	2210	pg/L	81.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1750	2210	pg/L	79.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1840	2210	pg/L	83.0	(23%-140%)
13C-OCDD		3490	4420	pg/L	79.0	(17%-157%)
13C-2,3,7,8-TCDF		1950	2210	pg/L	88.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		2080	2210	pg/L	94.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		2050	2210	pg/L	92.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1740	2210	pg/L	78.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1790	2210	pg/L	81.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1840	2210	pg/L	83.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1720	2210	pg/L	77.8	(29%-147%)

Cape Fear Analytical LLC Report Date: July 21, 2014

Page 2

HRP750

1

Instrument:

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

904.4 mL

TRCC001 TRCC00314 SDG Number: 6254 Client: **Project:** 06/17/2014 09:00 6254001 WATER Lab Sample ID: **Date Collected:** Matrix:

1613B Water Date Received: 06/18/2014 10:50 **Client Sample:**

Client ID: **EB01 Prep Basis:** As Received **Batch ID:** 26223 Method: EPA Method 1613B

Data File: A23JUN14A_3-11 Dilution: SW846 3520C **Prep Method:** Prep Batch: 26220

Analyst:

Prep Aliquot: CAS No. **EMPC** Units **EDL PQL Parmname** Qual Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		1850	2210	pg/L	83.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		1690	2210	pg/L	76.3	(26%-138%)
37Cl-2,3,7,8-TCDD		210	221	pg/L	95.1	(35%-197%)

Comments:

Run Date:

Prep Date:

Value is estimated

Estimated Maximum Possible Concentration

06/24/2014 12:57

20-JUN-14

Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6254 6254002 **Date Collected:** Lab Sample ID: 1613B Water Date Received: **Client Sample:**

TRCC001 06/17/2014 09:45 06/18/2014 10:50

978.9 mL

Project: Matrix:

Instrument:

TRCC00314 WATER

Client ID: LFSW01 **Batch ID:**

Run Date:

26223 06/24/2014 23:33

Method: EPA Method 1613B **Analyst: JTF**

Prep Basis: As Received

Data File: A23JUN14A_4-12 26220 Prep Batch:

Prep Method: Prep Aliquot:

Dilution: SW846 3520C

HRP750 1

Prep Date: 20-JUN-14

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
746-01-6	2,3,7,8-TCDD	U	.913		pg/L	0.913	10.2	
0321-76-4	1,2,3,7,8-PeCDD	U	.887		pg/L	0.887	51.1	
9227-28-6	1,2,3,4,7,8-HxCDD	U	1.29		pg/L	1.29	51.1	
7653-85-7	1,2,3,6,7,8-HxCDD	U	1.24		pg/L	1.24	51.1	
9408-74-3	1,2,3,7,8,9-HxCDD	U	1.34		pg/L	1.34	51.1	
5822-46-9	1,2,3,4,6,7,8-HpCDD	J	4.15		pg/L	2.00	51.1	
268-87-9	1,2,3,4,6,7,8,9-OCDD	J	92.4		pg/L	11.8	102	
1207-31-9	2,3,7,8-TCDF	U	.815		pg/L	0.815	10.2	
7117-41-6	1,2,3,7,8-PeCDF	U	.744		pg/L	0.744	51.1	
7117-31-4	2,3,4,7,8-PeCDF	U	.725		pg/L	0.725	51.1	
0648-26-9	1,2,3,4,7,8-HxCDF	U	.548		pg/L	0.548	51.1	
7117-44-9	1,2,3,6,7,8-HxCDF	U	.543		pg/L	0.543	51.1	
0851-34-5	2,3,4,6,7,8-HxCDF	U	.58		pg/L	0.580	51.1	
2918-21-9	1,2,3,7,8,9-HxCDF	U	.881		pg/L	0.881	51.1	
7562-39-4	1,2,3,4,6,7,8-HpCDF	U	.635		pg/L	0.635	51.1	
5673-89-7	1,2,3,4,7,8,9-HpCDF	U	.93		pg/L	0.930	51.1	
9001-02-0	1,2,3,4,6,7,8,9-OCDF	U	2.19		pg/L	2.19	102	
1903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.913		pg/L	0.913	10.2	
6088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.887		pg/L	0.887	51.1	
4465-46-8	Total Hexachlorodibenzo-p-dioxin	U	1.24		pg/L	1.24	51.1	
7871-00-4	Total Heptachlorodibenzo-p-dioxin	J	10.2		pg/L	2.00	51.1	
0402-14-3	Total Tetrachlorodibenzofuran	U	.815		pg/L	0.815	10.2	
0402-15-4	Total Pentachlorodibenzofuran	U	.556		pg/L	0.556	51.1	
5684-94-1	Total Hexachlorodibenzofuran	U	.543		pg/L	0.543	51.1	
8998-75-3	Total Heptachlorodibenzofuran	U	.635		pg/L	0.635	51.1	
333-30-0	TEQ WHO2005 ND=0		0.0692	0.0692	pg/L			
333-30-1	TEQ WHO2005 ND=0.5		1.46	1.46	pg/L			

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1670	2040	pg/L	81.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		1860	2040	pg/L	91.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1510	2040	pg/L	74.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1620	2040	pg/L	79.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1710	2040	pg/L	83.6	(23%-140%)
13C-OCDD		3240	4090	pg/L	79.4	(17%-157%)
13C-2,3,7,8-TCDF		1760	2040	pg/L	86.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		1930	2040	pg/L	94.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		1890	2040	pg/L	92.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1570	2040	pg/L	77.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1620	2040	pg/L	79.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1600	2040	pg/L	78.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1480	2040	pg/L	72.6	(29%-147%)

Cape Fear Analytical LLC Report Date: July 21, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

> > **JTF**

978.9 mL

TRCC001 TRCC00314 Client: **Project:** 06/17/2014 09:45 WATER **Date Collected:** Matrix:

Instrument:

Dilution:

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HRP750

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6254002 Lab Sample ID: 1613B Water Date Received: 06/18/2014 10:50 **Client Sample:**

Client ID: LFSW01 **Prep Basis:** As Received **Batch ID:** 26223 Method: EPA Method 1613B

Data File: A23JUN14A_4-12 SW846 3520C **Prep Method:** Prep Batch: 26220

Prep Aliquot: Prep Date: 20-JUN-14 **PQL** CAS No. **EMPC** Units **EDL Parmname** Qual Result

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		1530	2040	pg/L	74.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		1680	2040	pg/L	82.2	(26%-138%)
37Cl-2,3,7,8-TCDD		202	204	pg/L	98.9	(35%-197%)

Comments:

SDG Number:

Run Date:

6254

06/24/2014 23:33

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 21, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6254 Client:
Lab Sample ID: 6254003 Date Collent Sample: 1613B Water Date Ro

Date Collected: Date Received: TRCC001 06/17/2014 10:20 06/18/2014 10:50 Project: Matrix: TRCC00314 WATER

Client ID: Batch ID:

3333-30-1

LFSW02 26223

Method: EPA Method 1613B Analyst: JTF Prep Basis: As Received

Run Date: Data File: Prep Batch:

06/25/2014 00:21 A23JUN14A_4-13 26220

Prep Method: SW846 3520C Prep Aliquot: 987.2 mL Instrument: HRP750 Dilution: 1

Prep Batch: 26220 Prep Date: 20-JUN-14

F	20 0011 11	• •						
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	.774		pg/L	0.774	10.1	
40321-76-4	1,2,3,7,8-PeCDD	U	.713		pg/L	0.713	50.6	
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.13		pg/L	1.13	50.6	
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.11		pg/L	1.11	50.6	
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.19		pg/L	1.19	50.6	
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK		2.86	pg/L	2.07	50.6	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	56.4		pg/L	6.44	101	
51207-31-9	2,3,7,8-TCDF	U	.81		pg/L	0.810	10.1	
57117-41-6	1,2,3,7,8-PeCDF	U	.61		pg/L	0.610	50.6	
57117-31-4	2,3,4,7,8-PeCDF	U	.598		pg/L	0.598	50.6	
70648-26-9	1,2,3,4,7,8-HxCDF	U	.569		pg/L	0.569	50.6	
					~			

U 57117-44-9 1,2,3,6,7,8-HxCDF .551 pg/L 0.551 50.6 60851-34-5 U pg/L 0.563 50.6 2.3.4.6.7.8-HxCDF .563 72918-21-9 1,2,3,7,8,9-HxCDF U .81 0.810 50.6 pg/L U 67562-39-4 1,2,3,4,6,7,8-HpCDF .401 pg/L 0.401 50.6 55673-89-7 1,2,3,4,7,8,9-HpCDF U .598 pg/L 0.598 50.6 39001-02-0 1,2,3,4,6,7,8,9-OCDF U 1.8 pg/L 1.80 101 U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin .774 pg/L 0.774 10.1 U 36088-22-9 Total Pentachlorodibenzo-p-dioxin .713 pg/L 0.713 50.6

U pg/L 34465-46-8 Total Hexachlorodibenzo-p-dioxin 1.11 1.11 50.6 Total Heptachlorodibenzo-p-dioxin 37871-00-4 3.38 6.24 pg/L 2.07 50.6 U 30402-14-3 0.810 Total Tetrachlorodibenzofuran .81 pg/L 10.1 30402-15-4 Total Pentachlorodibenzofuran U .513 pg/L 0.513 50.6 55684-94-1 Total Hexachlorodibenzofuran U .551 pg/L 0.551 50.6 0.401 U 38998-75-3 Total Heptachlorodibenzofuran .401 pg/L 50.6 3333-30-0 TEQ WHO2005 ND=0 0.0169 0.0455 pg/L

Acceptable Limits Surrogate/Tracer recovery Qual Result Nominal Units Recovery% 13C-2,3,7,8-TCDD 1640 2030 pg/L 80.9 (25%-164%) 13C-1,2,3,7,8-PeCDD 1720 2030 pg/L 84.9 (25%-181%) 1580 13C-1,2,3,4,7,8-HxCDD 2030 77.9 pg/L (32%-141%) 13C-1,2,3,6,7,8-HxCDD 1560 2030 77.1 pg/L (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 1780 2030 pg/L 87.7 (23%-140%) 13C-OCDD 3420 4050 84.4 (17%-157%) pg/L 13C-2,3,7,8-TCDF 1810 2030 89.4 (24%-169%) pg/L 13C-1,2,3,7,8-PeCDF 1830 2030 pg/L 90.1 (24%-185%) 2030 13C-2,3,4,7,8-PeCDF 1750 pg/L 86.6 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 1520 2030 pg/L 75.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 1590 2030 pg/L 78.3 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 1610 2030 pg/L 79.7 (28%-136%) (29%-147%) 13C-1,2,3,7,8,9-HxCDF 1570 2030 pg/L 77.4

1.21

1.23

pg/L

TEQ WHO2005 ND=0.5

Cape Fear Analytical LLC Report Date: July 21, 2014

Page 2

Dilution:

1

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

6254 TRCC001 TRCC00314 SDG Number: Client: **Project:** 06/17/2014 10:20 6254003 WATER Lab Sample ID: **Date Collected:** Matrix:

1613B Water Date Received: 06/18/2014 10:50 **Client Sample:**

Client ID: LFSW02 **Prep Basis:** As Received **Batch ID:** 26223 Method: EPA Method 1613B 06/25/2014 00:21 **Instrument: HRP750**

Analyst:

Data File: A23JUN14A_4-13 SW846 3520C **Prep Method:** Prep Batch: 26220 **Prep Aliquot:** 987.2 mL **Prep Date:** 20-JUN-14

CAS No. **EMPC** Units **EDL PQL Parmname** Qual Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		1680	2030	pg/L	83.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		1770	2030	pg/L	87.4	(26%-138%)
37Cl-2,3,7,8-TCDD		193	203	pg/L	95.5	(35%-197%)

Comments:

Run Date:

Value is estimated

Estimated Maximum Possible Concentration

Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 21, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6254 6254004 Lab Sample ID: 1613B Water **Client Sample: Client ID:**

LFSW03 26223

Run Date: 06/24/2014 22:45 Data File: A23JUN14A_4-11

Prep Batch: 26220 **Prep Date:** 20-JUN-14

Batch ID:

Client: **Date Collected:** Date Received:

Method:

Analyst:

Prep Method:

TRCC001 06/17/2014 10:20 06/18/2014 10:50

EPA Method 1613B **JTF**

SW846 3520C

Matrix: **Prep Basis:**

Dilution:

Project:

TRCC00314 WATER

As Received

HRP750 Instrument: 1

Prep Aliquot: 982.2 mL **PQL** CAS No. **Parmname** Qual Result **EMPC** Units **EDL** 1746-01-6 2,3,7,8-TCDD U 1.1 pg/L 1.10 10.2 U 40321-76-4 1,2,3,7,8-PeCDD .916 pg/L 0.916 50.9 U 39227-28-6 1,2,3,4,7,8-HxCDD 1.5 pg/L 1.50 50.9 U 57653-85-7 1,2,3,6,7,8-HxCDD 1.46 pg/L 1.46 50.9 19408-74-3 1,2,3,7,8,9-HxCDD U 1.57 pg/L 1.57 50.9 35822-46-9 1,2,3,4,6,7,8-HpCDD 1 4.26 pg/L 3.01 50.9 3268-87-9 1,2,3,4,6,7,8,9-OCDD 95.6 pg/L 5.93 102 51207-31-9 2,3,7,8-TCDF U 1.12 pg/L 1.12 10.2 U 57117-41-6 1,2,3,7,8-PeCDF .926 pg/L 0.926 50.9 57117-31-4 2,3,4,7,8-PeCDF U .874 pg/L 0.874 50.9 70648-26-9 1,2,3,4,7,8-HxCDF U .593 0.593 50.9 pg/L U 57117-44-9 1,2,3,6,7,8-HxCDF .586 pg/L 0.586 50.9 60851-34-5 U 0.593 50.9 2.3.4.6.7.8-HxCDF .593 pg/L 72918-21-9 1,2,3,7,8,9-HxCDF U .882 0.882 50.9 pg/L U 67562-39-4 1,2,3,4,6,7,8-HpCDF .627 pg/L 0.627 50.9 55673-89-7 pg/L 1,2,3,4,7,8,9-HpCDF U 1.03 1.03 50.9 39001-02-0 1,2,3,4,6,7,8,9-OCDF U 2.44 2.44 102 pg/L U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin 1.1 pg/L 1.10 10.2 U 36088-22-9 Total Pentachlorodibenzo-p-dioxin .916 pg/L 0.916 50.9 U pg/L 34465-46-8 Total Hexachlorodibenzo-p-dioxin 1.46 1.46 50.9 Total Heptachlorodibenzo-p-dioxin 37871-00-4 10.3 pg/L 3.01 50.9 U 30402-14-3 1.12 1.12 Total Tetrachlorodibenzofuran pg/L 10.2 30402-15-4 Total Pentachlorodibenzofuran U .751 pg/L 0.751 50.9 U 55684-94-1 Total Hexachlorodibenzofuran .586 pg/L 0.586 50.9 U 38998-75-3 Total Heptachlorodibenzofuran .627 pg/L 0.627 50.9 0.0712 0.0712 3333-30-0 TEQ WHO2005 ND=0 pg/L 3333-30-1 TEQ WHO2005 ND=0.5 1.65 1.65 pg/L

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		1470	2040	pg/L	72.0	(25%-164%)	
13C-1,2,3,7,8-PeCDD		1650	2040	pg/L	80.8	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		1560	2040	pg/L	76.4	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		1550	2040	pg/L	76.3	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		1740	2040	pg/L	85.4	(23%-140%)	
13C-OCDD		3150	4070	pg/L	77.4	(17%-157%)	
13C-2,3,7,8-TCDF		1620	2040	pg/L	79.7	(24%-169%)	
13C-1,2,3,7,8-PeCDF		1740	2040	pg/L	85.6	(24%-185%)	
13C-2,3,4,7,8-PeCDF		1770	2040	pg/L	87.0	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		1510	2040	pg/L	74.3	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		1590	2040	pg/L	78.1	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		1610	2040	pg/L	79.0	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		1490	2040	pg/L	73.4	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 21, 2014

Page 2

HRP750

1

Instrument:

Dilution:

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

982.2 mL

TRCC001 TRCC00314 SDG Number: 6254 Client: **Project:** 06/17/2014 10:20 6254004 WATER Lab Sample ID: **Date Collected:** Matrix:

1613B Water Date Received: 06/18/2014 10:50 **Client Sample:**

06/24/2014 22:45

20-JUN-14

Client ID: LFSW03 **Prep Basis:** As Received **Batch ID:** 26223 Method: EPA Method 1613B

Data File: A23JUN14A_4-11 SW846 3520C **Prep Method:** Prep Batch: 26220

Prep Aliquot: PQL CAS No. Qual **EMPC** Units **EDL Parmname** Result

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		1630	2040	pg/L	80.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		1650	2040	pg/L	81.1	(26%-138%)
37Cl-2,3,7,8-TCDD		167	204	pg/L	82.2	(35%-197%)

Comments:

Run Date:

Prep Date:

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 21, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6254 6254005 Lab Sample ID: 1613B Soil **Client Sample:** LFSD01 **Client ID:**

TRCC001 06/17/2014 10:00 **Date Collected:** 06/18/2014 10:50 Date Received:

Project: Matrix: %Moisture: TRCC00314 SOLID 47.3

Prep Basis: Dry Weight

Instrument: HRP763 Dilution:

Batch ID: 26255 07/11/2014 03:22 **Run Date:** Data File: b09jul14a_5-6

Prep Batch: 26253 **Prep Date:** 24-JUN-14

Prep Method: Prep Aliquot:

Method:

Analyst:

SW846 3540C

JTF

EPA Method 1613B

19.41 g

Prep Date:	24-JUN-14	Frep Anquot.	19.41 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.371		pg/g	0.371	0.977
40321-76-4	1,2,3,7,8-PeCDD	U	.342		pg/g	0.342	4.89
39227-28-6	1,2,3,4,7,8-HxCDD	U	.688		pg/g	0.688	4.89
57653-85-7	1,2,3,6,7,8-HxCDD	U	.651		pg/g	0.651	4.89
19408-74-3	1,2,3,7,8,9-HxCDD	U	.706		pg/g	0.706	4.89
35822-46-9	1,2,3,4,6,7,8-HpCDD		12.2		pg/g	1.09	4.89
3268-87-9	1,2,3,4,6,7,8,9-OCDD		835		pg/g	4.53	9.77
51207-31-9	2,3,7,8-TCDF	U	.315		pg/g	0.315	0.977
57117-41-6	1,2,3,7,8-PeCDF	U	.252		pg/g	0.252	4.89
57117-31-4	2,3,4,7,8-PeCDF	U	.211		pg/g	0.211	4.89
70648-26-9	1,2,3,4,7,8-HxCDF	U	.233		pg/g	0.233	4.89
57117-44-9	1,2,3,6,7,8-HxCDF	U	.197		pg/g	0.197	4.89
60851-34-5	2,3,4,6,7,8-HxCDF	U	.225		pg/g	0.225	4.89
72918-21-9	1,2,3,7,8,9-HxCDF	U	.356		pg/g	0.356	4.89
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.485		pg/g	0.246	4.89
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.414		pg/g	0.414	4.89
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	1.22		pg/g	0.893	9.77
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.371		pg/g	0.371	0.977
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.788		pg/g	0.342	4.89
34465-46-8	Total Hexachlorodibenzo-p-dioxin		5.51		pg/g	0.651	4.89
37871-00-4	Total Heptachlorodibenzo-p-dioxin		41.4		pg/g	1.09	4.89
30402-14-3	Total Tetrachlorodibenzofuran	U	.315	0.397	pg/g	0.315	0.977
30402-15-4	Total Pentachlorodibenzofuran	U	.184	0.311	pg/g	0.184	4.89
55684-94-1	Total Hexachlorodibenzofuran	U	.197	0.389	pg/g	0.197	4.89
38998-75-3	Total Heptachlorodibenzofuran	J	0.979		pg/g	0.246	4.89
3333-30-0	TEQ WHO2005 ND=0		0.378	0.378	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.941	0.941	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		161	195	pg/g	82.5	(25%-164%)	
13C-1,2,3,7,8-PeCDD		176	195	pg/g	90.2	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		129	195	pg/g	66.3	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		150	195	pg/g	76.9	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		170	195	pg/g	86.9	(23%-140%)	
13C-OCDD		296	391	pg/g	75.7	(17%-157%)	
13C-2,3,7,8-TCDF		191	195	pg/g	97.8	(24%-169%)	
13C-1,2,3,7,8-PeCDF		184	195	pg/g	93.9	(24%-185%)	
13C-2,3,4,7,8-PeCDF		207	195	pg/g	106	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		145	195	pg/g	74.0	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		192	195	pg/g	98.1	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		177	195	pg/g	90.5	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		166	195	pg/g	85.1	(29%-147%)	

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client:TRCC001Project:Date Collected:06/17/2014 10:00Matrix:Date Received:06/18/2014 10:50%Moisture:

Page 2

TRCC00314

Dry Weight

SOLID

47.3

Prep Basis:

of 2

 Client ID:
 LFSD01

 Batch ID:
 26255

 Method:
 EPA Method 1613B

 Batch ID:
 26255
 Method:
 EPA Method 1613B

 Run Date:
 07/11/2014 03:22
 Analyst:
 JTF
 Instrument:
 HRP763

 Data File:
 b09jul14a_5-6
 Dilution:
 1

 Prep Batch:
 26253
 Prep Method:
 SW846 3540C

Prep Date: 24-JUN-14 Prep Aliquot: 19.41 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		177	195	pg/g	90.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		183	195	pg/g	93.5	(26%-138%)
37Cl-2,3,7,8-TCDD		18.7	19.5	pg/g	95.8	(35%-197%)

Comments:

SDG Number:

Lab Sample ID:

Client Sample:

J Value is estimated

K Estimated Maximum Possible Concentration

6254

6254005

1613B Soil

U Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6254 Client:
Lab Sample ID: 6254006 Date Collected:
Client Sample: 1613B Soil Date Received:
Client ID: LFSD02

t: TRCC001 Collected: 06/17/2014 10:45 Received: 06/18/2014 10:50

JTF

16.44 g

Project: Matrix: %Moisture:

TRCC00314 SOLID 39.1

Prep Basis: Dry Weight

HRP763

Run Date: 07/07/2014 21:21 Data File: b07jul14a-9 Pron Ratch: 26753

26255

Batch ID:

Prep Method: Prep Aliquot:

Method:

Analyst:

SW846 3540C

EPA Method 1613B

Instrument: Dilution:

Prep Batch: 26253 Prep Date: 24-JUN-14

F	2.001(1.		O				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.377		pg/g	0.377	0.998
40321-76-4	1,2,3,7,8-PeCDD	U	.339		pg/g	0.339	4.99
39227-28-6	1,2,3,4,7,8-HxCDD	JK		0.611	pg/g	0.425	4.99
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.894		pg/g	0.449	4.99
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.05		pg/g	0.465	4.99
35822-46-9	1,2,3,4,6,7,8-HpCDD		32.7		pg/g	0.888	4.99
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1750		pg/g	2.04	9.98
51207-31-9	2,3,7,8-TCDF	J	0.401		pg/g	0.297	0.998
57117-41-6	1,2,3,7,8-PeCDF	J	0.188		pg/g	0.157	4.99
57117-31-4	2,3,4,7,8-PeCDF	U	.137		pg/g	0.137	4.99
70648-26-9	1,2,3,4,7,8-HxCDF	U	.238		pg/g	0.238	4.99
57117-44-9	1,2,3,6,7,8-HxCDF	U	.208		pg/g	0.208	4.99
60851-34-5	2,3,4,6,7,8-HxCDF	U	.23		pg/g	0.230	4.99
72918-21-9	1,2,3,7,8,9-HxCDF	U	.317		pg/g	0.317	4.99
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	1.00		pg/g	0.301	4.99
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.455		pg/g	0.455	4.99
39001-02-0	1,2,3,4,6,7,8,9-OCDF	JK		1.70	pg/g	0.595	9.98
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.377		pg/g	0.377	0.998
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.339	1.76	pg/g	0.339	4.99
34465-46-8	Total Hexachlorodibenzo-p-dioxin		14.7	15.3	pg/g	0.425	4.99
37871-00-4	Total Heptachlorodibenzo-p-dioxin		92.7		pg/g	0.888	4.99
30402-14-3	Total Tetrachlorodibenzofuran	J	0.401	0.803	pg/g	0.297	0.998
30402-15-4	Total Pentachlorodibenzofuran	J	0.188	1.16	pg/g	0.137	4.99
55684-94-1	Total Hexachlorodibenzofuran	J	0.309	1.26	pg/g	0.208	4.99
38998-75-3	Total Heptachlorodibenzofuran	J	1.69		pg/g	0.301	4.99
3333-30-0	TEQ WHO2005 ND=0		1.10	1.16	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		1.55	1.59	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		159	200	pg/g	79.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		169	200	pg/g	84.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		166	200	pg/g	83.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	200	pg/g	75.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		206	200	pg/g	103	(23%-140%)
13C-OCDD		418	399	pg/g	105	(17%-157%)
13C-2,3,7,8-TCDF		185	200	pg/g	92.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		173	200	pg/g	86.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		193	200	pg/g	96.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		182	200	pg/g	91.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		184	200	pg/g	92.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		184	200	pg/g	92.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		196	200	pg/g	98.1	(29%-147%)

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Dilution:

1

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6254 TRCC001 TRCC00314 SDG Number: Client: **Project:** 06/17/2014 10:45 6254006 Lab Sample ID: **Date Collected:** Matrix: **SOLID** %Moisture: 39.1 1613B Soil Date Received: 06/18/2014 10:50 **Client Sample:** Client ID: LFSD02 **Prep Basis:** Dry Weight

 Batch ID:
 26255
 Method:
 EPA Method 1613B

 Run Date:
 07/07/2014 21:21
 Analyst:
 JTF
 Instrument:
 HRP763

Data File:b07jul14a-9Prep Batch:26253Prep Method:SW846 3540CPrep Date:24-JUN-14Prep Aliquot:16.44 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		195	200	pg/g	97.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		221	200	pg/g	111	(26%-138%)
37Cl-2,3,7,8-TCDD		18.5	20.0	pg/g	92.9	(35%-197%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6254 6254007 **Date Collected:** Lab Sample ID: 1613B Soil Date Received: **Client Sample: Client ID:** LFSD03

TRCC001 06/17/2014 10:45 06/18/2014 10:50

EPA Method 1613B

Project: Matrix: %Moisture:

TRCC00314 SOLID 50.3

Prep Basis: Dry Weight

Instrument: HRP763 Dilution:

Batch ID: 26255 07/07/2014 20:33 **Run Date:** Data File: b07jul14a-8 Prep Batch:

26253

Prep Method:

Method:

Analyst:

JTF

SW846 3540C

Prep Date:	24-JUN-14	Prep Aliquot:	20.4 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.286		pg/g	0.286	0.986
40321-76-4	1,2,3,7,8-PeCDD	J	0.424		pg/g	0.278	4.93
39227-28-6	1,2,3,4,7,8-HxCDD	JK		0.889	pg/g	0.365	4.93
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.57		pg/g	0.355	4.93
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.35		pg/g	0.381	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD		60.3		pg/g	1.14	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD		3130		pg/g	2.52	9.86
51207-31-9	2,3,7,8-TCDF	J	0.418		pg/g	0.331	0.986
57117-41-6	1,2,3,7,8-PeCDF	JK		0.256	pg/g	0.229	4.93
57117-31-4	2,3,4,7,8-PeCDF	JK		0.272	pg/g	0.187	4.93
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.250		pg/g	0.221	4.93
57117-44-9	1,2,3,6,7,8-HxCDF	JK		0.274	pg/g	0.203	4.93
50851-34-5	2,3,4,6,7,8-HxCDF	J	0.317		pg/g	0.225	4.93
2918-21-9	1,2,3,7,8,9-HxCDF	U	.312		pg/g	0.312	4.93
57562-39-4	1,2,3,4,6,7,8-HpCDF	J	2.21		pg/g	0.219	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.347		pg/g	0.347	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	3.00		pg/g	0.481	9.86
11903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.286		pg/g	0.286	0.986
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	2.04	3.41	pg/g	0.278	4.93
34465-46-8	Total Hexachlorodibenzo-p-dioxin		17.2	26.6	pg/g	0.355	4.93
37871-00-4	Total Heptachlorodibenzo-p-dioxin		182		pg/g	1.14	4.93
30402-14-3	Total Tetrachlorodibenzofuran		1.70	2.96	pg/g	0.331	0.986
30402-15-4	Total Pentachlorodibenzofuran	J	1.45	3.50	pg/g	0.106	4.93
5684-94-1	Total Hexachlorodibenzofuran	J	2.81	3.36	pg/g	0.203	4.93
88998-75-3	Total Heptachlorodibenzofuran	J	3.66		pg/g	0.219	4.93
3333-30-0	TEQ WHO2005 ND=0		2.48	2.69	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		2.70	2.85	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		165	197	pg/g	83.6	(25%-164%)	
13C-1,2,3,7,8-PeCDD		184	197	pg/g	93.5	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		159	197	pg/g	80.6	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		155	197	pg/g	78.7	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		186	197	pg/g	94.4	(23%-140%)	
13C-OCDD		433	394	pg/g	110	(17%-157%)	
13C-2,3,7,8-TCDF		193	197	pg/g	98.1	(24%-169%)	
13C-1,2,3,7,8-PeCDF		183	197	pg/g	92.7	(24%-185%)	
13C-2,3,4,7,8-PeCDF		206	197	pg/g	105	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		167	197	pg/g	84.6	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		176	197	pg/g	89.5	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		177	197	pg/g	89.6	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		182	197	pg/g	92.1	(29%-147%)	

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

 Client:
 TRCC001
 Project:
 TRCC00314

 Date Collected:
 06/17/2014 10:45
 Matrix:
 SOLID

 Date Received:
 06/18/2014 10:50
 %Moisture:
 50.3

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Client ID: LFSD03 Prep Basis: Dry Weight

 Batch ID:
 26255
 Method:
 EPA Method 1613B

 Run Date:
 07/07/2014 20:33
 Analyst:
 JTF
 Instrument:
 HRP763

Data File: b07jul14a-8
Prep Batch: 26253
Prep Method: SW846 3540C
Dilution: 1
Prep Method: SW846 3540C

Prep Date: 24-JUN-14 Prep Aliquot: 20.4 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		186	197	pg/g	94.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		208	197	pg/g	105	(26%-138%)
37Cl-2,3,7,8-TCDD		18.8	19.7	pg/g	95.5	(35%-197%)

Comments:

SDG Number:

Lab Sample ID:

Client Sample:

J Value is estimated

K Estimated Maximum Possible Concentration

6254

6254007

1613B Soil

U Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

Client: SDG Number: 6254 6254008 Lab Sample ID: 1613B Liquid **Client Sample:**

Date Collected: Date Received:

Method:

Analyst:

TRCC001 06/17/2014 13:35 06/18/2014 10:50

EPA Method 1613B

Project: Matrix: TRCC00314

MILK

As Received **Prep Basis:**

Instrument: HRP763 Dilution: 1

JFM01 **Client ID: Batch ID:** 26419

07/18/2014 23:46 **Run Date:** Data File: b18jul14a-13 **Prep Batch:** 26417

SW846 3520C **Prep Method:** $100 \; mL$

Prep Aliquot: **Prep Date:** 16-JUL-14

•							
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	19.7		pg/L	19.7	100
40321-76-4	1,2,3,7,8-PeCDD	U	9.92		pg/L	9.92	500
39227-28-6	1,2,3,4,7,8-HxCDD	U	13.2		pg/L	13.2	500
57653-85-7	1,2,3,6,7,8-HxCDD	U	12.7		pg/L	12.7	500
19408-74-3	1,2,3,7,8,9-HxCDD	U	13.7		pg/L	13.7	500
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	23.6		pg/L	23.6	500
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	118		pg/L	44.2	1000
51207-31-9	2,3,7,8-TCDF	U	12.6		pg/L	12.6	100
57117-41-6	1,2,3,7,8-PeCDF	J	7.60		pg/L	7.08	500
57117-31-4	2,3,4,7,8-PeCDF	U	6.04		pg/L	6.04	500
70648-26-9	1,2,3,4,7,8-HxCDF	U	8.52		pg/L	8.52	500
57117-44-9	1,2,3,6,7,8-HxCDF	U	7.66		pg/L	7.66	500
60851-34-5	2,3,4,6,7,8-HxCDF	U	8.66		pg/L	8.66	500
72918-21-9	1,2,3,7,8,9-HxCDF	U	12.8		pg/L	12.8	500
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	9.28		pg/L	9.28	500
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	16.3		pg/L	16.3	500
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	53.2		pg/L	53.2	1000
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	19.7		pg/L	19.7	100
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	9.92		pg/L	9.92	500
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	12.7		pg/L	12.7	500
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	23.6		pg/L	23.6	500
30402-14-3	Total Tetrachlorodibenzofuran	U	12.6		pg/L	12.6	100
30402-15-4	Total Pentachlorodibenzofuran	J	7.60		pg/L	6.04	500
55684-94-1	Total Hexachlorodibenzofuran	U	7.66		pg/L	7.66	500
38998-75-3	Total Heptachlorodibenzofuran	U	9.28		pg/L	9.28	500
3333-30-0	TEQ WHO2005 ND=0		0.263	0.263	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		20.7	20.7	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		16800	20000	pg/L	84.1	(25%-164%)	
13C-1,2,3,7,8-PeCDD		19300	20000	pg/L	96.7	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		16800	20000	pg/L	84.2	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		17000	20000	pg/L	85.0	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		19300	20000	pg/L	96.5	(23%-140%)	
13C-OCDD		35800	40000	pg/L	89.4	(17%-157%)	
13C-2,3,7,8-TCDF		18100	20000	pg/L	90.6	(24%-169%)	
13C-1,2,3,7,8-PeCDF		17800	20000	pg/L	89.1	(24%-185%)	
13C-2,3,4,7,8-PeCDF		20900	20000	pg/L	104	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		16400	20000	pg/L	81.9	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		17400	20000	pg/L	87.1	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		17200	20000	pg/L	86.1	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		16900	20000	pg/L	84.5	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 21, 2014

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HRP763

1

Instrument:

Dilution:

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

6254 Client: TRCC001 Project: TRCC00314 : 6254008 Date Collected: 06/17/2014 13:35 Matrix: MILK

JTF

 Lab Sample ID:
 6254008
 Date Collected:
 06/17/2014 13:35

 Client Sample:
 1613B Liquid
 Date Received:
 06/18/2014 10:50

07/18/2014 23:46

Client ID: JFM01 Prep Basis: As Received Batch ID: 26419 Method: EPA Method 1613B

Data File:b18jul14a-13Prep Batch:26417Prep Method:SW846 3520CPrep Date:16-JUL-14Prep Aliquot:100 mL

CAS No. Parmname Qual Result EMPC Units EDL PQL

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		18700	20000	pg/L	93.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		19200	20000	pg/L	96.2	(26%-138%)
37CI-2,3,7,8-TCDD		2070	2000	pg/L	104	(35%-197%)

Comments:

SDG Number:

Run Date:

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6254 6254009 Lab Sample ID: 1613B Liquid **Client Sample:**

JFM02 **Client ID: Batch ID:** 26307

07/07/2014 18:58 **Run Date:** Data File: b07jul14a-6

26305 Prep Batch: Prep Date: 30-JUN-14

TRCC001 Client: 06/17/2014 13:40 **Date Collected:** Date Received:

Method:

Analyst:

06/18/2014 10:50

EPA Method 1613B **JTF**

SW846 3520C **Prep Method: Prep Aliquot:** 100 mL

Instrument: Dilution:

Prep Basis:

Project:

Matrix:

TRCC00314 MILK

As Received

HRP763 1

Prep Date:	30-JUN-14	Prep Aliquot:	100 mL				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	71.2		pg/L	71.2	100
40321-76-4	1,2,3,7,8-PeCDD	U	38.8		pg/L	38.8	500
39227-28-6	1,2,3,4,7,8-HxCDD	U	53.4		pg/L	53.4	500
57653-85-7	1,2,3,6,7,8-HxCDD	U	51.8		pg/L	51.8	500
19408-74-3	1,2,3,7,8,9-HxCDD	U	55.6		pg/L	55.6	500
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	58.2		pg/L	58.2	500
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	156		pg/L	82.8	1000
51207-31-9	2,3,7,8-TCDF	U	54.4		pg/L	54.4	100
57117-41-6	1,2,3,7,8-PeCDF	U	34.4		pg/L	34.4	500
57117-31-4	2,3,4,7,8-PeCDF	U	30		pg/L	30.0	500
70648-26-9	1,2,3,4,7,8-HxCDF	U	34		pg/L	34.0	500
57117-44-9	1,2,3,6,7,8-HxCDF	U	32.4		pg/L	32.4	500
60851-34-5	2,3,4,6,7,8-HxCDF	U	35.2		pg/L	35.2	500
72918-21-9	1,2,3,7,8,9-HxCDF	U	50.4		pg/L	50.4	500
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	32.8		pg/L	32.8	500
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	49.2		pg/L	49.2	500
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	114		pg/L	114	1000
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	71.2		pg/L	71.2	100
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	38.8		pg/L	38.8	500
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	51.8		pg/L	51.8	500
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	58.2		pg/L	58.2	500
30402-14-3	Total Tetrachlorodibenzofuran	U	54.4		pg/L	54.4	100
30402-15-4	Total Pentachlorodibenzofuran	U	29		pg/L	29.0	500
55684-94-1	Total Hexachlorodibenzofuran	U	32.4		pg/L	32.4	500
38998-75-3	Total Heptachlorodibenzofuran	U	32.8		pg/L	32.8	500
3333-30-0	TEQ WHO2005 ND=0		0.0468	0.0468	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		79.1	79.1	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		7960	20000	pg/L	39.8	(25%-164%)	
13C-1,2,3,7,8-PeCDD		8880	20000	pg/L	44.4	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		7840	20000	pg/L	39.2	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		8400	20000	pg/L	42.0	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		10400	20000	pg/L	52.2	(23%-140%)	
13C-OCDD		20900	40000	pg/L	52.3	(17%-157%)	
13C-2,3,7,8-TCDF		9090	20000	pg/L	45.5	(24%-169%)	
13C-1,2,3,7,8-PeCDF		8790	20000	pg/L	43.9	(24%-185%)	
13C-2,3,4,7,8-PeCDF		10100	20000	pg/L	50.4	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		9110	20000	pg/L	45.6	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		9780	20000	pg/L	48.9	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		9480	20000	pg/L	47.4	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		9530	20000	pg/L	47.7	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 21, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

TRCC001 TRCC00314 SDG Number: 6254 Client: **Project:** 06/17/2014 13:40 6254009 MILK Lab Sample ID: **Date Collected:** Matrix:

1613B Liquid Date Received: 06/18/2014 10:50 **Client Sample:**

Client ID: JFM02 **Prep Basis:** As Received **Batch ID:** 26307 Method: EPA Method 1613B 07/07/2014 18:58 **Instrument: HRP763**

Analyst:

Dilution: Data File: b07jul14a-6 SW846 3520C 26305 **Prep Method:** Prep Batch: **Prep Aliquot:** $100 \; mL$ **Prep Date:**

PQL CAS No. Qual **EMPC** Units **EDL Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		10500	20000	pg/L	52.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		11600	20000	pg/L	57.8	(26%-138%)
37Cl-2,3,7,8-TCDD		1740	2000	pg/L	87.1	(35%-197%)

Comments:

Run Date:

30-JUN-14

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6254 6254010 Lab Sample ID: 1613B Liquid **Client Sample:**

JFM03

Batch ID: 26307 07/07/2014 19:46 **Run Date:** Data File: b07jul14a-7

Client ID:

26305 Prep Batch: **Prep Date:** 30-JUN-14

TRCC001 06/17/2014 13:45 **Date Collected:** 06/18/2014 10:50 Date Received:

> EPA Method 1613B **JTF**

Prep Method: Prep Aliquot: $100 \; mL$

Method:

Analyst:

SW846 3520C

Dilution:

Project: TRCC00314 Matrix:

Prep Basis:

Instrument:

MILK

As Received

HRP763 1

Prep Date:	30-JUN-14	Prep Anquot:	100 mL					
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	46.8		pg/L	46.8	100	
40321-76-4	1,2,3,7,8-PeCDD	U	25.2		pg/L	25.2	500	
39227-28-6	1,2,3,4,7,8-HxCDD	U	35.4		pg/L	35.4	500	
57653-85-7	1,2,3,6,7,8-HxCDD	U	34.4		pg/L	34.4	500	
19408-74-3	1,2,3,7,8,9-HxCDD	U	37		pg/L	37.0	500	
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK		37.8	pg/L	34.4	500	
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	123		pg/L	65.2	1000	
51207-31-9	2,3,7,8-TCDF	U	35.2		pg/L	35.2	100	
57117-41-6	1,2,3,7,8-PeCDF	U	23.8		pg/L	23.8	500	
57117-31-4	2,3,4,7,8-PeCDF	U	21.4		pg/L	21.4	500	
70648-26-9	1,2,3,4,7,8-HxCDF	U	19.3		pg/L	19.3	500	
57117-44-9	1,2,3,6,7,8-HxCDF	U	18.3		pg/L	18.3	500	
50851-34-5	2,3,4,6,7,8-HxCDF	U	22.2		pg/L	22.2	500	
72918-21-9	1,2,3,7,8,9-HxCDF	U	26.6		pg/L	26.6	500	
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	18.8		pg/L	18.8	500	
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	29.8		pg/L	29.8	500	
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	69.2		pg/L	69.2	1000	
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	46.8		pg/L	46.8	100	
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	25.2		pg/L	25.2	500	
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	34.4		pg/L	34.4	500	
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	34.4	37.8	pg/L	34.4	500	
30402-14-3	Total Tetrachlorodibenzofuran	U	35.2		pg/L	35.2	100	
30402-15-4	Total Pentachlorodibenzofuran	U	21		pg/L	21.0	500	
55684-94-1	Total Hexachlorodibenzofuran	U	18.3		pg/L	18.3	500	
38998-75-3	Total Heptachlorodibenzofuran	U	18.8		pg/L	18.8	500	
3333-30-0	TEQ WHO2005 ND=0		0.037	0.415	pg/L			
3333-30-1	TEQ WHO2005 ND=0.5		51.5	51.7	pg/L			

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		8480	20000	pg/L	42.4	(25%-164%)	
13C-1,2,3,7,8-PeCDD		9170	20000	pg/L	45.8	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		9220	20000	pg/L	46.1	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		9010	20000	pg/L	45.0	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		12100	20000	pg/L	60.5	(23%-140%)	
13C-OCDD		22300	40000	pg/L	55.8	(17%-157%)	
13C-2,3,7,8-TCDF		9490	20000	pg/L	47.4	(24%-169%)	
13C-1,2,3,7,8-PeCDF		9640	20000	pg/L	48.2	(24%-185%)	
13C-2,3,4,7,8-PeCDF		10600	20000	pg/L	52.8	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		10200	20000	pg/L	50.9	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		10800	20000	pg/L	54.2	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		10100	20000	pg/L	50.5	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		10400	20000	pg/L	52.2	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 21, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

> > **JTF**

TRCC001 TRCC00314 Client: **Project:** 06/17/2014 13:45 MILK **Date Collected:** Matrix:

Instrument:

Dilution:

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HRP763

1

of 2

6254010 Lab Sample ID: 1613B Liquid Date Received: 06/18/2014 10:50 **Client Sample:**

Client ID: JFM03 **Prep Basis:** As Received **Batch ID:** 26307 Method: EPA Method 1613B

Data File: b07jul14a-7 SW846 3520C 26305 **Prep Method:** Prep Batch: **Prep Aliquot:** $100 \, mL$

CAS No. **EMPC** Units **EDL PQL Parmname** Qual Result

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		12200	20000	pg/L	61.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		12300	20000	pg/L	61.4	(26%-138%)
37CI-2,3,7,8-TCDD		1860	2000	pg/L	93.1	(35%-197%)

Comments:

SDG Number:

Run Date:

Prep Date:

6254

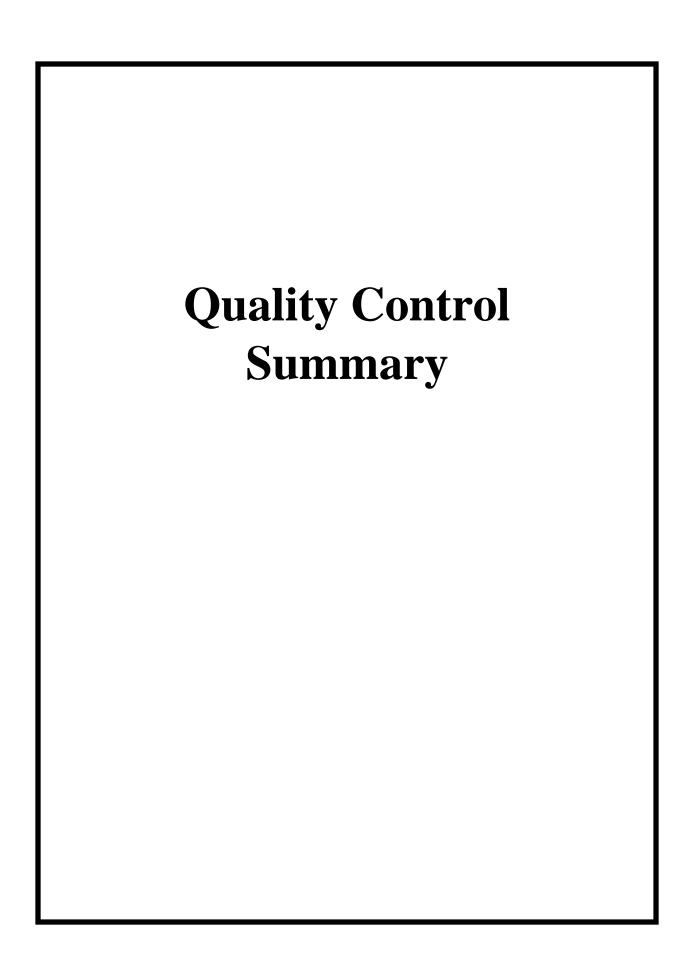
07/07/2014 19:46

30-JUN-14

Value is estimated

Estimated Maximum Possible Concentration

Analyte was analyzed for, but not detected above the specified detection limit.



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Hi-Res Dioxins/Furans Surrogate Recovery Report

13C-1_2_3_7_8_PCDD	Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
13C-1_2.3_7.8_HCDD	12010820	LCS for batch 26305	13C-2,3,7,8-TCDD		36.7	(20%-175%)
13C-1,23,67,8-HxCDD			13C-1,2,3,7,8-PeCDD		47.3	(21%-227%)
13C-1,2,3,4,6,7,8-HpCDD			13C-1,2,3,4,7,8-HxCDD		51.0	(21%-193%)
13C-OCDD 57.0 (138-199%) 13C-3.3.78-TCDF 41.9 (228-1528) 13C-1.2.3.78-PCDF 45.6 (218-1928) 13C-1.2.3.78-PCDF 45.6 (218-1928) 13C-1.2.3.4.78-PCDF 54.4 (138-3288) 13C-1.2.3.4.78-PCDF 54.4 (138-3288) 13C-1.2.3.4.6.78-HxCDF 56.1 (219-1598) 13C-1.2.3.4.6.78-HxCDF 56.1 (219-1598) 13C-1.2.3.4.6.78-HxCDF 59.3 (178-2058) 13C-1.2.3.4.78-PCDF 59.3 (178-2058) 13C-1.2.3.4.78-PCDF 56.4 (208-1888) 13C-1.2.3.4.78-PCDD 56.4 (208-1888) 13C-1.2.3.4.78-PCDD 56.4 (208-1888) 13C-1.2.3.4.78-PCDD 61.0 (219-2278) 13C-1.2.3.4.78-HxCDD 61.0 (219-2278) 13C-1.2.3.4.78-PCDD 61.0 (219-1938) 13C-1.2.3.4.78-PCDD 61.0 (219-1938) 13C-1.2.3.4.78-PCDD 74.8 (229-1668) 13C-1.2.3.4.78-PCDD 74.6 (138-198) 13C-1.2.3.4.78-PCDF 55.5 (228-1528) 13C-1.2.3.4.78-PCDF 55.5 (228-1528) 13C-1.2.3.4.78-PCDF 57.0 (218-1228) 13C-1.2.3.4.78-PCDF 57.0 (218-1228) 13C-1.2.3.4.78-PCDF 57.0 (218-1228) 13C-1.2.3.4.78-PCDF 57.0 (218-1228) 13C-1.2.3.4.78-PCDF 77.1 (792-2028) 13C-1.2.3.4.78-PCDF 78.0 (219-1898)			13C-1,2,3,6,7,8-HxCDD		49.4	(25%-163%)
13C-2.3.7.8-TCDF 41.9 (22%-152%) 13C-1.2.3.7.8-PCDF 45.6 (21%-192%) 13C-1.2.3.7.8-PCDF 54.4 (13%-328%) 13C-1.2.3.4.7.8-HxCDF 56.6 (19%-202%) 13C-1.2.3.4.7.8-HxCDF 56.7 (22%-176%) 13C-1.2.3.4.6.7.8-HxCDF 56.7 (22%-176%) 13C-1.2.3.4.6.7.8-HxCDF 56.7 (22%-176%) 13C-1.2.3.4.6.7.8-HxCDF 63.8 (21%-159%) 13C-1.2.3.4.6.7.8-HxCDF 63.8 (21%-159%) 13C-1.2.3.4.6.7.8-HxCDF 63.8 (21%-159%) 13C-1.2.3.4.6.7.8-HxCDD 63.8 (21%-159%) 13C-1.2.3.7.8-PCDD 63.8 (21%-159%) 13C-1.2.3.7.8-PCDD 63.8 (21%-159%) 13C-1.2.3.7.8-PCDD 63.8 (21%-159%) 13C-1.2.3.7.8-HxCDD 64.2 (25%-166%) 13C-1.2.3.4.6.7.8-HxCDD 64.2 (25%-166%) 13C-1.2.3.4.6.7.8-HxCDD 74.8 (22%-166%) 13C-1.2.3.7.8-PCDF 74.6 (13%-159%) 13C-1.2.3.7.8-PCDF 75.8 (22%-152%) 13C-1.2.3.7.8-PCDF 75.8 (22%-152%) 13C-1.2.3.7.8-PCDF 75.8 (22%-152%) 13C-1.2.3.7.8-PCDF 75.8 (21%-152%) 13C-1.2.3.7.8-HxCDF 75.8 (21%-152%) 13C-1.2.3.7.8-HxCDF 75.9 (21%-152%) 13C-1.2.3.7.8-HxCDF 75.0 (21%-152%) 13C-1.2.3.7.8-PCDF 75.0 (21%-152%) 13C-1.2.3.7.8-PCDF 75.0 (21%-152%) 13C-1.2.3.7.8-PCDF 75.0 (21%-152%) 13C-1.2.3.7.8-PCDD 75.0 (21%-152%) 13C			13C-1,2,3,4,6,7,8-HpCDD		64.0	(22%-166%)
13C-1,2,3,7,8-PeCDF			13C-OCDD		57.0	(13%-199%)
13C-2.3.4.7.8-PtCDF 5.4 (13%-328%) 13C-1.2.3.4.7.8-HxCDF 5.6 (19%-202%) 13C-1.2.3.4.7.8-HxCDF 5.6 (19%-202%) 13C-1.2.3.4.6.7.8-HxCDF 5.6 (20%-159%) 13C-1.2.3.4.6.7.8-HxCDF 5.7 (20%-159%) 13C-1.2.3.4.6.7.8-HxCDF 5.8 (21%-159%) 13C-1.2.3.4.6.7.8-HyCDF 6.3 (21%-159%) 13C-1.2.3.4.6.7.8-HyCDF 6.5 (20%-186%) 13C-1.2.3.7.8-PtCDD 6.5 (20%-186%) 13C-1.2.3.7.8-PtCDD 9.8 (31%-191%) 13C-1.2.3.7.8-PtCDD 6.1 (21%-227%) 13C-1.2.3.7.8-HyCDD 6.1 (21%-227%) 13C-1.2.3.7.8-HyCDD 6.1 (21%-227%) 13C-1.2.3.4.6.7.8-HyCDD 6.1 (21%-227%) 13C-1.2.3.7.8-PtCDD 7.4 (22%-166%) 13C-2.3.7.8-PtCDF 7.6 (38%-199%) 13C-2.3.7.8-PtCDF 7.1 (13%-328%) 13C-1.2.3.7.8-PtCDF 7.1 (13%-328%) 13C-1.2.3.7.8-PtCDF 7.1 (13%-328%) 13C-1.2.3.7.8-HyCDF 7.1 (13%-138%) 13C-1.2.3.7.8-HyCDF 7.1 (13			13C-2,3,7,8-TCDF		41.9	(22%-152%)
13C-1,2,3,4,7,8-HxCDF 56.6 (19%-202%) 13C-1,2,3,6,7,8-HxCDF 56.1 (21%-159%) 13C-1,2,3,4,6,7,8-HxCDF 56.7 (22%-176%) 13C-1,2,3,4,7,8-HxCDF 53.3 (17%-205%) 13C-1,2,3,4,7,8-HxCDF 63.8 (21%-158%) 13C-1,2,3,4,7,8-HxCDF 65.4 (20%-186%) 13C-1,2,3,4,7,8-HxCDD 65.4 (20%-186%) 13C-1,2,3,4,7,8-HxCDD 47.5 (20%-175%) 13C-1,2,3,4,7,8-HxCDD 61.0 (21%-272%) 13C-1,2,3,4,6,7,8-HxCDD 61.0 (21%-272%) 13C-1,2,3,4,6,7,8-HxCDD 61.0 (21%-193%) 13C-1,2,3,4,6,7,8-HxCDD 74.8 (22%-166%) 13C-0,2,3,7,8-TCDD 74.0 (13%-199%) 13C-1,2,3,4,6,7,8-HxCDF 75.5 (22%-152%) 13C-1,2,3,7,8-PCDF 58.7 (21%-192%) 13C-1,2,3,7,8-PCDF 58.7 (21%-192%) 13C-1,2,3,4,7,8-HxCDF 68.7 (19%-202%) 13C-1,2,3,4,7,8-HxCDF 71.6 (13%-238%) 13C-1,2,3,4,7,8-HxCDF 71.7 (17%-202%-176%) 13C-1,2,3,4,7,8-HxCDF 71.7 (17%-205%) 13C-1,2,3,4,7,8-HxCDF 71.7 (17%-205%) 13C-1,2,3,4,7,8-HxCDF 71.7 (20%-176%) 13C-1,2,3,4,7,8-HxCDF 71.7			13C-1,2,3,7,8-PeCDF		45.6	(21%-192%)
13C-1,2,3,6,7,8-HxCDF 56.1 (21%-159%) 13C-1,2,3,7,8-9-HxCDF 56.7 (22%-176%) 13C-1,2,3,4,6,7,8-HyCDF 65.3 (17%-205%) 13C-1,2,3,4,7,8-9-HyCDF 65.4 (20%-185%) 37C1-2,3,7,8-TCDD 90.8 (31%-191%) 13C-1,2,3,7,8-PCDD 65.4 (20%-185%) 13C-1,2,3,7,8-PCDD 61.0 (21%-227%) 13C-1,2,3,7,8-HxCDD 61.0 (21%-227%) 13C-1,2,3,7,8-HxCDD 61.6 (21%-193%) 13C-1,2,3,7,8-HxCDD 64.2 (25%-163%) 13C-1,2,3,7,8-HxCDD 74.8 (25%-165%) 13C-1,2,3,7,8-PCDD 74.8 (25%-165%) 13C-1,2,3,7,8-PCDD 74.8 (25%-165%) 13C-1,2,3,7,8-PCDF 75.5 (25%-152%) 13C-1,2,3,7,8-HxCDF 75.5 (25%-152%) 13C-1,2,3,7,8-HxCDF 71.6 (13%-328%) 13C-1,2,3,7,8-HxCDF 71.7 (25%-176%) 13C-1,2,3,7,8-HxCDD 71.7 (25%-176%) 13C-1,2,3,7,8-HxCDD 71.7 (25%-176%) 13C-1,2,3,7,8-HxCDD 71.7 (25%-164%) 13C-1,2,3,7,8-HxCDF 71.7 (25%-165%) 13C-1,2,3,7,8-HxCDF 71.7 (26%-125%) 13C-1,2,3,7,8-HxCDF 71.7			13C-2,3,4,7,8-PeCDF		54.4	(13%-328%)
13C-1,2,3,4,6,7,8-HxCDF 56,7 (229-176%) 13C-1,2,3,4,6,7,8-HpCDF 53,3 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 65,4 (20%-186%) 13C-1,2,3,4,7,8,9-HpCDF 65,4 (20%-186%) 37C1-2,3,7,8-TCDD 90,8 (31%-191%) 1010821 LCSD for batch 26305 13C-2,3,7,8-TCDD 47,5 (20%-175%) 13C-1,2,3,4,7,8-HpCDD 61,0 (21%-272%) 13C-1,2,3,4,7,8-HpCDD 61,6 (21%-1293%) 13C-1,2,3,4,7,8-HpCDD 74,8 (22%-165%) 13C-1,2,3,4,7,8-HpCDD 74,8 (22%-165%) 13C-1,2,3,4,7,8-HpCDF 74,6 (13%-192%) 13C-2,3,7,8-TCDF 74,6 (13%-192%) 13C-1,2,3,4,7,8-HpCDF 74,7 (17%-205%) 13C-1,2,3,4,7,8-HpCDF 74,7 (20%-138%) 13C-1,2,3,4,7,8-HpCDD 74,8 (20%-138%) 13C-1,2,3,4,7,8-HpCDF 74,7 (20%-138%) 13C-1,2,3,4,8,8-HpCDF 74,8 (20%-138%) 13C-1,2,3,4,8,8-HpCDF 74,7 (20%-138%) 13C-1,2			13C-1,2,3,4,7,8-HxCDF		56.6	(19%-202%)
13C-1_2_3_1_8_P-HpCDF			13C-1,2,3,6,7,8-HxCDF		56.1	(21%-159%)
13C-1,2,3,4,6,7,8-HpCDF			13C-2,3,4,6,7,8-HxCDF		56.7	(22%-176%)
13C-1,2,3,4,7,8,9-HpCDF 65,4 (20%-186%) 37C1-2,3,7,8-TCDD 90,8 (31%-191%)			13C-1,2,3,7,8,9-HxCDF		59.3	(17%-205%)
10821 LCSD for batch 26305 13C-2,3,7,8-TCDD 47,5 (20%-175%) 13C-1,2,3,7,8-PeCDD 61,0 (21%-227%) 13C-1,2,3,4,7,8-HACDD 61,6 (21%-227%) 13C-1,2,3,4,7,8-HACDD 64,2 (25%-163%) 13C-1,2,3,4,7,8-HACDD 74,6 (13%-199%) 13C-0,2,3,4,7,8-PeCDF 74,6 (13%-199%) 13C-2,3,7,8-PeCDF 55,5 (22%-152%) 13C-1,2,3,7,8-PeCDF 51,6 (13%-328%) 13C-1,2,3,7,8-PeCDF 71,6 (13%-328%) 13C-1,2,3,4,7,8-HACDF 68,7 (19%-202%) 13C-1,2,3,4,7,8-HACDF 68,7 (19%-202%) 13C-1,2,3,4,6,7,8-HACDF 71,7 (17%-205%) 13C-1,2,3,4,6,7,8-HACDF 71,7 (17%-205%) 13C-1,2,3,4,6,7,8-HACDF 71,7 (17%-205%) 13C-1,2,3,4,6,7,8-HACDF 71,7 (17%-205%) 13C-1,2,3,4,7,8-PECDD 80,1 (20%-186%) 37C1-2,3,7,8-PECDD 83,0 (31%-191%) (30%-186%) 31C-1,2,3,4,7,8-HACDD 39,0 (25%-164%) 13C-1,2,3,4,7,8-HACDD 39,7 (32%-141%) 13C-1,2,3,4,8-HACDD 43,1 (28%-130%) 13C-1,2,3,4,8-HACDD 43,1 (28%-130%) 13C-1,2,3,4,8-PECDD 43,2 (24%-169%) 13C-1,2,3,4,8-PECDF 48,2 (24%-169%) 13C-1,2,3,4,8-PECDF 48,8 (24%-169%)			13C-1,2,3,4,6,7,8-HpCDF			(21%-158%)
13C-1,2,3,7,8-PCDD			13C-1,2,3,4,7,8,9-HpCDF		65.4	(20%-186%)
13C-1,2,3,7,8-PcDD 61.0 (21%-227%) 13C-1,2,3,4,7,8-HxCDD 61.6 (21%-193%) 13C-1,2,3,4,7,8-HxCDD 64.2 (25%-163%) 13C-1,2,3,4,6,7,8-HpCDD 74.8 (22%-166%) 13C-0CDD 74.6 (13%-199%) 13C-2,3,7,8-TCDF 55.5 (22%-152%) 13C-1,2,3,4,7,8-PcDF 58.7 (21%-192%) 13C-1,2,3,4,7,8-PcDF 71.6 (13%-328%) 13C-1,2,3,4,7,8-PcDF 71.6 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 68.7 (19%-202%) 13C-1,2,3,4,6,7,8-HxCDF 69.6 (21%-159%) 13C-1,2,3,4,6,7,8-HxCDF 71.7 (17%-205%) 13C-1,2,3,4,6,7,8-HyCDF 76.0 (21%-158%) 13C-1,2,3,4,7,8-HyCDF 80.1 (20%-186%) 13C-1,2,3,4,7,8-HyCDF 80.1 (20%-186%) 13C-1,2,3,7,8-TCDD 83.0 (31%-191%) D10819 MB for batch 26305 13C-2,3,7,8-TCDD 39.0 (25%-164%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,7,8-HyCDD 43.1 (28%-130%) 13C-1,2,3,4,7,8-HyCDD 50.7 (23%-141%) 13C-1,2,3,4,6,7,8-HyCDD 50.7 (23%-141%) 13C-1,2,3,4,6,7,8-HyCDD 50.7 (23%-141%) 13C-1,2,3,4,6,7,8-HyCDD 45.9 (17%-157%) 13C-2,3,3,7,8-TCDF 48.8 (24%-169%) 13C-1,2,3,4,6,7,8-HyCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HyCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HyCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HyCDF 48.8 (24%-169%) 13C-1,2,3,4,7,8-HyCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8-HyCDF 48.8 (28%-143%) 13C-1,2,3,4,6,7,8-HyCDF 54.1 (26%-138%) 13C-1,2,3,4,6,7,8-HyCDF 54.1 (26%-138%) 13C-1,2,3,7,8-HyCDF 54.1 (26%-138%) 13C-1,2,3,7,8-HyCDF 54.1 (26%-138%) 13C-1,2,3,7,8-HyCDF 54.1 (37Cl-2,3,7,8-TCDD		90.8	(31%-191%)
13C-1,2,3,4,7,8-HxCDD 61.6 (21%-193%) 13C-1,2,3,4,7,8-HxCDD 64.2 (25%-163%) 13C-1,2,3,4,7,8-HxCDD 74.8 (22%-165%) 13C-0CDD 74.6 (13%-199%) 13C-0CDD 74.6 (13%-199%) 13C-2,3,7,8-TCDF 55.5 (22%-152%) 13C-1,2,3,7,8-PCDF 55.5 (22%-152%) 13C-1,2,3,7,8-PCDF 71.6 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 68.7 (19%-202%) 13C-1,2,3,4,7,8-HxCDF 69.6 (21%-159%) 13C-1,2,3,4,7,8-HxCDF 71.7 (17%-202%-176%) 13C-1,2,3,4,7,8-HxCDF 71.7 (17%-205%-13C-1,2,3,4,7,8-HyCDF 76.0 (21%-158%) 13C-1,2,3,4,7,8-HyCDF 76.0 (21%-158%) 13C-1,2,3,4,7,8-HyCDF 80.1 (20%-186%) 13C-1,2,3,4,7,8-HyCDD 83.0 (31%-191%) 13C-1,2,3,4,7,8-HxCDD 39.7 (25%-164%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,7,8-HyCDD 43.1 (28%-130%) 13C-1,2,3,4,7,8-HyCDD 43.1 (28%-130%) 13C-1,2,3,4,7,8-HyCDD 43.1 (28%-130%) 13C-1,2,3,4,7,8-HyCDD 43.1 (28%-130%) 13C-1,2,3,4,7,8-HyCDD 45.9 (17%-157%) 13C-2,3,7,8-TCDF 48.8 (24%-169%) 13C-2,3,7,8-HyCDF 48.8 (24%-169%) 13C-1,2,3,4,7,8-HyCDF 48.8 (24%-169%) 13C-1,2,3,4,7,8-HyCDF 48.8 (24%-169%) 13C-1,2,3,4,7,8-HyCDF 48.8 (24%-169%) 13C-1,2,3,4,7,8-HyCDF 48.6 (28%-136%) 13C-1,2,3,4,8-HyCDF 48.6 (28%-136%) 13C-1,2,3,4,8-HyCDF 48.8 (28%-143%) 13C-1,2,3,4,6,7,8-HyCDF 48.8 (28%-143%) 13C-1,2,3,4,8-HyCDF 48.8 (28%-143%) 13C-1,2,3,	12010821 LCSD	LCSD for batch 26305	13C-2,3,7,8-TCDD		47.5	(20%-175%)
13C-1,2,3,6,7,8-HxCDD			13C-1,2,3,7,8-PeCDD		61.0	(21%-227%)
13C-1,2,3,4,6,7,8-HpCDD			13C-1,2,3,4,7,8-HxCDD		61.6	(21%-193%)
13C-OCDD 74.6 (13%-199%) 13C-2,37,8-TCDF 55.5 (22%-152%) 13C-1,2,3,8-PeCDF 58.7 (21%-192%) 13C-2,3,47,8-PeCDF 71.6 (13%-328%) 13C-1,2,3,47,8-HxCDF 68.7 (19%-202%) 13C-1,2,3,47,8-HxCDF 69.6 (21%-159%) 13C-2,3,4,67,8-HxCDF 71.7 (22%-176%) 13C-1,2,3,4,6,7,8-HxCDF 71.7 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 76.0 (21%-158%) 13C-1,2,3,4,6,7,8-HpCDF 76.0 (21%-158%) 13C-1,2,3,7,8-PeCDD 83.0 (31%-191%) 13C-1,2,3,7,8-PeCDD 39.0 (25%-164%) 13C-1,2,3,7,8-PeCDD 43.6 (25%-181%) 13C-1,2,3,6,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,6,7,8-HxCDD 43.1 (28%-130%) 13C-1,2,3,6,7,8-HxCDD 45.9 (17%-157%) 13C-2,3,7,8-PeCDF 49.2 (21%-178%) 13C-2,3,7,8-PeCDF 49.2 (21%-178%) 13C-2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 47.7 (26%-123%) 13C-2,3,4,7,8-HxCDF 48.8 (28%-136%) 13C-1,2,3,4,6,7,8-HxCDF 48.2 (29%-147%) 13C-2,3,4,6,7,8-HxCDF 48.8 (28%-136%) 13C-1,2,3,4,6,7,8-HxCDF 48.8 (28%-136%) 13C-1,2,3,4,6,7,8-HxCDF 48.8 (28%-136%) 13C-1,2,3,4,6,7,8-HxCDF 48.8 (28%-136%) 13C-1,2,3,4,6,7,8-HyCDF 48.8 (28%-136%)			13C-1,2,3,6,7,8-HxCDD		64.2	(25%-163%)
13C-2,3,7,8-TCDF 55.5 (22%-152%) 13C-1,2,3,7,8-PeCDF 58.7 (21%-192%) 13C-1,2,3,4,7,8-PeCDF 71.6 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 68.7 (19%-202%) 13C-1,2,3,4,7,8-HxCDF 68.7 (19%-202%) 13C-1,2,3,4,6,7,8-HxCDF 71.7 (22%-176%) 13C-1,2,3,4,6,7,8-HxCDF 71.7 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 76.0 (21%-158%) 13C-1,2,3,4,6,7,8-HpCDF 80.1 (20%-186%) 37C1-2,3,7,8-PCDD 83.0 (31%-191%) MB for batch 26305 13C-2,3,7,8-TCDD 39.0 (25%-164%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-1,2,3,4,5,7,8-PCDD 43.1 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-0,2,3,7,8-PCDF 48.8 (24%-165%) 13C-1,2,3,7,8-PCDF 48.8 (24%-165%) 13C-1,2,3,7,8-PCDF 48.8 (24%-165%) 13C-1,2,3,4,7,8-HxCDF 48.8 (24%-185%) 13C-1,2,3,4,7,8-HxCDF 48.2 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 48.2 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 48.8 (28%-130%) 13C-1,2,3,4,7,8-HxCDF 48.8 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 54.1 (26%-138%) 13C-1,2,3,4,7,8-HxCDF 54.1 (26%-138%) 13C-1,2,3,4,7,8-HxCDF 54.1 (26%-138%) 13C-1,2,3,4,7,8-HxCDF 54.1 (26%-138%) 13C-1,2,3,4,7,8-HxCDF 54			13C-1,2,3,4,6,7,8-HpCDD		74.8	(22%-166%)
13C-1,2,3,7,8-PeCDF			13C-OCDD		74.6	(13%-199%)
13C-2,3,47,8-PeCDF 71.6 (13%-328%) 13C-1,2,3,47,8-HxCDF 68.7 (19%-202%) 13C-1,2,3,47,8-HxCDF 69.6 (21%-159%) 13C-1,2,3,46,7,8-HxCDF 71.7 (22%-176%) 13C-1,2,3,4,6,7,8-HxCDF 71.7 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 76.0 (21%-158%) 13C-1,2,3,4,6,7,8-HpCDF 80.1 (20%-186%) 37C1-2,3,7,8-TCDD 83.0 (31%-191%) 010819 MB for batch 26305 13C-2,3,7,8-TCDD 39.0 (25%-164%) 13C-1,2,3,7,8-PeCDD 43.6 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 43.1 (22%-130%) 13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-1,2,3,4,8-PeCDF 45.9 (17%-157%) 13C-2,3,7,8-PeCDF 48.8 (24%-169%) 13C-1,2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,3,7,8-PeCDF 48.8 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 48.8 (28%-136%) 13C-1,2,3,7,8-PHCDF 48.8 (28%-136%) 13C-1,2,3,7,8-PHCDF 48.8 (28%-136%) 13C-1,2,3,7,8-PHCDF 48.8 (28%-136%) 13C-1,2,3,7,8-PHCDF 48.8 (28%-137%)			13C-2,3,7,8-TCDF		55.5	(22%-152%)
13C-1,2,3,4,7,8-HxCDF 68.7 (19%-202%) 13C-1,2,3,6,7,8-HxCDF 69.6 (21%-159%) 13C-2,3,4,6,7,8-HxCDF 71.7 (22%-176%) 13C-1,2,3,7,8-HxCDF 71.7 (17%-205%) 13C-1,2,3,7,8-HpCDF 71.7 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 76.0 (21%-158%) 13C-1,2,3,4,7,8-HpCDF 80.1 (20%-186%) 37C1-2,3,7,8-TCDD 83.0 (31%-191%) 010819 MB for batch 26305 13C-2,3,7,8-TCDD 39.0 (25%-164%) 13C-1,2,3,7,8-PCDD 43.6 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-1,2,3,4,6,7,8-HpCDD 45.9 (17%-157%) 13C-2,3,7,8-PCDF 48.8 (24%-169%) 13C-1,2,3,4,7,8-PCDF 49.2 (21%-158%) 13C-2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-2,3,4,6,7,8-HpCDF 48.8 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8-HxCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8-HxCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8-HxCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8-HyCDF 54.1 (26%-138%)			13C-1,2,3,7,8-PeCDF		58.7	(21%-192%)
13C-1,2,3,6,7,8-HxCDF			13C-2,3,4,7,8-PeCDF		71.6	(13%-328%)
13C-2,3,4,6,7,8-HxCDF 71.7 (22%-176%) 13C-1,2,3,7,8,9-HxCDF 71.7 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 76.0 (21%-158%) 13C-1,2,3,4,7,8,9-HpCDF 80.1 (20%-186%) 37C1-2,3,7,8-TCDD 83.0 (31%-191%) 010819 MB for batch 26305 13C-2,3,7,8-TCDD 39.0 (25%-164%) 13C-1,2,3,7,8-HxCDD 39.0 (25%-164%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,6,7,8-HpCDD 43.1 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-0CDD 45.9 (17%-157%) 13C-2,3,7,8-TCDF 48.8 (24%-169%) 13C-1,2,3,7,8-PeCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 47.7 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 48.8 (28%-136%) 13C-1,2,3,4,7,8-HyCDF 54.1 (26%-152%) 13C-1,2,3,4,7,8-HyCDF 54.1 (26%-153%)			13C-1,2,3,4,7,8-HxCDF		68.7	(19%-202%)
13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,7,8,9-HpCDF 13C-1,2,3,7,8-TCDD 13C-1,2,3,7,8-TCDD 13C-1,2,3,7,8-TCDD 39.0 25%-164%) 13C-1,2,3,7,8-PeCDD 39.0 25%-164%) 13C-1,2,3,7,8-PeCDD 39.7 32%-141%) 13C-1,2,3,4,7,8-HxCDD 39.7 32%-141%) 13C-1,2,3,4,6,7,8-HpCDD 30.7 32%-141%) 13C-1,2,3,4,6,7,8-PeCDD 45.9 13C-1,2,3,4,6,7,8-PeCDF 48.8 24%-169%) 13C-1,2,3,4,7,8-PeCDF 48.8 24%-169%) 13C-1,2,3,4,7,8-PeCDF 48.8 24%-185%) 13C-1,2,3,4,7,8-HxCDF 45.2 26%-152%) 13C-1,2,3,4,7,8-HxCDF 45.2 26%-152%) 13C-1,2,3,4,7,8-HxCDF 45.2 26%-152%) 13C-1,2,3,4,7,8-HxCDF 45.2 26%-152%) 13C-1,2,3,4,7,8-PhCDF 48.6 28%-136%) 13C-1,2,3,4,7,8-PhCDF 48.8 22%-147%) 13C-1,2,3,4,7,8-PhCDF 48.8 22%-147%) 13C-1,2,3,4,7,8-PhCDF 48.8 22%-143%) 13C-1,2,3,4,7,8-PhCDF 48.8 22%-143%) 37C1-2,3,4,7,8-PhCDF 54.1 26%-138%) 37C1-2,3,7,8-TCDD			13C-1,2,3,6,7,8-HxCDF		69.6	(21%-159%)
13C-1,2,3,4,6,7,8-HpCDF 76.0 (21%-158%) 13C-1,2,3,4,7,8,9-HpCDF 80.1 (20%-186%) 37C1-2,3,7,8-TCDD 83.0 (31%-191%) MB for batch 26305 13C-1,2,3,7,8-TCDD 39.0 (25%-164%) 13C-1,2,3,7,8-PeCDD 43.6 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,6,7,8-HxCDD 43.1 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-0CDD 45.9 (17%-157%) 13C-0CDD 45.9 (17%-157%) 13C-1,2,3,7,8-PeCDF 43.2 (24%-169%) 13C-1,2,3,7,8-PeCDF 43.2 (24%-185%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8-HpCDF 54.1 (26%-138%) 13C-1,2,3,4,7,8-HpCDF			13C-2,3,4,6,7,8-HxCDF		71.7	(22%-176%)
13C-1,2,3,4,7,8,9-HpCDF 80.1 (20%-186%) 37Cl-2,3,7,8-TCDD 83.0 (31%-191%) 13C-1,2,3,7,8-TCDD 39.0 (25%-164%) 13C-1,2,3,4,7,8-PeCDD 43.6 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 43.1 (28%-130%) 13C-1,2,3,4,6,7,8-HxCDD 50.7 (23%-141%) 13C-0,23,7,8-TCDD 45.9 (17%-157%) 13C-2,3,7,8-TCDF 48.8 (24%-169%) 13C-1,2,3,7,8-PeCDF 43.2 (24%-185%) 13C-1,2,3,4,7,8-PeCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,6,7,8-HxCDF 48.8 (28%-143%) 13C-1,2,3,4,6,7,8-HyCDF 48.8 (28%-143%) 13C-1,2,3,4,6,7,8-HyCDF 48.8 (28%-143%) 13C-1,2,3,4,6,7,8-HyCDF 54.1 (26%-138%) 37Cl-2,3,4,7,8-PHCDF 54.1 (26%-138%) 37Cl-2,3,4,7,8-HyCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-1,2,3,7,8,9-HxCDF		71.7	(17%-205%)
37Cl-2,3,7,8-TCDD MB for batch 26305 13C-2,3,7,8-TCDD 39.0 (25%-164%) 13C-1,2,3,7,8-PCDD 39.7 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,6,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,4,6,7,8-HxCDD 43.1 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-0CDD 45.9 (17%-157%) 13C-2,3,7,8-PCDF 48.8 (24%-169%) 13C-1,2,3,7,8-PCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,4,6,7,8-HxCDF 47.7 (26%-123%) 13C-1,2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD			13C-1,2,3,4,6,7,8-HpCDF		76.0	(21%-158%)
MB for batch 26305 13C-2,3,7,8-TCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,7,8-HxCDD 13C-1,2,3,4,6,7,8-HyCDD 13C-0CDD 13C-2,3,7,8-TCDF 13C-2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,7,8-HyCDF 13C-1,2,3,4,7,8,9-HyCDF 13C-1,2,3,4,7,8-TCDD			13C-1,2,3,4,7,8,9-HpCDF		80.1	(20%-186%)
13C-1,2,3,7,8-PeCDD 43.6 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,6,7,8-HxCDD 43.1 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-OCDD 45.9 (17%-157%) 13C-2,3,7,8-TCDF 48.8 (24%-169%) 13C-1,2,3,7,8-PeCDF 43.2 (24%-185%) 13C-2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 47.7 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,6,7,8-HpCDF 54.1 (26%-138%) 37C1-2,3,7,8-TCDD 91.7 (35%-197%)			37Cl-2,3,7,8-TCDD		83.0	(31%-191%)
13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,6,7,8-HxCDD 43.1 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-OCDD 45.9 (17%-157%) 13C-2,3,7,8-TCDF 48.8 (24%-169%) 13C-1,2,3,7,8-PeCDF 43.2 (24%-185%) 13C-2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,4,6,7,8-HxCDF 47.7 (26%-123%) 13C-1,2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)	2010819	MB for batch 26305	13C-2,3,7,8-TCDD		39.0	(25%-164%)
13C-1,2,3,4,7,8-HxCDD 39.7 (32%-141%) 13C-1,2,3,6,7,8-HxCDD 43.1 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-OCDD 45.9 (17%-157%) 13C-2,3,7,8-TCDF 48.8 (24%-169%) 13C-1,2,3,7,8-PeCDF 43.2 (24%-185%) 13C-2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,4,6,7,8-HxCDF 47.7 (26%-123%) 13C-1,2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-1,2,3,7,8-PeCDD		43.6	(25%-181%)
13C-1,2,3,4,6,7,8-HpCDD 50.7 (23%-140%) 13C-OCDD 45.9 (17%-157%) 13C-2,3,7,8-TCDF 48.8 (24%-169%) 13C-1,2,3,7,8-PeCDF 43.2 (24%-185%) 13C-2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 47.7 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,6,7,8-HpCDF 54.1 (26%-138%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)					39.7	(32%-141%)
13C-OCDD 45.9 (17%-157%) 13C-2,3,7,8-TCDF 48.8 (24%-169%) 13C-1,2,3,7,8-PeCDF 43.2 (24%-185%) 13C-2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 47.7 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-1,2,3,6,7,8-HxCDD		43.1	(28%-130%)
13C-2,3,7,8-TCDF 48.8 (24%-169%) 13C-1,2,3,7,8-PcDF 43.2 (24%-185%) 13C-2,3,4,7,8-PcDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 47.7 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-1,2,3,4,6,7,8-HpCDD		50.7	(23%-140%)
13C-1,2,3,7,8-PeCDF 43.2 (24%-185%) 13C-2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 47.7 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-OCDD		45.9	(17%-157%)
13C-2,3,4,7,8-PeCDF 49.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 47.7 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-2,3,7,8-TCDF		48.8	(24%-169%)
13C-1,2,3,4,7,8-HxCDF 45.2 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 47.7 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-1,2,3,7,8-PeCDF		43.2	(24%-185%)
13C-1,2,3,6,7,8-HxCDF 47.7 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-2,3,4,7,8-PeCDF		49.2	(21%-178%)
13C-2,3,4,6,7,8-HxCDF 48.6 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-1,2,3,4,7,8-HxCDF		45.2	(26%-152%)
13C-1,2,3,7,8,9-HxCDF 48.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-1,2,3,6,7,8-HxCDF		47.7	(26%-123%)
13C-1,2,3,4,6,7,8-HpCDF 48.8 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-2,3,4,6,7,8-HxCDF		48.6	(28%-136%)
13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-1,2,3,7,8,9-HxCDF		48.2	(29%-147%)
13C-1,2,3,4,7,8,9-HpCDF 54.1 (26%-138%) 37Cl-2,3,7,8-TCDD 91.7 (35%-197%)			13C-1,2,3,4,6,7,8-HpCDF		48.8	(28%-143%)
			*			
54009 JFM02 13C-2,3,7,8-TCDD 39.8 (25%-164%)			37Cl-2,3,7,8-TCDD		91.7	(35%-197%)
	254009	JFM02	13C-2,3,7,8-TCDD		39.8	(25%-164%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
6254009	JFM02	13C-1,2,3,7,8-PeCDD		44.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		39.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		42.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		52.2	(23%-140%)
		13C-OCDD		52.3	(17%-157%)
		13C-2,3,7,8-TCDF		45.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		43.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		50.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		45.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		48.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		47.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		47.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		52.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		57.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		87.1	(35%-197%)
5254010	JFM03	13C-2,3,7,8-TCDD		42.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		45.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		46.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		45.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		60.5	(23%-140%)
		13C-OCDD		55.8	(17%-157%)
		13C-2,3,7,8-TCDF		47.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		48.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		52.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		50.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		54.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		50.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		52.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		61.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		61.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.1	(35%-197%)
12010926	LCS for batch 26417	13C-2,3,7,8-TCDD		94.0	(20%-175%)
12010)20	ECS for Suich 20117	13C-1,2,3,7,8-PeCDD		109	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		96.9	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		89.8	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		105	(22%-166%)
		13C-OCDD		95.9	(13%-199%)
		13C-2,3,7,8-TCDF		101	(22%-152%)
		13C-1,2,3,7,8-PeCDF		105	(21%-192%)
		13C-2,3,4,7,8-PeCDF		117	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		92.1	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		95.5	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		95.7	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		97.3	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		102	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		106	(20%-186%)
		37Cl-2,3,7,8-TCDD		104	(31%-191%)
12010927	LCSD for batch 26417	13C-2,3,7,8-TCDD		86.6	(20%-175%)
010,2,		13C-1,2,3,7,8-PeCDD		103	(21%-227%)
		13C-1,2,3,7,0-FCCDD		103	(2170-22170)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
2010927	LCSD for batch 26417	13C-1,2,3,4,7,8-HxCDD		87.3	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		88.4	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		101	(22%-166%)
		13C-OCDD		93.1	(13%-199%)
		13C-2,3,7,8-TCDF		92.4	(22%-152%)
		13C-1,2,3,7,8-PeCDF		99.4	(21%-192%)
		13C-2,3,4,7,8-PeCDF		112	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		85.9	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		93.3	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		90.7	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		94.4	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		95.5	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		104	(20%-186%)
		37C1-2,3,7,8-TCDD		95.8	(31%-191%)
12010925	MB for batch 26417	13C-2,3,7,8-TCDD		83.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		94.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		91.2	(23%-140%)
		13C-OCDD		82.8	(17%-157%)
		13C-2,3,7,8-TCDF		88.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		92.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		102	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		84.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		86.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		88.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		89.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		86.8	(35%-197%)
54008	JFM01	13C-2,3,7,8-TCDD		84.1	(25%-164%)
	VI 1.101	13C-1,2,3,7,8-PeCDD		96.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		96.5	(23%-140%)
		13C-OCDD		89.4	(17%-157%)
		13C-2,3,7,8-TCDF		90.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		104	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		87.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		86.1	(28%-125%)
		13C-1,2,3,7,8,9-HxCDF		84.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDF		93.4	,
					(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		96.2	(26%-138%)

^{*} Recovery outside Acceptance Limits

[#] Column to be used to flag recovery values

Hi-Res Dioxins/Furans

Surrogate Recovery Report

SDG Number: 6254 Matrix Type: LIQUID Report Date: July 21, 2014 Page 4

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Recovery Acceptance QUAL Sample ID **Client ID** Surrogate Limits (%)

^{*} Recovery outside Acceptance Limits

[#] Column to be used to flag recovery values

D Sample Diluted

of 10

Hi-Res Dioxins/Furans Surrogate Recovery Report

18C-1_2_3_17_8_HCDD	Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
18C-1_2.3.7_8-PcDD	2010725	LCS for batch 26220	13C-2,3,7,8-TCDD		85.1	(20%-175%)
13C1_2_3,6_7_8-HxCDD			13C-1,2,3,7,8-PeCDD		88.6	(21%-227%)
13C-1,2,3,4,6,7,8 HpCDD			13C-1,2,3,4,7,8-HxCDD		83.6	(21%-193%)
13C-OCDD			13C-1,2,3,6,7,8-HxCDD		94.3	(25%-163%)
13C-2.3.7.8-TCDF 9.7.2 (22%-132%) 13C-1.2.3.7.8-TCDF 96.4 (21%-192%) 13C-1.2.3.7.8-TCDF 96.4 (21%-192%) 13C-1.2.3.7.8-TKDF 92.8 (19%-202%) 13C-1.2.3.7.8-TKDF 92.8 (19%-202%) 13C-1.2.3.7.8-TKDF 92.8 (19%-202%) 13C-1.2.3.7.8-TKDF 91.8 (22%-176%) 13C-1.2.3.4.6.7.8-TKDF 91.8 (22%-176%) 13C-1.2.3.4.6.7.8-TKDF 91.8 (22%-176%) 13C-1.2.3.4.6.7.8-TKDF 80.6 (21%-138%) 13C-1.2.3.4.6.7.8-TKDD 80.6 (21%-138%) 13C-1.2.3.7.8-TCDD 102 (31%-191%) 13C-1.2.3.7.8-TCDD 87.0 (20%-157%) 13C-1.2.3.7.8-TCDD 89.2 (21%-227%) 13C-1.2.3.7.8-TCDD 89.2 (21%-227%) 13C-1.2.3.7.8-TCDD 89.2 (21%-227%) 13C-1.2.3.7.8-TCDD 86.1 (21%-138%) 13C-1.2.3.6.7.8-TKDD 86.1 (21%-138%) 13C-1.2.3.6.7.8-TKDD 86.1 (21%-138%) 13C-1.2.3.7.8-TCDD 96.2 (22%-166%) 13C-0.2.3.7.8-TCDF 101 (22%-1328%) 13C-1.2.3.7.8-TCDF 91.3 (13%-238%) 13C-1.2.3.7.8-TCDF 91.3 (13%-238%) 13C-1.2.3.7.8-TCDF 91.3 (13%-238%) 13C-1.2.3.7.8-TCDF 94.9 (19%-202%) 13C-1.2.3.7.8-TCDF 95.2 (21%-138%) 13C-1.2.3.7.8-TCDF 96.2 (21%-138%) 13C-1.2.3.7.8-TCDD 86.2 (25%-164%) 13C-1.2.3.7.8-TCDD 96.2 (31%-191%) 13C-1.2.3.7.8-TCDD 97.0 (31%-191%			13C-1,2,3,4,6,7,8-HpCDD		68.9	(22%-166%)
13C-12.3,7.8-PcDF 96.4 (21%-192%) 13C-12.3,47.8-HxDF 93.1 (13%-328%) 13C-12.3,47.8-HxDF 94.9 (19%-202%) 13C-12.3,46.78-HxDF 94.9 (21%-159%) 13C-12.3,46.78-HxDF 94.9 (21%-159%) 13C-12.3,46.78-HxDF 73.8 (17%-202%) 13C-12.3,46.78-HxDF 73.8 (17%-202%) 13C-12.3,47.8-PhDF 73.8 (17%-205%) 13C-12.3,47.8-PhDF 57.7 (20%-186%) 13C-12.3,47.8-PCDD 57.7 (20%-186%) 13C-12.3,47.8-PCDD 87.0 (31%-191%) 13C-12.3,47.8-PCDD 89.2 (21%-227%) 13C-12.3,47.8-HxDD 86.1 (21%-193%) 13C-12.3,67.8-HxDD 84.1 (21%-193%) 13C-12.3,67.8-HxDD 94.4 (25%-163%) 13C-12.3,67.8-HxDD 94.4 (25%-163%) 13C-12.3,67.8-HxDD 94.4 (25%-163%) 13C-12.3,47.8-PCDF 93.5 (21%-192%) 13C-12.3,47.8-HxDF 94.9 (19%-202%) 13C-12.3,47.8-HxDF 94.1 (19%-202%) 13C-12.3,47.8-HxDF 94.1 (19%-202%) 13C-12.3,47.8-HxDF 94.1 (19%-202%) 13C-12.3,47.8-HxDF 96.2 (25%-166%) 13C-12.3,47.8-HxDF 97.0 (26%-187%) 13C-12.3,47.8-HxDF 97.0 (26%-188%) 13C-12.3,47.8			13C-OCDD		29.6	(13%-199%)
13C-2.3.4.7.8-PkCDF 93.1 (13%-328%) 13C-1.2.3.4.7.8-HxCDF 92.8 (19%-202%) 13C-1.2.3.6.7.8-HxCDF 94.9 (21%-159%) 13C-1.2.3.6.7.8-HxCDF 91.8 (22%-176%) 13C-1.2.3.4.6.7.8-HxCDF 91.8 (22%-176%) 13C-1.2.3.4.6.7.8-HxCDF 80.6 (21%-159%) 13C-1.2.3.4.6.7.8-HyCDF 80.6 (21%-159%) 13C-1.2.3.4.6.7.8-HyCDF 80.6 (21%-159%) 13C-1.2.3.7.8-PCDD 102 (31%-191%) 13C-1.2.3.7.8-PCDD 87.0 (20%-175%) 13C-1.2.3.7.8-PCDD 89.2 (21%-227%) 13C-1.2.3.7.8-HxCDD 89.2 (21%-227%) 13C-1.2.3.4.7.8-HxCDD 94.4 (25%-163%) 13C-1.2.3.6.7.8-HxCDD 94.4 (25%-163%) 13C-1.2.3.7.8-PCDF 101 (22%-1528%) 13C-1.2.3.7.8-PCDF 101 (22%-1528%) 13C-1.2.3.7.8-PCDF 101 (22%-1528%) 13C-1.2.3.7.8-PCDF 91.3 (13%-238%) 13C-1.2.3.7.8-HxCDF 91.3 (13%-238%) 13C-1.2.3.7.8-HxCDF 98.1 (21%-159%) 13C-1.2.3.7.8-HxCDF 98.1 (21%-159%) 13C-1.2.3.7.8-HxCDF 98.1 (21%-159%) 13C-1.2.3.7.8-HxCDF 99.1 (21%-159%) 13C-1.2.3.7.8-HxCDF 90.2 (22%-176%) 13C-1.2.3.7.8-HxCDF 90.2 (22%-176%) 13C-1.2.3.7.8-HxCDF 90.2 (23%-168%) 13C-1.2.3.7.8-HxCDF 90.2 (25%-168%) 13C-1.2.3.7.8-HxCDF 90.2 (25%-168%) 13C-1.2.3.7.8-HxCDD 90.2 (25%-168%) 13C-1.2.3.7.8-HxCDD 90.2 (25%-168%) 13C-1.2.3.7.8-HxCDD 90.3 (31%-191%) 13C-1.2.3.7.8-HxCDF 91.6 (24%-185%) 13C-1.2.3.7.			13C-2,3,7,8-TCDF		97.2	(22%-152%)
13C-1,2,3,4,7,8-HxCDF			13C-1,2,3,7,8-PeCDF		96.4	(21%-192%)
13C-1,2,3,6,7,8-HxCDF			13C-2,3,4,7,8-PeCDF		93.1	(13%-328%)
13C-12.3,4.6,7.8-HxCDF 73.8 (22%-176%) 13C-12.3,4.6,7.8-HyCDF 73.8 (17%-205%) 13C-12.3,4.6,7.8-HyCDF 57.7 (20%-186%) 13C-12.3,4.7,8.9-HyCDF 57.7 (20%-186%) 37C1-2.3,7.8-TCDD 87.0 (31%-191%) 100726 LCSD for batch 26220 13C-2.3,7.8-TCDD 87.0 (20%-175%) 13C-12.3,4.7,8-HyCDD 86.1 (21%-1278) 13C-12.3,4.7,8-HyCDD 86.1 (21%-1278) 13C-12.3,4.7,8-HyCDD 86.1 (21%-193%) 13C-12.3,4.7,8-HyCDD 86.0 (22%-166%) 13C-0CDD 43.9 (13%-199%) 13C-2.3,7.8-TCDF 93.5 (21%-192%) 13C-12.3,7.8-PCDF 93.5 (21%-192%) 13C-12.3,7.8-HyCDF 93.5 (21%-192%) 13C-12.3,7.8-HyCDF 93.1 (13%-328%) 13C-12.3,4.7,8-HyCDF 98.1 (22%-176%) 13C-12.3,4.7,8-HyCDF 70.5 (17%-205%) 13C-12.3,4.7,8-HyCDD 70.9 (22%-176%) 13C-12.3,4.7,8-HyCDD 70.9 (22%-176%) 13C-12.3,4.7,8-HyCDD 70.9 (22%-176%) 13C-12.3,4.7,8-HyCDD 70.9 (22%-176%) 13C-12.3,4.7,8-HyCDF 70.6 (26%-138%) 13C-1			13C-1,2,3,4,7,8-HxCDF		92.8	(19%-202%)
13C-1,2,3,7,8,9-HxCDF			13C-1,2,3,6,7,8-HxCDF		94.9	(21%-159%)
13C-1,2,3,4,6,7,8-HpCDF			13C-2,3,4,6,7,8-HxCDF		91.8	(22%-176%)
13C-1,2,3,4,7,8,9-HpCDF 57.7 (20%-186%) 57C1-2,3,7,8-TCDD 102 (31%-191%) 10726 LCSD for batch 26220 13C-2,3,7,8-TCDD 87.0 (20%-175%) 13C-1,2,3,7,8-PCCDD 89.2 (21%-227%) 13C-1,2,3,7,8-PCCDD 89.2 (21%-227%) 13C-1,2,3,4,7,8-HxCDD 65.0 (21%-193%) 13C-1,2,3,4,7,8-HxCDD 44.4 (25%-163%) 13C-1,2,3,4,7,8-HxCDD 43.9 (13%-199%) 13C-2,3,7,8-PCCDF 101 (22%-152%) 13C-2,3,7,8-PCCDF 91.3 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 91.3 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 91.3 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 91.3 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 90.2 (22%-176%) 13C-1,2,3,4,6,7,8-HyCDF 70.5 (17%-205%) 13C-1,2,3,4,7,8-HxCDF 96.2 (31%-191%) 13C-1,2,3,4,6,7,8-HyCDF 70.5 (20%-186%) 37C1-2,3,7,8-PCDD 86.2 (31%-191%) 13C-1,2,3,4,7,8-HxCDD 96.2 (31%-191%) 13C-1,2,3,4,7,8-HxCDD 96.2 (31%-191%) 13C-1,2,3,4,7,8-HxCDD 96.2 (31%-191%) 13C-1,2,3,4,7,8-HxCDD 97.9 (17%-157%) 13C-2,3,7,8-PCCDD 97.9 (17%-157%) 13C-1,2,3,7,8-PCCDD 97.9 (17%-157%) 13C-1,2,3,4,7,8-HxCDD 97.9 (17%-157%) 13C-1,2,3,4,7,8-HxCDD 97.9 (17%-157%) 13C-2,3,7,8-PCCDF 98.3 (24%-169%) 13C-1,2,3,4,7,8-HxCDF 98.3 (24%-169%			13C-1,2,3,7,8,9-HxCDF		73.8	(17%-205%)
37C1-2,3,7,8-TCDD 102 (31%-191%) 10726 LCSD for batch 26220 13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,7,8-PCDF 13C-1,2,3,7,8-PCDF 13C-1,2,3,7,8-PCDF 13C-1,2,3,7,8-PCDF 13C-1,2,3,4,8-HxCDF 13C-1,2,3,4,8-HxCDF 13C-1,2,3,4,8-HxCDF 13C-1,2,3,4,6-X,8-HyCDF 13C-1,2,3,4,6-X,8-HyCDF 13C-1,2,3,4,6-X,8-HyCDF 13C-1,2,3,4,6-X,8-HyCDF 13C-1,2,3,4,6-X,8-HyCDF 13C-1,2,3,4,6-X,8-HyCDF 13C-1,2,3,4,6-X,8-HyCDF 13C-1,2,3,4,6-X,8-HyCDF 13C-1,2,3,4,6-X,8-HyCDF 13C-1,2,3,4,7,8-HyCDF 13C-1,2,3,4,6-X,8-HyCDF 13C-1,2,3,4,7,8-HyCDF 13C-1,2,3,4,7,8-HyCDF 13C-1,2,3,4,7,8-HyCDD 13C-1,2,3,4,7,8-HyCDF 13C-1,2,3,4			13C-1,2,3,4,6,7,8-HpCDF		80.6	(21%-158%)
100726 LCSD for batch 26220 13C-2,3,7,8-TCDD 87.0 (20%-175%) 13C-1,2,3,4,7,8-HxCDD 86.1 (21%-297%) 13C-1,2,3,4,7,8-HxCDD 86.1 (21%-193%) 13C-1,2,3,4,7,8-HxCDD 94.4 (25%-163%) 13C-1,2,3,4,7,8-HxCDD 95.0 (22%-165%) 13C-0CDD 43.9 (13%-199%) 13C-2,3,7,8-TCDF 101 (22%-152%) 13C-1,2,3,4,7,8-HxCDF 93.5 (21%-122%) 13C-1,2,3,4,7,8-HxCDF 91.3 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 94.9 (19%-202%) 13C-1,2,3,4,6,7,8-HxCDF 90.2 (22%-176%) 13C-1,2,3,4,7,8-HxCDF 90.2 (22%-176%) 13C-1,2,3,4,7,8-HxCDF 70.5 (17%-205%) 13C-1,2,3,4,7,8-HxCDF 70.5 (17%-205%) 13C-1,2,3,4,7,8-HxCDF 70.5 (17%-205%) 13C-1,2,3,4,7,8-HxCDD 82.1 (25%-184%) 13C-1,2,3,4,7,8-HxCDD 82.1 (25%-184%) 13C-1,2,3,4,7,8-HxCDD 83.5 (32%-144%) 13C-1,2,3,4,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,7,8-HxCDD 93.3 (23%-140%) 13C-0CDD 57.9 (17%-157%) 13C-1,2,3,7,8-PCDF 91.6 (24%-165%) 13C-1,2,3,7,8-PCDF 91.6 (24%-165%) 13C-1,2,3,7,8-PCDF 91.6 (24%-165%) 13C-1,2,3,7,8-PCDF 91.6 (24%-165%) 13C-1,2,3,7,8-PCDF 91.6 (24%-185%) 13C-1,2,3,7,8-PCDF 97.3 (28%-136%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 97.3 (28%-136%) 13C-1,2,3,4,7,8-HyCDF 97.3 (28%-136%)			13C-1,2,3,4,7,8,9-HpCDF		57.7	(20%-186%)
13C-1,2,3,7,8-PcDD 89.2 (21%-227%) 13C-1,2,3,4,7,8-HxCDD 86.1 (21%-193%) 13C-1,2,3,4,7,8-HxCDD 94.4 (25%-163%) 13C-1,2,3,4,6,7,8-HpCDD 65.0 (22%-166%) 13C-0CDD 43.9 (13%-199%) 13C-2,3,7,8-PCDF 101 (22%-152%) 13C-1,2,3,7,8-PcDF 95.5 (21%-192%) 13C-1,2,3,4,7,8-HxCDF 91.3 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 94.9 (19%-202%) 13C-1,2,3,4,7,8-HxCDF 98.1 (21%-159%) 13C-1,2,3,4,6,7,8-HxCDF 98.1 (21%-159%) 13C-1,2,3,4,6,7,8-HxCDF 90.2 (22%-176%) 13C-1,2,3,4,6,7,8-HyCDF 70.5 (17%-205%) 13C-1,2,3,4,7,8-HyCDF 70.5 (17%-205%) 13C-1,2,3,4,7,8-HyCDF 70.5 (17%-205%) 13C-1,2,3,4,7,8-HyCDF 70.5 (20%-186%) 13C-1,2,3,4,7,8-HyCDF 70.5 (20%-186%) 13C-1,2,3,4,7,8-HyCDD 82.1 (25%-181%) 13C-1,2,3,4,7,8-HyCDD 83.5 (32%-141%) 13C-1,2,3,4,7,8-HyCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HyCDD 93.3 (23%-141%) 13C-1,2,3,4,6,7,8-HyCDD 93.3 (23%-141%) 13C-1,2,3,4,6,7,8-HyCDD 99.3 (28%-130%) 13C-0CDD 57.9 (17%-157%) 13C-2,3,7,8-PCDF 98.3 (24%-169%) 13C-2,3,7,8-PCDF 98.3 (24%-169%) 13C-1,2,3,4,6,7,8-HyCDF 98.3 (24%-168%) 13C-1,2,3,4,6,7,8-HyCDF 98.3 (24%-169%) 13C-1,2,3,4,6,7,8-HyCDF 98.3 (24%-169%) 13C-1,2,3,4,6,7,8-HyCDF 98.3 (24%-169%) 13C-1,2,3,4,6,7,8-HyCDF 98.3 (24%-169%) 13C-1,2,3,4,6,7,8-HyCDF 97.3 (28%-143%) 13C-1,2,3,4,6,7,8-HyCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HyCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HyCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HyCDF 77.3 (28%-143%) 13C-1,2,3,4,6,7,8-HyCDF 77.6 (26%-133%) 13C-1,2,3,4,6,7,8-HyCDF 77.6 (26%-133%) 13C-1,2,3,4,6,7,8-HyCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HyCDF 77.5 (26%-138%) 13C-1,2,3,4,6,7,8-HyCDF 77.6 (26%-138%) 13C-1,2,3,4,			37Cl-2,3,7,8-TCDD		102	(31%-191%)
13C-1,2,3,4,7,8-HxCDD	12010726	LCSD for batch 26220	13C-2,3,7,8-TCDD		87.0	(20%-175%)
13C-1,2,3,6,7,8-HxCDD 94.4 (25%-163%) 13C-1,2,3,4,6,7,8-HyCDD 65.0 (22%-166%) 13C-1,2,3,4,6,7,8-HyCDD 65.0 (22%-166%) 13C-2,37,8-PCDF 101 (22%-152%) 13C-1,2,3,7,8-PCDF 93.5 (21%-192%) 13C-1,2,3,7,8-PCDF 93.5 (21%-192%) 13C-1,2,3,4,7,8-PCDF 91.3 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 94.9 (19%-202%) 13C-1,2,3,4,6,7,8-HxCDF 98.1 (21%-159%) 13C-1,2,3,4,6,7,8-HxCDF 90.2 (22%-176%) 13C-1,2,3,4,6,7,8-HyCDF 70.5 (17%-205%) 13C-1,2,3,4,6,7,8-HyCDF 67.3 (21%-158%) 13C-1,2,3,7,8-PCDD 96.2 (31%-191%) 13C-1,2,3,7,8-PCDD 96.2 (31%-191%) 13C-1,2,3,7,8-PCDD 82.1 (25%-184%) 13C-1,2,3,7,8-PCDD 82.1 (25%-184%) 13C-1,2,3,4,6,7,8-HyCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HyCDD 90.9 (28%-130%) 13C-1,2,3,4,7,8-HyCDD 93.3 (23%-140%) 13C-1,2,3,4,7,8-HyCDD 93.3 (23%-140%) 13C-1,2,3,4,7,8-PCDF 98.3 (24%-169%) 13C-2,3,7,8-PCDF 91.6 (24%-185%) 13C-2,3,4,7,8-HyCDF 91.6 (24%-185%) 13C-1,2,3,4,7,8-HyCDF 91.6 (24%-185%) 13C-1,2,3,4,7,8-HyCDF 91.6 (24%-185%) 13C-1,2,3,4,7,8-HyCDF 91.6 (24%-185%) 13C-1,2,3,4,7,8-HyCDF 91.6 (24%-185%) 13C-1,2,3,4,8-HyCDF 97.3 (28%-143%) 13C-1,2,3,4,8,8-HyCDF 97.6 (26%-138%) 13C-1,2,3,4,8,8-HyCDF 97.6 (26%-13			13C-1,2,3,7,8-PeCDD		89.2	(21%-227%)
13C-1,2,3,4,6,7,8-HpCDD			13C-1,2,3,4,7,8-HxCDD		86.1	(21%-193%)
13C-OCDD 43.9 (13%-199%) 13C-2.3.7,8-TCDF 101 (22%-152%) 13C-1.2.3.7,8-PeCDF 93.5 (21%-192%) 13C-1.2.3.4.7,8-PeCDF 91.3 (13%-328%) 13C-1.2.3.4.7,8-PeCDF 91.3 (13%-328%) 13C-1.2.3.4.7,8-PeCDF 99.4 (19%-202%) 13C-1.2.3.4.6.7,8-HxCDF 98.1 (21%-159%) 13C-2.3.4.6.7,8-HxCDF 90.2 (22%-176%) 13C-1.2.3.7,8-PECDF 70.5 (17%-205%) 13C-1.2.3.4.6.7,8-HpCDF 67.3 (21%-158%) 13C-1.2.3.7,8-PECDD 67.3 (21%-158%) 13C-1.2.3.7,8-PECDD 96.2 (31%-191%) 13C-1.2.3.7,8-PECDD 82.1 (25%-181%) 13C-1.2.3.4.7,8-HxCDD 83.5 (32%-141%) 13C-1.2.3.4.7,8-HxCDD 90.9 (28%-130%) 13C-1.2.3.6,7.8-HxCDD 90.9 (28%-130%) 13C-1.2.3.6,7.8-PECDD 93.3 (23%-140%) 13C-0CDD 57.9 (17%-157%) 13C-2.3.3,7.8-PECDF 98.3 (24%-169%) 13C-1.2.3.4.6.7,8-PECDF 91.6 (24%-185%) 13C-1.2.3.4.7,8-PECDF 91.6 (24%-185%) 13C-1.2.3.4.7,8-PECDF 91.6 (24%-185%) 13C-1.2.3.4.7,8-PECDF 97.6 (26%-152%) 13C-1.2.3.4.7,8-PECDF 97.3 (28%-130%) 13C-1.2.3.4.7,8-PECDF 97.3 (28%-130%) 13C-1.2.3.4,6.7,8-PECDF 97.6 (26%-138%) 13C-1.2.3.4,6.7,8-PECDD 97.8 (26%-138%)			13C-1,2,3,6,7,8-HxCDD		94.4	(25%-163%)
13C-2,3,7,8-TCDF 101 (22%-152%) 13C-1,2,3,7,8-PcDF 93.5 (21%-192%) 13C-1,2,3,7,8-PcDF 91.3 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 94.9 (19%-202%) 13C-1,2,3,4,6,7,8-HxCDF 98.1 (21%-159%) 13C-1,2,3,4,6,7,8-HxCDF 90.2 (22%-176%) 13C-1,2,3,4,6,7,8-HyCDF 70.5 (17%-205%) 13C-1,2,3,4,6,7,8-HyCDF 67.3 (21%-158%) 13C-1,2,3,4,7,8-HyCDF 56.5 (20%-186%) 37C1-2,3,7,8-TCDD 86.2 (25%-164%) 37C1-2,3,7,8-TCDD 86.2 (25%-164%) 13C-1,2,3,4,7,8-HxCDD 83.5 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,7,8-HyCDD 91.3 (23%-140%) 13C-1,2,3,4,7,8-HyCDD 93.3 (23%-140%) 13C-1,2,3,4,7,8-HyCDD 93.3 (23%-140%) 13C-1,2,3,4,7,8-HyCDD 91.6 (24%-185%) 13C-1,2,3,4,7,8-HyCDF 91.6 (26%-152%) 13C-1,2,3,4,7,8-HyCDF 97.3 (28%-136%) 13C-1,2,3,4,7,8-HyCDF 97.3 (28%-136%) 13C-1,2,3,4,6,7,8-HyCDF 97.3 (28%-138%) 13C-1,2,3,4,6,7,8-HyCDF 97.3 (28%-136%) 13C-1,2,3,4,6,7,8-HyCDF 97.3 (28%-136%) 13C-1,2,3,4,6,7,8-HyCDF 97.3 (28%-138%)			13C-1,2,3,4,6,7,8-HpCDD		65.0	(22%-166%)
13C-1,2,3,7,8-PeCDF 93.5 (21%-192%) 13C-2,3,4,7,8-PeCDF 91.3 (13%-328%) 13C-1,2,3,4,7,8-PeCDF 94.9 (19%-202%) 13C-1,2,3,4,7,8-HxCDF 94.9 (19%-202%) 13C-1,2,3,4,6,7,8-HxCDF 98.1 (21%-159%) 13C-1,2,3,4,6,7,8-HxCDF 90.2 (22%-176%) 13C-1,2,3,4,6,7,8-HyCDF 70.5 (17%-205%) 13C-1,2,3,4,7,8,9-HyCDF 70.5 (20%-186%) 13C-1,2,3,4,7,8,9-HyCDF 56.5 (20%-186%) 13C-1,2,3,4,7,8,9-HyCDF 56.5 (20%-186%) 13C-1,2,3,4,7,8-PeCDD 82.1 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 83.5 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HyCDD 93.3 (23%-140%) 13C-1,2,3,4,7,8-PeCDF 95.3 (24%-169%) 13C-1,2,3,4,7,8-PeCDF 96.3 (24%-169%) 13C-1,2,3,4,7,8-PeCDF 97.9 (17%-157%) 13C-2,3,4,7,8-PeCDF 97.0 (24%-185%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 106 (26%-123%) 13C-1,2,3,4,7,8-HxCDF 106 (26%-123%) 13C-1,2,3,4,7,8-HxCDF 97.3 (28%-137%) 13C-1,2,3,4,7,8-HxCDF 97.6 (26%-138%)			13C-OCDD		43.9	(13%-199%)
13C-2,3,4,7,8-PeCDF 91.3 (13%-328%) 13C-1,2,3,4,7,8-HxCDF 94.9 (19%-202%) 13C-1,2,3,4,7,8-HxCDF 98.1 (21%-159%) 13C-1,2,3,4,6,7,8-HxCDF 90.2 (22%-176%) 13C-1,2,3,4,6,7,8-HxCDF 70.5 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 70.5 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 56.5 (20%-186%) 13C-1,2,3,4,7,8-TCDD 86.2 (25%-164%) 13C-1,2,3,7,8-PeCDD 82.1 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 83.5 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 93.3 (23%-140%) 13C-1,2,3,4,7,8-HxCDD 93.3 (23%-140%) 13C-2,3,7,8-PeCDF 98.3 (24%-169%) 13C-2,3,4,8-PeCDF 91.6 (24%-185%) 13C-2,3,4,8-PeCDF 91.6 (24%-185%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 110 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 110 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 106 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 17.2 (29%-147%) 13C-1,2,3,4,7,8-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 77.2 (29%-147%) 13C-1,2,3,7,8-TCDD 100 (35%-197%)			13C-2,3,7,8-TCDF		101	(22%-152%)
13C-1,2,3,4,7,8-HxCDF 94.9 (19%-202%) 13C-1,2,3,6,7,8-HxCDF 98.1 (21%-15%) 13C-2,3,4,6,7,8-HxCDF 90.2 (22%-176%) 13C-1,2,3,4,6,7,8-HxCDF 70.5 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 70.5 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 56.5 (20%-186%) 37C1-2,3,7,8-TCDD 86.2 (31%-191%) 100724 MB for batch 26220 13C-2,3,7,8-TCDD 86.2 (25%-164%) 13C-1,2,3,7,8-PCDD 82.1 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 83.5 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 93.3 (23%-140%) 13C-0,2,3,7,8-TCDD 97.9 (17%-157%) 13C-2,3,7,8-PCDF 98.3 (24%-169%) 13C-1,2,3,4,7,8-PxCDF 98.3 (24%-169%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-2,3,4,7,8-HxCDF 106 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,7,8-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,7,8-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,7,8-HpCDF 77.3 (28%-138%) 13C-1,2,3,4,7,8-HpCDF 77.2 (29%-147%)			13C-1,2,3,7,8-PeCDF		93.5	(21%-192%)
13C-1,2,3,6,7,8-HxCDF 98.1 (21%-159%) 13C-2,3,4,6,7,8-HxCDF 90.2 (22%-176%) 13C-1,2,3,4,6,7,8-HyCDF 70.5 (17%-205%) 13C-1,2,3,4,6,7,8-HyCDF 70.5 (12%-158%) 13C-1,2,3,4,6,7,8-HyCDF 56.5 (20%-186%) 37C1-2,3,4,7,8-PHCDF 56.5 (20%-186%) 37C1-2,3,7,8-TCDD 86.2 (31%-191%) MB for batch 26220 13C-2,3,7,8-PCDD 86.2 (25%-164%) 13C-1,2,3,7,8-PCDD 87.1 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 87.2 (25%-181%) 13C-1,2,3,4,7,8-HyCDD 90.9 (28%-130%) 13C-1,2,3,4,5,8-HyCDD 93.3 (23%-140%) 13C-0CDD 57.9 (17%-157%) 13C-2,3,7,8-TCDF 98.3 (24%-169%) 13C-1,2,3,7,8-PCDF 98.3 (24%-169%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 110 (26%-123%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 106 (26%-123%) 13C-1,2,3,4,8-HxCDF 106 (26%-123%) 13C-1,2,3,4,8-HxCDF 106 (26%-123%) 13C-1,2,3,4,6,7,8-HyCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HyCDF 97.3 (28%-143%) 13C-1,2,3,4,5,7,8-HyCDF 97.3 (28%-143%)			13C-2,3,4,7,8-PeCDF		91.3	(13%-328%)
13C-2,3,4,6,7,8-HxCDF 70.5 (17%-205%) 13C-1,2,3,4,7,8-HpCDF 70.5 (17%-205%) 13C-1,2,3,4,7,8,9-HpCDF 70.5 (20%-186%) 13C-1,2,3,4,7,8,9-HpCDF 70.5 (20%-186%) 13C-1,2,3,7,8-TCDD 70.2 (25%-164%) 13C-1,2,3,7,8-TCDD 70.2 (25%-164%) 13C-1,2,3,7,8-TCDD 70.2 (25%-164%) 13C-1,2,3,7,8-HxCDD 70.2 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 70.2 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 70.2 (25%-181%) 13C-1,2,3,4,7,8-HpCDD 70.2 (25%-181%) 13C-1,2,3,4,7,8-HpCDD 70.2 (25%-181%) 13C-2,3,7,8-TCDF 70.2 (26%-130%) 13C-1,2,3,4,7,8-PpCDF 70.2 (26%-185%) 13C-1,2,3,4,7,8-PpCDF 70.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 70.2 (22%-136%) 13C-1,2,3,4,7,8-HxCDF 70.2 (22%-136%) 13C-1,2,3,4,7,8-HxCDF 70.2 (22%-137%) 13C-1,2,3,4,7,8-HxCDF 70.2 (22%-137%) 13C-1,2,3,4,7,8-HxCDF 70.2 (22%-136%) 13C-1,2,3,4,7,8-HxCDF 70.2 (22%-147%) 13C-1,2,3,4,7,8-HxCDF 70.2 (22%-147%) 13C-1,2,3,4,7,8-HxCDF 70.2 (22%-147%) 13C-1,2,3,4,7,8-HxCDF 70.2 (22%-147%) 13C-1,2,3,4,7,8-HyCDF 70.2 (22%-147%) 13C-1,			13C-1,2,3,4,7,8-HxCDF		94.9	(19%-202%)
13C-1,2,3,7,8,9-HxCDF 70.5 (17%-205%) 13C-1,2,3,4,6,7,8-HpCDF 67.3 (21%-158%) 13C-1,2,3,4,7,8,9-HpCDF 56.5 (20%-186%) 37C1-2,3,7,8-TCDD 96.2 (31%-191%) 100724 MB for batch 26220 13C-2,3,7,8-TCDD 86.2 (25%-164%) 13C-1,2,3,4,7,8-HxCDD 82.1 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 83.5 (32%-141%) 13C-1,2,3,4,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 93.3 (23%-140%) 13C-0CDD 57.9 (17%-157%) 13C-2,3,7,8-TCDF 98.3 (24%-169%) 13C-1,2,3,4,7,8-PeCDF 91.6 (24%-188%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 106 (26%-123%) 13C-1,2,3,4,7,8-HxCDF 106 (26%-138%) 13C-1,2,3,4,7,8-HxCDF 106 (26%-138%) 13C-1,2,3,4,7,8-HpCDF 77.2 (29%-147%) 13C-1,2,3,4,7,8-HpCDF 79.6 (26%-138%) 37C1-2,3,4,7,8-HpCDF 79.6 (26%-138%) 37C1-2,3,4,7,8-TCDD 100 (35%-197%)			13C-1,2,3,6,7,8-HxCDF		98.1	(21%-159%)
13C-1,2,3,4,6,7,8-HpCDF 56.5 (20%-186%) 37Cl-2,3,7,8-TCDD 96.2 (31%-191%) 96.2			13C-2,3,4,6,7,8-HxCDF		90.2	(22%-176%)
13C-1,2,3,4,7,8,9-HpCDF 56.5 (20%-186%) 37Cl-2,3,7,8-TCDD 96.2 (31%-191%) 100724 MB for batch 26220 13C-2,3,7,8-TCDD 86.2 (25%-164%) 13C-1,2,3,7,8-PeCDD 82.1 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 83.5 (32%-141%) 13C-1,2,3,4,6,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 97.3 (23%-140%) 13C-0,2,3,4,6,7,8-HpCDD 97.3 (23%-140%) 13C-0,2,3,7,8-TCDF 98.3 (24%-169%) 13C-1,2,3,7,8-PeCDF 91.6 (24%-185%) 13C-1,2,3,4,7,8-PeCDF 91.6 (24%-185%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 106 (26%-152%) 13C-1,2,3,4,6,7,8-HxCDF 106 (26%-148%) 13C-1,2,3,4,6,7,8-HxCDF 106 (26%-138%) 13C-1,2,3,4,7,8,9-HyCDF 106 (26%-138%) 13C-1,2,3,4,7,8,9-HyCDF 100 (35%-197%)					70.5	(17%-205%)
13C-1,2,3,4,7,8,9-HpCDF 56.5 (20%-186%) 37Cl-2,3,7,8-TCDD 96.2 (31%-191%) 96.2 (31%-191%) 96.2 (31%-191%) 96.2 (31%-191%) 96.2 (31%-191%) 96.2 (31%-191%) 96.2 (31%-191%) 96.2 (31%-191%) 96.2 (25%-164%) 13C-1,2,3,7,8-PCDD 82.1 (25%-181%) 13C-1,2,3,4,7,8-PCDD 83.5 (32%-181%) 13C-1,2,3,4,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 93.3 (23%-140%) 13C-0CDD 57.9 (17%-157%) 13C-0CDD 57.9 (17%-157%) 13C-2,3,7,8-PCDF 98.3 (24%-169%) 13C-1,2,3,7,8-PCDF 91.6 (24%-185%) 13C-1,2,3,4,7,8-PCDF 91.6 (24%-185%) 13C-1,2,3,4,7,8-PCDF 111 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 106 (26%-152%) 13C-1,2,3,4,7,8-HxCDF 106 (26%-152%) 13C-1,2,3,4,6,7,8-HxCDF 97.3 (28%-136%) 13C-1,2,3,4,6,7,8-HxCDF 97.3 (28%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 97.6 (26%-138%) 37Cl-2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37Cl-2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37Cl-2,3,4,7,8-TCDD 100 (35%-197%)					67.3	
37Cl-2,3,7,8-TCDD MB for batch 26220 13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,7,8-HxCDD 13C-1,2,3,7,8-TCDF 13C-0CDD 13C-1,2,3,7,8-PeCDF 13C-1,2,3,7,8-PeCDF 13C-1,2,3,7,8-PeCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,7,8-HyCDF 13C-1,2,3,4,7,8,9-HyCDF 13C-1,2,3,4,7,8,9-HyCDF 13C-1,2,3,7,8-TCDD 100 135%-197%)			•		56.5	
13C-1,2,3,7,8-PeCDD 82.1 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 83.5 (32%-141%) 13C-1,2,3,6,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 93.3 (23%-140%) 13C-OCDD 57.9 (17%-157%) 13C-1,2,3,7,8-TCDF 98.3 (24%-169%) 13C-1,2,3,7,8-PeCDF 91.6 (24%-185%) 13C-2,3,4,7,8-PeCDF 87.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37Cl-2,3,7,8-TCDD 100 (35%-197%)					96.2	
13C-1,2,3,7,8-PeCDD 82.1 (25%-181%) 13C-1,2,3,4,7,8-HxCDD 83.5 (32%-141%) 13C-1,2,3,6,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 93.3 (23%-140%) 13C-OCDD 57.9 (17%-157%) 13C-1,2,3,7,8-TCDF 98.3 (24%-169%) 13C-1,2,3,7,8-PeCDF 91.6 (24%-185%) 13C-2,3,4,7,8-PeCDF 87.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37Cl-2,3,7,8-TCDD 100 (35%-197%)	2010724	MB for batch 26220	13C-2.3.7.8-TCDD		86.2	(25%-164%)
13C-1,2,3,4,7,8-HxCDD 83.5 (32%-141%) 13C-1,2,3,6,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 93.3 (23%-140%) 13C-OCDD 57.9 (17%-157%) 13C-2,3,7,8-TCDF 98.3 (24%-169%) 13C-1,2,3,7,8-PcDF 91.6 (24%-185%) 13C-2,3,4,7,8-PcDF 87.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-1,2,3,7,8,9-HxCDF 89.2 (28%-136%) 13C-1,2,3,4,6,7,8-HpCDF 77.2 (29%-147%) 13C-1,2,3,4,7,8,9-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37Cl-2,3,7,8-TCDD 100 (35%-197%)						
13C-1,2,3,6,7,8-HxCDD 90.9 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 93.3 (23%-140%) 13C-OCDD 57.9 (17%-157%) 13C-2,3,7,8-TCDF 98.3 (24%-169%) 13C-1,2,3,7,8-PeCDF 91.6 (24%-185%) 13C-2,3,4,7,8-PeCDF 87.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,6,7,8-HpCDF 97.6 (26%-138%) 37C1-2,3,7,8,9-HpCDF 79.6 (26%-138%) 37C1-2,3,7,8-TCDD 100 (35%-197%)						,
13C-1,2,3,4,6,7,8-HpCDD 93.3 (23%-140%) 13C-OCDD 57.9 (17%-157%) 13C-2,3,7,8-TCDF 98.3 (24%-169%) 13C-1,2,3,7,8-PeCDF 91.6 (24%-185%) 13C-2,3,4,7,8-PeCDF 87.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37C1-2,3,7,8-TCDD 100 (35%-197%)						
13C-OCDD 57.9 (17%-157%) 13C-2,3,7,8-TCDF 98.3 (24%-169%) 13C-1,2,3,7,8-PCDF 91.6 (24%-185%) 13C-2,3,4,7,8-PCDF 87.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37C1-2,3,7,8-TCDD 100 (35%-197%)					93.3	(23%-140%)
13C-2,3,7,8-TCDF 98.3 (24%-169%) 13C-1,2,3,7,8-PeCDF 91.6 (24%-185%) 13C-2,3,4,7,8-PeCDF 87.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37C1-2,3,7,8-TCDD 100 (35%-197%)			*			
13C-1,2,3,7,8-PeCDF 91.6 (24%-185%) 13C-2,3,4,7,8-PeCDF 87.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37C1-2,3,7,8-TCDD 100 (35%-197%)						
13C-2,3,4,7,8-PeCDF 87.2 (21%-178%) 13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37C1-2,3,7,8-TCDD 100 (35%-197%)						
13C-1,2,3,4,7,8-HxCDF 111 (26%-152%) 13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37C1-2,3,7,8-TCDD 100 (35%-197%)			13C-2,3,4,7,8-PeCDF			` ,
13C-1,2,3,6,7,8-HxCDF 106 (26%-123%) 13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37C1-2,3,7,8-TCDD 100 (35%-197%)						
13C-2,3,4,6,7,8-HxCDF 89.2 (28%-136%) 13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37Cl-2,3,7,8-TCDD 100 (35%-197%)						
13C-1,2,3,7,8,9-HxCDF 77.2 (29%-147%) 13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37Cl-2,3,7,8-TCDD 100 (35%-197%)						
13C-1,2,3,4,6,7,8-HpCDF 97.3 (28%-143%) 13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37Cl-2,3,7,8-TCDD 100 (35%-197%)						
13C-1,2,3,4,7,8,9-HpCDF 79.6 (26%-138%) 37Cl-2,3,7,8-TCDD 100 (35%-197%)						
37C1-2,3,7,8-TCDD 100 (35%-197%)			•			
4001 EB01 13C-2,3,7,8-TCDD 80.5 (25%-164%)			•			,
	254001	EB01	13C-2,3,7,8-TCDD		80.5	(25%-164%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
6254001	EB01	13C-1,2,3,7,8-PeCDD		90.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.0	(23%-140%)
		13C-OCDD		79.0	(17%-157%)
		13C-2,3,7,8-TCDF		88.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		94.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.7	(26%-152%)
	13C-1,2,3,6,7,8-HxCDF		81.1	(26%-123%)	
	13C-2,3,4,6,7,8-HxCDF		83.1	(28%-136%)	
		13C-1,2,3,7,8,9-HxCDF		77.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		83.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.3	(26%-138%)
	37Cl-2,3,7,8-TCDD		95.1	(35%-197%)	
5254004 LF	LFSW03	13C-2,3,7,8-TCDD		72.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		80.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.4	(32%-141%)
	13C-1,2,3,6,7,8-HxCDD		76.3	(28%-130%)	
		13C-1,2,3,4,6,7,8-HpCDD		85.4	(23%-140%)
	13C-OCDD		77.4	(17%-157%)	
		13C-2,3,7,8-TCDF		79.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		85.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.2	(35%-197%)
5254002	LFSW01	13C-2,3,7,8-TCDD		81.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		91.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.6	(23%-140%)
		13C-OCDD		79.4	(17%-157%)
		13C-2,3,7,8-TCDF		86.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		94.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		72.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		82.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		98.9	(35%-197%)
5254003	LFSW02	13C-2,3,7,8-TCDD		80.9	(25%-164%)
220.000		13C-1,2,3,7,8-PeCDD		84.9	(25%-181%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits		
6254003	LFSW02	13C-1,2,3,4,7,8-HxCDD		77.9	(32%-141%)		
		13C-1,2,3,6,7,8-HxCDD		77.1	(28%-130%)		
		13C-1,2,3,4,6,7,8-HpCDD		87.7	(23%-140%)		
		13C-OCDD		84.4	(17%-157%)		
		13C-2,3,7,8-TCDF		89.4	(24%-169%)		
		13C-1,2,3,7,8-PeCDF		90.1	(24%-185%)		
		13C-2,3,4,7,8-PeCDF		86.6	(21%-178%)		
		13C-1,2,3,4,7,8-HxCDF		75.2	(26%-152%)		
		13C-1,2,3,6,7,8-HxCDF		78.3	(26%-123%)		
		13C-2,3,4,6,7,8-HxCDF		79.7	(28%-136%)		
		13C-1,2,3,7,8,9-HxCDF		77.4	(29%-147%)		
		13C-1,2,3,4,6,7,8-HpCDF		83.1	(28%-143%)		
		13C-1,2,3,4,7,8,9-HpCDF		87.4	(26%-138%)		
		37Cl-2,3,7,8-TCDD		95.5	(35%-197%)		

^{*} Recovery outside Acceptance Limits

[#] Column to be used to flag recovery values

D Sample Diluted

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010757	LCS for batch 26253	13C-2,3,7,8-TCDD		85.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		81.4	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		95.7	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		83.9	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		93.8	(22%-166%)
		13C-OCDD		79.9	(13%-199%)
		13C-2,3,7,8-TCDF		90.6	(22%-152%)
		13C-1,2,3,7,8-PeCDF		83.7	(21%-192%)
		13C-2,3,4,7,8-PeCDF		90.3	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		96.7	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		92.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		93.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		88.3	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		92.4	(21%-158%)
	13C-1,2,3,4,7,8,9-HpCDF		88.8	(20%-186%)	
		37Cl-2,3,7,8-TCDD		97.0	(31%-191%)
		27012,0,1,0 1022		<i>,,,</i> ,	(5170 15170)
2010758 LCSD fo	LCSD for batch 26253	13C-2,3,7,8-TCDD		84.5	(20%-175%)
		13C-1,2,3,7,8-PeCDD		82.4	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		89.4	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		87.4	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		87.1	(22%-166%)
		13C-OCDD		74.8	(13%-199%)
		13C-2,3,7,8-TCDF		90.8	(22%-152%)
		13C-1,2,3,7,8-PeCDF		83.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		91.2	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		95.7	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		91.6	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		91.3	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		84.4	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		89.7	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		81.2	(20%-186%)
		37C1-2,3,7,8-TCDD		98.1	(31%-191%)
2010756	MD 5 1 4 1 26252	12G 2 2 7 0 TCDD		77.0	(050/ 1640/)
2010756	MB for batch 26253	13C-2,3,7,8-TCDD		77.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		80.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.0	(23%-140%)
		13C-OCDD		80.8	(17%-157%)
		13C-2,3,7,8-TCDF		83.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		88.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		85.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		84.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		86.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		86.3	(26%-138%)
		37C1-2,3,7,8-TCDD		96.8	(35%-197%)
5254007	LFSD03	13C-2,3,7,8-TCDD		83.6	(25%-164%)

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Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
254007	LFSD03	13C-1,2,3,7,8-PeCDD		93.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		78.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		94.4	(23%-140%)
		13C-OCDD		110	(17%-157%)
		13C-2,3,7,8-TCDF		98.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		92.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		105	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		89.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		89.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		92.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		94.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		105	(26%-138%)
		37Cl-2,3,7,8-TCDD		95.5	(35%-197%)
5254006 L	LFSD02	13C-2,3,7,8-TCDD		79.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		84.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		83.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		103	(23%-140%)
		13C-OCDD		105	(17%-157%)
		13C-2,3,7,8-TCDF		92.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		86.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		96.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		91.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		92.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		92.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		98.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		97.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		111	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.9	(35%-197%)
54005	LFSD01	13C-2,3,7,8-TCDD		82.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		90.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		66.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.9	(23%-140%)
		13C-OCDD		75.7	(17%-157%)
		13C-2,3,7,8-TCDF		97.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		93.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		106	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.0	(26%-152%)
		13C-1,2,3,4,7,6-HXCDF		98.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		90.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		90.8	(28%-143%)
		13C-1,2,3,4,0,7,8-HpCDF		93.5	(26%-138%)
		15C-1,2,5,4,7,0,7-npCDF		95.8 95.8	(2070-130%)

^{*} Recovery outside Acceptance Limits

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SDG Number: 6254 Matrix Type: SOLID

Recovery Acceptance QUAL Sample ID **Client ID** Surrogate Limits (%)

^{*} Recovery outside Acceptance Limits

[#] Column to be used to flag recovery values

D Sample Diluted

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6254 Sample Type: Laboratory Control Sample

Client ID: LCS for batch 26220 Matrix: WATER

Lab Sample ID: 12010725

Instrument: HRP750 Analysis Date: 06/24/2014 04:44 Dilution: 1

Analyst: JTF Prep Batch ID:26220

Batch ID: 26223

		Parmname	Amount Added pg/L	Spike Conc. pg/L	Dogovory	Acceptance
CAS No.					%	Limits
1746-01-6	LCS	2,3,7,8-TCDD	200	217	109	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	1000	1040	104	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	1000	1020	102	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	1000	1050	105	74-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	1000	1030	103	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	1000	1030	103	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	2000	2120	106	78-144
51207-31-9	LCS	2,3,7,8-TCDF	200	188	93.9	75-158
7117-41-6	LCS	1,2,3,7,8-PeCDF	1000	999	99.9	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	1000	1000	100	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	1000	1030	103	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	1000	1040	104	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	1000	1030	103	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	1000	1050	105	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	1000	993	99.3	82-122
5673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	1000	1030	103	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	2000	2080	104	63-170

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6254 Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 26220 Matrix: WATER

Lab Sample ID: 12010726

Instrument: HRP750 Analysis Date: 06/24/2014 05:32 Dilution: 1

Analyst: JTF Prep Batch ID:26220

			Amount Added	Spike Conc.	Recovery	Acceptance	RPD	Acceptance
CAS No.		Parmname	pg/L	pg/L	%	Limits	%	Limits
1746-01-6	LCSD	2,3,7,8-TCDD	200	213	106	67-158	2.20	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	1000	1010	101	70-142	2.50	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	1000	1020	102	70-164	0.0216	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	1000	1020	102	74-134	2.62	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	1000	1010	101	64-162	1.51	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	1000	994	99.4	70-140	4.00	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	2000	2080	104	78-144	2.08	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	200	185	92.7	75-158	1.35	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	1000	1040	104	80-134	3.88	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	1000	1040	104	68-160	3.17	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	1000	1050	105	72-134	2.22	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	1000	1060	106	84-130	1.74	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	1000	1060	106	70-156	2.52	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	1000	1110	111	78-130	5.62	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	1000	1030	103	82-122	3.25	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	1000	1040	104	78-138	0.527	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	2000	1930	96.7	63-170	7.06	0-20

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Hi-Res Dioxins/Furans Quality Control Summary Spike Recovery Report

SDG Number: 6254 Sample Type: Laboratory Control Sample

Client ID: LCS for batch 26253 Matrix: SOLID

Lab Sample ID: 12010757

Instrument: HRP763 Analysis Date: 06/27/2014 15:12 Dilution: 1

Analyst: JTF Prep Batch ID:26253

			Amount Added	Spike Conc.	Recovery	Acceptance
CAS No.		Parmname	pg/g	pg/g	%	Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	21.9	109	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	108	108	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	109	109	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	110	110	76-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	107	107	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	103	103	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	202	101	78-144
51207-31-9	LCS	2,3,7,8-TCDF	20.0	20.9	104	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	100	106	106	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	100	104	104	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	109	109	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	109	109	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	111	111	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	115	115	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	108	108	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	107	107	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	216	108	63-170

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6254 Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 26253 Matrix: SOLID

Lab Sample ID: 12010758

Instrument: HRP763 Analysis Date: 06/27/2014 15:59 Dilution: 1

Analyst: JTF Prep Batch ID:26253

CAS No.		Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	21.8	109	67-158	0.422	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	107	107	70-142	0.504	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	109	109	70-164	0.308	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	108	108	76-134	1.44	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	109	109	64-162	1.98	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	104	104	70-140	0.623	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	209	105	78-144	3.41	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	21.1	105	75-158	1.15	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	109	109	80-134	2.78	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	106	106	68-160	1.50	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	109	109	72-134	0.224	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	108	108	84-130	0.411	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	110	110	70-156	0.796	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	113	113	78-130	2.47	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	108	108	82-122	0.410	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	111	111	78-138	3.24	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	213	107	63-170	1.21	0-20

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6254 Sample Type: Laboratory Control Sample

Client ID: LCS for batch 26305 Matrix: MILK

Lab Sample ID: 12010820

Instrument: HRP763 Analysis Date: 07/07/2014 15:47 Dilution: 1

Analyst: JTF Prep Batch ID:26305

			Amount Added	Spike Conc.	Recovery	Acceptance
CAS No.		Parmname	pg/L	pg/L	%	Limits
1746-01-6	LCS	2,3,7,8-TCDD	2000	2070	103	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	10000	10100	101	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	10000	10200	102	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	10000	10700	107	74-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	10000	11600	116	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	10000	9690	96.9	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	20000	19800	98.9	78-144
51207-31-9	LCS	2,3,7,8-TCDF	2000	2090	105	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	10000	10700	107	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	10000	10200	102	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	10000	10900	109	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	10000	10900	109	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	10000	11400	114	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	10000	11600	116	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	10000	10800	108	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	10000	11100	111	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	20000	24000	120	63-170

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6254 Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 26305 Matrix: MILK

Lab Sample ID: 12010821

Instrument: HRP763 Analysis Date: 07/07/2014 16:35 Dilution: 1

Analyst: JTF Prep Batch ID:26305

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	2000	2060	103	67-158	0.126	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	10000	10400	104	70-142	3.20	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	10000	10600	106	70-164	3.99	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	10000	10500	105	74-134	2.07	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	10000	11700	117	64-162	0.669	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	10000	9840	98.4	70-140	1.53	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	20000	20100	101	78-144	1.63	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	2000	2130	106	75-158	1.72	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	10000	11000	110	80-134	1.94	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	10000	10300	103	68-160	1.45	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	10000	11100	111	72-134	2.05	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	10000	11200	112	84-130	2.77	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	10000	11200	112	70-156	2.54	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	10000	12000	120	78-130	3.20	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	10000	11000	110	82-122	1.87	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	10000	11300	113	78-138	1.49	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	20000	23600	118	63-170	1.65	0-20

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6254 Sample Type: Laboratory Control Sample

Client ID: LCS for batch 26417 Matrix: MILK

Lab Sample ID: 12010926

Instrument: HRP763 Analysis Date: 07/18/2014 21:23 Dilution: 1

Analyst: JTF Prep Batch ID:26417

			Amount Added	Spike Conc.	Dogovory	Acceptance
CAS No.		Parmname	pg/L	pg/L	%	Limits
1746-01-6	LCS	2,3,7,8-TCDD	2000	2120	106	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	10000	10400	104	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	10000	10000	100	70-164
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	10000	10300	103	74-134
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	10000	11000	110	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	10000	10000	100	70-140
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	20000	20400	102	78-144
51207-31-9	LCS	2,3,7,8-TCDF	2000	2030	102	75-158
57117-41-6	LCS	1,2,3,7,8-PeCDF	10000	10900	109	80-134
57117-31-4	LCS	2,3,4,7,8-PeCDF	10000	10400	104	68-160
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	10000	11300	113	72-134
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	10000	11500	115	84-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	10000	11300	113	70-156
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	10000	11900	119	78-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	10000	10600	106	82-122
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	10000	11000	110	78-138
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	20000	23200	116	63-170

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6254 Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 26417 Matrix: MILK

Lab Sample ID: 12010927

Instrument: HRP763 Analysis Date: 07/18/2014 22:11 Dilution: 1

Analyst: JTF Prep Batch ID:26417

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	2000	2090	105	67-158	1.26	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	10000	10500	105	70-142	0.777	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	10000	10300	103	70-164	2.39	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	10000	10400	104	74-134	0.919	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	10000	11600	116	64-162	4.63	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	10000	10200	102	70-140	2.20	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	20000	20400	102	78-144	0.223	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	2000	2070	103	75-158	1.84	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	10000	10900	109	80-134	0.231	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	10000	10900	109	68-160	3.95	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	10000	11800	118	72-134	5.08	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	10000	10900	109	84-130	5.60	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	10000	11300	113	70-156	0.663	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	10000	12000	120	78-130	1.32	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	10000	11100	111	82-122	4.62	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	10000	11200	112	78-138	1.21	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	20000	23200	116	63-170	0.00345	0-20

July 21, 2014

Method Blank Summary

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SDG Number:

6254

MB for batch 26220

Lab Sample ID: 12010724

Client: **Prep Date:**

TRCC001 Instrument ID: HRP750 20-JUN-14 Matrix: Data File: A23JUN14A_3-3

WATER

Analyzed: 06/24/14 06:20

Column:

Client ID:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed	
01 LCS for batch 26220	12010725	A23JUN14A_3-1	06/24/14	0444	
02 LCSD for batch 26220	12010726	A23JUN14A_3-2	06/24/14	0532	
03 EB01	6254001	A23JUN14A_3-11	06/24/14	1257	
04 LFSW03	6254004	A23JUN14A_4-11	06/24/14	2245	
05 LFSW01	6254002	A23JUN14A_4-12	06/24/14	2333	
06 LFSW02	6254003	A23JUN14A_4-13	06/25/14	0021	

July 21, 2014

Method Blank Summary

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SDG Number: **Client ID:**

6254 MB for batch 26253

Lab Sample ID: 12010756

TRCC001 Client: Instrument ID: HRP763 **Prep Date:**

24-JUN-14

Matrix: Data File: b27jun14a-4

SOLID Analyzed: 06/27/14 16:47

Column:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed	
01 LCS for batch 26253	12010757	b27jun14a-2	06/27/14	1512	
02 LCSD for batch 26253	12010758	b27jun14a-3	06/27/14	1559	
03 LFSD03	6254007	b07jul14a-8	07/07/14	2033	
04 LFSD02	6254006	b07jul14a-9	07/07/14	2121	
05 LFSD01	6254005	b09jul14a_5-6	07/11/14	0322	

July 21, 2014

Method Blank Summary

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SDG Number: 6254 **Client ID:**

Lab Sample ID: 12010819

MB for batch 26305

Client:

Prep Date:

TRCC001 Instrument ID: HRP763 30-JUN-14 Matrix: Analyzed: 07/07/14 17:22

MILK Data File: b07jul14a-4

Column:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed	
01 LCS for batch 26305	12010820	b07jul14a-2	07/07/14	1547	
02 LCSD for batch 26305	12010821	b07jul14a-3	07/07/14	1635	
03 JFM02	6254009	b07jul14a-6	07/07/14	1858	
04 JFM03	6254010	b07jul14a-7	07/07/14	1946	

July 21, 2014

Method Blank Summary

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of 1

SDG Number: 6254 **Client ID:**

MB for batch 26417

Instrument ID: HRP763

Client:

TRCC001

Matrix:

MILK Data File: b18jul14a-12

Lab Sample ID: 12010925 Column:

Prep Date: 16-JUL-14 Analyzed: 07/18/14 22:59

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 26417	12010926	b18jul14a-10	07/18/14	2123
02 LCSD for batch 26417	12010927	b18jul14a-11	07/18/14	2211
03 JFM01	6254008	b18jul14a-13	07/18/14	2346

TRCC00314

As Received

WATER

Page 1

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001

6254 Client: SDG Number:

12010724 Lab Sample ID:

QC for batch 26220 MB for batch 26220

20-JUN-14

Client Sample: Client ID:

Prep Date:

Batch ID: 26223

06/24/2014 06:20 **Run Date:** A23JUN14A_3-3

Data File: **Prep Batch:** 26220

Method: EPA Method 1613B **Analyst: JTF**

Prep Method:

Prep Aliquot:

SW846 3520C

 $1000 \ mL$

Prep Basis:

Project:

Matrix:

HRP750

Instrument: Dilution: 1

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.87		pg/L	0.870	10.0
40321-76-4	1,2,3,7,8-PeCDD	JK		1.84	pg/L	0.900	50.0
39227-28-6	1,2,3,4,7,8-HxCDD	U	2.46		pg/L	2.46	50.0
57653-85-7	1,2,3,6,7,8-HxCDD	JK		3.90	pg/L	2.42	50.0
19408-74-3	1,2,3,7,8,9-HxCDD	J	3.64		pg/L	2.60	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK		3.78	pg/L	2.52	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	12.5		pg/L	9.50	100
51207-31-9	2,3,7,8-TCDF	U	.812		pg/L	0.812	10.0
57117-41-6	1,2,3,7,8-PeCDF	J	2.02		pg/L	0.958	50.0
57117-31-4	2,3,4,7,8-PeCDF	J	2.34		pg/L	0.992	50.0
70648-26-9	1,2,3,4,7,8-HxCDF	JK		2.90	pg/L	1.20	50.0
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.50		pg/L	1.33	50.0
60851-34-5	2,3,4,6,7,8-HxCDF	J	3.78		pg/L	1.64	50.0
72918-21-9	1,2,3,7,8,9-HxCDF	JK		4.16	pg/L	2.60	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		3.10	pg/L	2.02	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	JK		5.80	pg/L	3.82	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF	JK		8.86	pg/L	8.74	100
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.87		pg/L	0.870	10.0
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.9	1.84	pg/L	0.900	50.0
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	3.64	7.54	pg/L	2.42	50.0
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	2.52	3.78	pg/L	2.52	50.0
30402-14-3	Total Tetrachlorodibenzofuran	U	.812		pg/L	0.812	10.0
30402-15-4	Total Pentachlorodibenzofuran	J	4.36		pg/L	0.688	50.0
55684-94-1	Total Hexachlorodibenzofuran	J	6.28	13.3	pg/L	1.20	50.0
38998-75-3	Total Heptachlorodibenzofuran	U	2.02	8.90	pg/L	2.02	50.0
3333-30-0	TEQ WHO2005 ND=0		1.76	4.82	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		3.16	5.42	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1720	2000	pg/L	86.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		1640	2000	pg/L	82.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1670	2000	pg/L	83.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1820	2000	pg/L	90.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1870	2000	pg/L	93.3	(23%-140%)
13C-OCDD		2310	4000	pg/L	57.9	(17%-157%)
13C-2,3,7,8-TCDF		1970	2000	pg/L	98.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		1830	2000	pg/L	91.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		1740	2000	pg/L	87.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		2230	2000	pg/L	111	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		2110	2000	pg/L	106	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1780	2000	pg/L	89.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1540	2000	pg/L	77.2	(29%-147%)

Cape Fear Analytical LLC Report Date: July 21, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

Page 2

Dilution:

EDL

1

PQL

of 2

TRCC001 TRCC00314 SDG Number: 6254 Client: **Project:** 12010724 Lab Sample ID: Matrix: WATER

QC for batch 26220 **Client Sample:**

Client ID: MB for batch 26220 **Prep Basis:** As Received

Batch ID: 26223 Method: EPA Method 1613B **Instrument: HRP750 Run Date:** 06/24/2014 06:20 **Analyst: JTF**

Prep Method: Prep Aliquot: 1000 mL**Prep Date:** 20-JUN-14 Qual

Surrogate/Tracer recovery Units Recovery% **Acceptable Limits** Qual Result Nominal 13C-1,2,3,4,6,7,8-HpCDF 1950 97.3 2000 pg/L (28%-143%) pg/L 13C-1,2,3,4,7,8,9-HpCDF 1590 2000 79.6 (26%-138%) 37Cl-2,3,7,8-TCDD 200 200 100 (35%-197%) pg/L

Result

SW846 3520C

EMPC

Units

Comments:

Data File:

CAS No.

Prep Batch:

Value is estimated

Estimated Maximum Possible Concentration K

A23JUN14A_3-3

Parmname

26220

Analyte was analyzed for, but not detected above the specified detection limit.

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TRCC00314

HRP750

1

Project:

Instrument:

Dilution:

of 1

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

TRCC001

Lab Sample ID:12010725Matrix:WATERClient Sample:QC for batch 26220Client ID:LCS for batch 26220Prep Basis:As ReceivedBatch ID:26223Method:EPA Method 1613B

Client:

Analyst:

 Data File:
 A23JUN14A_3-1

 Prep Batch:
 26220

 Prep Date:
 20-HIN-14

 Prep Aliquot:
 1000 mL

Prep Date:	20-JUN-14	Prep Aliquot:	1000 mL				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		217		pg/L	1.60	10.0
40321-76-4	1,2,3,7,8-PeCDD		1040		pg/L	3.28	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		1020		pg/L	6.42	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		1050		pg/L	6.64	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1030		pg/L	6.92	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		1030		pg/L	8.78	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2120		pg/L	37.0	100
51207-31-9	2,3,7,8-TCDF		188		pg/L	1.42	10.0
57117-41-6	1,2,3,7,8-PeCDF		999		pg/L	3.10	50.0
57117-31-4	2,3,4,7,8-PeCDF		1000		pg/L	3.04	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		1030		pg/L	6.62	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		1040		pg/L	7.04	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		1030		pg/L	7.34	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		1050		pg/L	12.3	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		993		pg/L	4.94	50.0

1030

2080

pg/L

pg/L

11.6

55.0

50.0

100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1700	2000	pg/L	85.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		1770	2000	pg/L	88.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		1670	2000	pg/L	83.6	(21%-193%)
3C-1,2,3,6,7,8-HxCDD		1890	2000	pg/L	94.3	(25%-163%)
3C-1,2,3,4,6,7,8-HpCDD		1380	2000	pg/L	68.9	(22%-166%)
3C-OCDD		1190	4000	pg/L	29.6	(13%-199%)
3C-2,3,7,8-TCDF		1940	2000	pg/L	97.2	(22%-152%)
3C-1,2,3,7,8-PeCDF		1930	2000	pg/L	96.4	(21%-192%)
3C-2,3,4,7,8-PeCDF		1860	2000	pg/L	93.1	(13%-328%)
3C-1,2,3,4,7,8-HxCDF		1860	2000	pg/L	92.8	(19%-202%)
3C-1,2,3,6,7,8-HxCDF		1900	2000	pg/L	94.9	(21%-159%)
3C-2,3,4,6,7,8-HxCDF		1840	2000	pg/L	91.8	(22%-176%)
3C-1,2,3,7,8,9-HxCDF		1480	2000	pg/L	73.8	(17%-205%)
3C-1,2,3,4,6,7,8-HpCDF		1610	2000	pg/L	80.6	(21%-158%)
3C-1,2,3,4,7,8,9-HpCDF		1150	2000	pg/L	57.7	(20%-186%)
7C1-2,3,7,8-TCDD		204	200	pg/L	102	(31%-191%)

Comments:

SDG Number:

Run Date:

55673-89-7

39001-02-0

1,2,3,4,7,8,9-HpCDF

1,2,3,4,6,7,8,9-OCDF

6254

06/24/2014 04:44

U Analyte was analyzed for, but not detected above the specified detection limit.

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Page 1

TRCC00314

HRP750

1

Project:

Instrument:

Dilution:

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001

Lab Sample ID:12010726Matrix:WATERClient Sample:QC for batch 26220Prep Basis:As ReceivedClient ID:LCSD for batch 26220Prep Basis:As ReceivedBatch ID:26223Method:EPA Method 1613B

Client:

Run Date: 06/24/2014 05:32 Analyst: JTF

Data File: A23JUN14A_3-2

 Prep Batch:
 26220
 Prep Method:
 SW846 3520C

 Prep Date:
 20-HIN-14
 Prep Aliquot:
 1000 mL

6254

SDG Number:

Prep Date:	20-JUN-14	Prep Anquot:	1000 mL					
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD		213		pg/L	1.12	10.0	
40321-76-4	1,2,3,7,8-PeCDD		1010		pg/L	3.16	50.0	
39227-28-6	1,2,3,4,7,8-HxCDD		1020		pg/L	6.26	50.0	
57653-85-7	1,2,3,6,7,8-HxCDD		1020		pg/L	6.12	50.0	
19408-74-3	1,2,3,7,8,9-HxCDD		1010		pg/L	6.56	50.0	
35822-46-9	1,2,3,4,6,7,8-HpCDD		994		pg/L	10.5	50.0	
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2080		pg/L	29.6	100	
51207-31-9	2,3,7,8-TCDF		185		pg/L	1.34	10.0	
57117-41-6	1,2,3,7,8-PeCDF		1040		pg/L	3.00	50.0	
57117-31-4	2,3,4,7,8-PeCDF		1040		pg/L	2.90	50.0	
70648-26-9	1,2,3,4,7,8-HxCDF		1050		pg/L	6.90	50.0	
57117-44-9	1,2,3,6,7,8-HxCDF		1060		pg/L	6.64	50.0	
60851-34-5	2,3,4,6,7,8-HxCDF		1060		pg/L	7.90	50.0	
72918-21-9	1,2,3,7,8,9-HxCDF		1110		pg/L	14.5	50.0	
67562-39-4	1,2,3,4,6,7,8-HpCDF		1030		pg/L	7.44	50.0	
55673-89-7	1,2,3,4,7,8,9-HpCDF		1040		pg/L	14.3	50.0	
39001-02-0	1,2,3,4,6,7,8,9-OCDF		1930		pg/L	60.2	100	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1740	2000	pg/L	87.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		1780	2000	pg/L	89.2	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		1720	2000	pg/L	86.1	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		1890	2000	pg/L	94.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		1300	2000	pg/L	65.0	(22%-166%)
13C-OCDD		1760	4000	pg/L	43.9	(13%-199%)
13C-2,3,7,8-TCDF		2010	2000	pg/L	101	(22%-152%)
13C-1,2,3,7,8-PeCDF		1870	2000	pg/L	93.5	(21%-192%)
13C-2,3,4,7,8-PeCDF		1830	2000	pg/L	91.3	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		1900	2000	pg/L	94.9	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		1960	2000	pg/L	98.1	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		1800	2000	pg/L	90.2	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		1410	2000	pg/L	70.5	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		1350	2000	pg/L	67.3	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		1130	2000	pg/L	56.5	(20%-186%)
37Cl-2,3,7,8-TCDD		192	200	pg/L	96.2	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

6254 SDG Number: Lab Sample ID:

12010756

QC for batch 26253 MB for batch 26253

Batch ID: 26255

Client Sample: Client ID:

06/27/2014 16:47 **Run Date:**

Data File: b27jun14a-4

Prep Batch: 26253 **Prep Date:** 24-JUN-14 Client:

TRCC001

EPA Method 1613B

Project: Matrix: TRCC00314

SOLID

Prep Basis:

As Received

Instrument:

Dilution:

HRP763 1

SW846 3540C **Prep Method:**

10 g Prep Aliquot:

Method:

Analyst:

Prep Date:	24-JUN-14	Frep Anquot.	10 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.0994		pg/g	0.0994	1.00
40321-76-4	1,2,3,7,8-PeCDD	J	0.198		pg/g	0.0714	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	JK		0.198	pg/g	0.0966	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.208		pg/g	0.103	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	JK		0.210	pg/g	0.106	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.380		pg/g	0.140	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	2.09		pg/g	0.220	10.0
51207-31-9	2,3,7,8-TCDF	U	.0668		pg/g	0.0668	1.00
57117-41-6	1,2,3,7,8-PeCDF	J	0.242		pg/g	0.0432	5.00
57117-31-4	2,3,4,7,8-PeCDF	J	0.176		pg/g	0.040	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	JK		0.188	pg/g	0.069	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	JK		0.176	pg/g	0.0654	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.180		pg/g	0.0704	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.322		pg/g	0.096	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		0.220	pg/g	0.0656	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.194		pg/g	0.108	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	JK		0.396	pg/g	0.234	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.0994		pg/g	0.0994	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.198		pg/g	0.0714	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	0.208	0.616	pg/g	0.0966	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.704		pg/g	0.140	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	.0668		pg/g	0.0668	1.00
30402-15-4	Total Pentachlorodibenzofuran	J	0.528	0.670	pg/g	0.033	5.00
55684-94-1	Total Hexachlorodibenzofuran	J	1.07	1.43	pg/g	0.0654	5.00
38998-75-3	Total Heptachlorodibenzofuran	J	0.336	0.556	pg/g	0.0656	5.00
3333-30-0	TEQ WHO2005 ND=0		0.335	0.415	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.406	0.468	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		156	200	pg/g	77.8	(25%-164%)	
13C-1,2,3,7,8-PeCDD		160	200	pg/g	80.0	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		174	200	pg/g	87.2	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		151	200	pg/g	75.4	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		178	200	pg/g	89.0	(23%-140%)	
13C-OCDD		323	400	pg/g	80.8	(17%-157%)	
13C-2,3,7,8-TCDF		168	200	pg/g	83.8	(24%-169%)	
13C-1,2,3,7,8-PeCDF		162	200	pg/g	81.1	(24%-185%)	
13C-2,3,4,7,8-PeCDF		177	200	pg/g	88.7	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		171	200	pg/g	85.5	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		164	200	pg/g	82.2	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		170	200	pg/g	84.9	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		174	200	pg/g	87.2	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 21, 2014

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary Page 2

As Received

HRP763

1

Instrument:

Dilution:

of 2

SDG Number: 6254 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 12010756 Matrix: SOLID

Client Sample: QC for batch 26253
Client ID: MB for batch 26253

Prep Basis:
Method: EPA Method 1613B

 Batch ID:
 26255
 Method:
 EPA Method 1613B

 Run Date:
 06/27/2014 16:47
 Analyst:
 JTF

Data File:b27jun14a-4Prep Batch:26253Prep Method:SW846 3540CPrep Date:24-JUN-14Prep Aliquot:10 g

Prep Date: 24-JUN-14 Prep Aliquot: 10 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery Units Recovery% **Acceptable Limits** Qual Result Nominal 13C-1,2,3,4,6,7,8-HpCDF 173 200 86.3 (28%-143%) pg/g 13C-1,2,3,4,7,8,9-HpCDF 173 200 86.3 (26%-138%) pg/g 37Cl-2,3,7,8-TCDD 19.4 (35%-197%) 20.0 96.8 pg/g

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

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of 1

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001

6254 Client: SDG Number: Lab Sample ID:

12010757

QC for batch 26253

Client ID: LCS for batch 26253

Client Sample:

Batch ID: 26255

06/27/2014 15:12 **Run Date:**

Data File: b27jun14a-2

26253 Prep Batch: **Prep Date:** 24-JUN-14 Method: EPA Method 1613B

Analyst: JTF

SW846 3540C **Prep Method:**

Prep Aliquot: 10 g **Prep Basis:**

Project:

Matrix:

As Received

TRCC00314

SOLID

Instrument: HRP763

Dilution: 1

rrep Date.	21.0011.11						
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		21.9		pg/g	0.161	1.00
40321-76-4	1,2,3,7,8-PeCDD		108		pg/g	0.168	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		109		pg/g	0.244	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		110		pg/g	0.258	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		107		pg/g	0.266	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		103		pg/g	0.344	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		202		pg/g	0.520	10.0
51207-31-9	2,3,7,8-TCDF		20.9		pg/g	0.0984	1.00
57117-41-6	1,2,3,7,8-PeCDF		106		pg/g	0.228	5.00
57117-31-4	2,3,4,7,8-PeCDF		104		pg/g	0.210	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		109		pg/g	0.364	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		109		pg/g	0.372	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		111		pg/g	0.374	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		115		pg/g	0.572	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		108		pg/g	0.292	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		107		pg/g	0.514	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		216		pg/g	0.600	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	200	pg/g	85.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		163	200	pg/g	81.4	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		191	200	pg/g	95.7	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		168	200	pg/g	83.9	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		188	200	pg/g	93.8	(22%-166%)
13C-OCDD		320	400	pg/g	79.9	(13%-199%)
13C-2,3,7,8-TCDF		181	200	pg/g	90.6	(22%-152%)
13C-1,2,3,7,8-PeCDF		167	200	pg/g	83.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		181	200	pg/g	90.3	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		193	200	pg/g	96.7	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		186	200	pg/g	92.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		187	200	pg/g	93.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		177	200	pg/g	88.3	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		185	200	pg/g	92.4	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		178	200	pg/g	88.8	(20%-186%)
37Cl-2,3,7,8-TCDD		19.4	20.0	pg/g	97.0	(31%-191%)

Comments:

Estimated Maximum Possible Concentration

Cape Fear Analytical LLC **Report Date:** July 21, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC001 SDG Number: 6254 Client: **Project:** TRCC00314 12010758 Lab Sample ID: Matrix: **SOLID**

QC for batch 26253 **Client Sample:**

Client ID: LCSD for batch 26253

Batch ID: 26255

Run Date: 06/27/2014 15:59

Data File: b27jun14a-3

Prep Batch: 26253 **Prep Date:** 24-JUN-14 Method: EPA Method 1613B

Analyst: **JTF**

Prep Method:

10 g **Prep Aliquot:**

SW846 3540C

Dilution: 1

Prep Basis:

HRP763 Instrument:

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As Received

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CAS No. **EMPC EDL PQL Parmname** Qual Result Units 1746-01-6 2,3,7,8-TCDD 21.8 0.156 1.00 pg/g 40321-76-4 1,2,3,7,8-PeCDD 0.121 107 pg/g 5.00 39227-28-6 1,2,3,4,7,8-HxCDD 109 0.180 5.00 pg/g 57653-85-7 1,2,3,6,7,8-HxCDD 108 0.186 5.00 pg/g 1,2,3,7,8,9-HxCDD 19408-74-3 109 pg/g 0.194 5.00 35822-46-9 1,2,3,4,6,7,8-HpCDD 104 0.354 5.00 pg/g 3268-87-9 1,2,3,4,6,7,8,9-OCDD 209 0.594 10.0 pg/g 51207-31-9 2,3,7,8-TCDF 21.1 0.0828 1.00 pg/g 57117-41-6 1,2,3,7,8-PeCDF 109 pg/g 0.1505.00 57117-31-4 2,3,4,7,8-PeCDF 106 0.133 5.00 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF 109 0.322 5.00 pg/g 57117-44-9 1,2,3,6,7,8-HxCDF 108 pg/g 0.314 5.00 60851-34-5 2,3,4,6,7,8-HxCDF 110 0.354 5.00 pg/g 72918-21-9 1,2,3,7,8,9-HxCDF 113 0.538 5.00 pg/g 1,2,3,4,6,7,8-HpCDF 108 0.338 67562-39-4 pg/g 5.00 55673-89-7 1,2,3,4,7,8,9-HpCDF 111 0.612 5.00 pg/g 39001-02-0 1,2,3,4,6,7,8,9-OCDF 213 0.682 10.0 pg/g

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	200	pg/g	84.5	(20%-175%)
13C-1,2,3,7,8-PeCDD		165	200	pg/g	82.4	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		179	200	pg/g	89.4	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		175	200	pg/g	87.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		174	200	pg/g	87.1	(22%-166%)
13C-OCDD		299	400	pg/g	74.8	(13%-199%)
13C-2,3,7,8-TCDF		182	200	pg/g	90.8	(22%-152%)
13C-1,2,3,7,8-PeCDF		166	200	pg/g	83.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		182	200	pg/g	91.2	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		191	200	pg/g	95.7	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		183	200	pg/g	91.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		183	200	pg/g	91.3	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		169	200	pg/g	84.4	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		179	200	pg/g	89.7	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		162	200	pg/g	81.2	(20%-186%)
37Cl-2,3,7,8-TCDD		19.6	20.0	pg/g	98.1	(31%-191%)

Comments:

Estimated Maximum Possible Concentration

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Hi-Res Dioxins/Furans Certificate of Analysis **Sample Summary**

JTF

SDG Number: 6254 Client: 12010819 Lab Sample ID:

TRCC001

Project: Matrix:

TRCC00314 **MILK**

QC for batch 26305 **Client Sample:**

Client ID: MB for batch 26305 **Batch ID:** 26307

Method: Analyst:

EPA Method 1613B

Prep Basis:

As Received

Run Date: 07/07/2014 17:22 Data File: b07jul14a-4

Prep Method:

SW846 3520C

Instrument: Dilution:

Accontable Limite

HRP763 1

Prep Batch: 26305 **Prep Date:** 30-JUN-14

Cumpagata/Traggar regovery

100 mL **Prep Aliquot:** CAS No. **Parmname** Qual Result 2,3,7,8-TCDD U 79

EMPC EDL PQL Units 1746-01-6 pg/L 79.0 100 U 40321-76-4 1,2,3,7,8-PeCDD 42 pg/L 42.0 500 39227-28-6 1,2,3,4,7,8-HxCDD U 58 pg/L 58.0 500 1,2,3,6,7,8-HxCDD U 57653-85-7 58.2 pg/L 58.2 500 19408-74-3 1,2,3,7,8,9-HxCDD U 61.6 pg/L 61.6 500 U 35822-46-9 1,2,3,4,6,7,8-HpCDD 69.6 pg/L 69.6 500 3268-87-9 1,2,3,4,6,7,8,9-OCDD 497 129 1000 pg/L 51207-31-9 2,3,7,8-TCDF U 55.8 pg/L 55.8 100 U 57117-41-6 1,2,3,7,8-PeCDF 38.6 pg/L 38.6 500 57117-31-4 2,3,4,7,8-PeCDF U 34 pg/L 34.0 500 70648-26-9 1,2,3,4,7,8-HxCDF U 32.2 32.2 500 pg/L U 57117-44-9 1,2,3,6,7,8-HxCDF 31.6 pg/L 31.6 500 60851-34-5 2,3,4,6,7,8-HxCDF U pg/L 500 34.6 34.6 72918-21-9 1,2,3,7,8,9-HxCDF U 49.8 49.8 500 pg/L U 1,2,3,4,6,7,8-HpCDF 67562-39-4 42.8 pg/L 42.8 500 pg/L 55673-89-7 1,2,3,4,7,8,9-HpCDF U 62.2 62.2 500 39001-02-0 1,2,3,4,6,7,8,9-OCDF U 149 149 1000 pg/L U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin 79 pg/L 79.0 100 U 36088-22-9 Total Pentachlorodibenzo-p-dioxin 42 pg/L 42.0 500 U 34465-46-8 Total Hexachlorodibenzo-p-dioxin 58 pg/L 58.0 500 U 37871-00-4 Total Heptachlorodibenzo-p-dioxin 69.6 pg/L 69.6 500 U 30402-14-3 Total Tetrachlorodibenzofuran 100 55.8 pg/L 55.8 30402-15-4 Total Pentachlorodibenzofuran U 32.2 pg/L 32.2 500 55684-94-1 Total Hexachlorodibenzofuran U 31.6 pg/L 31.6 500 38998-75-3 U 500 Total Heptachlorodibenzofuran 42.8 pg/L 42.8 pg/L 3333-30-0 TEQ WHO2005 ND=0 0.149 0.149 3333-30-1 TEQ WHO2005 ND=0.5 86.3 86.3 pg/L

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		7800	20000	pg/L	39.0	(25%-164%)	
13C-1,2,3,7,8-PeCDD		8720	20000	pg/L	43.6	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		7930	20000	pg/L	39.7	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		8620	20000	pg/L	43.1	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		10100	20000	pg/L	50.7	(23%-140%)	
13C-OCDD		18400	40000	pg/L	45.9	(17%-157%)	
13C-2,3,7,8-TCDF		9760	20000	pg/L	48.8	(24%-169%)	
13C-1,2,3,7,8-PeCDF		8640	20000	pg/L	43.2	(24%-185%)	
13C-2,3,4,7,8-PeCDF		9850	20000	pg/L	49.2	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		9050	20000	pg/L	45.2	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		9530	20000	pg/L	47.7	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		9730	20000	pg/L	48.6	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		9640	20000	pg/L	48.2	(29%-147%)	

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Cape Fear Analytical LLC Report Date: July 21, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 6254 Client: **Project:** TRCC00314 SDG Number: 12010819 MILK Lab Sample ID: Matrix:

QC for batch 26305 **Client Sample:**

Prep Basis: Client ID: MB for batch 26305 As Received **Batch ID:** 26307 Method: EPA Method 1613B

07/07/2014 17:22 **Instrument: HRP763 Run Date: Analyst: JTF** Dilution: Data File: b07jul14a-4 1 SW846 3520C 26305 **Prep Method:**

Prep Aliquot: $100 \; mL$ **Prep Date:** 30-JUN-14 **EDL PQL** CAS No. Qual **EMPC** Units **Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		9760	20000	pg/L	48.8	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		10800	20000	pg/L	54.1	(26%-138%)
37Cl-2,3,7,8-TCDD		1830	2000	pg/L	91.7	(35%-197%)

Comments:

Prep Batch:

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

Cape Fear Analytical LLC Report Date: July 21, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC001 6254 Client: TRCC00314 SDG Number: **Project:** 12010820 MILK Lab Sample ID: Matrix:

QC for batch 26305 **Client Sample:**

Client ID: LCS for batch 26305

Batch ID: 26307

07/07/2014 15:47 **Run Date:**

Data File: b07jul14a-2 26305 Prep Batch: Prep Date: 30-IIIN-14

Method: EPA Method 1613B

Analyst: JTF

Prep Method: Prep Aliquot:

SW846 3520C

of 1

Page 1

As Received

HRP763

1

Prep Basis:

Instrument:

Dilution:

100 mL

Prep Date:	30-JUN-14	Prep Anquot:	100 mL				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		2070		pg/L	109	100
40321-76-4	1,2,3,7,8-PeCDD		10100		pg/L	70.0	500
39227-28-6	1,2,3,4,7,8-HxCDD		10200		pg/L	128	500
57653-85-7	1,2,3,6,7,8-HxCDD		10700		pg/L	128	500
19408-74-3	1,2,3,7,8,9-HxCDD		11600		pg/L	136	500
35822-46-9	1,2,3,4,6,7,8-HpCDD		9690		pg/L	97.4	500
3268-87-9	1,2,3,4,6,7,8,9-OCDD		19800		pg/L	216	1000
51207-31-9	2,3,7,8-TCDF		2090		pg/L	71.6	100
57117-41-6	1,2,3,7,8-PeCDF		10700		pg/L	81.4	500
57117-31-4	2,3,4,7,8-PeCDF		10200		pg/L	67.8	500
70648-26-9	1,2,3,4,7,8-HxCDF		10900		pg/L	115	500
57117-44-9	1,2,3,6,7,8-HxCDF		10900		pg/L	108	500
60851-34-5	2,3,4,6,7,8-HxCDF		11400		pg/L	108	500
72918-21-9	1,2,3,7,8,9-HxCDF		11600		pg/L	160	500
67562-39-4	1,2,3,4,6,7,8-HpCDF		10800		pg/L	124	500
55673-89-7	1,2,3,4,7,8,9-HpCDF		11100		pg/L	194	500
39001-02-0	1,2,3,4,6,7,8,9-OCDF		24000		pg/L	614	1000

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
3C-2,3,7,8-TCDD		7340	20000	pg/L	36.7	(20%-175%)
3C-1,2,3,7,8-PeCDD		9460	20000	pg/L	47.3	(21%-227%)
3C-1,2,3,4,7,8-HxCDD		10200	20000	pg/L	51.0	(21%-193%)
3C-1,2,3,6,7,8-HxCDD		9880	20000	pg/L	49.4	(25%-163%)
3C-1,2,3,4,6,7,8-HpCDD		12800	20000	pg/L	64.0	(22%-166%)
3C-OCDD		22800	40000	pg/L	57.0	(13%-199%)
3C-2,3,7,8-TCDF		8370	20000	pg/L	41.9	(22%-152%)
3C-1,2,3,7,8-PeCDF		9120	20000	pg/L	45.6	(21%-192%)
3C-2,3,4,7,8-PeCDF		10900	20000	pg/L	54.4	(13%-328%)
3C-1,2,3,4,7,8-HxCDF		11300	20000	pg/L	56.6	(19%-202%)
3C-1,2,3,6,7,8-HxCDF		11200	20000	pg/L	56.1	(21%-159%)
3C-2,3,4,6,7,8-HxCDF		11300	20000	pg/L	56.7	(22%-176%)
3C-1,2,3,7,8,9-HxCDF		11900	20000	pg/L	59.3	(17%-205%)
3C-1,2,3,4,6,7,8-HpCDF		12800	20000	pg/L	63.8	(21%-158%)
3C-1,2,3,4,7,8,9-HpCDF		13100	20000	pg/L	65.4	(20%-186%)
7C1-2,3,7,8-TCDD		1820	2000	pg/L	90.8	(31%-191%)

Comments:

Estimated Maximum Possible Concentration

Cape Fear Analytical LLC Report Date: July 21, 2014

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HRP763

1

Instrument:

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6254 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 12010821 Matrix: MILK

Client Sample: QC for batch 26305

Client ID: LCSD for batch 26305 Prep Basis: As Received

 Batch ID:
 26307
 Method:
 EPA Method 1613B

 Run Date:
 07/07/2014 16:35
 Analyst:
 JTF

Data File:b07jul14a-3Dilution:Prep Batch:26305Prep Method:SW846 3520CPrep Date:30-JUN-14Prep Aliquot:100 mL

Prep Date:	30-JUN-14	Prep Aliquot:	100 mL				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		2060		pg/L	81.0	100
40321-76-4	1,2,3,7,8-PeCDD		10400		pg/L	55.2	500
39227-28-6	1,2,3,4,7,8-HxCDD		10600		pg/L	89.2	500
57653-85-7	1,2,3,6,7,8-HxCDD		10500		pg/L	86.2	500
19408-74-3	1,2,3,7,8,9-HxCDD		11700		pg/L	92.8	500
35822-46-9	1,2,3,4,6,7,8-HpCDD		9840		pg/L	108	500
3268-87-9	1,2,3,4,6,7,8,9-OCDD		20100		pg/L	182	1000
51207-31-9	2,3,7,8-TCDF		2130		pg/L	62.8	100
57117-41-6	1,2,3,7,8-PeCDF		11000		pg/L	87.0	500
57117-31-4	2,3,4,7,8-PeCDF		10300		pg/L	68.2	500
70648-26-9	1,2,3,4,7,8-HxCDF		11100		pg/L	117	500
57117-44-9	1,2,3,6,7,8-HxCDF		11200		pg/L	113	500
60851-34-5	2,3,4,6,7,8-HxCDF		11200		pg/L	119	500
72918-21-9	1,2,3,7,8,9-HxCDF		12000		pg/L	162	500
67562-39-4	1,2,3,4,6,7,8-HpCDF		11000		pg/L	128	500
55673-89-7	1,2,3,4,7,8,9-HpCDF		11300		pg/L	192	500
39001-02-0	1,2,3,4,6,7,8,9-OCDF		23600		pg/L	187	1000

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		9500	20000	pg/L	47.5	(20%-175%)
13C-1,2,3,7,8-PeCDD		12200	20000	pg/L	61.0	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		12300	20000	pg/L	61.6	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		12800	20000	pg/L	64.2	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		15000	20000	pg/L	74.8	(22%-166%)
13C-OCDD		29800	40000	pg/L	74.6	(13%-199%)
13C-2,3,7,8-TCDF		11100	20000	pg/L	55.5	(22%-152%)
13C-1,2,3,7,8-PeCDF		11700	20000	pg/L	58.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		14300	20000	pg/L	71.6	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		13700	20000	pg/L	68.7	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		13900	20000	pg/L	69.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		14300	20000	pg/L	71.7	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		14300	20000	pg/L	71.7	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		15200	20000	pg/L	76.0	(21%-158%)
3C-1,2,3,4,7,8,9-HpCDF		16000	20000	pg/L	80.1	(20%-186%)
37C1-2,3,7,8-TCDD		1660	2000	pg/L	83.0	(31%-191%)

Comments:

K Estimated Maximum Possible Concentration

Page 1

July 21, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

EPA Method 1613B

6254 SDG Number: Lab Sample ID:

12010925

QC for batch 26417 MB for batch 26417

Client ID: Batch ID: 26419

Client Sample:

07/18/2014 22:59 **Run Date:** Data File: b18jul14a-12

Prep Batch: 26417 **Prep Date:** 16-JUL-14

TRCC001 Client:

Project: Matrix: TRCC00314

MILK

Prep Basis:

As Received

Instrument: Dilution:

HRP763 1

SW846 3520C **Prep Method:** Prep Aliquot: $100 \; mL$

Method:

Analyst:

Prep Date:	16-JUL-14	Prep Anquot:	100 mL				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	18.7		pg/L	18.7	100
40321-76-4	1,2,3,7,8-PeCDD	U	9.7		pg/L	9.70	500
39227-28-6	1,2,3,4,7,8-HxCDD	U	12.7		pg/L	12.7	500
57653-85-7	1,2,3,6,7,8-HxCDD	U	12.9		pg/L	12.9	500
19408-74-3	1,2,3,7,8,9-HxCDD	U	13.6		pg/L	13.6	500
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	24.6		pg/L	24.6	500
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK		72.8	pg/L	44.0	1000
51207-31-9	2,3,7,8-TCDF	U	13.9		pg/L	13.9	100
57117-41-6	1,2,3,7,8-PeCDF	U	9.26		pg/L	9.26	500
57117-31-4	2,3,4,7,8-PeCDF	U	7.78		pg/L	7.78	500
70648-26-9	1,2,3,4,7,8-HxCDF	U	10.5		pg/L	10.5	500
57117-44-9	1,2,3,6,7,8-HxCDF	U	10.4		pg/L	10.4	500
60851-34-5	2,3,4,6,7,8-HxCDF	U	10.6		pg/L	10.6	500
72918-21-9	1,2,3,7,8,9-HxCDF	U	16		pg/L	16.0	500
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	11.9		pg/L	11.9	500
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	20.4		pg/L	20.4	500
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	54.4		pg/L	54.4	1000
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	18.7		pg/L	18.7	100
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	9.7		pg/L	9.70	500
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	12.7		pg/L	12.7	500
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	24.6		pg/L	24.6	500
30402-14-3	Total Tetrachlorodibenzofuran	U	13.9		pg/L	13.9	100
30402-15-4	Total Pentachlorodibenzofuran	U	6.1		pg/L	6.10	500
55684-94-1	Total Hexachlorodibenzofuran	U	10.4		pg/L	10.4	500
38998-75-3	Total Heptachlorodibenzofuran	U	11.9		pg/L	11.9	500
3333-30-0	TEQ WHO2005 ND=0		0.00	0.0218	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		20.8	20.8	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		16600	20000	pg/L	83.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		18900	20000	pg/L	94.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		16600	20000	pg/L	82.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		15800	20000	pg/L	79.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		18200	20000	pg/L	91.2	(23%-140%)
13C-OCDD		33100	40000	pg/L	82.8	(17%-157%)
13C-2,3,7,8-TCDF		17600	20000	pg/L	88.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		18500	20000	pg/L	92.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		20400	20000	pg/L	102	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		15700	20000	pg/L	78.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		16900	20000	pg/L	84.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		16600	20000	pg/L	83.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		17300	20000	pg/L	86.6	(29%-147%)

Cape Fear Analytical LLC Report Date: July 21, 2014

Page 2

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 Client: TRCC00314 SDG Number: 6254 **Project:** 12010925 MILK Lab Sample ID: Matrix:

QC for batch 26417 **Client Sample:**

Client ID: MB for batch 26417 **Prep Basis:** As Received

Batch ID: 26419 Method: EPA Method 1613B 07/18/2014 22:59 **Instrument: HRP763 Run Date: Analyst: JTF**

Data File: b18jul14a-12 Dilution: 1 SW846 3520C 26417 **Prep Method:** Prep Batch:

Prep Aliquot: Prep Date: PQL CAS No. Qual **EMPC** Units **EDL Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		17700	20000	pg/L	88.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		18000	20000	pg/L	89.8	(26%-138%)
37Cl-2,3,7,8-TCDD		1740	2000	pg/L	86.8	(35%-197%)

 $100 \; mL$

Comments:

Value is estimated

Estimated Maximum Possible Concentration

16-JUL-14

Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Page 1

As Received

HRP763

1

Prep Basis:

of 1

TRCC001 6254 Client: TRCC00314 SDG Number: **Project:** 12010926 MILK Lab Sample ID: Matrix:

QC for batch 26417 **Client Sample:**

b18jul14a-10

Data File:

Client ID: LCS for batch 26417

Batch ID: 26419 Method: EPA Method 1613B 07/18/2014 21:23 **Instrument: Run Date: Analyst: JTF** Dilution:

SW846 3520C 26417 **Prep Method:** Prep Batch: 100 mL

Prep Date:	16-JUL-14	Prep Aliquot:	100 mL				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		2120		pg/L	24.2	100
40321-76-4	1,2,3,7,8-PeCDD		10400		pg/L	22.6	500
39227-28-6	1,2,3,4,7,8-HxCDD		10000		pg/L	36.4	500
57653-85-7	1,2,3,6,7,8-HxCDD		10300		pg/L	36.2	500
19408-74-3	1,2,3,7,8,9-HxCDD		11000		pg/L	38.4	500
35822-46-9	1,2,3,4,6,7,8-HpCDD		10000		pg/L	60.6	500
3268-87-9	1,2,3,4,6,7,8,9-OCDD		20400		pg/L	89.6	1000
51207-31-9	2,3,7,8-TCDF		2030		pg/L	15.2	100
57117-41-6	1,2,3,7,8-PeCDF		10900		pg/L	33.0	500
57117-31-4	2,3,4,7,8-PeCDF		10400		pg/L	29.2	500
70648-26-9	1,2,3,4,7,8-HxCDF		11300		pg/L	49.6	500
57117-44-9	1,2,3,6,7,8-HxCDF		11500		pg/L	49.2	500
60851-34-5	2,3,4,6,7,8-HxCDF		11300		pg/L	52.2	500
72918-21-9	1,2,3,7,8,9-HxCDF		11900		pg/L	79.8	500
67562-39-4	1,2,3,4,6,7,8-HpCDF		10600		pg/L	48.0	500
55673-89-7	1,2,3,4,7,8,9-HpCDF		11000		pg/L	78.0	500
39001-02-0	1,2,3,4,6,7,8,9-OCDF		23200		pg/L	93.0	1000

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		18800	20000	pg/L	94.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		21800	20000	pg/L	109	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		19400	20000	pg/L	96.9	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		18000	20000	pg/L	89.8	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		21000	20000	pg/L	105	(22%-166%)
13C-OCDD		38400	40000	pg/L	95.9	(13%-199%)
13C-2,3,7,8-TCDF		20100	20000	pg/L	101	(22%-152%)
13C-1,2,3,7,8-PeCDF		21000	20000	pg/L	105	(21%-192%)
13C-2,3,4,7,8-PeCDF		23500	20000	pg/L	117	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		18400	20000	pg/L	92.1	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		19100	20000	pg/L	95.5	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		19100	20000	pg/L	95.7	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		19500	20000	pg/L	97.3	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		20400	20000	pg/L	102	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		21100	20000	pg/L	106	(20%-186%)
37Cl-2,3,7,8-TCDD		2080	2000	pg/L	104	(31%-191%)

Comments:

Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

of 1

Page 1

As Received

HRP763

1

Prep Basis:

Instrument:

Dilution:

TRCC001 6254 Client: TRCC00314 SDG Number: **Project:** 12010927 MILK Lab Sample ID: Matrix:

QC for batch 26417 **Client Sample:**

Client ID: LCSD for batch 26417

Batch ID: 26419 Method: EPA Method 1613B 07/18/2014 22:11 **Run Date: Analyst: JTF**

Data File: b18jul14a-11 SW846 3520C 26417 **Prep Method:** Prep Batch:

Prep Date: Prep Aliquot: 100 mL 16-JUL-14

Prep Date:	16-JUL-14	Frep Anquot:	100 IIIL				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		2090		pg/L	26.6	100
40321-76-4	1,2,3,7,8-PeCDD		10500		pg/L	15.5	500
39227-28-6	1,2,3,4,7,8-HxCDD		10300		pg/L	37.2	500
57653-85-7	1,2,3,6,7,8-HxCDD		10400		pg/L	36.0	500
19408-74-3	1,2,3,7,8,9-HxCDD		11600		pg/L	38.8	500
35822-46-9	1,2,3,4,6,7,8-HpCDD		10200		pg/L	58.6	500
3268-87-9	1,2,3,4,6,7,8,9-OCDD		20400		pg/L	95.0	1000
51207-31-9	2,3,7,8-TCDF		2070		pg/L	18.0	100
57117-41-6	1,2,3,7,8-PeCDF		10900		pg/L	64.0	500
57117-31-4	2,3,4,7,8-PeCDF		10900		pg/L	54.6	500
70648-26-9	1,2,3,4,7,8-HxCDF		11800		pg/L	40.0	500
57117-44-9	1,2,3,6,7,8-HxCDF		10900		pg/L	39.8	500
60851-34-5	2,3,4,6,7,8-HxCDF		11300		pg/L	43.8	500
72918-21-9	1,2,3,7,8,9-HxCDF		12000		pg/L	61.6	500
67562-39-4	1,2,3,4,6,7,8-HpCDF		11100		pg/L	40.4	500
55673-89-7	1,2,3,4,7,8,9-HpCDF		11200		pg/L	66.4	500
39001-02-0	1,2,3,4,6,7,8,9-OCDF		23200		pg/L	124	1000

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		17300	20000	pg/L	86.6	(20%-175%)
13C-1,2,3,7,8-PeCDD		20500	20000	pg/L	103	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		17500	20000	pg/L	87.3	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		17700	20000	pg/L	88.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		20200	20000	pg/L	101	(22%-166%)
13C-OCDD		37200	40000	pg/L	93.1	(13%-199%)
13C-2,3,7,8-TCDF		18500	20000	pg/L	92.4	(22%-152%)
13C-1,2,3,7,8-PeCDF		19900	20000	pg/L	99.4	(21%-192%)
13C-2,3,4,7,8-PeCDF		22300	20000	pg/L	112	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		17200	20000	pg/L	85.9	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		18700	20000	pg/L	93.3	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		18100	20000	pg/L	90.7	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		18900	20000	pg/L	94.4	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		19100	20000	pg/L	95.5	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		20800	20000	pg/L	104	(20%-186%)
37Cl-2,3,7,8-TCDD		1920	2000	pg/L	95.8	(31%-191%)

Comments:

Analyte was analyzed for, but not detected above the specified detection limit.



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Please print clearly, legibly and completely. Samples can not be logged in and furnatural time clock will not start until any embiguites are resolved. All samples. MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS SELHIOB CFA WO # 6324 submitted are subject to Albhais Payment Terms SAMPLE HANDLING L1413508-05 L1413508-06 L1413508-09 L1413508-10 L1413508-12 L1413508-13 L1413508-14 L1413508-15 L1413508-04 L1413508-11 ☐ Done ☐ Not Needed (Please specify below) Sample Specific Comments ☐ Lab to do ☐ Lab to do Preservation Are CT RCP (Reasonable Confidence Protocols) Required? Filtration # 0 Billing Information Same as Client info COULTY 0915 Date/Time Are MCP Analytical Methods Required? Criferia Regulatory Requirements/Report Limits Cyride derline Report Information Data Deliverables せじ ☐ Add'l Deliverables Received By: ☐ EMAIL 対しかにの Ŷ. PUNCIU DAIS State/Fed Program 7/9/14 15:35 Date Recidin Lab **ANALYSIS** Date/Time ☐ ADEx and X \boxtimes ☐ FAX ☐ Yes ☐ Yes Per TRC $\boxtimes \boxtimes$ \boxtimes \boxtimes \boxtimes \boxtimes \boxtimes \boxtimes \boxtimes Preservative Container Type Sampler's Rush (ONLY IF PRE-APPROVED) Initials PAGE 1 OF 2 Project Name: Montgomery County RRF TISSUE Sample Matrix Project Location: Dickerson, MD Time: Project Manager: Liz Denly Time Project Information 11:00 12:00 13:40 13:55 00:00 00:00 00:00 00:00 8:40 **CHAIN OF CUSTODY** Turn-Around Time 9:30 ollection Other Project Specific Requirements/Comments/Detection Limits ALPHA Quote #: 6/17/14 6/17/14 6/17/14 6/17/14 6/17/14 6/18/14 6/19/14 Date Standard Standard 6/18/14 6/18/14 6/18/14 Due Date: Project #: MA MCP or CT RCP? These samples have been Previously analyzed by Alpha Sample ID IS YOUR PROJECT PLEASE ANSWER QUESTIONS ABOVE! TEL: 508-822-9300 FAX: 508-822-3288 DClient: TRC Environmental Corp. 650 Suffolk St Lowell, MA 01854 Email: edenly@trcsolutions.com CPLMB02 CPLMB01 LFLMB02 Mansfield, MA LFLMB01 YFBG01 YFBG02 CPBG02 CPBG01 LFBG01 Address: Wannalancit Mills Client Information Phone: 978-656-3577 (Lab Use Only) AFAX: 508-898-9193 ALPHA Lab ID Westborough, MA TEL: 508-898-9220

temp. apon arrival = 1.6%

#KC

OFA WO # 6324

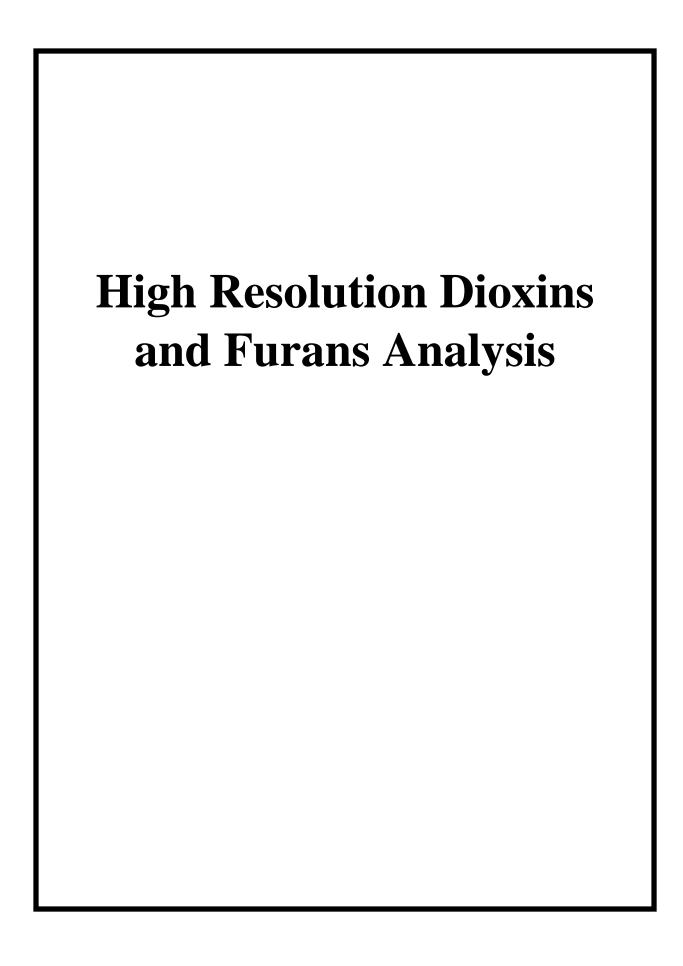
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ALLANDINGAL	4. A.	Project Information	nation			FAX	×	Neboli III oli para Deliverables		EMAIL	el abl	\vdash	Sam	DIIIIING IIIIIOFRITALION ☐ Same as Client info	a unfo	PO#:	
Westborough, MA Ma TEL: 508-898-9220 TE	Mansfield, MA TEL: 508-822-9300	Project Name: Montgomery County RRF	Montgomery	County RRF		□	ADEx			Add'l De	Add'l Deliverables						
FAX: 508-898-9193 FA	FAX: 508-822-3288					Real	llatory	Regulatory Requirements/Report Limits	remen	ts/Rei	oort Li	mits					
Client Information		Project Location: Dickerson,	1: Dickerson,	MD		State//	State/Fed Program	am					Criteria				
ocilient: TRC Environmental Corp.	nental Corp.	Project #:															
جرز Address: Wannalancit Mills	it Mills	Project Manager: Liz Denly	r: Liz Denly			MCP	PRES	ITAIMIN	VE CE	RTAIL	J-XLI	I REA	SONA	BLE C	ONFID	MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS	STOO
650 Suffolk St Lowell, MA 01854	MA 01854	ALPHA Quote #:	ئد			. Yes	SO.	₽ : □ [Are	ACP And	lytical N	lethods	Are MCP Analytical Methods Required?		:	
Dhana: 079 656 357		+				∏ Yes	١	0 		Are	1 KC	Keason	able Co	Hidence	Protocols	Are C RCP (Reasonable Confidence Protocols) Required?	
riidile. 9/0-000-00/	,	i urn-Around i ime	IIMe			ANA	ANALYSIS		_		-		-	-		L	
Fax:		☐ Standard	□ Ru	Rush (ONLY IF PRE-APPROVED)	APPROVED)											SAMPLE HANDLING	- ∢ . •
Email: edenly@trcsolutions.com	lutions.com															П Вопе	_1 =
These samples have be	These samples have been Previously analyzed by Alpha	Due Date:	Time:													□ Not Needed □ Lab to do	# Œ
Other Project Spec	Other Project Specific Requirements/Comments/Detection Limits.	/Detection Limit	.s:			•										Preservation	0 P
			i					<u></u>								☐ Lab to do	-
																helow)	ı iii o
ALPHA Lab ID	Sample ID	Allo	ollection	Sample	Sampler's	36											
(Lab Use Only)		Date	Time	Matrix	Initials	IT 199	ana		····							Sample Specific Comments	
	LFBG01-F	6/17/14	11:00	TISSUE		\boxtimes										L1413508-17	-
	LFBG02-F	6/17/14	12:00	TISSUE												L1413508-18	-
	LFLMB01-F	6/17/14	8:40	TISSUE		\boxtimes										L1413508-19	-
	YFBG01-F / YFBG02-F	6/17/14	13:40	TISSUE		\boxtimes										L1413508-20	-
	NA - composite above	6/17/14	13:55	TISSUE												L1413508-21	0
	CPBG01-F	6/18/14	00:00	TISSUE		\boxtimes										L1413508-22	-
	CPBG02-F	6/18/14	00:00	TISSUE		\boxtimes										L1413508-23	-
	CPLMB01-F	6/18/14	00:00	TISSUE		\boxtimes										L1413508-24	-
	CPLMB02-F	6/18/14	00:00	TISSUE												L1413508-25	-
	LFLMB02-F	6/19/14	9:30	TISSUE		\boxtimes										L1413508-26	-
PLEASE ANSWER QUESTIONS ABOVE!	UESTIONS ABOVE!			Con	Container Type		,			-	,	,	-	-	-		
				۵.	Preservative			<u>.</u>			,	'			,	Please print dearly, legibly and completely. Samples can	legibly nples can
IS YOUR PROJECT	PROJECT		Reling	tuished By:		Dat	Date/Time			Receiv	Received By:			Date/Time	me	not be lagged in and turnaround time clock will not	k will not
MA MCP	MA MCP or CT RCP?	9	Shith.	11		7/9//	1914 15:35	36		200	Ş					start until any ambiguities are resolved. All samples	uities are 35
FORM NO: 01-01(!) (rev. 30-JUL-07)			M	So		SIPO HIJUCOT	150 F	,	Cyrole		Lanle	3	<u>§</u>	וסימרות	0915	submitted are subject to Alpha's Payment Terms	오 % K E
		-				-						-	-	,	200		

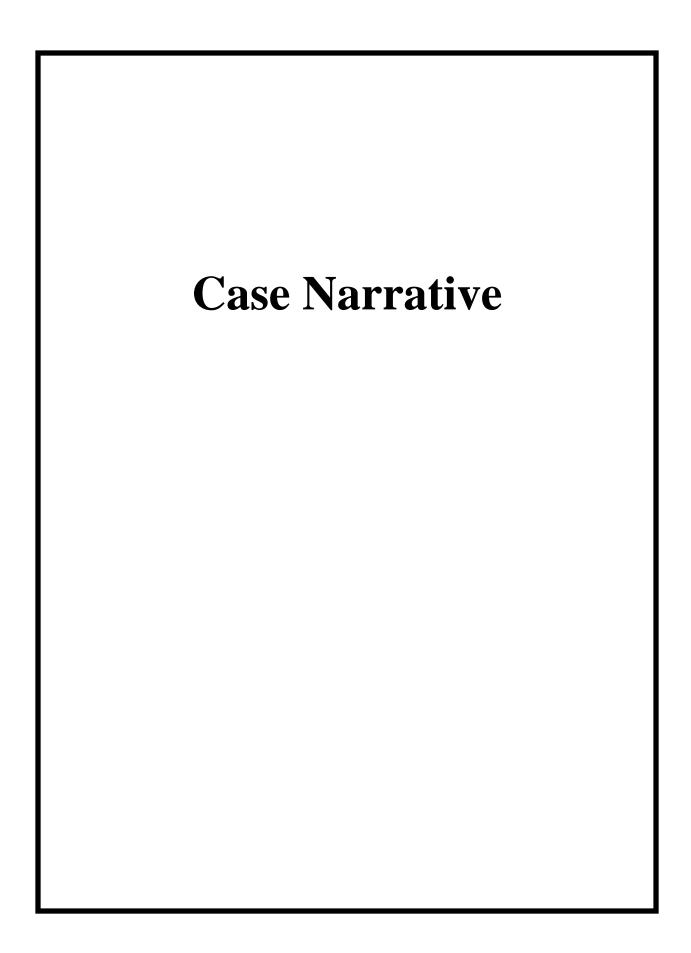
temp.= 1.80

SAMPLE RECEIPT CHECKLIST

_				Саре	e Fear Analytical		
Clie	ent: TRCC				Work Order: 6324		
Shi	pping Company: UPS				Date/Time Received: 10JUL14 0915		
Sus	pected Hazard Information	Yes	NA	No	DOE Site Sample Packages Yes NA No*		
Shi	pped as DOT Hazardous?			<i>U</i>	Screened <0.5 mR/hr?		
Sar	nples identified as Foreign Soil?		i.		Samples < 2x background?		
			I - ::-		* Notify RSO of any responses in this column immediately.		
Air	Sample Receipt Specifics	Yes	NA	No			
Air	sample in shipment?			-	Air Witness:		
Sample Receipt Criteria Yes NA No				No	Comments/Qualifiers (required for Non-Conforming Items)		
	Shipping containers received intact		 		Circle Applicable:		
1	and sealed?	/			seals broken damaged container leaking container other(describe)		
	Chain of Contact of the Contact of t						
2	Chain of Custody documents included	レ	1				
	with shipment?						
	Complete				Preservation Method:		
3	Samples requiring cold preservation	. /	ľ	(ice bags blue ice dry ice none other (describe)		
	within 0-6°C?				1-8°C		
	Aguagus samples found to have visible				Sample IDs, containers affected:		
4	Aqueous samples found to have visible						
L	solids?						
	Samples requiring chemical				Sample IDs, containers affected and pH observed:		
5	· · · · · · · · · · · · · · · · · · ·						
	preservation at proper pH?				If preservative added, Lot#:		
	Samples requiring preservation have				Sample IDs, containers affected:		
6	- ·						
	no residual chlorine?				If preservative added, Lot#:		
					Sample IDs, tests affected:		
7	Samples received within holding time?	/					
			. jili				
ĺ	Sample IDs on COC match IDs on	,			Sample IDs, containers affected:		
8	containers?	\checkmark					
<u> </u>	1		1 2				
	Date & time of COC match date & time			ĺ	Sample IDs, containers affected:		
9	on containers?	\neg					
	- John Sommanier S.						
	Number of containers received match				Sample IDs, containers affected:		
10	number indicated on COC?			l			
	4						
أمرأ	COC form is properly signed in		/				
11	relinquished/received sections?	~		ļ			
C		j					
con	nments:						
					·		
` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` `							
					A MARINE CALL		

Checklist performed by: Initials: Date: 10JUL (4)
Rci g'6'qh': 5





HDOX Case Narrative TRC Environmental Corporation (TRCC) SDG 6324

Method/Analysis Information

Product: Dioxins/Furans by EPA Method 1613B in Tissues

Analytical Method: EPA Method 1613B

Extraction Method: SW846 3540C Analytical Batch Number: 26413, 26440 Clean Up Batch Number: 26412, 26439 Extraction Batch Number: 26411, 26438

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1613B:

Sample ID	Client ID
6324001	LFBG01
6324002	LFBG02
6324003	LFBG02 Dup
6324004	LFLMB01
6324005	YFBG01
6324006	YFBG02
6324007	CPBG01
6324008	CPBG02
6324009	CPLMB01
6324010	CPLMB02
6324011	CPLMB02 Dup
6324012	LFLMB02
6324013	LFBG01-F
6324014	LFBG02-F
6324015	LFBG02-F Dup
6324016	LFLMB01-F
6324017	YFBG01-F / YFBG02-F
6324018	CPBG01-F
6324019	CPBG02-F
6324020	CPLMB01-F
6324021	CPLMB02-F
6324022	CPLMB02-F Dup

12010947 Method Blank (MB) 12010948 Laboratory Control Sample (LCS)	6324023	LFLMB02-F
12010921 Laboratory Control Sample Duplicate (LCSD) 12010947 Method Blank (MB) 12010948 Laboratory Control Sample (LCS)	12010919	Method Blank (MB)
12010947 Method Blank (MB) 12010948 Laboratory Control Sample (LCS)	12010920	Laboratory Control Sample (LCS)
12010948 Laboratory Control Sample (LCS)	12010921	Laboratory Control Sample Duplicate (LCSD)
7	12010947	Method Blank (MB)
12010949 Laboratory Control Sample Duplicate (LCSD)	12010948	Laboratory Control Sample (LCS)
	12010949	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 13.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement

The test results presented in this document are certified to meet all requirements of the 2003 NELAC Standard.

Method Blank (MB) Statement

The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery

The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement

The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation

A NCR was not required for this SDG.

Manual Integrations

Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

System Configuration

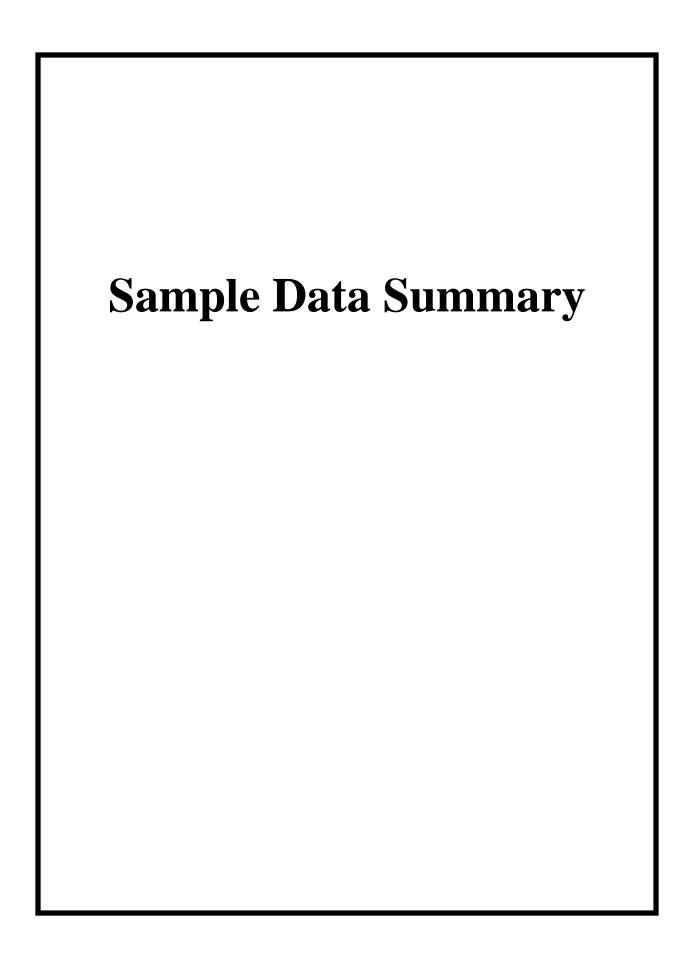
This analysis was performed on the following instrument configuration:

Instrument	Instrument	System	Column	Column
ID		Configuration	ID	Description
HRP763_1	High-Resolution GC/MS System	Dioxin Analysis	DB-5MS	60m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional

packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.



Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report for

VTEE223"VTE'Gpxktqpo gpvcn'Eqtr qtcvkqp Enkgpv'UFI <8546"EHC"Y qtm'Qtf gt<8546

The Qualifiers in this report are defined as follows:

, """"C"'s works{ "eqpstqri'cpon{ vg"t geqxgt { "ku"qwulst g"qh'ur gelshligf "ceegr vcpeg"et kigt kc

, , '"""Cpcn(vg'ku'c'uwttqi cvg'eqo r qwpf

L'"""Xcnwg'ku'guvko cvgf

M"""Gurko cvgf 'O czko wo 'Rquukdrg'Eqpegpytcykqp

 $W"""Cpcn{\ \ \ } vg'y\ cu''cpcn{\ \ \ } gf''hqt."dw''pqv''f\ gvgevgf''cdqxg''yj\ g''ur\ gelkhlgf'''f\ gvgevkqp''hlo\ k0$

TG""""Kof kecvgu'vj cv'uco r ng'ku'tg/gzvtcevgf 0"

Review/Validation

Ecr g"Hgct 'Cpcn(ween't gs wkt gu"cmi'cpcn(ween't cvc 'vq "dg 'xgt khlgf "d{ "c"s werkhlgf "f cvc 'tgxlgy gt0

Vj g'hqmqy kpi 'f cvc'xcnkf cvqt'xgtkhkgf 'vj g'kphqto cvkqp'r tgugpvgf 'kp'vj ku'ecug'pcttcvkxg<"

Signature: Heather Patterson

Date: 30 JUL 2014 Title: Data Validator

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: Date Collected: Date Received:

TRCC001 06/17/2014 11:00 07/10/2014 09:15 **Project:** Matrix:

Dilution:

TRCC00314 TISSUE

1613B Tissue **Client Sample: Client ID:** LFBG01

SDG Number:

Lab Sample ID:

Batch ID: 26413

07/19/2014 04:40 **Run Date:** Data File: b18jul14a_2-4 26411 Prep Batch:

6324 6324001

> Method: EPA Method 1613B **Analyst: JTF**

Prep Basis: As Received **Instrument:** HRP763

1

SW846 3540C **Prep Method:**

Prep	Aliquot:	10.53 g

Prep Date:	20411 17-JUL-14	Prep Aliquot:	10.53 g	340C			
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.17		pg/g	0.170	0.950
40321-76-4	1,2,3,7,8-PeCDD	U	.0826		pg/g	0.0826	4.75
39227-28-6	1,2,3,4,7,8-HxCDD	U	.134		pg/g	0.134	4.75
57653-85-7	1,2,3,6,7,8-HxCDD	U	.126		pg/g	0.126	4.75
19408-74-3	1,2,3,7,8,9-HxCDD	U	.138		pg/g	0.138	4.75
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.270		pg/g	0.220	4.75
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	4.57		pg/g	0.545	9.50
51207-31-9	2,3,7,8-TCDF	J	0.313		pg/g	0.155	0.950
57117-41-6	1,2,3,7,8-PeCDF	U	.08		pg/g	0.080	4.75
57117-31-4	2,3,4,7,8-PeCDF	U	.0735		pg/g	0.0735	4.75
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0944		pg/g	0.0944	4.75
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0864		pg/g	0.0864	4.75
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0976		pg/g	0.0976	4.75
72918-21-9	1,2,3,7,8,9-HxCDF	U	.142		pg/g	0.142	4.75
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.0988		pg/g	0.0988	4.75
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.161		pg/g	0.161	4.75
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.367		pg/g	0.367	9.50
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.17		pg/g	0.170	0.950
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.0826		pg/g	0.0826	4.75
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.126		pg/g	0.126	4.75
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.270	0.570	pg/g	0.220	4.75
30402-14-3	Total Tetrachlorodibenzofuran	J	0.513		pg/g	0.155	0.950
30402-15-4	Total Pentachlorodibenzofuran	U	.0539		pg/g	0.0539	4.75
55684-94-1	Total Hexachlorodibenzofuran	U	.0864		pg/g	0.0864	4.75
38998-75-3	Total Heptachlorodibenzofuran	U	.0988		pg/g	0.0988	4.75
3333-30-0	TEQ WHO2005 ND=0		0.0354	0.0354	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.216	0.216	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		181	190	pg/g	95.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		208	190	pg/g	109	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		166	190	pg/g	87.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		177	190	pg/g	93.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		195	190	pg/g	103	(23%-140%)
13C-OCDD		360	380	pg/g	94.8	(17%-157%)
13C-2,3,7,8-TCDF		195	190	pg/g	103	(24%-169%)
13C-1,2,3,7,8-PeCDF		197	190	pg/g	104	(24%-185%)
13C-2,3,4,7,8-PeCDF		214	190	pg/g	113	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		173	190	pg/g	91.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		180	190	pg/g	94.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		182	190	pg/g	95.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		179	190	pg/g	94.2	(29%-147%)

Cape Fear Analytical LLC Report Date: July 30, 2014

Page 2

HRP763

1

Instrument:

Dilution:

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

10.53 g

TRCC001 TRCC00314 SDG Number: 6324 Client: **Project:** 06/17/2014 11:00 6324001 TISSUE Lab Sample ID: **Date Collected:** Matrix:

1613B Tissue Date Received: 07/10/2014 09:15 **Client Sample:**

Client ID: LFBG01 **Prep Basis:** As Received **Batch ID:** 26413 Method: EPA Method 1613B

Data File: b18jul14a_2-4 SW846 3540C 26411 **Prep Method:** Prep Batch:

Prep Aliquot: CAS No. **EMPC** Units **EDL PQL Parmname** Qual Result

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		187	190	pg/g	98.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		201	190	pg/g	106	(26%-138%)
37Cl-2,3,7,8-TCDD		20.2	19.0	pg/g	106	(35%-197%)

Comments:

Run Date:

Prep Date:

Value is estimated

Estimated Maximum Possible Concentration

07/19/2014 04:40

17-JUL-14

Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6324 6324002 Lab Sample ID: 1613B Tissue **Client Sample:**

TRCC001 06/17/2014 12:00 **Date Collected:** 07/10/2014 09:15 Date Received:

Project: Matrix:

Prep Basis:

Dilution:

TRCC00314 TISSUE

As Received

Client ID: LFBG02 Batch ID: 26413

07/19/2014 05:28 **Run Date:** Data File: b18jul14a_2-5

Method: EPA Method 1613B **Analyst: JTF**

Instrument: HRP763

1

Prep Batch: 26411 **Prep Date:** 17-JUL-14 **Prep Method:** Prep Aliquot: 10.53 g

SW846 3540C

Trep Date.	17-JUL-14	rrep imquot.	10.00 8				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.213		pg/g	0.213	0.950
40321-76-4	1,2,3,7,8-PeCDD	U	.118		pg/g	0.118	4.75
39227-28-6	1,2,3,4,7,8-HxCDD	U	.131		pg/g	0.131	4.75
57653-85-7	1,2,3,6,7,8-HxCDD	U	.134		pg/g	0.134	4.75
19408-74-3	1,2,3,7,8,9-HxCDD	U	.141		pg/g	0.141	4.75
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.475		pg/g	0.291	4.75
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	5.12		pg/g	0.577	9.50
51207-31-9	2,3,7,8-TCDF	J	0.291		pg/g	0.174	0.950
57117-41-6	1,2,3,7,8-PeCDF	U	.0999		pg/g	0.0999	4.75
57117-31-4	2,3,4,7,8-PeCDF	U	.0887		pg/g	0.0887	4.75
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0965		pg/g	0.0965	4.75
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0942		pg/g	0.0942	4.75
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0972		pg/g	0.0972	4.75
72918-21-9	1,2,3,7,8,9-HxCDF	U	.153		pg/g	0.153	4.75
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.131		pg/g	0.109	4.75
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.182		pg/g	0.182	4.75
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.475		pg/g	0.475	9.50
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.213		pg/g	0.213	0.950
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.118		pg/g	0.118	4.75
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.131		pg/g	0.131	4.75
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.475		pg/g	0.291	4.75
30402-14-3	Total Tetrachlorodibenzofuran	J	0.291		pg/g	0.174	0.950
30402-15-4	Total Pentachlorodibenzofuran	U	.0659		pg/g	0.0659	4.75
55684-94-1	Total Hexachlorodibenzofuran	U	.0942		pg/g	0.0942	4.75
38998-75-3	Total Heptachlorodibenzofuran	J	0.131		pg/g	0.109	4.75
3333-30-0	TEQ WHO2005 ND=0		0.0367	0.0367	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.260	0.260	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		185	190	pg/g	97.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		211	190	pg/g	111	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		180	190	pg/g	94.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		174	190	pg/g	91.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		205	190	pg/g	108	(23%-140%)
13C-OCDD		382	380	pg/g	101	(17%-157%)
13C-2,3,7,8-TCDF		193	190	pg/g	102	(24%-169%)
13C-1,2,3,7,8-PeCDF		206	190	pg/g	108	(24%-185%)
13C-2,3,4,7,8-PeCDF		219	190	pg/g	115	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		177	190	pg/g	93.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		188	190	pg/g	98.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		189	190	pg/g	99.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		181	190	pg/g	95.4	(29%-147%)

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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 $\quad \text{of } 2$

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

 6324
 Client:
 TRCC001
 Project:
 TRCC00314

 6324002
 Date Collected:
 06/17/2014 12:00
 Matrix:
 TISSUE

Client Sample: 1613B Tissue Date Received: 07/10/2014 09:15
Client ID: LFBG02 Prep Basis:

Client ID: LFBG02 Prep Basis: As Received Batch ID: 26413 Method: EPA Method 1613B

 Run Date:
 07/19/2014 05:28
 Analyst:
 JTF
 Instrument:
 HRP763

 Data File:
 b18jul14a_2-5
 Dilution:
 1

 Prep Batch:
 26411
 Prep Method:
 SW846 3540C

Prep Date: 17-JUL-14 Prep Aliquot: 10.53 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		195	190	pg/g	103	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		209	190	pg/g	110	(26%-138%)
37Cl-2,3,7,8-TCDD		20.7	19.0	pg/g	109	(35%-197%)

Comments:

SDG Number:

Lab Sample ID:

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

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July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6324 6324003 Lab Sample ID: 1613B Tissue **Client Sample:**

Date Collected: Date Received:

TRCC001 06/17/2014 12:00 07/10/2014 09:15

SW846 3540C

10.38 g

Project: Matrix: TRCC00314 TISSUE

Client ID: Batch ID:

LFBG02 Dup

26413 07/19/2014 06:16 **Run Date:** Data File: b18jul14a_2-6

Method: **Analyst: JTF**

EPA Method 1613B

Prep Basis: As Received HRP763

Prep Batch: 26411 **Prep Date:** 17-JUL-14 **Prep Method:** Prep Aliquot:

Instrument: Dilution: 1

P	1.0021.		Ü				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.316		pg/g	0.316	0.963
40321-76-4	1,2,3,7,8-PeCDD	U	.148		pg/g	0.148	4.82
39227-28-6	1,2,3,4,7,8-HxCDD	U	.198		pg/g	0.198	4.82
57653-85-7	1,2,3,6,7,8-HxCDD	U	.197		pg/g	0.197	4.82
19408-74-3	1,2,3,7,8,9-HxCDD	U	.208		pg/g	0.208	4.82
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.522		pg/g	0.449	4.82
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	5.69		pg/g	0.865	9.63
51207-31-9	2,3,7,8-TCDF	J	0.287		pg/g	0.225	0.963
57117-41-6	1,2,3,7,8-PeCDF	U	.13		pg/g	0.130	4.82
57117-31-4	2,3,4,7,8-PeCDF	U	.118		pg/g	0.118	4.82
70648-26-9	1,2,3,4,7,8-HxCDF	U	.121		pg/g	0.121	4.82
57117-44-9	1,2,3,6,7,8-HxCDF	U	.117		pg/g	0.117	4.82
60851-34-5	2,3,4,6,7,8-HxCDF	U	.128		pg/g	0.128	4.82
72918-21-9	1,2,3,7,8,9-HxCDF	U	.2		pg/g	0.200	4.82
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.146		pg/g	0.146	4.82
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.231		pg/g	0.231	4.82
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.711		pg/g	0.711	9.63
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.316		pg/g	0.316	0.963
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.148		pg/g	0.148	4.82
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.197		pg/g	0.197	4.82
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.522		pg/g	0.449	4.82
30402-14-3	Total Tetrachlorodibenzofuran	J	0.287		pg/g	0.225	0.963
30402-15-4	Total Pentachlorodibenzofuran	U	.118		pg/g	0.118	4.82
55684-94-1	Total Hexachlorodibenzofuran	U	.117		pg/g	0.117	4.82
38998-75-3	Total Heptachlorodibenzofuran	U	.146		pg/g	0.146	4.82
3333-30-0	TEQ WHO2005 ND=0		0.0356	0.0356	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.348	0.348	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		176	193	pg/g	91.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		202	193	pg/g	105	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		172	193	pg/g	89.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		177	193	pg/g	91.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		203	193	pg/g	106	(23%-140%)
13C-OCDD		379	385	pg/g	98.4	(17%-157%)
13C-2,3,7,8-TCDF		191	193	pg/g	99.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		198	193	pg/g	103	(24%-185%)
13C-2,3,4,7,8-PeCDF		217	193	pg/g	113	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		182	193	pg/g	94.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		185	193	pg/g	95.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		187	193	pg/g	97.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		178	193	pg/g	92.2	(29%-147%)

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 TRCC00314 6324 Client: **Project:** 6324003 06/17/2014 12:00 TISSUE **Date Collected:** Matrix:

Lab Sample ID: 1613B Tissue 07/10/2014 09:15 Date Received: **Client Sample:**

LFBG02 Dup As Received **Client ID: Prep Basis: Batch ID:** 26413 Method: EPA Method 1613B

07/19/2014 06:16 **Instrument: HRP763 Run Date: Analyst: JTF** Dilution: 1 Data File: b18jul14a_2-6 SW846 3540C

Prep Method: Prep Aliquot: 10.38 g **Prep Date:** 17-JUL-14 **EDL PQL** CAS No. Qual Result **EMPC** Units **Parmname**

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		196	193	pg/g	102	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		205	193	pg/g	107	(26%-138%)
37Cl-2,3,7,8-TCDD		20.3	19.3	pg/g	105	(35%-197%)

Comments:

SDG Number:

Prep Batch:

26411

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6324 6324004 Lab Sample ID: 1613B Tissue **Client Sample:**

Date Collected: Date Received:

TRCC001 06/17/2014 08:40 07/10/2014 09:15 **Project:** Matrix: TRCC00314 TISSUE

Client ID: Batch ID: Run Date:

Data File:

LFLMB01 26413

07/19/2014 07:04 b18jul14a_2-7

Method: EPA Method 1613B **Analyst: JTF**

Prep Basis: As Received **Instrument:** HRP763

Prep Batch: 26411 **Prep Date:**

Prep Method:

SW846 3540C

Dilution: 1

Prep Aliquot: 10.15 g 17-JUL-14

Prep Date:	17-JUL-14	Frep Anquot.	10.13 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.203		pg/g	0.203	0.985
40321-76-4	1,2,3,7,8-PeCDD	U	.128		pg/g	0.128	4.93
39227-28-6	1,2,3,4,7,8-HxCDD	U	.151		pg/g	0.151	4.93
57653-85-7	1,2,3,6,7,8-HxCDD	U	.149		pg/g	0.149	4.93
19408-74-3	1,2,3,7,8,9-HxCDD	U	.159		pg/g	0.159	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.349		pg/g	0.292	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	1.58		pg/g	0.573	9.85
51207-31-9	2,3,7,8-TCDF	J	0.384		pg/g	0.205	0.985
57117-41-6	1,2,3,7,8-PeCDF	U	.0971		pg/g	0.0971	4.93
57117-31-4	2,3,4,7,8-PeCDF	U	.09		pg/g	0.090	4.93
70648-26-9	1,2,3,4,7,8-HxCDF	U	.106		pg/g	0.106	4.93
57117-44-9	1,2,3,6,7,8-HxCDF	U	.102		pg/g	0.102	4.93
60851-34-5	2,3,4,6,7,8-HxCDF	U	.11		pg/g	0.110	4.93
72918-21-9	1,2,3,7,8,9-HxCDF	U	.16		pg/g	0.160	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.117		pg/g	0.117	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.191		pg/g	0.191	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.487		pg/g	0.487	9.85
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.203		pg/g	0.203	0.985
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.128		pg/g	0.128	4.93
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.149		pg/g	0.149	4.93
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.349		pg/g	0.292	4.93
30402-14-3	Total Tetrachlorodibenzofuran	J	0.384		pg/g	0.205	0.985
30402-15-4	Total Pentachlorodibenzofuran	U	.0804		pg/g	0.0804	4.93
55684-94-1	Total Hexachlorodibenzofuran	U	.102		pg/g	0.102	4.93
38998-75-3	Total Heptachlorodibenzofuran	U	.117		pg/g	0.117	4.93
3333-30-0	TEQ WHO2005 ND=0		0.0424	0.0424	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.271	0.271	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		173	197	pg/g	87.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		203	197	pg/g	103	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		171	197	pg/g	86.8	(32%-141%)
3C-1,2,3,6,7,8-HxCDD		175	197	pg/g	88.9	(28%-130%)
3C-1,2,3,4,6,7,8-HpCDD		209	197	pg/g	106	(23%-140%)
BC-OCDD		385	394	pg/g	97.7	(17%-157%)
C-2,3,7,8-TCDF		195	197	pg/g	99.1	(24%-169%)
C-1,2,3,7,8-PeCDF		204	197	pg/g	103	(24%-185%)
C-2,3,4,7,8-PeCDF		216	197	pg/g	110	(21%-178%)
C-1,2,3,4,7,8-HxCDF		175	197	pg/g	89.0	(26%-152%)
C-1,2,3,6,7,8-HxCDF		176	197	pg/g	89.4	(26%-123%)
C-2,3,4,6,7,8-HxCDF		181	197	pg/g	91.9	(28%-136%)
C-1,2,3,7,8,9-HxCDF		178	197	pg/g	90.5	(29%-147%)

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

10.15 g

TRCC001 TRCC00314 Client: **Project:** 06/17/2014 08:40 TISSUE **Date Collected:** Matrix:

Instrument:

Dilution:

 $Page \ 2$

HRP763

1

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6324004 Lab Sample ID: 1613B Tissue 07/10/2014 09:15 Date Received: **Client Sample:**

Client ID: LFLMB01 **Prep Basis:** As Received **Batch ID:** 26413 Method: EPA Method 1613B

Data File: b18jul14a_2-7 SW846 3540C 26411 **Prep Method:** Prep Batch:

Prep Aliquot: EDL PQL CAS No. Qual **EMPC** Units **Parmname** Result

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		192	197	pg/g	97.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		207	197	pg/g	105	(26%-138%)
37Cl-2,3,7,8-TCDD		20.3	19.7	pg/g	103	(35%-197%)

Comments:

SDG Number:

Run Date:

Prep Date:

6324

07/19/2014 07:04

17-JUL-14

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6324 6324005 **Date Collected:** Lab Sample ID: 1613B Tissue Date Received: **Client Sample:**

TRCC001 06/17/2014 13:40 07/10/2014 09:15

SW846 3540C

10.48 g

Project: Matrix:

Prep Basis:

TRCC00314 TISSUE

As Received

Client ID:

YFBG01 **Batch ID:** 26413

07/19/2014 07:51 **Run Date:** Data File: b18jul14a_2-8 **Prep Batch:** 26411

Prep Method: Prep Aliquot:

Method:

Analyst:

EPA Method 1613B **JTF**

Instrument: HRP763 Dilution: 1

Prep Date: 17-JUL-14

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.176		pg/g	0.176	0.954
40321-76-4	1,2,3,7,8-PeCDD	U	.106		pg/g	0.106	4.77
39227-28-6	1,2,3,4,7,8-HxCDD	U	.127		pg/g	0.127	4.77
57653-85-7	1,2,3,6,7,8-HxCDD	U	.116		pg/g	0.116	4.77
19408-74-3	1,2,3,7,8,9-HxCDD	U	.128		pg/g	0.128	4.77
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.460		pg/g	0.279	4.77
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	5.27		pg/g	0.454	9.54
51207-31-9	2,3,7,8-TCDF	J	0.271		pg/g	0.160	0.954
57117-41-6	1,2,3,7,8-PeCDF	U	.0931		pg/g	0.0931	4.77
57117-31-4	2,3,4,7,8-PeCDF	U	.0847		pg/g	0.0847	4.77
70648-26-9	1,2,3,4,7,8-HxCDF	U	.109		pg/g	0.109	4.77
57117-44-9	1,2,3,6,7,8-HxCDF	U	.104		pg/g	0.104	4.77
60851-34-5	2,3,4,6,7,8-HxCDF	U	.116		pg/g	0.116	4.77
72918-21-9	1,2,3,7,8,9-HxCDF	U	.171		pg/g	0.171	4.77
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.235		pg/g	0.125	4.77
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.208		pg/g	0.208	4.77
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.511		pg/g	0.511	9.54
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.176		pg/g	0.176	0.954
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.106		pg/g	0.106	4.77
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.116		pg/g	0.116	4.77
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.460		pg/g	0.279	4.77
30402-14-3	Total Tetrachlorodibenzofuran	J	0.481		pg/g	0.160	0.954
30402-15-4	Total Pentachlorodibenzofuran	U	.0588		pg/g	0.0588	4.77
55684-94-1	Total Hexachlorodibenzofuran	U	.104	0.147	pg/g	0.104	4.77
38998-75-3	Total Heptachlorodibenzofuran	J	0.235		pg/g	0.125	4.77
3333-30-0	TEQ WHO2005 ND=0		0.0356	0.0356	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.236	0.236	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		170	191	pg/g	89.0	(25%-164%)	
13C-1,2,3,7,8-PeCDD		204	191	pg/g	107	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		166	191	pg/g	86.8	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		169	191	pg/g	88.6	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		197	191	pg/g	103	(23%-140%)	
13C-OCDD		346	382	pg/g	90.6	(17%-157%)	
13C-2,3,7,8-TCDF		194	191	pg/g	102	(24%-169%)	
13C-1,2,3,7,8-PeCDF		201	191	pg/g	105	(24%-185%)	
13C-2,3,4,7,8-PeCDF		212	191	pg/g	111	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		168	191	pg/g	87.9	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		181	191	pg/g	95.0	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		177	191	pg/g	92.5	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		175	191	pg/g	91.9	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 30, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC00314 TRCC001 Client: **Project:** 06/17/2014 13:40 TISSUE **Date Collected:** Matrix:

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Lab Sample ID: 1613B Tissue **Date Received:** 07/10/2014 09:15 **Client Sample:**

Prep Basis: Client ID: YFBG01 As Received **Batch ID:** 26413 Method: EPA Method 1613B

Instrument: HRP763 Run Date: 07/19/2014 07:51 Analyst: **JTF** Data File: b18jul14a_2-8 Dilution: 1 SW846 3540C **Prep Method:**

Prep Aliquot: 10.48 g **Prep Date:** 17-JUL-14 CAS No. **EMPC EDL PQL Parmname** Qual Result Units

Surrogate/Tracer recovery Units Recovery% **Acceptable Limits** Qual Result Nominal 13C-1,2,3,4,6,7,8-HpCDF 181 94.9 191 (28%-143%) pg/g 13C-1,2,3,4,7,8,9-HpCDF 196 191 103 (26%-138%) pg/g 37Cl-2,3,7,8-TCDD 19.4 102 (35%-197%) 19.1 pg/g

Comments:

SDG Number:

Prep Batch:

6324

6324005

26411

Value is estimated

Estimated Maximum Possible Concentration \mathbf{K}

Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 Client:
Lab Sample ID: 6324006 Date Collect
Client Sample: 1613B Tissue Date Receiv

Client: TRCC001

Date Collected: 06/17/2014 13:55

Date Received: 07/10/2014 09:15

Project: TRCC00314 Matrix: TISSUE

Client ID: YFBG02
Batch ID: 26413

Method: EPA Method 1613B Analyst: JTF Prep Basis: As Received

Run Date: 07/19/2014 08:39 Data File: b18jul14a_2-9 Prep Batch: 26411

Prep Method: SW846 3540C Prep Aliquot: 10.62 g Instrument: HRP763 Dilution: 1

Prep Batch: 26411 Prep Date: 17-JUL-14

-			U				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.18		pg/g	0.180	0.942
40321-76-4	1,2,3,7,8-PeCDD	U	.0985		pg/g	0.0985	4.71
39227-28-6	1,2,3,4,7,8-HxCDD	U	.146		pg/g	0.146	4.71
57653-85-7	1,2,3,6,7,8-HxCDD	U	.144		pg/g	0.144	4.71
19408-74-3	1,2,3,7,8,9-HxCDD	U	.154		pg/g	0.154	4.71
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.311		pg/g	0.249	4.71
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	9.31		pg/g	0.691	9.42
51207-31-9	2,3,7,8-TCDF	J	0.292		pg/g	0.154	0.942
57117-41-6	1,2,3,7,8-PeCDF	U	.0893		pg/g	0.0893	4.71
57117-31-4	2,3,4,7,8-PeCDF	U	.084		pg/g	0.084	4.71
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0991		pg/g	0.0991	4.71
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0945		pg/g	0.0945	4.71
60851-34-5	2,3,4,6,7,8-HxCDF	U	.1		pg/g	0.100	4.71
72918-21-9	1,2,3,7,8,9-HxCDF	U	.151		pg/g	0.151	4.71
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		0.134	pg/g	0.110	4.71
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.182		pg/g	0.182	4.71
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.411		pg/g	0.411	9.42
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.18		pg/g	0.180	0.942
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.0985		pg/g	0.0985	4.71
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.144		pg/g	0.144	4.71
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.311		pg/g	0.249	4.71
30402-14-3	Total Tetrachlorodibenzofuran	J	0.292		pg/g	0.154	0.942
30402-15-4	Total Pentachlorodibenzofuran	U	.0601		pg/g	0.0601	4.71
55684-94-1	Total Hexachlorodibenzofuran	U	.0945		pg/g	0.0945	4.71
38998-75-3	Total Heptachlorodibenzofuran	U	.11	0.134	pg/g	0.110	4.71
3333-30-0	TEQ WHO2005 ND=0		0.0351	0.0364	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.234	0.235	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		161	188	pg/g	85.4	(25%-164%)	
13C-1,2,3,7,8-PeCDD		182	188	pg/g	96.9	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		157	188	pg/g	83.2	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		156	188	pg/g	83.0	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		182	188	pg/g	96.9	(23%-140%)	
13C-OCDD		325	377	pg/g	86.3	(17%-157%)	
13C-2,3,7,8-TCDF		178	188	pg/g	94.3	(24%-169%)	
13C-1,2,3,7,8-PeCDF		184	188	pg/g	97.6	(24%-185%)	
13C-2,3,4,7,8-PeCDF		196	188	pg/g	104	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		156	188	pg/g	82.7	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		171	188	pg/g	90.6	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		166	188	pg/g	88.2	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		164	188	pg/g	87.3	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 30, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC00314 TRCC001 Client: **Project:** 06/17/2014 13:55 TISSUE **Date Collected:** Matrix:

SW846 3540C

Units

Page 2

of 2

6324006 Lab Sample ID: 1613B Tissue **Date Received:** 07/10/2014 09:15 **Client Sample:**

Prep Basis: Client ID: YFBG02 As Received **Batch ID:** 26413 Method: EPA Method 1613B

Instrument: HRP763 Run Date: 07/19/2014 08:39 Analyst: **JTF** Data File: b18jul14a_2-9 Dilution: 1

Prep Method: Prep Aliquot: $10.62 \mathrm{\ g}$ **Prep Date:** 17-JUL-14 CAS No. **EMPC EDL PQL** Qual

Surrogate/Tracer recovery Units Recovery% **Acceptable Limits** Qual Result Nominal 13C-1,2,3,4,6,7,8-HpCDF 179 188 95.3 (28%-143%) pg/g 13C-1,2,3,4,7,8,9-HpCDF 187 188 99.0 (26%-138%) pg/g 37Cl-2,3,7,8-TCDD (35%-197%) 18.6 18.8 98.6 pg/g

Result

Comments:

SDG Number:

Prep Batch:

6324

26411

Value is estimated

Estimated Maximum Possible Concentration \mathbf{K}

Analyte was analyzed for, but not detected above the specified detection limit.

Parmname

TRCC00314

As Received

TISSUE

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 6324007 Lab Sample ID: 1613B Tissue **Client Sample: Client ID:**

CPBG01 26413

07/19/2014 09:27 **Run Date:** Data File: b18jul14a_2-10 **Prep Batch:** 26411

Prep Date: 17-JUL-14

Batch ID:

TRCC001 Client: **Date Collected:** Date Received:

Method:

Analyst:

06/18/2014 00:00 07/10/2014 09:15

EPA Method 1613B **JTF**

SW846 3540C **Prep Method: Prep Aliquot:** 10.26 g

Prep Basis:

Project:

Matrix:

Instrument: HRP763 1

Dilution:

Trep Date.	17-JUL-14	rrep inquot.	10.20 5				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.166		pg/g	0.166	0.975
40321-76-4	1,2,3,7,8-PeCDD	U	.102		pg/g	0.102	4.87
39227-28-6	1,2,3,4,7,8-HxCDD	U	.12		pg/g	0.120	4.87
57653-85-7	1,2,3,6,7,8-HxCDD	U	.114		pg/g	0.114	4.87
19408-74-3	1,2,3,7,8,9-HxCDD	U	.124		pg/g	0.124	4.87
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.228		pg/g	0.228	4.87
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	2.04		pg/g	0.596	9.75
51207-31-9	2,3,7,8-TCDF	J	0.302		pg/g	0.137	0.975
57117-41-6	1,2,3,7,8-PeCDF	U	.0758		pg/g	0.0758	4.87
57117-31-4	2,3,4,7,8-PeCDF	U	.0673		pg/g	0.0673	4.87
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0895		pg/g	0.0895	4.87
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0828		pg/g	0.0828	4.87
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0926		pg/g	0.0926	4.87
72918-21-9	1,2,3,7,8,9-HxCDF	U	.142		pg/g	0.142	4.87
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.122		pg/g	0.122	4.87
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.205		pg/g	0.205	4.87
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.419		pg/g	0.419	9.75
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.166		pg/g	0.166	0.975
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.102		pg/g	0.102	4.87
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.114		pg/g	0.114	4.87
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.228		pg/g	0.228	4.87
30402-14-3	Total Tetrachlorodibenzofuran	J	0.302	0.474	pg/g	0.137	0.975
30402-15-4	Total Pentachlorodibenzofuran	U	.0563		pg/g	0.0563	4.87
55684-94-1	Total Hexachlorodibenzofuran	U	.0828		pg/g	0.0828	4.87
38998-75-3	Total Heptachlorodibenzofuran	U	.122		pg/g	0.122	4.87
3333-30-0	TEQ WHO2005 ND=0		0.0308	0.0308	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.217	0.217	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		181	195	pg/g	92.8	(25%-164%)	
13C-1,2,3,7,8-PeCDD		207	195	pg/g	106	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		166	195	pg/g	85.2	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		171	195	pg/g	87.8	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		190	195	pg/g	97.7	(23%-140%)	
13C-OCDD		346	390	pg/g	88.8	(17%-157%)	
13C-2,3,7,8-TCDF		195	195	pg/g	99.9	(24%-169%)	
13C-1,2,3,7,8-PeCDF		199	195	pg/g	102	(24%-185%)	
13C-2,3,4,7,8-PeCDF		213	195	pg/g	110	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		174	195	pg/g	89.5	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		173	195	pg/g	88.9	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		178	195	pg/g	91.2	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		180	195	pg/g	92.2	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 30, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

> > **JTF**

10.26 g

TRCC001 TRCC00314 Client: **Project:** 06/18/2014 00:00 TISSUE **Date Collected:** Matrix:

Instrument:

Dilution:

Page 2

HRP763

1

of 2

6324007 Lab Sample ID: 1613B Tissue Date Received: 07/10/2014 09:15 **Client Sample:**

Client ID: CPBG01 **Prep Basis:** As Received **Batch ID:** 26413 Method: EPA Method 1613B

Data File: b18jul14a_2-10 SW846 3540C 26411 **Prep Method:** Prep Batch:

Prep Aliquot: Prep Date: CAS No. Qual **EMPC** Units **EDL PQL Parmname** Result

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		186	195	pg/g	95.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		196	195	pg/g	100	(26%-138%)
37Cl-2,3,7,8-TCDD		20.3	19.5	pg/g	104	(35%-197%)

Comments:

SDG Number:

Run Date:

6324

07/19/2014 09:27

17-JUL-14

Value is estimated

Estimated Maximum Possible Concentration

Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 **Client:** 6324008 Lab Sample ID: 1613B Tissue **Client Sample:**

TRCC001 06/18/2014 00:00 **Date Collected:** 07/10/2014 09:15 Date Received:

Project: Matrix:

TRCC00314 TISSUE

Client ID: CPBG02

Batch ID:

26413

Method: EPA Method 1613B Analyst: **JTF**

Prep Basis: As Received

Run Date: 07/19/2014 10:15 Data File: b18jul14a_2-11 Prep Batch: 26411

SW846 3540C **Prep Method:**

HRP763 Instrument: Dilution: 1

Prep Aliquot: Prep Date: 17-JUL-14

11.26 g

PQL CAS No. **Parmname** Qual Result **EMPC** Units **EDL** 1746-01-6 2,3,7,8-TCDD U .17 0.170 0.888 pg/g U 0.0847 40321-76-4 1,2,3,7,8-PeCDD .0847 pg/g 4.44 39227-28-6 1,2,3,4,7,8-HxCDD U .115 0.115 4.44 pg/g U 57653-85-7 1,2,3,6,7,8-HxCDD .114 0.114 4.44 pg/g 19408-74-3 1,2,3,7,8,9-HxCDD U .121 pg/g 0.121 4.44 U 35822-46-9 1,2,3,4,6,7,8-HpCDD .169 0.169 4 44 pg/g 3268-87-9 1,2,3,4,6,7,8,9-OCDD J 1.74 0.506 8.88 pg/g 51207-31-9 2,3,7,8-TCDF J 0.298 0.126 0.888 pg/g U 57117-41-6 1,2,3,7,8-PeCDF .0694 pg/g 0.0694 4.44 57117-31-4 2,3,4,7,8-PeCDF U .062 0.062 4.44 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF U .0686 0.0686 4.44 pg/g U 57117-44-9 1,2,3,6,7,8-HxCDF .0611 pg/g 0.0611 4.44 60851-34-5 2,3,4,6,7,8-HxCDF U 0.0664 4.44 .0664 pg/g 72918-21-9 1,2,3,7,8,9-HxCDF U .102 0.102 4.44 pg/g U 0.0909 67562-39-4 1,2,3,4,6,7,8-HpCDF .0909 pg/g 4.44 55673-89-7 1,2,3,4,7,8,9-HpCDF U .148 0.148 4.44 pg/g 39001-02-0 1,2,3,4,6,7,8,9-OCDF U 0.353 .353 pg/g 8.88 U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin .17 0.170 0.888pg/g U 36088-22-9 Total Pentachlorodibenzo-p-dioxin .0847 0.0847 4.44 pg/g U 34465-46-8 Total Hexachlorodibenzo-p-dioxin .114 0.114 4.44 pg/g U 37871-00-4 Total Heptachlorodibenzo-p-dioxin .169 pg/g 0.169 4.44 30402-14-3 0.501 0.888 Total Tetrachlorodibenzofuran 1 pg/g 0.126 30402-15-4 Total Pentachlorodibenzofuran U .0533 0.0533 4.44 pg/g 55684-94-1 Total Hexachlorodibenzofuran U .0611 0.0611 4.44 pg/g U 0.0909 4.44 38998-75-3 Total Heptachlorodibenzofuran .0909 pg/g 0.0304 3333-30-0 TEQ WHO2005 ND=0 0.0304 pg/g 3333-30-1 TEQ WHO2005 ND=0.5 0.203 0.203 pg/g

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		160	178	pg/g	89.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		183	178	pg/g	103	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		150	178	pg/g	84.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	178	pg/g	85.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		174	178	pg/g	98.2	(23%-140%)
13C-OCDD		324	355	pg/g	91.1	(17%-157%)
13C-2,3,7,8-TCDF		180	178	pg/g	102	(24%-169%)
13C-1,2,3,7,8-PeCDF		180	178	pg/g	101	(24%-185%)
13C-2,3,4,7,8-PeCDF		195	178	pg/g	110	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		157	178	pg/g	88.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		161	178	pg/g	90.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		161	178	pg/g	90.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		159	178	pg/g	89.6	(29%-147%)

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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 $\quad \text{of } 2$

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

11.26 g

TRCC001 TRCC00314 SDG Number: 6324 Client: **Project:** 06/18/2014 00:00 6324008 TISSUE Lab Sample ID: **Date Collected:** Matrix:

07/10/2014 09:15 1613B Tissue Date Received: **Client Sample:**

CPBG02 **Client ID: Prep Basis:** As Received **Batch ID:** 26413 Method: EPA Method 1613B 07/19/2014 10:15 **Instrument: HRP763**

Dilution: Data File: b18jul14a_2-11 SW846 3540C 26411 **Prep Method:** Prep Batch:

Analyst:

Prep Aliquot: EDL PQL CAS No. Qual **EMPC** Units **Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		173	178	pg/g	97.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		179	178	pg/g	101	(26%-138%)
37Cl-2,3,7,8-TCDD		19.1	17.8	pg/g	108	(35%-197%)

Comments:

Run Date:

Prep Date:

17-JUL-14

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

10.33 g

SDG Number: 6324 6324009 Lab Sample ID: 1613B Tissue **Client Sample:**

TRCC001 **Client:** 06/18/2014 00:00 **Date Collected:** 07/10/2014 09:15 Date Received:

Project: Matrix: TRCC00314 TISSUE

Client ID: Batch ID:

CPLMB01

26413 07/19/2014 11:02 **Run Date:** b18jul14a_2-12

Method: EPA Method 1613B **Analyst: JTF**

Prep Basis:

As Received

Data File: **Prep Batch:** 26411

Prep Method: Prep Aliquot: SW846 3540C

Instrument: HRP763 Dilution: 1

Prep Date: 17-JUL-14

F	1, 0021.		Ü				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.244		pg/g	0.169	0.968
40321-76-4	1,2,3,7,8-PeCDD	U	.0951		pg/g	0.0951	4.84
39227-28-6	1,2,3,4,7,8-HxCDD	U	.144		pg/g	0.144	4.84
57653-85-7	1,2,3,6,7,8-HxCDD	U	.137		pg/g	0.137	4.84
19408-74-3	1,2,3,7,8,9-HxCDD	U	.148		pg/g	0.148	4.84
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.321		pg/g	0.271	4.84
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	4.58		pg/g	0.598	9.68
51207-31-9	2,3,7,8-TCDF	J	0.395		pg/g	0.172	0.968
57117-41-6	1,2,3,7,8-PeCDF	U	.0931		pg/g	0.0931	4.84
57117-31-4	2,3,4,7,8-PeCDF	U	.0842		pg/g	0.0842	4.84
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0829		pg/g	0.0829	4.84
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0807		pg/g	0.0807	4.84
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0838		pg/g	0.0838	4.84
72918-21-9	1,2,3,7,8,9-HxCDF	U	.13		pg/g	0.130	4.84
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.108		pg/g	0.103	4.84
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.165		pg/g	0.165	4.84
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.35		pg/g	0.350	9.68
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	0.244		pg/g	0.169	0.968
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.0951		pg/g	0.0951	4.84
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.137		pg/g	0.137	4.84
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.321		pg/g	0.271	4.84
30402-14-3	Total Tetrachlorodibenzofuran	J	0.395		pg/g	0.172	0.968
30402-15-4	Total Pentachlorodibenzofuran	U	.0546		pg/g	0.0546	4.84
55684-94-1	Total Hexachlorodibenzofuran	U	.0807		pg/g	0.0807	4.84
38998-75-3	Total Heptachlorodibenzofuran	J	0.108		pg/g	0.103	4.84
3333-30-0	TEQ WHO2005 ND=0		0.289	0.289	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.392	0.392	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		177	194	pg/g	91.7	(25%-164%)	
13C-1,2,3,7,8-PeCDD		204	194	pg/g	105	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		159	194	pg/g	82.1	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		177	194	pg/g	91.4	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		197	194	pg/g	102	(23%-140%)	
13C-OCDD		357	387	pg/g	92.3	(17%-157%)	
13C-2,3,7,8-TCDF		199	194	pg/g	103	(24%-169%)	
13C-1,2,3,7,8-PeCDF		199	194	pg/g	103	(24%-185%)	
13C-2,3,4,7,8-PeCDF		220	194	pg/g	114	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		170	194	pg/g	87.8	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		177	194	pg/g	91.6	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		180	194	pg/g	93.1	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		177	194	pg/g	91.5	(29%-147%)	

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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 $Page \ 2$

 $\quad \text{of } 2$

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 TRCC00314 6324 Client: **Project:** 06/18/2014 00:00 6324009 TISSUE **Date Collected:** Matrix:

Lab Sample ID: 1613B Tissue 07/10/2014 09:15 Date Received: **Client Sample:**

Client ID: CPLMB01 **Prep Basis:** As Received **Batch ID:** 26413 Method: EPA Method 1613B

07/19/2014 11:02 **Instrument: HRP763 Run Date: Analyst: JTF** Dilution: 1 Data File: b18jul14a_2-12 SW846 3540C 26411 **Prep Method:**

Prep Aliquot: 10.33 g **Prep Date:** 17-JUL-14 **EDL PQL** CAS No. Qual **EMPC** Units **Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		186	194	pg/g	96.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		202	194	pg/g	104	(26%-138%)
37Cl-2,3,7,8-TCDD		20.1	19.4	pg/g	104	(35%-197%)

Comments:

SDG Number:

Prep Batch:

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

TRCC00314

As Received

TISSUE

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001

SDG Number: 6324 6324010 Lab Sample ID: 1613B Tissue **Client Sample: Client ID:**

CPLMB02 26413

07/19/2014 11:50 **Run Date:** Data File: b18jul14a_2-13 **Prep Batch:**

Batch ID:

Method: **Analyst:**

Date Collected:

Date Received:

Client:

EPA Method 1613B

06/18/2014 00:00

07/10/2014 09:15

JTF

SW846 3540C

Prep Basis:

Project:

Matrix:

Instrument: HRP763 Dilution: 1

Prep Method: 26411 **Prep Aliquot:** 10.14 g **Prep Date:** 17-JUL-14

Prep Date:	17-JUL-14	Frep Anquot.	10.14 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.394		pg/g	0.223	0.986
40321-76-4	1,2,3,7,8-PeCDD	U	.122		pg/g	0.122	4.93
39227-28-6	1,2,3,4,7,8-HxCDD	U	.14		pg/g	0.140	4.93
57653-85-7	1,2,3,6,7,8-HxCDD	U	.135		pg/g	0.135	4.93
19408-74-3	1,2,3,7,8,9-HxCDD	U	.146		pg/g	0.146	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.286		pg/g	0.252	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	1.58		pg/g	0.521	9.86
51207-31-9	2,3,7,8-TCDF	J	0.416		pg/g	0.171	0.986
57117-41-6	1,2,3,7,8-PeCDF	U	.104		pg/g	0.104	4.93
57117-31-4	2,3,4,7,8-PeCDF	U	.0917		pg/g	0.0917	4.93
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0998		pg/g	0.0998	4.93
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0941		pg/g	0.0941	4.93
60851-34-5	2,3,4,6,7,8-HxCDF	U	.103		pg/g	0.103	4.93
72918-21-9	1,2,3,7,8,9-HxCDF	U	.159		pg/g	0.159	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.0921		pg/g	0.0921	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.146		pg/g	0.146	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.46		pg/g	0.460	9.86
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	0.394		pg/g	0.223	0.986
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.122		pg/g	0.122	4.93
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.135		pg/g	0.135	4.93
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.286		pg/g	0.252	4.93
30402-14-3	Total Tetrachlorodibenzofuran	J	0.416		pg/g	0.171	0.986
30402-15-4	Total Pentachlorodibenzofuran	U	.0655		pg/g	0.0655	4.93
55684-94-1	Total Hexachlorodibenzofuran	U	.0941		pg/g	0.0941	4.93
38998-75-3	Total Heptachlorodibenzofuran	U	.0921		pg/g	0.0921	4.93
3333-30-0	TEQ WHO2005 ND=0		0.439	0.439	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.561	0.561	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		173	197	pg/g	87.9	(25%-164%)	
13C-1,2,3,7,8-PeCDD		194	197	pg/g	98.5	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		166	197	pg/g	84.0	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		165	197	pg/g	83.6	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		192	197	pg/g	97.5	(23%-140%)	
13C-OCDD		347	394	pg/g	88.0	(17%-157%)	
13C-2,3,7,8-TCDF		193	197	pg/g	97.7	(24%-169%)	
13C-1,2,3,7,8-PeCDF		193	197	pg/g	97.6	(24%-185%)	
13C-2,3,4,7,8-PeCDF		206	197	pg/g	105	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		163	197	pg/g	82.5	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		180	197	pg/g	91.5	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		175	197	pg/g	88.9	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		173	197	pg/g	87.8	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 30, 2014

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

Client: TRCC001 Project: TRCC00314
Date Collected: 06/18/2014 00:00 Matrix: TISSUE

Instrument:

Dilution:

Page 2

HRP763

1

of 2

 Lab Sample ID:
 6324010
 Date Collected:
 06/18/2014 00:00

 Client Sample:
 1613B Tissue
 Date Received:
 07/10/2014 09:15

Client ID: CPLMB02 Prep Basis: As Received Batch ID: 26413 Method: EPA Method 1613B

 Data File:
 b18jul14a_2-13

 Prep Batch:
 26411

 Prep Method:
 SW846 3540C

Prep Date: 17-JUL-14 Prep Aliquot: 10.14 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		181	197	pg/g	91.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		191	197	pg/g	96.6	(26%-138%)
37Cl-2,3,7,8-TCDD		19.6	19.7	pg/g	99.4	(35%-197%)

Comments:

SDG Number:

Run Date:

6324

07/19/2014 11:50

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

TRCC00314

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 6324011 Lab Sample ID: 1613B Tissue **Client Sample: Client ID:**

CPLMB02 Dup

Batch ID: 26413 07/20/2014 04:48 **Run Date:** Data File: b18jul14a_4-6

26411 Prep Batch: Prep Date: 17-IIII -14

TRCC001 Client: 06/18/2014 00:00 **Date Collected:** Date Received:

Method:

Analyst:

Prep Method:

07/10/2014 09:15

EPA Method 1613B **JTF**

SW846 3540C

Prep Basis:

Project:

Matrix:

TISSUE

As Received

Instrument: HRP763 Dilution: 1

Prep Date:	20411 17-JUL-14	Prep Aliquot:	10.47 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.495		pg/g	0.189	0.955
40321-76-4	1,2,3,7,8-PeCDD	U	.0921		pg/g	0.0921	4.78
39227-28-6	1,2,3,4,7,8-HxCDD	U	.141		pg/g	0.141	4.78
57653-85-7	1,2,3,6,7,8-HxCDD	U	.127		pg/g	0.127	4.78
19408-74-3	1,2,3,7,8,9-HxCDD	U	.14		pg/g	0.140	4.78
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.411		pg/g	0.183	4.78
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	2.88		pg/g	0.607	9.55
51207-31-9	2,3,7,8-TCDF	U	.16		pg/g	0.160	0.955
57117-41-6	1,2,3,7,8-PeCDF	U	.0961		pg/g	0.0961	4.78
57117-31-4	2,3,4,7,8-PeCDF	U	.0831		pg/g	0.0831	4.78
70648-26-9	1,2,3,4,7,8-HxCDF	U	.086		pg/g	0.086	4.78
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0818		pg/g	0.0818	4.78
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0904		pg/g	0.0904	4.78
72918-21-9	1,2,3,7,8,9-HxCDF	U	.141		pg/g	0.141	4.78
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.0968		pg/g	0.0968	4.78
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.164		pg/g	0.164	4.78
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.401		pg/g	0.401	9.55
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	0.495		pg/g	0.189	0.955
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.0921		pg/g	0.0921	4.78
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.127		pg/g	0.127	4.78
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.411		pg/g	0.183	4.78
30402-14-3	Total Tetrachlorodibenzofuran	J	0.902		pg/g	0.160	0.955
30402-15-4	Total Pentachlorodibenzofuran	U	.0596		pg/g	0.0596	4.78
55684-94-1	Total Hexachlorodibenzofuran	U	.0818		pg/g	0.0818	4.78
38998-75-3	Total Heptachlorodibenzofuran	U	.0968		pg/g	0.0968	4.78
3333-30-0	TEQ WHO2005 ND=0		0.500	0.500	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.609	0.609	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		104	191	pg/g	54.6	(25%-164%)	
13C-1,2,3,7,8-PeCDD		124	191	pg/g	65.1	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		90.8	191	pg/g	47.5	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		110	191	pg/g	57.4	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		118	191	pg/g	61.8	(23%-140%)	
13C-OCDD		207	382	pg/g	54.1	(17%-157%)	
13C-2,3,7,8-TCDF		118	191	pg/g	61.5	(24%-169%)	
13C-1,2,3,7,8-PeCDF		118	191	pg/g	61.6	(24%-185%)	
13C-2,3,4,7,8-PeCDF		129	191	pg/g	67.6	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		100	191	pg/g	52.6	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		115	191	pg/g	60.4	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		109	191	pg/g	56.9	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		107	191	pg/g	55.8	(29%-147%)	

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

TRCC001 TRCC00314 SDG Number: 6324 Client: **Project:** 06/18/2014 00:00 6324011 TISSUE Lab Sample ID: **Date Collected:** Matrix:

1613B Tissue 07/10/2014 09:15 Date Received: **Client Sample:**

07/20/2014 04:48

CPLMB02 Dup **Client ID: Prep Basis:** As Received **Batch ID:** 26413 Method: EPA Method 1613B **Instrument: HRP763**

Analyst: Dilution: Data File: b18jul14a_4-6 SW846 3540C 26411 **Prep Method:** Prep Batch:

Prep Aliquot: 10.47 g **Prep Date:** 17-JUL-14 **EDL PQL** CAS No. Qual **EMPC** Units **Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		117	191	pg/g	61.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		121	191	pg/g	63.4	(26%-138%)
37Cl-2,3,7,8-TCDD		17.9	19.1	pg/g	93.5	(35%-197%)

Comments:

Run Date:

Value is estimated

Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 6324012 Lab Sample ID: 1613B Tissue **Client Sample:** Client ID:

LFLMB02 26413

07/19/2014 14:21 **Run Date:** Data File: b18jul14a_3-2 26411

Prep Batch:

Batch ID:

Client: TRCC001 **Date Collected:** 06/19/2014 09:30 Date Received:

Method:

Analyst:

07/10/2014 09:15

EPA Method 1613B **JTF**

SW846 3540C **Prep Method:**

Prep Basis:

Project:

Matrix:

TRCC00314 TISSUE

As Received

Instrument: HRP763 Dilution: 1

Prep Date:	17-JUL-14	Prep Aliquot:	10.51 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.289		pg/g	0.289	0.951
40321-76-4	1,2,3,7,8-PeCDD	U	.171		pg/g	0.171	4.76
39227-28-6	1,2,3,4,7,8-HxCDD	U	.285		pg/g	0.285	4.76
57653-85-7	1,2,3,6,7,8-HxCDD	U	.263		pg/g	0.263	4.76
19408-74-3	1,2,3,7,8,9-HxCDD	U	.287		pg/g	0.287	4.76
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.668		pg/g	0.419	4.76
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	3.06		pg/g	1.08	9.51
51207-31-9	2,3,7,8-TCDF	J	0.266		pg/g	0.249	0.951
57117-41-6	1,2,3,7,8-PeCDF	U	.148		pg/g	0.148	4.76
57117-31-4	2,3,4,7,8-PeCDF	U	.135		pg/g	0.135	4.76
70648-26-9	1,2,3,4,7,8-HxCDF	U	.172		pg/g	0.172	4.76
57117-44-9	1,2,3,6,7,8-HxCDF	U	.163		pg/g	0.163	4.76
60851-34-5	2,3,4,6,7,8-HxCDF	U	.192		pg/g	0.192	4.76
72918-21-9	1,2,3,7,8,9-HxCDF	U	.301		pg/g	0.301	4.76
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.215		pg/g	0.215	4.76
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.373		pg/g	0.373	4.76
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.906		pg/g	0.906	9.51
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.289		pg/g	0.289	0.951
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.171		pg/g	0.171	4.76
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.263		pg/g	0.263	4.76
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.668		pg/g	0.419	4.76
30402-14-3	Total Tetrachlorodibenzofuran	J	0.266		pg/g	0.249	0.951
30402-15-4	Total Pentachlorodibenzofuran	U	.123		pg/g	0.123	4.76
55684-94-1	Total Hexachlorodibenzofuran	U	.163		pg/g	0.163	4.76
38998-75-3	Total Heptachlorodibenzofuran	U	.215		pg/g	0.215	4.76
3333-30-0	TEQ WHO2005 ND=0		0.0342	0.0342	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.373	0.373	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		161	190	pg/g	84.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		184	190	pg/g	96.8	(25%-181%)
3C-1,2,3,4,7,8-HxCDD		141	190	pg/g	74.1	(32%-141%)
C-1,2,3,6,7,8-HxCDD		174	190	pg/g	91.5	(28%-130%)
C-1,2,3,4,6,7,8-HpCDD		179	190	pg/g	94.1	(23%-140%)
C-OCDD		288	381	pg/g	75.7	(17%-157%)
-2,3,7,8-TCDF		179	190	pg/g	94.1	(24%-169%)
1,2,3,7,8-PeCDF		181	190	pg/g	95.0	(24%-185%)
2,3,4,7,8-PeCDF		194	190	pg/g	102	(21%-178%)
1,2,3,4,7,8-HxCDF		158	190	pg/g	82.9	(26%-152%)
1,2,3,6,7,8-HxCDF		181	190	pg/g	95.4	(26%-123%)
2,3,4,6,7,8-HxCDF		172	190	pg/g	90.2	(28%-136%)
-1,2,3,7,8,9-HxCDF		158	190	pg/g	82.8	(29%-147%)

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 6324012 Date Collected: 06/19/2014 09:30 Matrix: TISSUE
Client Sample: 1613B Tissue Date Received: 07/10/2014 09:15

Client Sample: 1613B Tissue Date Received: 07/10/2014 09:15

Client ID: LFLMB02 Prep Basis: As Received

Batch ID: 26413 Method: EPA Method 1613B

 Run Date:
 07/19/2014 14:21
 Analyst:
 JTF
 Instrument:
 HRP763

 Data File:
 b18jul14a_3-2
 Dilution:
 1

 Prep Batch:
 26411
 Prep Method:
 SW846 3540C

Prep Date: 17-JUL-14 Prep Aliquot: 10.51 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery Units Recovery% **Acceptable Limits** Qual Result Nominal 13C-1,2,3,4,6,7,8-HpCDF 181 95.0 190 (28%-143%) pg/g 13C-1,2,3,4,7,8,9-HpCDF 169 190 88.7 (26%-138%) pg/g 37Cl-2,3,7,8-TCDD 18.5 97.2 (35%-197%) 19.0 pg/g

Comments:

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 6324013 Lab Sample ID: 1613B Tissue **Client Sample:**

Client ID: LFBG01-F **Batch ID:** 26413

07/19/2014 15:09 **Run Date:** Data File: b18jul14a_3-3 26411

Prep Batch:

TRCC001 Client: 06/17/2014 11:00 **Date Collected:** Date Received:

Method:

Analyst:

07/10/2014 09:15

EPA Method 1613B **JTF**

Prep Method:

SW846 3540C 11.08 g

Instrument: Dilution:

TRCC00314 **Project:** Matrix:

Prep Basis:

TISSUE

As Received

HRP763 1

Prep Date:	17-JUL-14	Prep Aliquot:	11.08 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.204		pg/g	0.204	0.903
40321-76-4	1,2,3,7,8-PeCDD	U	.101		pg/g	0.101	4.51
39227-28-6	1,2,3,4,7,8-HxCDD	U	.154		pg/g	0.154	4.51
57653-85-7	1,2,3,6,7,8-HxCDD	U	.144		pg/g	0.144	4.51
19408-74-3	1,2,3,7,8,9-HxCDD	U	.157		pg/g	0.157	4.51
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.22		pg/g	0.220	4.51
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	1.17		pg/g	0.480	9.03
51207-31-9	2,3,7,8-TCDF	U	.174		pg/g	0.174	0.903
57117-41-6	1,2,3,7,8-PeCDF	U	.103		pg/g	0.103	4.51
57117-31-4	2,3,4,7,8-PeCDF	U	.093		pg/g	0.093	4.51
70648-26-9	1,2,3,4,7,8-HxCDF	U	.106		pg/g	0.106	4.51
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0996		pg/g	0.0996	4.51
60851-34-5	2,3,4,6,7,8-HxCDF	U	.112		pg/g	0.112	4.51
72918-21-9	1,2,3,7,8,9-HxCDF	U	.158		pg/g	0.158	4.51
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.11		pg/g	0.110	4.51
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.18		pg/g	0.180	4.51
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.453		pg/g	0.453	9.03
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.204		pg/g	0.204	0.903
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.101		pg/g	0.101	4.51
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.144		pg/g	0.144	4.51
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.22		pg/g	0.220	4.51
30402-14-3	Total Tetrachlorodibenzofuran	U	.174		pg/g	0.174	0.903
30402-15-4	Total Pentachlorodibenzofuran	U	.0704		pg/g	0.0704	4.51
55684-94-1	Total Hexachlorodibenzofuran	U	.0996		pg/g	0.0996	4.51
38998-75-3	Total Heptachlorodibenzofuran	U	.11		pg/g	0.110	4.51
3333-30-0	TEQ WHO2005 ND=0		0.000352	0.000352	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.226	0.226	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		142	181	pg/g	78.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		161	181	pg/g	89.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		130	181	pg/g	71.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		140	181	pg/g	77.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		156	181	pg/g	86.5	(23%-140%)
13C-OCDD		269	361	pg/g	74.4	(17%-157%)
13C-2,3,7,8-TCDF		161	181	pg/g	88.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		159	181	pg/g	88.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		180	181	pg/g	99.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		138	181	pg/g	76.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		146	181	pg/g	81.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		143	181	pg/g	79.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		142	181	pg/g	78.8	(29%-147%)

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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Dilution:

1

 $\quad \text{of } 2$

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 6324013 Date Collected: 06/17/2014 11:00 Matrix: TISSUE
Client Sample: 1613B Tissue Date Received: 07/10/2014 09:15

Client Sample: 1613B Tissue Date Received: 07/10/2014 09:15
Client ID: LFBG01-F Prep Basis:

Client ID: LFBG01-F Prep Basis: As Received Batch ID: 26413 Method: EPA Method 1613B Run Date: 07/19/2014 15:09 Analyst: JTF Instrument: HRP763

 Data File:
 b18jul14a_3-3

 Prep Batch:
 26411
 Prep Method:
 SW846 3540C

 Prep Date:
 17-JUL-14
 Prep Aliquot:
 11.08 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		155	181	pg/g	85.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		161	181	pg/g	89.4	(26%-138%)
37Cl-2,3,7,8-TCDD		18.8	18.1	pg/g	104	(35%-197%)

Comments:

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6324 6324014 **Date Collected:** Lab Sample ID: 1613B Tissue Date Received: **Client Sample:**

TRCC001 06/17/2014 12:00 07/10/2014 09:15 **Project:** Matrix: TRCC00314 TISSUE

As Received

Client ID: LFBG02-F

Batch ID: 26413 07/19/2014 15:56 **Run Date:** Data File: b18jul14a_3-4

Method: EPA Method 1613B **Analyst: JTF**

Prep Basis: Instrument: HRP763

Prep Batch: 26411 **Prep Date:** 17-JUL-14

SW846 3540C **Prep Method:** Prep Aliquot:

10.13 g

Dilution: 1

rrep Date:	1/-JUL-14	Trep Anquot.	10.13 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.167		pg/g	0.167	0.987
40321-76-4	1,2,3,7,8-PeCDD	U	.112		pg/g	0.112	4.94
39227-28-6	1,2,3,4,7,8-HxCDD	U	.134		pg/g	0.134	4.94
57653-85-7	1,2,3,6,7,8-HxCDD	U	.132		pg/g	0.132	4.94
19408-74-3	1,2,3,7,8,9-HxCDD	U	.141		pg/g	0.141	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.185		pg/g	0.185	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK		0.650	pg/g	0.379	9.87
51207-31-9	2,3,7,8-TCDF	J	0.298		pg/g	0.159	0.987
57117-41-6	1,2,3,7,8-PeCDF	U	.0855		pg/g	0.0855	4.94
57117-31-4	2,3,4,7,8-PeCDF	U	.0744		pg/g	0.0744	4.94
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0853		pg/g	0.0853	4.94
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0815		pg/g	0.0815	4.94
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0888		pg/g	0.0888	4.94
72918-21-9	1,2,3,7,8,9-HxCDF	U	.137		pg/g	0.137	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.0956		pg/g	0.0956	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.164		pg/g	0.164	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.409		pg/g	0.409	9.87
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.167		pg/g	0.167	0.987
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.112		pg/g	0.112	4.94
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.132		pg/g	0.132	4.94
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.185		pg/g	0.185	4.94
30402-14-3	Total Tetrachlorodibenzofuran	J	0.298		pg/g	0.159	0.987
30402-15-4	Total Pentachlorodibenzofuran	U	.0584		pg/g	0.0584	4.94
55684-94-1	Total Hexachlorodibenzofuran	U	.0815		pg/g	0.0815	4.94
38998-75-3	Total Heptachlorodibenzofuran	U	.0956		pg/g	0.0956	4.94
3333-30-0	TEQ WHO2005 ND=0		0.0298	0.030	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.224	0.224	pg/g		

Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
	173	197	pg/g	87.9	(25%-164%)
	197	197	pg/g	99.7	(25%-181%)
	157	197	pg/g	79.4	(32%-141%)
	165	197	pg/g	83.7	(28%-130%)
	187	197	pg/g	94.8	(23%-140%)
	345	395	pg/g	87.3	(17%-157%)
	194	197	pg/g	98.4	(24%-169%)
	199	197	pg/g	101	(24%-185%)
	212	197	pg/g	108	(21%-178%)
	168	197	pg/g	84.9	(26%-152%)
	171	197	pg/g	86.5	(26%-123%)
	171	197	pg/g	86.7	(28%-136%)
	167	197	pg/g	84.5	(29%-147%)
	Qual	173 197 157 165 187 345 194 199 212 168 171	173 197 197 197 197 157 197 165 197 187 197 345 395 194 197 199 197 212 197 168 197 171 197	173 197 pg/g 197 197 pg/g 197 197 pg/g 157 197 pg/g 165 197 pg/g 187 197 pg/g 345 395 pg/g 194 197 pg/g 199 197 pg/g 212 197 pg/g 168 197 pg/g 171 197 pg/g 171 197 pg/g	173 197 pg/g 87.9 197 197 pg/g 99.7 157 197 pg/g 79.4 165 197 pg/g 83.7 187 197 pg/g 83.7 187 197 pg/g 94.8 345 395 pg/g 87.3 194 197 pg/g 98.4 199 197 pg/g 101 212 197 pg/g 108 168 197 pg/g 84.9 171 197 pg/g 86.5 171 197 pg/g 86.7

Cape Fear Analytical LLC Report Date: July 30, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC001 TRCC00314 Client: **Project:** 06/17/2014 12:00 TISSUE **Date Collected:** Matrix:

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6324014 Lab Sample ID: 1613B Tissue Date Received: 07/10/2014 09:15 **Client Sample:**

Client ID: LFBG02-F **Prep Basis:** As Received **Batch ID:** 26413 Method: EPA Method 1613B

Instrument: HRP763 Run Date: 07/19/2014 15:56 **Analyst: JTF** Data File: b18jul14a_3-4 Dilution: 1 SW846 3540C

Prep Method: Prep Aliquot: 10.13 g **Prep Date:** 17-JUL-14 CAS No. **EMPC** Units **EDL PQL Parmname** Qual Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		191	197	pg/g	96.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		188	197	pg/g	95.4	(26%-138%)
37Cl-2,3,7,8-TCDD		19.2	19.7	pg/g	97.3	(35%-197%)

Comments:

SDG Number:

Prep Batch:

6324

26411

Value is estimated

Estimated Maximum Possible Concentration

Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6324 6324015 Lab Sample ID: 1613B Tissue **Client Sample:**

TRCC001 06/17/2014 12:00 **Date Collected:** 07/10/2014 09:15 Date Received:

Project: Matrix: TRCC00314 TISSUE

As Received

Client ID:

LFBG02-F Dup

Batch ID: 26413 07/19/2014 16:44 **Run Date:** Data File: b18jul14a_3-5

Method: **Analyst: JTF**

EPA Method 1613B

Prep Basis:

Prep Batch: 26411

Prep Method:

Instrument: HRP763 Dilution: 1

SW846 3540C **Prep Aliquot:** 10.25 g **Prep Date:** 17-JUL-14

Trep Date.	17-JUL-14	Trep miquot.	10.20 5				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.151		pg/g	0.151	0.976
40321-76-4	1,2,3,7,8-PeCDD	U	.0759		pg/g	0.0759	4.88
39227-28-6	1,2,3,4,7,8-HxCDD	U	.108		pg/g	0.108	4.88
57653-85-7	1,2,3,6,7,8-HxCDD	U	.105		pg/g	0.105	4.88
19408-74-3	1,2,3,7,8,9-HxCDD	U	.112		pg/g	0.112	4.88
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.164		pg/g	0.164	4.88
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0.628		pg/g	0.345	9.76
51207-31-9	2,3,7,8-TCDF	J	0.244		pg/g	0.123	0.976
57117-41-6	1,2,3,7,8-PeCDF	U	.0722		pg/g	0.0722	4.88
57117-31-4	2,3,4,7,8-PeCDF	U	.0628		pg/g	0.0628	4.88
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0716		pg/g	0.0716	4.88
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0665		pg/g	0.0665	4.88
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0736		pg/g	0.0736	4.88
72918-21-9	1,2,3,7,8,9-HxCDF	U	.112		pg/g	0.112	4.88
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.072		pg/g	0.072	4.88
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.125		pg/g	0.125	4.88
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.349		pg/g	0.349	9.76
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.151		pg/g	0.151	0.976
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.0759		pg/g	0.0759	4.88
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.105		pg/g	0.105	4.88
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.164		pg/g	0.164	4.88
30402-14-3	Total Tetrachlorodibenzofuran	J	0.394		pg/g	0.123	0.976
30402-15-4	Total Pentachlorodibenzofuran	U	.0542		pg/g	0.0542	4.88
55684-94-1	Total Hexachlorodibenzofuran	U	.0665		pg/g	0.0665	4.88
38998-75-3	Total Heptachlorodibenzofuran	U	.072		pg/g	0.072	4.88
3333-30-0	TEQ WHO2005 ND=0		0.0246	0.0246	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.183	0.183	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		175	195	pg/g	89.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		205	195	pg/g	105	(25%-181%)
3C-1,2,3,4,7,8-HxCDD		153	195	pg/g	78.5	(32%-141%)
3C-1,2,3,6,7,8-HxCDD		177	195	pg/g	90.6	(28%-130%)
C-1,2,3,4,6,7,8-HpCDD		191	195	pg/g	98.1	(23%-140%)
C-OCDD		337	390	pg/g	86.3	(17%-157%)
C-2,3,7,8-TCDF		198	195	pg/g	102	(24%-169%)
-1,2,3,7,8-PeCDF		202	195	pg/g	104	(24%-185%)
-2,3,4,7,8-PeCDF		219	195	pg/g	112	(21%-178%)
C-1,2,3,4,7,8-HxCDF		165	195	pg/g	84.6	(26%-152%)
-1,2,3,6,7,8-HxCDF		184	195	pg/g	94.4	(26%-123%)
C-2,3,4,6,7,8-HxCDF		180	195	pg/g	92.1	(28%-136%)
C-1,2,3,7,8,9-HxCDF		178	195	pg/g	91.0	(29%-147%)

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 6324015 Date Collected: 06/17/2014 12:00 Matrix: TISSUE

Client Sample: 1613B Tissue Date Received: 07/10/2014 09:15

Client ID: LFBG02-F Dup Prep Basis: As Received Batch ID: 26413 Method: EPA Method 1613B

 Run Date:
 07/19/2014 16:44
 Analyst:
 JTF
 Instrument:
 HRP763

 Data File:
 b18jul14a_3-5
 Dilution:
 1

 Prep Batch:
 26411
 Prep Method:
 SW846 3540C

Prep Date: 17-JUL-14 Prep Aliquot: 10.25 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		188	195	pg/g	96.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		195	195	pg/g	100	(26%-138%)
37Cl-2,3,7,8-TCDD		20.1	19.5	pg/g	103	(35%-197%)

Comments:

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6324 6324016 **Date Collected:** Lab Sample ID: 1613B Tissue Date Received: **Client Sample:**

TRCC001 06/17/2014 08:40 07/10/2014 09:15 **Project:** Matrix: TRCC00314 TISSUE

EPA Method 1613B

As Received **Prep Basis:**

07/19/2014 17:32 **Run Date:** Data File: b18jul14a_3-6

Client ID:

Batch ID:

26411

LFLMB01-F

26413

SW846 3540C **Prep Method:**

JTF

Method:

Analyst:

Instrument: HRP763 Dilution: 1

Prep Batch: Prep Aliquot: 10.45 g **Prep Date:** 17-JUL-14

Trep Date.	17-JUL-14	rrep inquot.	10.10 8				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.186		pg/g	0.186	0.957
40321-76-4	1,2,3,7,8-PeCDD	U	.0921		pg/g	0.0921	4.78
39227-28-6	1,2,3,4,7,8-HxCDD	U	.11		pg/g	0.110	4.78
57653-85-7	1,2,3,6,7,8-HxCDD	U	.107		pg/g	0.107	4.78
19408-74-3	1,2,3,7,8,9-HxCDD	U	.115		pg/g	0.115	4.78
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.274		pg/g	0.230	4.78
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0.957		pg/g	0.318	9.57
51207-31-9	2,3,7,8-TCDF	J	0.310		pg/g	0.152	0.957
57117-41-6	1,2,3,7,8-PeCDF	U	.0838		pg/g	0.0838	4.78
57117-31-4	2,3,4,7,8-PeCDF	U	.0683		pg/g	0.0683	4.78
70648-26-9	1,2,3,4,7,8-HxCDF	U	.0725		pg/g	0.0725	4.78
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0739		pg/g	0.0739	4.78
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0769		pg/g	0.0769	4.78
72918-21-9	1,2,3,7,8,9-HxCDF	U	.12		pg/g	0.120	4.78
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.102		pg/g	0.102	4.78
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.169		pg/g	0.169	4.78
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.354		pg/g	0.354	9.57
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.186		pg/g	0.186	0.957
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.0921		pg/g	0.0921	4.78
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.107		pg/g	0.107	4.78
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.274	0.547	pg/g	0.230	4.78
30402-14-3	Total Tetrachlorodibenzofuran	J	0.501		pg/g	0.152	0.957
30402-15-4	Total Pentachlorodibenzofuran	U	.0567		pg/g	0.0567	4.78
55684-94-1	Total Hexachlorodibenzofuran	U	.0725		pg/g	0.0725	4.78
38998-75-3	Total Heptachlorodibenzofuran	U	.102		pg/g	0.102	4.78
3333-30-0	TEQ WHO2005 ND=0		0.034	0.034	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.220	0.220	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		167	191	pg/g	87.3	(25%-164%)	
13C-1,2,3,7,8-PeCDD		197	191	pg/g	103	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		156	191	pg/g	81.5	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		162	191	pg/g	84.6	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		182	191	pg/g	95.2	(23%-140%)	
13C-OCDD		323	383	pg/g	84.3	(17%-157%)	
13C-2,3,7,8-TCDF		192	191	pg/g	100	(24%-169%)	
13C-1,2,3,7,8-PeCDF		193	191	pg/g	101	(24%-185%)	
13C-2,3,4,7,8-PeCDF		218	191	pg/g	114	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		154	191	pg/g	80.3	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		176	191	pg/g	92.1	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		171	191	pg/g	89.3	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		163	191	pg/g	85.4	(29%-147%)	

Cape Fear Analytical LLC Report Date: July 30, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC001 TRCC00314 Client: **Project:** 06/17/2014 08:40 TISSUE **Date Collected:** Matrix:

Page 2

of 2

6324016 Lab Sample ID: 1613B Tissue Date Received: 07/10/2014 09:15 **Client Sample:**

Client ID: LFLMB01-F **Prep Basis:** As Received

Batch ID: 26413 Method: EPA Method 1613B **Instrument: HRP763 Run Date:** 07/19/2014 17:32 **Analyst: JTF**

Data File: b18jul14a_3-6 Dilution: 1 SW846 3540C 26411 **Prep Method:** Prep Batch:

Prep Aliquot: CAS No. **EMPC** Units **EDL PQL Parmname** Qual Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		180	191	pg/g	94.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		187	191	pg/g	97.8	(26%-138%)
37Cl-2,3,7,8-TCDD		19.7	19.1	pg/g	103	(35%-197%)

10.45 g

Comments:

Prep Date:

SDG Number:

6324

17-JUL-14

Value is estimated

Estimated Maximum Possible Concentration

Analyte was analyzed for, but not detected above the specified detection limit.

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July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 6324017 Lab Sample ID: **Client Sample:**

Client ID:

1613B Tissue

YFBG01-F / YFBG02-F

Batch ID: 26413 07/19/2014 18:20 **Run Date:** Data File: b18jul14a_3-7

26411 Prep Batch: **Prep Date:** 17-JUL-14

TRCC001 Client: 06/17/2014 13:40 **Date Collected:** Date Received:

Method:

Analyst:

07/10/2014 09:15

EPA Method 1613B **JTF**

SW846 3540C **Prep Method: Prep Aliquot:** 10.64 g

TRCC00314 **Project:** TISSUE Matrix:

As Received **Prep Basis:**

Instrument: HRP763 Dilution: 1

Prep Date:	17-JUL-14	Prep Aliquot:	10.64 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.164		pg/g	0.164	0.940
40321-76-4	1,2,3,7,8-PeCDD	U	.091		pg/g	0.091	4.70
39227-28-6	1,2,3,4,7,8-HxCDD	U	.122		pg/g	0.122	4.70
57653-85-7	1,2,3,6,7,8-HxCDD	U	.12		pg/g	0.120	4.70
19408-74-3	1,2,3,7,8,9-HxCDD	U	.128		pg/g	0.128	4.70
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.164		pg/g	0.164	4.70
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0.476		pg/g	0.461	9.40
51207-31-9	2,3,7,8-TCDF	J	0.222		pg/g	0.134	0.940
57117-41-6	1,2,3,7,8-PeCDF	U	.0769		pg/g	0.0769	4.70
57117-31-4	2,3,4,7,8-PeCDF	U	.0675		pg/g	0.0675	4.70
70648-26-9	1,2,3,4,7,8-HxCDF	U	.081		pg/g	0.081	4.70
57117-44-9	1,2,3,6,7,8-HxCDF	U	.0771		pg/g	0.0771	4.70
60851-34-5	2,3,4,6,7,8-HxCDF	U	.0836		pg/g	0.0836	4.70
72918-21-9	1,2,3,7,8,9-HxCDF	U	.138		pg/g	0.138	4.70
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.0808		pg/g	0.0808	4.70
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.135		pg/g	0.135	4.70
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.329		pg/g	0.329	9.40
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.164		pg/g	0.164	0.940
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.091		pg/g	0.091	4.70
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.12		pg/g	0.120	4.70
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.164		pg/g	0.164	4.70
30402-14-3	Total Tetrachlorodibenzofuran	J	0.415		pg/g	0.134	0.940
30402-15-4	Total Pentachlorodibenzofuran	U	.0547		pg/g	0.0547	4.70
55684-94-1	Total Hexachlorodibenzofuran	U	.0771		pg/g	0.0771	4.70
38998-75-3	Total Heptachlorodibenzofuran	U	.0808		pg/g	0.0808	4.70
3333-30-0	TEQ WHO2005 ND=0		0.0223	0.0223	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.200	0.200	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	188	pg/g	89.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		204	188	pg/g	108	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	188	pg/g	86.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		163	188	pg/g	86.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		193	188	pg/g	102	(23%-140%)
13C-OCDD		346	376	pg/g	92.0	(17%-157%)
13C-2,3,7,8-TCDF		193	188	pg/g	103	(24%-169%)
13C-1,2,3,7,8-PeCDF		203	188	pg/g	108	(24%-185%)
13C-2,3,4,7,8-PeCDF		218	188	pg/g	116	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		162	188	pg/g	86.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		185	188	pg/g	98.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		174	188	pg/g	92.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		169	188	pg/g	90.0	(29%-147%)

Cape Fear Analytical LLC Report Date: July 30, 2014

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As Received

HRP763

1

Prep Basis:

Instrument:

Dilution:

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

EPA Method 1613B

SDG Number: 6324 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 6324017 Date Collected: 06/17/2014 13:40 Matrix: TISSUE

Client Sample: 1613B Tissue Date Received: 07/10/2014 09:15

Client ID: YFBG01-F / YFBG02-F

Batch ID: 26413 Run Date: 07/19/2014 18:20

 Data File:
 b18jul14a_3-7

 Prep Batch:
 26411
 Prep Method:
 SW846 3540C

 Prep Batch:
 26411
 Prep Method:
 Swe40 35400

 Prep Date:
 17-JUL-14
 Prep Aliquot:
 10.64 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Method:

Analyst:

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		190	188	pg/g	101	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		195	188	pg/g	104	(26%-138%)
37Cl-2,3,7,8-TCDD		19.0	18.8	pg/g	101	(35%-197%)

Comments:

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

TRCC00314

As Received

TISSUE

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324018 Lab Sample ID: 1613B Tissue **Client Sample: Client ID:**

6324

CPBG01-F

Batch ID: 26413 Run Date: 07/19/2014 19:07 Data File: b18jul14a_3-8

Prep Batch: 26411 **Prep Date:** 17-JUL-14

34465-46-8

37871-00-4

30402-14-3

30402-15-4

55684-94-1

38998-75-3

3333-30-0

3333-30-1

Client: TRCC001 06/17/2014 00:00 **Date Collected:** Date Received:

Method:

Analyst:

Prep Method: Prep Aliquot: 07/10/2014 09:15

EPA Method 1613B **JTF**

SW846 3540C 10.1 g

Instrument:

0.115

0.197

0.151

0.0568

0.0739

0.0931

pg/g

pg/g

pg/g

pg/g

pg/g

pg/g

pg/g

pg/g

0.0242

0.209

4.95

4.95

0.990

4.95

4.95

4.95

Project:

Matrix:

Prep Basis:

HRP763 Dilution: 1

EDL PQL CAS No. **Parmname** Qual Result **EMPC** Units 1746-01-6 2,3,7,8-TCDD U .176 0.176 0.990 pg/g U 40321-76-4 1,2,3,7,8-PeCDD .095 pg/g 0.095 4.95 U 39227-28-6 1,2,3,4,7,8-HxCDD .128 0.128 4.95 pg/g 1,2,3,6,7,8-HxCDD U 57653-85-7 .115 pg/g 0.115 4.95 19408-74-3 1,2,3,7,8,9-HxCDD U .128 pg/g 0.1284.95 U .197 35822-46-9 1,2,3,4,6,7,8-HpCDD 0.197 4.95 pg/g 3268-87-9 1,2,3,4,6,7,8,9-OCDD 0.648 0.370 9.90 pg/g 51207-31-9 2,3,7,8-TCDF J 0.240 0.151 0.990 pg/g U 57117-41-6 1,2,3,7,8-PeCDF .0739 pg/g 0.0739 4.95 57117-31-4 2,3,4,7,8-PeCDF U .0651 0.0651 4.95 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF U .076 0.0764.95 pg/g 57117-44-9 U 1,2,3,6,7,8-HxCDF .0739 pg/g 0.0739 4.95 60851-34-5 2,3,4,6,7,8-HxCDF U .0804 0.0804 4.95 pg/g 72918-21-9 1,2,3,7,8,9-HxCDF U .126 0.126 4.95 pg/g U .0931 67562-39-4 1,2,3,4,6,7,8-HpCDF pg/g 0.09314.95 55673-89-7 1,2,3,4,7,8,9-HpCDF U .16 0.160 4.95 pg/g 39001-02-0 1,2,3,4,6,7,8,9-OCDF U .38 0.380 9.90 pg/g U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin .176 0.176 0.990 pg/g U 36088-22-9 Total Pentachlorodibenzo-p-dioxin .095 0.095 4.95 pg/g

U

U

U

U

U

.115

.197

0.436

.0568

.0739

.0931

0.0242

0.209

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		177	198	pg/g	89.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		217	198	pg/g	110	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	198	pg/g	80.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		170	198	pg/g	85.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		198	198	pg/g	100	(23%-140%)
13C-OCDD		360	396	pg/g	90.8	(17%-157%)
13C-2,3,7,8-TCDF		201	198	pg/g	101	(24%-169%)
13C-1,2,3,7,8-PeCDF		209	198	pg/g	105	(24%-185%)
13C-2,3,4,7,8-PeCDF		229	198	pg/g	116	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		166	198	pg/g	84.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		187	198	pg/g	94.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		178	198	pg/g	90.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		177	198	pg/g	89.5	(29%-147%)

Total Hexachlorodibenzo-p-dioxin

Total Heptachlorodibenzo-p-dioxin

Total Tetrachlorodibenzofuran

Total Pentachlorodibenzofuran

Total Hexachlorodibenzofuran

Total Heptachlorodibenzofuran

TEQ WHO2005 ND=0

TEQ WHO2005 ND=0.5

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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HRP763

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 6324018 Date Collected: 06/17/2014 00:00 Matrix: TISSUE

Client Sample: 1613B Tissue Date Received: 07/10/2014 09:15

Client ID: CPBG01-F Prep Basis: As Received Batch ID: 26413 Method: EPA Method 1613B

 Run Date:
 07/19/2014 19:07
 Analyst:
 JTF
 Instrument:

 Data File:
 b18jul14a_3-8
 Dilution:

 Prep Batch:
 26411
 Prep Method:
 SW846 3540C

Prep Date: 17-JUL-14 Prep Aliquot: 10.1 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		192	198	pg/g	97.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		206	198	pg/g	104	(26%-138%)
37Cl-2,3,7,8-TCDD		21.2	19.8	pg/g	107	(35%-197%)

Comments:

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 Client:
Lab Sample ID: 6324019 Date Collected:
Client Sample: 1613B Tissue Date Received:
Client ID: CPRG02-F

TRCC001 cted: 06/17/2014 00:00 ived: 07/10/2014 09:15

EPA Method 1613B

Project: Matrix: TRCC00314 TISSUE

As Received

Client ID: Batch ID: CPBG02-F 26413

Run Date: 07/19/2014 19:55 Data File: b18jul14a_3-9

Analyst: JTF

Prep Basis:

Instrument: HRP763 Dilution: 1

Prep Batch: 26411 Prep Date: 17-JUL-14

Prep Method: Prep Aliquot:

Method:

Method: SW846 3540C

Prep Aliquot: 10.29 g

PQL CAS No. **Parmname** Qual Result **EMPC** Units **EDL** 1746-01-6 2,3,7,8-TCDD U .186 0.186 0.972 pg/g U 40321-76-4 1,2,3,7,8-PeCDD .103 pg/g 0.103 4.86 39227-28-6 1,2,3,4,7,8-HxCDD U .134 0.134 4.86 pg/g U 57653-85-7 1,2,3,6,7,8-HxCDD .119 0.119 4.86 pg/g 19408-74-3 1,2,3,7,8,9-HxCDD U .133 pg/g 0.133 4.86 U 35822-46-9 1,2,3,4,6,7,8-HpCDD .225 0.225 4.86 pg/g 3268-87-9 1,2,3,4,6,7,8,9-OCDD JK 0.507 0.362 9.72 pg/g 51207-31-9 2,3,7,8-TCDF J 0.288 0.140 0.972 pg/g U 57117-41-6 1,2,3,7,8-PeCDF .0733 pg/g 0.0733 4.86 57117-31-4 2,3,4,7,8-PeCDF U .0641 0.0641 4.86 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF U .0741 0.07414.86 pg/g U 57117-44-9 1,2,3,6,7,8-HxCDF .0702 pg/g 0.0702 4.86 60851-34-5 2,3,4,6,7,8-HxCDF U .0781 0.0781 4.86 pg/g 72918-21-9 1,2,3,7,8,9-HxCDF U .125 0.125 4.86 pg/g U 0.0927 67562-39-4 1,2,3,4,6,7,8-HpCDF .0927 pg/g 4.86 55673-89-7 1,2,3,4,7,8,9-HpCDF U .154 0.154 4.86 pg/g 39001-02-0 1,2,3,4,6,7,8,9-OCDF U 0.418 .418 pg/g 9.72 U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin .186 0.186 0.972 pg/g U 36088-22-9 Total Pentachlorodibenzo-p-dioxin .103 0.103 4.86 pg/g U 34465-46-8 Total Hexachlorodibenzo-p-dioxin .119 0.119 4.86 pg/g U 37871-00-4 Total Heptachlorodibenzo-p-dioxin .225 pg/g 0.225 4.86 30402-14-3 0.503 0.972 Total Tetrachlorodibenzofuran 1 pg/g 0.140 30402-15-4 Total Pentachlorodibenzofuran U .0641 0.0641 4.86 pg/g U 55684-94-1 Total Hexachlorodibenzofuran .0702 0.0702 4.86 pg/g U 0.0927 38998-75-3 Total Heptachlorodibenzofuran .0927 pg/g 4.86 0.0289 3333-30-0 TEQ WHO2005 ND=0 0.0288 pg/g 3333-30-1 TEQ WHO2005 ND=0.5 0.223 0.223 pg/g

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		167	194	pg/g	85.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		197	194	pg/g	102	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		155	194	pg/g	79.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		167	194	pg/g	85.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		185	194	pg/g	95.4	(23%-140%)
13C-OCDD		327	389	pg/g	84.1	(17%-157%)
13C-2,3,7,8-TCDF		191	194	pg/g	98.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		195	194	pg/g	100	(24%-185%)
13C-2,3,4,7,8-PeCDF		211	194	pg/g	109	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		169	194	pg/g	87.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		173	194	pg/g	89.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		171	194	pg/g	87.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		171	194	pg/g	87.9	(29%-147%)

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Dilution:

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 TRCC00314 SDG Number: 6324 Client: **Project:** 06/17/2014 00:00 6324019 TISSUE Lab Sample ID: **Date Collected:** Matrix:

1613B Tissue Date Received: 07/10/2014 09:15 **Client Sample:**

Client ID: CPBG02-F **Prep Basis:** As Received **Batch ID:** 26413 Method: EPA Method 1613B **Instrument: HRP763 Run Date:** 07/19/2014 19:55 Analyst: **JTF**

Data File: b18jul14a_3-9 SW846 3540C 26411 **Prep Method:** Prep Batch:

Prep Aliquot: PQL CAS No. Qual **EMPC** Units **EDL Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		185	194	pg/g	95.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		189	194	pg/g	97.3	(26%-138%)
37Cl-2,3,7,8-TCDD		19.0	19.4	pg/g	98.0	(35%-197%)

10.29 g

Comments:

Prep Date:

Value is estimated

Estimated Maximum Possible Concentration

17-JUL-14

Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

 $10.26 \mathrm{\ g}$

SDG Number: 6324 Client:
Lab Sample ID: 6324020 Date Co
Client Sample: 1613B Tissue Date Ro

Date Collected:

Date Received:

Method:

TRCC001 06/17/2014 00:00 07/10/2014 09:15

EPA Method 1613B

Project: Matrix: TRCC00314 TISSUE

Client ID:

3333-30-1

CPLMB01-F

Batch ID: 26413 Run Date: 07/19/2014 20:43 Data File: b18jul14a_3-10

Analyst: JTF
Prep Method: SW846 3540C

Prep Basis: As Received

Instrument: HRP763 Dilution: 1

Prep Batch: 26411 Prep Date: 17-JUL

26411 Prep Method: 17-JUL-14 Prep Aliquot:

EDL PQL CAS No. **Parmname** Qual Result **EMPC** Units 1746-01-6 2,3,7,8-TCDD U .168 0.168 0.975 pg/g U 0.0947 40321-76-4 1,2,3,7,8-PeCDD .0947 pg/g 4.87 U 39227-28-6 1,2,3,4,7,8-HxCDD .115 0.115 4.87 pg/g 1,2,3,6,7,8-HxCDD U 57653-85-7 .111 0.111 4.87 pg/g 19408-74-3 1,2,3,7,8,9-HxCDD U .119 pg/g 0.119 4.87 U .174 35822-46-9 1,2,3,4,6,7,8-HpCDD 0.174 4 87 pg/g 3268-87-9 1,2,3,4,6,7,8,9-OCDD JK 0.480 0.363 9.75 pg/g 51207-31-9 2,3,7,8-TCDF J 0.248 0.140 0.975 pg/g U 57117-41-6 1,2,3,7,8-PeCDF .0789 pg/g 0.0789 4.87 57117-31-4 2,3,4,7,8-PeCDF U .0686 0.0686 4.87 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF U .0704 0.0704 4.87 pg/g U 57117-44-9 1,2,3,6,7,8-HxCDF .0663 pg/g 0.0663 4.87 60851-34-5 2,3,4,6,7,8-HxCDF U .0723 0.0723 4.87 pg/g 72918-21-9 1,2,3,7,8,9-HxCDF U .11 0.110 4.87 pg/g U 0.0844 67562-39-4 1,2,3,4,6,7,8-HpCDF .0844 pg/g 4.87 55673-89-7 1,2,3,4,7,8,9-HpCDF U .141 0.141 4.87 pg/g 39001-02-0 1,2,3,4,6,7,8,9-OCDF U 0.376 .376 pg/g 9.75 U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin .168 0.168 0.975 pg/g U 36088-22-9 Total Pentachlorodibenzo-p-dioxin .0947 0.0947 4.87 pg/g U 34465-46-8 Total Hexachlorodibenzo-p-dioxin .111 0.111 4.87 pg/g U 37871-00-4 Total Heptachlorodibenzo-p-dioxin .174 pg/g 0.1744.87 30402-14-3 Total Tetrachlorodibenzofuran 0.435 0.975 1 pg/g 0.140 30402-15-4 Total Pentachlorodibenzofuran U .0517 0.0517 4.87 pg/g 55684-94-1 Total Hexachlorodibenzofuran U .0663 0.0663 4.87 pg/g 38998-75-3 U 0.0844 4.87 Total Heptachlorodibenzofuran .0844 pg/g 0.0249 3333-30-0 TEQ WHO2005 ND=0 0.0248 pg/g

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		168	195	pg/g	86.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		203	195	pg/g	104	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		150	195	pg/g	77.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		174	195	pg/g	89.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		195	195	pg/g	100	(23%-140%)
13C-OCDD		328	390	pg/g	84.0	(17%-157%)
13C-2,3,7,8-TCDF		198	195	pg/g	101	(24%-169%)
13C-1,2,3,7,8-PeCDF		198	195	pg/g	102	(24%-185%)
13C-2,3,4,7,8-PeCDF		215	195	pg/g	110	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		165	195	pg/g	84.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		186	195	pg/g	95.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		179	195	pg/g	91.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		172	195	pg/g	88.3	(29%-147%)

0.203

0.203

pg/g

TEQ WHO2005 ND=0.5

Cape Fear Analytical LLC Report Date: July 30, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

TRCC001 TRCC00314 Client: **Project:** 06/17/2014 00:00 TISSUE **Date Collected:** Matrix:

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6324020 Lab Sample ID: 1613B Tissue Date Received: 07/10/2014 09:15 **Client Sample:**

Client ID: CPLMB01-F **Prep Basis:** As Received **Batch ID:** 26413 Method: EPA Method 1613B

07/19/2014 20:43 **Instrument: HRP763 Run Date:** Analyst: **JTF** Data File: b18jul14a_3-10 Dilution: 1

Prep Method: Prep Aliquot: 10.26 g **Prep Date:** 17-JUL-14 **PQL** CAS No. Qual **EMPC** Units **EDL Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		192	195	pg/g	98.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		195	195	pg/g	100	(26%-138%)
37Cl-2,3,7,8-TCDD		19.4	19.5	pg/g	99.5	(35%-197%)

SW846 3540C

Comments:

SDG Number:

Prep Batch:

6324

26411

Value is estimated

Estimated Maximum Possible Concentration

Analyte was analyzed for, but not detected above the specified detection limit.

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July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 6324021 Lab Sample ID: 1613B Tissue **Client Sample: Client ID:** CPLMB02-F

Date Collected: Date Received:

TRCC001 06/17/2014 00:00 07/10/2014 09:15 **Project:** Matrix: TRCC00314 TISSUE

Batch ID: 26440

07/23/2014 09:17 **Run Date:** Data File: b22jul14a_3-4

Method: EPA Method 1613B **Analyst: JTF**

As Received **Prep Basis:**

26438 Prep Batch:

Prep Method:

Client:

SW846 3540C

Instrument: HRP763 Dilution: 1

Prep Aliquot: 10.49 g **Prep Date:** 18-JUL-14

Prep Date:	18-JUL-14	Prep Anquot:	10.49 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.233		pg/g	0.233	0.953
40321-76-4	1,2,3,7,8-PeCDD	U	.153		pg/g	0.153	4.77
39227-28-6	1,2,3,4,7,8-HxCDD	U	.215		pg/g	0.215	4.77
57653-85-7	1,2,3,6,7,8-HxCDD	U	.208		pg/g	0.208	4.77
19408-74-3	1,2,3,7,8,9-HxCDD	U	.225		pg/g	0.225	4.77
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.261		pg/g	0.261	4.77
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0.826		pg/g	0.690	9.53
51207-31-9	2,3,7,8-TCDF	J	0.214		pg/g	0.190	0.953
57117-41-6	1,2,3,7,8-PeCDF	U	.0995		pg/g	0.0995	4.77
57117-31-4	2,3,4,7,8-PeCDF	U	.0902		pg/g	0.0902	4.77
70648-26-9	1,2,3,4,7,8-HxCDF	U	.118		pg/g	0.118	4.77
57117-44-9	1,2,3,6,7,8-HxCDF	U	.115		pg/g	0.115	4.77
60851-34-5	2,3,4,6,7,8-HxCDF	U	.122		pg/g	0.122	4.77
72918-21-9	1,2,3,7,8,9-HxCDF	U	.186		pg/g	0.186	4.77
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.194		pg/g	0.194	4.77
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.322		pg/g	0.322	4.77
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.601		pg/g	0.601	9.53
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.233		pg/g	0.233	0.953
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.153		pg/g	0.153	4.77
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.208		pg/g	0.208	4.77
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.261		pg/g	0.261	4.77
30402-14-3	Total Tetrachlorodibenzofuran	J	0.214		pg/g	0.190	0.953
30402-15-4	Total Pentachlorodibenzofuran	U	.0902		pg/g	0.0902	4.77
55684-94-1	Total Hexachlorodibenzofuran	U	.115		pg/g	0.115	4.77
38998-75-3	Total Heptachlorodibenzofuran	U	.194		pg/g	0.194	4.77
3333-30-0	TEQ WHO2005 ND=0		0.0216	0.0216	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.293	0.293	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	
13C-2,3,7,8-TCDD		169	191	pg/g	88.9	(25%-164%)	
13C-1,2,3,7,8-PeCDD		166	191	pg/g	87.1	(25%-181%)	
13C-1,2,3,4,7,8-HxCDD		158	191	pg/g	83.1	(32%-141%)	
13C-1,2,3,6,7,8-HxCDD		170	191	pg/g	89.3	(28%-130%)	
13C-1,2,3,4,6,7,8-HpCDD		184	191	pg/g	96.5	(23%-140%)	
13C-OCDD		307	381	pg/g	80.6	(17%-157%)	
13C-2,3,7,8-TCDF		179	191	pg/g	93.9	(24%-169%)	
13C-1,2,3,7,8-PeCDF		161	191	pg/g	84.4	(24%-185%)	
13C-2,3,4,7,8-PeCDF		171	191	pg/g	89.8	(21%-178%)	
13C-1,2,3,4,7,8-HxCDF		164	191	pg/g	86.2	(26%-152%)	
13C-1,2,3,6,7,8-HxCDF		174	191	pg/g	91.5	(26%-123%)	
13C-2,3,4,6,7,8-HxCDF		169	191	pg/g	88.6	(28%-136%)	
13C-1,2,3,7,8,9-HxCDF		167	191	pg/g	87.6	(29%-147%)	

Cape Fear Analytical LLC	Report Date:	July 30, 2014
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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary $Page \ 2$

Dilution:

1

 $\quad \text{of } 2$

SDG Number: 6324 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 6324021 Date Collected: 06/17/2014 00:00 Matrix: TISSUE

Client Sample: 1613B Tissue Date Received: 07/10/2014 09:15

Client ID: CPLMB02-F Prep Basis: As Received Batch ID: 26440 Method: EPA Method 1613B Run Date: 07/23/2014 09:17 Analyst: JTF Instrument: HRP763

 Data File:
 b22jul14a_3-4

 Prep Batch:
 26438

 Prep Date:
 18-JUL-14

 Prep Aliquot:
 10.49 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		170	191	pg/g	89.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		175	191	pg/g	91.6	(26%-138%)
37Cl-2,3,7,8-TCDD		19.1	19.1	pg/g	100	(35%-197%)

Comments:

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

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of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

10.4 g

SDG Number: 6324 Client: 6324022 Lab Sample ID: 1613B Tissue **Client Sample:**

Date Collected: Date Received:

TRCC001 06/17/2014 00:00 07/10/2014 09:15 Project: Matrix:

TRCC00314 TISSUE

Client ID:

CPLMB02-F Dup

Batch ID: 26440 Run Date: 07/23/2014 10:04 Method: EPA Method 1613B Analyst: **JTF**

Prep Aliquot:

Prep Basis:

As Received

Data File: Prep Batch:

b22jul14a_3-5 26438

SW846 3540C Prep Method:

HRP763 Instrument: Dilution: 1

Prep Date: 18-JUL-14

PQL CAS No. **Parmname** Qual Result **EMPC** Units **EDL** 1746-01-6 2,3,7,8-TCDD U .235 0.235 0.962 pg/g U 40321-76-4 1,2,3,7,8-PeCDD .124 pg/g 0.124 4.81 39227-28-6 1,2,3,4,7,8-HxCDD U .179 0.179 4.81 pg/g U 57653-85-7 1,2,3,6,7,8-HxCDD .174 0.174 4.81 pg/g 19408-74-3 1,2,3,7,8,9-HxCDD U .187 pg/g 0.187 4.81 U 35822-46-9 1,2,3,4,6,7,8-HpCDD .283 0.283 4.81 pg/g U 3268-87-9 1,2,3,4,6,7,8,9-OCDD .644 0.644 9.62 pg/g 51207-31-9 2,3,7,8-TCDF J 0.235 0.173 0.962 pg/g U 57117-41-6 1,2,3,7,8-PeCDF .0846 pg/g 0.0846 4.81 57117-31-4 2,3,4,7,8-PeCDF U .075 0.075 4.81 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF U .116 0.116 4.81 pg/g U 57117-44-9 1,2,3,6,7,8-HxCDF .11 pg/g 0.110 4.81 60851-34-5 2,3,4,6,7,8-HxCDF U .119 0.119 4.81 pg/g 72918-21-9 1,2,3,7,8,9-HxCDF U .184 0.184 4.81 pg/g U 67562-39-4 1,2,3,4,6,7,8-HpCDF .16 pg/g 0.160 4.81 55673-89-7 1,2,3,4,7,8,9-HpCDF U .265 0.265 4.81 pg/g 39001-02-0 1,2,3,4,6,7,8,9-OCDF U .625 pg/g 0.625 9.62 U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin .235 0.235 0.962 pg/g U 36088-22-9 Total Pentachlorodibenzo-p-dioxin .124 0.124 4.81 pg/g U 0.174 34465-46-8 Total Hexachlorodibenzo-p-dioxin .174 4.81 pg/g U 37871-00-4 Total Heptachlorodibenzo-p-dioxin .283 pg/g 0.283 4.81 0.421 30402-14-3 0.235 0.962 Total Tetrachlorodibenzofuran 1 pg/g 0.173 30402-15-4 Total Pentachlorodibenzofuran U .0656 0.0656 4.81 pg/g 55684-94-1 Total Hexachlorodibenzofuran U .11 0.110 4.81 pg/g U 0.160 38998-75-3 Total Heptachlorodibenzofuran .16 pg/g 4.81 3333-30-0 TEQ WHO2005 ND=0 0.0235 0.0235 pg/g 3333-30-1 TEQ WHO2005 ND=0.5 0.272 0.272 pg/g

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	192	pg/g	88.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		170	192	pg/g	88.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	192	pg/g	83.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		166	192	pg/g	86.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		177	192	pg/g	91.8	(23%-140%)
13C-OCDD		284	385	pg/g	73.9	(17%-157%)
13C-2,3,7,8-TCDF		178	192	pg/g	92.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		161	192	pg/g	84.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		172	192	pg/g	89.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		165	192	pg/g	85.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		172	192	pg/g	89.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		168	192	pg/g	87.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		160	192	pg/g	83.4	(29%-147%)

Cape Fear Analytical LLC Report Date: July 30, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC00314 TRCC001 SDG Number: 6324 Client: **Project:** 06/17/2014 00:00 6324022 TISSUE Lab Sample ID: **Date Collected:** Matrix:

1613B Tissue **Date Received:** 07/10/2014 09:15 **Client Sample:**

CPLMB02-F Dup **Prep Basis: Client ID:** As Received **Batch ID:** 26440 Method: EPA Method 1613B

Instrument: HRP763 Run Date: 07/23/2014 10:04 Analyst: **JTF** Data File: b22jul14a_3-5 Dilution: 1

Prep Method: Prep Aliquot: 10.4 g **Prep Date:** 18-JUL-14 CAS No. **EMPC EDL PQL** Qual

Surrogate/Tracer recovery Units Recovery% **Acceptable Limits** Qual Result Nominal 13C-1,2,3,4,6,7,8-HpCDF 170 192 88.6 (28%-143%) pg/g 13C-1,2,3,4,7,8,9-HpCDF 169 192 87.7 (26%-138%) pg/g 37Cl-2,3,7,8-TCDD 18.7 19.2 97.3 (35%-197%) pg/g

Result

SW846 3540C

Units

Comments:

Prep Batch:

Value is estimated

Estimated Maximum Possible Concentration \mathbf{K}

26438

Analyte was analyzed for, but not detected above the specified detection limit.

Parmname

Page 1

July 30, 2014

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: SDG Number: 6324 6324023 **Date Collected:** Lab Sample ID: 1613B Tissue Date Received: **Client Sample:** LFLMB02-F

TRCC001 06/17/2014 09:30 07/10/2014 09:15 **Project:** Matrix: TRCC00314 TISSUE

Client ID: Batch ID:

Run Date:

26440 07/23/2014 10:52

Method: EPA Method 1613B **Analyst: JTF**

Prep Basis: As Received

Data File: b22jul14a_3-6 **Prep Batch:** 26438

Prep Method:

Dilution:

Instrument: HRP763 1

SW846 3540C Prep Aliquot: 10.05 g **Prep Date:** 18-JUL-14

F	10 002 11		Ü				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.275		pg/g	0.275	0.995
40321-76-4	1,2,3,7,8-PeCDD	U	.166		pg/g	0.166	4.98
39227-28-6	1,2,3,4,7,8-HxCDD	U	.227		pg/g	0.227	4.98
57653-85-7	1,2,3,6,7,8-HxCDD	U	.219		pg/g	0.219	4.98
19408-74-3	1,2,3,7,8,9-HxCDD	U	.235		pg/g	0.235	4.98
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.376		pg/g	0.376	4.98
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK		0.852	pg/g	0.754	9.95
51207-31-9	2,3,7,8-TCDF	U	.241		pg/g	0.241	0.995
57117-41-6	1,2,3,7,8-PeCDF	U	.144		pg/g	0.144	4.98
57117-31-4	2,3,4,7,8-PeCDF	U	.123		pg/g	0.123	4.98
70648-26-9	1,2,3,4,7,8-HxCDF	U	.172		pg/g	0.172	4.98
57117-44-9	1,2,3,6,7,8-HxCDF	U	.154		pg/g	0.154	4.98
60851-34-5	2,3,4,6,7,8-HxCDF	U	.174		pg/g	0.174	4.98
72918-21-9	1,2,3,7,8,9-HxCDF	U	.263		pg/g	0.263	4.98
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.261		pg/g	0.261	4.98
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.472		pg/g	0.472	4.98
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.961		pg/g	0.961	9.95
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.275		pg/g	0.275	0.995
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.166		pg/g	0.166	4.98
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.219		pg/g	0.219	4.98
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.376		pg/g	0.376	4.98
30402-14-3	Total Tetrachlorodibenzofuran	U	.241		pg/g	0.241	0.995
30402-15-4	Total Pentachlorodibenzofuran	U	.123		pg/g	0.123	4.98
55684-94-1	Total Hexachlorodibenzofuran	U	.154		pg/g	0.154	4.98
38998-75-3	Total Heptachlorodibenzofuran	U	.261		pg/g	0.261	4.98
3333-30-0	TEQ WHO2005 ND=0		0.00	0.000256	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.331	0.331	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	199	pg/g	85.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		167	199	pg/g	83.8	(25%-181%)
3C-1,2,3,4,7,8-HxCDD		153	199	pg/g	76.7	(32%-141%)
C-1,2,3,6,7,8-HxCDD		170	199	pg/g	85.2	(28%-130%)
C-1,2,3,4,6,7,8-HpCDD		178	199	pg/g	89.2	(23%-140%)
C-OCDD		284	398	pg/g	71.2	(17%-157%)
-2,3,7,8-TCDF		183	199	pg/g	91.8	(24%-169%)
1,2,3,7,8-PeCDF		160	199	pg/g	80.4	(24%-185%)
2,3,4,7,8-PeCDF		175	199	pg/g	88.2	(21%-178%)
-1,2,3,4,7,8-HxCDF		160	199	pg/g	80.2	(26%-152%)
1,2,3,6,7,8-HxCDF		177	199	pg/g	89.2	(26%-123%)
2,3,4,6,7,8-HxCDF		171	199	pg/g	86.1	(28%-136%)
1,2,3,7,8,9-HxCDF		159	199	pg/g	79.9	(29%-147%)

Cape Fear Analytical LLC Report Date: July 30, 2014

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

Client: TRCC001 Project: TRCC00314
Date Collected: 06/17/2014 09:30 Matrix: TISSUE

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 Lab Sample ID:
 6324023
 Date Collected:
 06/17/2014 09:30

 Client Sample:
 1613B Tissue
 Date Received:
 07/10/2014 09:15

Client ID: LFLMB02-F Prep Basis: As Received Batch ID: 26440 Method: EPA Method 1613B

 Run Date:
 07/23/2014 10:52
 Analyst:
 JTF
 Instrument:
 HRP763

 Data File:
 b22jul14a_3-6
 Dilution:
 1

 Prep Batch:
 26438
 Prep Method:
 SW846 3540C

Prep Date: 18-JUL-14 Prep Aliquot: 10.05 g

CAS No. Parmname Qual Result EMPC Units EDL PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		170	199	pg/g	85.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		164	199	pg/g	82.5	(26%-138%)
37Cl-2,3,7,8-TCDD		19.8	19.9	pg/g	99.4	(35%-197%)

Comments:

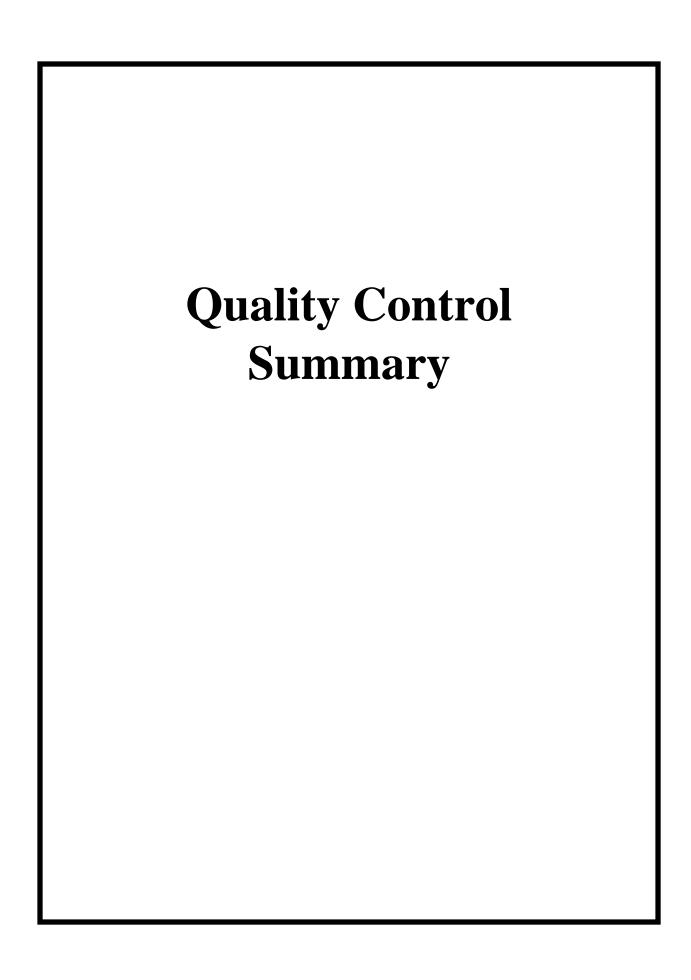
SDG Number:

6324

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.



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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
2010920	LCS for batch 26411	13C-2,3,7,8-TCDD		86.5	(20%-175%)
		13C-1,2,3,7,8-PeCDD		109	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		92.0	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		97.5	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		106	(22%-166%)
	13C-OCDD		93.6	(13%-199%)	
		13C-2,3,7,8-TCDF		104	(22%-152%)
		13C-1,2,3,7,8-PeCDF		105	(21%-192%)
		13C-2,3,4,7,8-PeCDF		112	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		97.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		101	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		99.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		101	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		103	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		106	(20%-186%)
		37Cl-2,3,7,8-TCDD		93.5	(31%-191%)
2010919 MB for batch 26411	MB for batch 26411	13C-2,3,7,8-TCDD		97.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		111	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		92.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		95.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		108	(23%-140%)
	13C-OCDD		98.1	(17%-157%)	
	13C-2,3,7,8-TCDF		106	(24%-169%)	
	13C-1,2,3,7,8-PeCDF		109	(24%-185%)	
		13C-2,3,4,7,8-PeCDF		118	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		92.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		96.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		98.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		97.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		102	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		108	(26%-138%)
		37Cl-2,3,7,8-TCDD		106	(35%-197%)
24001	LFBG01	13C-2,3,7,8-TCDD		95.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		109	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		93.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		103	(23%-140%)
		13C-OCDD		94.8	(17%-157%)
		13C-2,3,7,8-TCDF		103	(24%-169%)
		13C-1,2,3,7,8-PeCDF		104	(24%-185%)
		13C-2,3,4,7,8-PeCDF		113	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		91.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		94.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		95.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		94.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		98.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		106	(26%-138%)
		37Cl-2,3,7,8-TCDD		106	(35%-197%)
24002	LFBG02	13C-2,3,7,8-TCDD		97.5	(25%-164%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
324002	LFBG02	13C-1,2,3,7,8-PeCDD		111	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		94.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		91.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		108	(23%-140%)
		13C-OCDD		101	(17%-157%)
		13C-2,3,7,8-TCDF		102	(24%-169%)
	13C-1,2,3,7,8-PeCDF		108	(24%-185%)	
		13C-2,3,4,7,8-PeCDF		115	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		93.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		98.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		99.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		95.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		103	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		110	(26%-138%)
	37Cl-2,3,7,8-TCDD		109	(35%-197%)	
5324003	LFBG02 Dup	13C-2.3,7,8-TCDD		91.3	(25%-164%)
	1	13C-1,2,3,7,8-PeCDD		105	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		89.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		91.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		106	(23%-140%)
		13C-OCDD		98.4	(17%-157%)
		13C-2,3,7,8-TCDF		99.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		103	(24%-185%)
		13C-2,3,4,7,8-PeCDF		113	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		94.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		95.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		97.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		92.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		102	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		107	(26%-138%)
		37Cl-2,3,7,8-TCDD		105	(35%-197%)
324004	LFLMB01	13C-2,3,7,8-TCDD		87.6	(25%-164%)
24004	LI LIMBOT	13C-1,2,3,7,8-PeCDD		103	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		86.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		88.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		106	(23%-140%)
		13C-OCDD		97.7	(17%-157%)
		13C-2.3,7,8-TCDF		99.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		103	(24%-185%)
		13C-2,3,4,7,8-PeCDF		110	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		89.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		89.4	(26%-123%)
				91.9	(28%-136%)
		13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,7,8,9-HxCDF		91.9	(29%-147%)
				90.3 97.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF			
		13C-1,2,3,4,7,8,9-HpCDF 37Cl-2,3,7,8-TCDD		105 103	(26%-138%) (35%-197%)
24005	YFBG01	13C-2,3,7,8-TCDD		89.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		107	(25%-181%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5324005	YFBG01	13C-1,2,3,4,7,8-HxCDD		86.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		88.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		103	(23%-140%)
		13C-OCDD		90.6	(17%-157%)
		13C-2,3,7,8-TCDF		102	(24%-169%)
	13C-1,2,3,7,8-PeCDF		105	(24%-185%)	
		13C-2,3,4,7,8-PeCDF		111	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		87.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		95.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		92.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		91.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		94.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		103	(26%-138%)
	37Cl-2,3,7,8-TCDD		102	(35%-197%)	
324006	YFBG02	13C-2,3,7,8-TCDD		85.4	(25%-164%)
2 1000	11.002	13C-1,2,3,7,8-PeCDD		96.9	(25%-181%)
		13C-1,2,3,4,7,8-FeCDD		83.2	(32%-141%)
		13C-1,2,3,4,7,6-HXCDD		83.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		96.9	(23%-140%)
	13C-OCDD		86.3	(17%-157%)	
	13C-2,3,7,8-TCDF		94.3	(24%-169%)	
	13C-1,2,3,7,8-PeCDF		97.6	(24%-185%)	
	13C-1,2,3,7,8-FeCDF 13C-2,3,4,7,8-PeCDF		104	(24%-183%)	
			82.7		
	13C-1,2,3,4,7,8-HxCDF			(26%-152%)	
		13C-1,2,3,6,7,8-HxCDF		90.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		88.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		95.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		99.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		98.6	(35%-197%)
324007	CPBG01	13C-2,3,7,8-TCDD		92.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		106	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		87.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		97.7	(23%-140%)
		13C-OCDD		88.8	(17%-157%)
		13C-2,3,7,8-TCDF		99.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		102	(24%-185%)
		13C-2,3,4,7,8-PeCDF		110	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		89.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		88.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		91.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		92.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		95.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		100	(26%-138%)
		37C1-2,3,7,8-TCDD		104	(35%-197%)
324008	CPBG02	13C-2,3,7,8-TCDD		89.9	(25%-164%)
6324008					
		13C-1,2,3,7,8-PeCDD		103	(25%-181%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5324008	CPBG02	13C-1,2,3,6,7,8-HxCDD		85.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		98.2	(23%-140%)
		13C-OCDD		91.1	(17%-157%)
		13C-2,3,7,8-TCDF		102	(24%-169%)
		13C-1,2,3,7,8-PeCDF		101	(24%-185%)
	13C-2,3,4,7,8-PeCDF		110	(21%-178%)	
		13C-1,2,3,4,7,8-HxCDF		88.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		90.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		90.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		89.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		97.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		101	(26%-138%)
		37Cl-2,3,7,8-TCDD		108	(35%-197%)
5324009 CPLN	CPLMB01	13C-2,3,7,8-TCDD		91.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		105	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		91.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		102	(23%-140%)
		13C-OCDD		92.3	(17%-157%)
	13C-2,3,7,8-TCDF		103	(24%-169%)	
	13C-1,2,3,7,8-PeCDF		103	(24%-185%)	
	13C-2,3,4,7,8-PeCDF		114	(21%-178%)	
	13C-1,2,3,4,7,8-HxCDF		87.8	(26%-152%)	
	13C-1,2,3,6,7,8-HxCDF		91.6	(26%-123%)	
		13C-2,3,4,6,7,8-HxCDF		93.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		91.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		96.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		104	(26%-138%)
		37Cl-2,3,7,8-TCDD		104	(35%-197%)
324010	CPLMB02	13C-2,3,7,8-TCDD		87.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		98.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		97.5	(23%-140%)
		13C-OCDD		88.0	(17%-157%)
		13C-2,3,7,8-TCDF		97.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		97.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		105	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		91.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		88.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		91.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		96.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		99.4	(35%-197%)
324012	LFLMB02	13C-2,3,7,8-TCDD		84.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		96.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		91.5	(28%-130%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
6324012	LFLMB02	13C-1,2,3,4,6,7,8-HpCDD		94.1	(23%-140%)
		13C-OCDD		75.7	(17%-157%)
		13C-2,3,7,8-TCDF		94.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		95.0	(24%-185%)
	13C-2,3,4,7,8-PeCDF		102	(21%-178%)	
		13C-1,2,3,4,7,8-HxCDF		82.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		95.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		90.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		95.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		88.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.2	(35%-197%)
324013	LFBG01-F	13C-2,3,7,8-TCDD		78.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		89.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		71.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.5	(23%-140%)
		13C-OCDD		74.4	(17%-157%)
		13C-2,3,7,8-TCDF		88.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		88.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		99.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		81.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		85.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		89.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		104	(35%-197%)
324014	LFBG02-F	13C-2,3,7,8-TCDD		87.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		99.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		94.8	(23%-140%)
		13C-OCDD		87.3	(17%-157%)
		13C-2,3,7,8-TCDF		98.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		101	(24%-185%)
		13C-2,3,4,7,8-PeCDF		108	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		86.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		86.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		96.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		95.4	(26%-138%)
		37CI-2,3,7,8-TCDD		97.3	(35%-197%)
324015	LFBG02-F Dup	13C-2,3,7,8-TCDD		89.9	(25%-164%)
	-	13C-1,2,3,7,8-PeCDD		105	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		90.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		98.1	(23%-140%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5324015	LFBG02-F Dup	13C-OCDD		86.3	(17%-157%)
		13C-2,3,7,8-TCDF		102	(24%-169%)
		13C-1,2,3,7,8-PeCDF		104	(24%-185%)
		13C-2,3,4,7,8-PeCDF		112	(21%-178%)
	13C-1,2,3,4,7,8-HxCDF		84.6	(26%-152%)	
		13C-1,2,3,6,7,8-HxCDF		94.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		92.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		91.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		96.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		100	(26%-138%)
		37Cl-2,3,7,8-TCDD		103	(35%-197%)
324016	LFLMB01-F	13C-2,3,7,8-TCDD		87.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		103	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.2	(23%-140%)
		13C-OCDD		84.3	(17%-157%)
		13C-2,3,7,8-TCDF		100	(24%-169%)
		13C-1,2,3,7,8-PeCDF		101	(24%-185%)
		13C-2,3,4,7,8-PeCDF		114	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		92.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		89.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		85.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		94.2	(28%-143%)
		13C-1,2,3,4,0,7,8-HpCDF		94.2 97.8	(26%-138%)
		37Cl-2,3,7,8-TCDD		103	(35%-197%)
324017	YFBG01-F / YFBG02-F	13C-2,3,7,8-TCDD		89.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		108	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		86.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		102	(23%-140%)
		13C-OCDD		92.0	(17%-157%)
		13C-2,3,7,8-TCDF		103	(24%-169%)
		13C-1,2,3,7,8-PeCDF		108	(24%-185%)
		13C-2,3,4,7,8-PeCDF		116	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		86.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		98.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		92.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		90.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		101	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		104	(26%-138%)
		37Cl-2,3,7,8-TCDD		101	(35%-197%)
324018	CPBG01-F	13C-2,3,7,8-TCDD		89.4	(25%-164%)
010		13C-1,2,3,7,8-PeCDD		110	(25%-181%)
		13C-1,2,3,4,7,8-FeCDD		80.8	(32%-141%)
		13C-1,2,3,4,7,6-HXCDD		85.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		100	(23%-140%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
324018	CPBG01-F	13C-2,3,7,8-TCDF		101	(24%-169%)
		13C-1,2,3,7,8-PeCDF		105	(24%-185%)
		13C-2,3,4,7,8-PeCDF		116	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.0	(26%-152%)
	13C-1,2,3,6,7,8-HxCDF		94.3	(26%-123%)	
		13C-2,3,4,6,7,8-HxCDF		90.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		89.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		97.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		104	(26%-138%)
		37Cl-2,3,7,8-TCDD		107	(35%-197%)
24019	CPBG02-F	13C-2,3,7,8-TCDD		85.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		102	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.4	(23%-140%)
		13C-OCDD		84.1	(17%-157%)
		13C-2,3,7,8-TCDF		98.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		100	(24%-185%)
		13C-2,3,4,7,8-PeCDF		109	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		87.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		89.3	(26%-123%)
	13C-2,3,4,6,7,8-HxCDF		87.9	(28%-136%)	
	13C-1,2,3,7,8,9-HxCDF		87.9	(29%-147%)	
	13C-1,2,3,4,6,7,8-HpCDF		95.4	(28%-143%)	
	13C-1,2,3,4,7,8,9-HpCDF		97.3	(26%-138%)	
		37Cl-2,3,7,8-TCDD		98.0	(35%-197%)
324020	CPLMB01-F	13C-2,3,7,8-TCDD		86.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		104	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		89.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		100	(23%-140%)
		13C-OCDD		84.0	(17%-157%)
		13C-2,3,7,8-TCDF		101	(24%-169%)
		13C-1,2,3,7,8-PeCDF		102	(24%-185%)
		13C-2,3,4,7,8-PeCDF		110	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		95.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		91.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		88.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		98.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		100	(26%-138%)
		37Cl-2,3,7,8-TCDD		99.5	(35%-197%)
24011	CPLMB02 Dup	13C-2,3,7,8-TCDD		54.6	(25%-164%)
	- E	13C-1,2,3,7,8-PeCDD		65.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		47.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		57.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		61.8	(23%-140%)
		13C-OCDD		54.1	(17%-157%)
		13C-2,3,7,8-TCDF		61.5	(24%-169%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5324011	CPLMB02 Dup	13C-1,2,3,7,8-PeCDF		61.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		67.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		52.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		60.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		56.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		55.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		61.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		63.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.5	(35%-197%)
2010921	LCSD for batch 26411	13C-2,3,7,8-TCDD		93.2	(20%-175%)
2010921	LCSD for batch 20411				
		13C-1,2,3,7,8-PeCDD		103	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		99.9	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		91.4	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		110	(22%-166%)
		13C-OCDD		93.9	(13%-199%)
		13C-2,3,7,8-TCDF		98.8	(22%-152%)
		13C-1,2,3,7,8-PeCDF		97.8	(21%-192%)
		13C-2,3,4,7,8-PeCDF		106	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		93.9	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		95.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		97.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		96.1	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		104	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		109	(20%-186%)
		37Cl-2,3,7,8-TCDD		103	(31%-191%)
2010948	LCS for batch 26438	13C-2,3,7,8-TCDD		91.0	(20%-175%)
		13C-1,2,3,7,8-PeCDD		93.1	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		86.9	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		87.4	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		97.4	(22%-166%)
		13C-OCDD		81.9	(13%-199%)
		13C-2,3,7,8-TCDF		97.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		87.9	(21%-192%)
		13C-2,3,4,7,8-PeCDF		96.3	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		89.1	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		87.3	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		89.9	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		86.6	(17%-205%)
				91.0	` ,
		13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,7,8,9-HpCDF		92.9	(21%-158%) (20%-186%)
				103	, ,
		37Cl-2,3,7,8-TCDD		103	(31%-191%)
2010949	LCSD for batch 26438	13C-2,3,7,8-TCDD		96.2	(20%-175%)
		13C-1,2,3,7,8-PeCDD		96.0	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		91.6	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		88.7	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		101	(22%-166%)
		13C-OCDD		84.4	(13%-199%)
		13C-2,3,7,8-TCDF		103	(22%-152%)
		13C-1,2,3,7,8-PeCDF		94.2	(21%-192%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010949	LCSD for batch 26438	13C-2,3,4,7,8-PeCDF		100	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		88.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		93.3	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		94.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		90.2	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		92.7	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		99.4	(20%-186%)
		37Cl-2,3,7,8-TCDD		109	(31%-191%)
2010947	MB for batch 26438	13C-2,3,7,8-TCDD		92.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		95.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		91.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		102	(23%-140%)
		13C-OCDD		84.1	(17%-157%)
		13C-2,3,7,8-TCDF		97.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		95.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		90.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		96.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		94.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		92.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		94.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		98.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		99.3	(35%-197%)
324021	CPLMB02-F	13C-2,3,7,8-TCDD		88.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		83.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		89.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		96.5	(23%-140%)
		13C-OCDD		80.6	(17%-157%)
		13C-2,3,7,8-TCDF		93.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		89.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		86.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		91.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		88.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		89.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		91.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		100	(35%-197%)
324022	CPLMB02-F Dup	13C-2,3,7,8-TCDD		88.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		88.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		83.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		91.8	(23%-140%)
		13C-OCDD		73.9	(17%-157%)
		13C-2,3,7,8-TCDF		92.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		89.6	(21%-178%)

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Hi-Res Dioxins/Furans Surrogate Recovery Report

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
6324022	CPLMB02-F Dup	13C-1,2,3,4,7,8-HxCDF		85.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		89.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		87.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		88.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		87.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.3	(35%-197%)
6324023	LFLMB02-F	13C-2,3,7,8-TCDD		85.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		83.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.2	(23%-140%)
		13C-OCDD		71.2	(17%-157%)
		13C-2,3,7,8-TCDF		91.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		80.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		88.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		89.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		86.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		85.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		82.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		99.4	(35%-197%)

^{*} Recovery outside Acceptance Limits

[#] Column to be used to flag recovery values

D Sample Diluted

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6324 Sample Type: Laboratory Control Sample

Client ID: LCS for batch 26411 Matrix: TISSUE

Lab Sample ID: 12010920

Instrument: HRP763 Analysis Date: 07/19/2014 02:18 Dilution: 1

Analyst: JTF Prep Batch ID:26411

			Amount Added	Spike Conc.	Recovery	Acceptance
CAS No.		Parmname	pg/g	pg/g	%	Limits
746-01-6	LCS	2,3,7,8-TCDD	20.0	20.0	99.8	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	104	104	70-142
9227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	100	100	70-164
7653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	100	100	76-134
9408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	110	110	64-162
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	102	102	70-140
268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	193	96.5	78-144
1207-31-9	LCS	2,3,7,8-TCDF	20.0	20.1	101	75-158
7117-41-6	LCS	1,2,3,7,8-PeCDF	100	109	109	80-134
7117-31-4	LCS	2,3,4,7,8-PeCDF	100	108	108	68-160
0648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	111	111	72-134
7117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	113	113	84-130
0851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	109	109	70-156
2918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	112	112	78-130
7562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	108	108	82-122
6673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	110	110	78-138
9001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	227	113	63-170

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6324 Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 26411 Matrix: TISSUE

Lab Sample ID: 12010921

Instrument: HRP763 Analysis Date: 07/22/2014 09:50 Dilution: 1

Analyst: JTF Prep Batch ID:26411

			Amount Added	Spike Conc.	-	-		Acceptance
CAS No.		Parmname	pg/g	pg/g	%	Limits	%	Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	20.1	100	67-158	0.719	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	98.3	98.3	70-142	5.69	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	100	100	70-164	0.419	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	101	101	76-134	0.337	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	108	108	64-162	1.25	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	97.2	97.2	70-140	4.74	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	199	99.5	78-144	3.05	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	20.8	104	75-158	3.21	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	106	106	80-134	2.98	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	107	107	68-160	1.53	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	112	112	72-134	0.760	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	112	112	84-130	1.05	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	109	109	70-156	0.273	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	116	116	78-130	3.63	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	108	108	82-122	0.481	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	108	108	78-138	1.34	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	212	106	63-170	6.87	0-20

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Hi-Res Dioxins/Furans Quality Control Summary Spike Recovery Report

SDG Number: 6324 Sample Type: Laboratory Control Sample

Client ID: LCS for batch 26438 Matrix: TISSUE

Lab Sample ID: 12010948

Instrument: HRP763 Analysis Date: 07/23/2014 06:54 Dilution: 1

Analyst: JTF Prep Batch ID:26438

			Amount Added	Spike Conc.	Recovery	Acceptance
CAS No.		Parmname	$\mathbf{p}\mathbf{g}/\mathbf{g}$	pg/g	%	Limits
1746-01-6	LCS	2,3,7,8-TCDD	20.0	20.1	101	67-158
40321-76-4	LCS	1,2,3,7,8-PeCDD	100	98.6	98.6	70-142
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	100	102	102	70-164
7653-85-7	LCS	1,2,3,6,7,8-HxCDD	100	101	101	76-134
9408-74-3	LCS	1,2,3,7,8,9-HxCDD	100	106	106	64-162
5822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	100	97.2	97.2	70-140
268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	200	188	93.9	78-144
207-31-9	LCS	2,3,7,8-TCDF	20.0	20.7	104	75-158
117-41-6	LCS	1,2,3,7,8-PeCDF	100	103	103	80-134
117-31-4	LCS	2,3,4,7,8-PeCDF	100	98.8	98.8	68-160
648-26-9	LCS	1,2,3,4,7,8-HxCDF	100	110	110	72-134
7117-44-9	LCS	1,2,3,6,7,8-HxCDF	100	112	112	84-130
0851-34-5	LCS	2,3,4,6,7,8-HxCDF	100	110	110	70-156
2918-21-9	LCS	1,2,3,7,8,9-HxCDF	100	119	119	78-130
562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	100	106	106	82-122
673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	100	108	108	78-138
0001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	200	213	107	63-170

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Hi-Res Dioxins/Furans

Quality Control Summary Spike Recovery Report

SDG Number: 6324 Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 26438 Matrix: TISSUE

Lab Sample ID: 12010949

Instrument: HRP763 Analysis Date: 07/23/2014 07:41 Dilution: 1

Analyst: JTF Prep Batch ID:26438

G. G. Y.			Amount Added	Spike Conc.	•	-		Acceptance
CAS No.		Parmname	pg/g	pg/g	%	Limits	%	Limits
1746-01-6	LCSD	2,3,7,8-TCDD	20.0	21.0	105	67-158	4.39	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	100	101	101	70-142	2.83	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	100	103	103	70-164	1.13	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	100	106	106	76-134	5.12	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	100	115	115	64-162	7.92	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	100	102	102	70-140	5.07	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	200	200	99.8	78-144	6.02	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	20.0	20.5	103	75-158	1.08	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	100	108	108	80-134	4.51	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	100	107	107	68-160	7.69	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	100	118	118	72-134	7.14	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	100	110	110	84-130	1.26	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	100	113	113	70-156	2.52	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	100	123	123	78-130	2.98	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	100	113	113	82-122	6.41	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	100	110	110	78-138	1.44	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	200	226	113	63-170	5.94	0-20

July 30, 2014

Method Blank Summary

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SDG Number: **Client ID:**

Column:

Lab Sample ID: 12010919

6324 MB for batch 26411 Client: Instrument ID: HRP763 **Prep Date:**

TRCC001 17-JUL-14 Matrix: TISSUE Data File: b18jul14a_2-3 Analyzed: 07/19/14 03:53

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 26411	12010920	b18jul14a_2-1	07/19/14	0218
02 LFBG01	6324001	b18jul14a_2-4	07/19/14	0440
03 LFBG02	6324002	b18jul14a_2-5	07/19/14	0528
04 LFBG02 Dup	6324003	b18jul14a_2-6	07/19/14	0616
05 LFLMB01	6324004	b18jul14a_2-7	07/19/14	0704
06 YFBG01	6324005	b18jul14a_2-8	07/19/14	0751
07 YFBG02	6324006	b18jul14a_2-9	07/19/14	0839
08 CPBG01	6324007	b18jul14a_2-10	07/19/14	0927
09 CPBG02	6324008	b18jul14a_2-11	07/19/14	1015
10 CPLMB01	6324009	b18jul14a_2-12	07/19/14	1102
11 CPLMB02	6324010	b18jul14a_2-13	07/19/14	1150
12 LFLMB02	6324012	b18jul14a_3-2	07/19/14	1421
13 LFBG01-F	6324013	b18jul14a_3-3	07/19/14	1509
14 LFBG02-F	6324014	b18jul14a_3-4	07/19/14	1556
15 LFBG02-F Dup	6324015	b18jul14a_3-5	07/19/14	1644
16 LFLMB01-F	6324016	b18jul14a_3-6	07/19/14	1732
17 YFBG01-F / YFBG02-F	6324017	b18jul14a_3-7	07/19/14	1820
18 CPBG01-F	6324018	b18jul14a_3-8	07/19/14	1907
19 CPBG02-F	6324019	b18jul14a_3-9	07/19/14	1955
20 CPLMB01-F	6324020	b18jul14a_3-10	07/19/14	2043
21 CPLMB02 Dup	6324011	b18jul14a_4-6	07/20/14	0448
22 LCSD for batch 26411	12010921	b22jul14a-2	07/22/14	0950

6324

Report Date:

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Method Blank Summary

TRCC001

Matrix:

TISSUE Data File: b22jul14a_3-3

Client ID: Lab Sample ID: 12010947

SDG Number:

MB for batch 26438

Prep Date:

Client:

Instrument ID: HRP763 18-JUL-14

Analyzed: 07/23/14 08:29

Column:

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed	
01 LCS for batch 26438	12010948	b22jul14a_3-1	07/23/14	0654	
02 LCSD for batch 26438	12010949	b22jul14a_3-2	07/23/14	0741	
03 CPLMB02-F	6324021	b22jul14a_3-4	07/23/14	0917	
04 CPLMB02-F Dup	6324022	b22jul14a_3-5	07/23/14	1004	
05 LFLMB02-F	6324023	b22jul14a_3-6	07/23/14	1052	

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

SDG Number: 6324

12010919 Lab Sample ID:

QC for batch 26411 MB for batch 26411

Client ID: Batch ID: 26413

Client Sample:

Run Date: 07/19/2014 03:53 Data File: b18jul14a_2-3

Prep Batch: 26411 **Prep Date:**

Client:

Method:

Analyst:

TRCC001

Project: Matrix:

TRCC00314 TISSUE

Prep Basis:

As Received

Instrument:

0.103

5.00

Dilution:

HRP763 1

Prep Method: 17-IIII -14

rep Aliquot:	10 g
--------------	------

SW846 3540C	
10 α	

EPA Method 1613B

rrep Date:	17-JUL-14	Trep Anquot.	10 g					
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD	U	.204		pg/g	0.204	1.00	
40321-76-4	1,2,3,7,8-PeCDD	U	.104		pg/g	0.104	5.00	
39227-28-6	1,2,3,4,7,8-HxCDD	U	.171		pg/g	0.171	5.00	
57653-85-7	1,2,3,6,7,8-HxCDD	U	.156		pg/g	0.156	5.00	

1,2,3,7,8,9-HxCDD 19408-74-3 U .173 pg/g 0.1735.00 U 35822-46-9 1,2,3,4,6,7,8-HpCDD .26 0.260 5.00 pg/g 3268-87-9 1,2,3,4,6,7,8,9-OCDD 0.924 0.426 10.0 pg/g 51207-31-9 2,3,7,8-TCDF J 0.186 0.151 1.00 pg/g

57117-41-6 1,2,3,7,8-PeCDF J 0.108pg/g 0.092 5.00 57117-31-4 2,3,4,7,8-PeCDF JK 0.082 0.0786 5.00 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF U .116 0.116 5.00 pg/g IJ 57117-44-9 1,2,3,6,7,8-HxCDF .117 pg/g 0.117 5.00 U 0.119 2.3.4.6.7.8-HxCDF .119 5.00 pg/g

60851-34-5 72918-21-9 1,2,3,7,8,9-HxCDF U .18 0.180 5.00 pg/g U 67562-39-4 1,2,3,4,6,7,8-HpCDF .103 pg/g 0.1035.00 55673-89-7 1,2,3,4,7,8,9-HpCDF U .171 0.171 5.00 pg/g 1,2,3,4,6,7,8,9-OCDF U 0.480 39001-02-0 .48 pg/g 10.0

U 41903-57-5 Total Tetrachlorodibenzo-p-dioxin .204 0.204 1.00 pg/g U 36088-22-9 Total Pentachlorodibenzo-p-dioxin .104 0.104 5.00 pg/g U 34465-46-8 Total Hexachlorodibenzo-p-dioxin .156 0.156 5.00 pg/g 37871-00-4 Total Heptachlorodibenzo-p-dioxin U .26 pg/g 0.260 5.00 30402-14-3 0.186 Total Tetrachlorodibenzofuran 1 pg/g 0.151 1.00 30402-15-4 Total Pentachlorodibenzofuran 0.108 0.190 0.0576 5.00 pg/g 0.116 5.00

55684-94-1 Total Hexachlorodibenzofuran U .116 pg/g Total Heptachlorodibenzofuran U 38998-75-3 .103 pg/g 3333-30-0 TEQ WHO2005 ND=0 0.0221 0.0467 pg/g 3333-30-1 TEQ WHO2005 ND=0.5 0.242 0.255 pg/g

Acceptable Limits Surrogate/Tracer recovery Qual Result Nominal Units Recovery% 13C-2,3,7,8-TCDD 195 200 pg/g 97.5 (25%-164%) 13C-1,2,3,7,8-PeCDD 223 200 111 (25%-181%) pg/g 13C-1,2,3,4,7,8-HxCDD 92.3 185 200 pg/g (32%-141%) 13C-1,2,3,6,7,8-HxCDD 190 200 pg/g 95.2 (28%-130%) 13C-1,2,3,4,6,7,8-HpCDD 215 200 108 (23%-140%) pg/g 13C-OCDD 392 400 98.1 (17%-157%) pg/g 13C-2,3,7,8-TCDF 212 200 106 (24%-169%) pg/g 13C-1,2,3,7,8-PeCDF 218 200 109 (24%-185%) pg/g 13C-2,3,4,7,8-PeCDF 236 200 118 (21%-178%) pg/g 13C-1,2,3,4,7,8-HxCDF 186 200 92.8 (26%-152%) pg/g 13C-1,2,3,6,7,8-HxCDF 192 200 96.0 (26%-123%) pg/g 13C-2,3,4,6,7,8-HxCDF 197 200 pg/g 98.7 (28%-136%) (29%-147%) 13C-1,2,3,7,8,9-HxCDF 196 200 pg/g 97.8

Cape Fear Analytical LLC Report Date: July 30, 2014

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As Received

HRP763

1

Prep Basis:

Instrument:

Dilution:

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 Client: TRCC00314 SDG Number: 6324 **Project:** 12010919 TISSUE Lab Sample ID: Matrix:

QC for batch 26411 **Client Sample:**

Client ID: MB for batch 26411

Batch ID: 26413

07/19/2014 03:53 **Run Date:**

17-JUL-14

Data File: b18jul14a_2-3 26411 Prep Batch:

Method: EPA Method 1613B

Analyst: JTF

SW846 3540C **Prep Method:**

Prep Aliquot: 10 g

PQL CAS No. Qual **EMPC** Units **EDL Parmname** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		204	200	pg/g	102	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		215	200	pg/g	108	(26%-138%)
37Cl-2,3,7,8-TCDD		21.3	20.0	pg/g	106	(35%-197%)

Comments:

Prep Date:

Value is estimated

Estimated Maximum Possible Concentration

Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 Client: TRCC00314 SDG Number: 6324 **Project:** 12010920 TISSUE Lab Sample ID: Matrix: QC for batch 26411

Client Sample: Client ID: LCS for batch 26411

Batch ID: 26413

07/19/2014 02:18 **Run Date:**

Data File: b18jul14a_2-1 26411

Prep Batch:

Method: EPA Method 1613B

Analyst: JTF

SW846 3540C **Prep Method:**

Dilution: 1

Prep Basis:

Instrument: HRP763

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As Received

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Prep Date:	17-JUL-14	Prep Aliquot:	10 g				
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.0		pg/g	4.44	1.00
40321-76-4	1,2,3,7,8-PeCDD		104		pg/g	0.234	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		100		pg/g	0.448	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		100		pg/g	0.424	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		110		pg/g	0.460	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		102		pg/g	0.892	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		193		pg/g	1.60	10.0
51207-31-9	2,3,7,8-TCDF		20.1		pg/g	0.226	1.00
57117-41-6	1,2,3,7,8-PeCDF		109		pg/g	0.326	5.00
57117-31-4	2,3,4,7,8-PeCDF		108		pg/g	0.310	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		111		pg/g	0.604	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		113		pg/g	0.558	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		109		pg/g	0.642	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		112		pg/g	1.00	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		108		pg/g	0.616	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		110		pg/g	1.05	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		227		pg/g	1.56	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		173	200	pg/g	86.5	(20%-175%)
13C-1,2,3,7,8-PeCDD		218	200	pg/g	109	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		184	200	pg/g	92.0	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		195	200	pg/g	97.5	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		213	200	pg/g	106	(22%-166%)
13C-OCDD		374	400	pg/g	93.6	(13%-199%)
13C-2,3,7,8-TCDF		209	200	pg/g	104	(22%-152%)
13C-1,2,3,7,8-PeCDF		210	200	pg/g	105	(21%-192%)
13C-2,3,4,7,8-PeCDF		225	200	pg/g	112	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		196	200	pg/g	97.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		202	200	pg/g	101	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		200	200	pg/g	99.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		201	200	pg/g	101	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		207	200	pg/g	103	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		213	200	pg/g	106	(20%-186%)
37Cl-2,3,7,8-TCDD		18.7	20.0	pg/g	93.5	(31%-191%)

Comments:

Analyte was analyzed for, but not detected above the specified detection limit.

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Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

SDG Number: 6324 Client: TRCC001 Project: TRCC00314
Lab Sample ID: 12010921 Matrix: TISSUE
Client Sample: QC for batch 26411

Client Sample: QC for batch 26411
Client ID: LCSD for batch 26411

Client ID: LCSD for batch 26411 Prep Basis: As Received Batch ID: 26413 Method: EPA Method 1613B

Run Date: 07/22/2014 09:50 Analyst: JTF Instrument: HRP763
Data File: b22jul14a-2 Dilution: 1

Prep Batch:26411Prep Method:SW846 3540CPrep Date:17-JUL-14Prep Aliquot:10 g

CAS No. **EMPC EDL PQL Parmname** Qual Result Units 1746-01-6 2,3,7,8-TCDD 20.1 0.626 1.00 pg/g 40321-76-4 1,2,3,7,8-PeCDD 0.522 98.3 pg/g 5.00 39227-28-6 1,2,3,4,7,8-HxCDD 100 0.810 5.00 pg/g 57653-85-7 1,2,3,6,7,8-HxCDD 101 0.808 5.00 pg/g 1,2,3,7,8,9-HxCDD 19408-74-3 108 pg/g 0.858 5.00 0.708 35822-46-9 1,2,3,4,6,7,8-HpCDD 97.2 5.00 pg/g 3268-87-9 1,2,3,4,6,7,8,9-OCDD 199 2.12 10.0 pg/g 51207-31-9 2,3,7,8-TCDF 20.8 0.442 1.00 pg/g 57117-41-6 1,2,3,7,8-PeCDF 106 pg/g 0.620 5.00 57117-31-4 2,3,4,7,8-PeCDF 107 0.600 5.00 pg/g 70648-26-9 1,2,3,4,7,8-HxCDF 112 0.856 5.00 pg/g 57117-44-9 1,2,3,6,7,8-HxCDF 112 pg/g 0.840 5.00 60851-34-5 2,3,4,6,7,8-HxCDF 109 0.874 5.00 pg/g 72918-21-9 1,2,3,7,8,9-HxCDF 116 1.28 5.00 pg/g 1,2,3,4,6,7,8-HpCDF 108 0.670 67562-39-4 pg/g 5.00 55673-89-7 1,2,3,4,7,8,9-HpCDF 108 1.06 5.00 pg/g

212

2.40

pg/g

10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		186	200	pg/g	93.2	(20%-175%)
13C-1,2,3,7,8-PeCDD		206	200	pg/g	103	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		200	200	pg/g	99.9	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		183	200	pg/g	91.4	(25%-163%)
3C-1,2,3,4,6,7,8-HpCDD		220	200	pg/g	110	(22%-166%)
3C-OCDD		376	400	pg/g	93.9	(13%-199%)
3C-2,3,7,8-TCDF		198	200	pg/g	98.8	(22%-152%)
3C-1,2,3,7,8-PeCDF		196	200	pg/g	97.8	(21%-192%)
3C-2,3,4,7,8-PeCDF		211	200	pg/g	106	(13%-328%)
3C-1,2,3,4,7,8-HxCDF		188	200	pg/g	93.9	(19%-202%)
3C-1,2,3,6,7,8-HxCDF		192	200	pg/g	95.9	(21%-159%)
3C-2,3,4,6,7,8-HxCDF		195	200	pg/g	97.4	(22%-176%)
3C-1,2,3,7,8,9-HxCDF		192	200	pg/g	96.1	(17%-205%)
3C-1,2,3,4,6,7,8-HpCDF		208	200	pg/g	104	(21%-158%)
3C-1,2,3,4,7,8,9-HpCDF		217	200	pg/g	109	(20%-186%)
7C1-2,3,7,8-TCDD		20.7	20.0	pg/g	103	(31%-191%)

Comments:

39001-02-0

1,2,3,4,6,7,8,9-OCDF

U Analyte was analyzed for, but not detected above the specified detection limit.

Page 1

July 30, 2014

of 2

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

EPA Method 1613B

SDG Number: 6324

12010947 Lab Sample ID:

QC for batch 26438 **Client Sample: Client ID:** MB for batch 26438

Batch ID: 26440

Run Date: 07/23/2014 08:29 Data File: b22jul14a_3-3

Prep Batch: 26438

Prep Date: 18-JUL-14

TRCC001 Client:

Project:

TRCC00314 TISSUE

Matrix:

Prep Basis:

As Received

Instrument:

Dilution:

HRP763 1

SW846 3540C **Prep Method:**

JTF

Prep Aliquot:	10 g
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Method:

Analyst:

Prep Aliquot:	10 g
---------------	------

F	10 002 11						
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.322		pg/g	0.322	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	.168		pg/g	0.168	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	.236		pg/g	0.236	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	.242		pg/g	0.242	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	.254		pg/g	0.254	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	.274		pg/g	0.274	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK		0.832	pg/g	0.552	10.0
51207-31-9	2,3,7,8-TCDF	U	.206		pg/g	0.206	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	.11		pg/g	0.110	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	.096		pg/g	0.096	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	.168		pg/g	0.168	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	.158		pg/g	0.158	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	.175		pg/g	0.175	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	.264		pg/g	0.264	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	.182		pg/g	0.182	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.298		pg/g	0.298	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	.722		pg/g	0.722	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.322		pg/g	0.322	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.168		pg/g	0.168	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.236		pg/g	0.236	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	.274		pg/g	0.274	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	.206		pg/g	0.206	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	.076		pg/g	0.076	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	.158		pg/g	0.158	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	.182		pg/g	0.182	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00	0.00025	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		0.350	0.350	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		185	200	pg/g	92.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		190	200	pg/g	95.2	(25%-181%)
3C-1,2,3,4,7,8-HxCDD		170	200	pg/g	85.2	(32%-141%)
3C-1,2,3,6,7,8-HxCDD		182	200	pg/g	91.0	(28%-130%)
3C-1,2,3,4,6,7,8-HpCDD		204	200	pg/g	102	(23%-140%)
3C-OCDD		336	400	pg/g	84.1	(17%-157%)
3C-2,3,7,8-TCDF		195	200	pg/g	97.5	(24%-169%)
3C-1,2,3,7,8-PeCDF		183	200	pg/g	91.7	(24%-185%)
3C-2,3,4,7,8-PeCDF		191	200	pg/g	95.6	(21%-178%)
3C-1,2,3,4,7,8-HxCDF		181	200	pg/g	90.3	(26%-152%)
3C-1,2,3,6,7,8-HxCDF		192	200	pg/g	96.1	(26%-123%)
3C-2,3,4,6,7,8-HxCDF		190	200	pg/g	94.8	(28%-136%)
3C-1,2,3,7,8,9-HxCDF		185	200	pg/g	92.5	(29%-147%)

Cape Fear Analytical LLC Report Date: July 30, 2014

> **Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary**

> > **JTF**

TRCC001 Client: SDG Number: 6324 **Project:** 12010947 Lab Sample ID:

QC for batch 26438 **Client Sample:**

Client ID: MB for batch 26438

Batch ID: 26440

07/23/2014 08:29 **Run Date:**

Data File: b22jul14a_3-3

26438 Prep Batch: **Prep Date:**

18-JUL-14

Parmname

Matrix:

TRCC00314

Page 2

of 2

TISSUE

Prep Basis:

As Received

Instrument: HRP763

Dilution: 1

SW846 3540C **Prep Method:**

Method:

Analyst:

Prep Aliquot: 10 g

Qual

EPA Method 1613B

EMPC Units **EDL PQL** Result

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		190	200	pg/g	94.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		197	200	pg/g	98.5	(26%-138%)
37Cl-2,3,7,8-TCDD		19.9	20.0	pg/g	99.3	(35%-197%)

Comments:

CAS No.

Value is estimated

Estimated Maximum Possible Concentration

Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

JTF

TRCC001

of 1

Page 1

TRCC00314

HRP763

1

Project:

Instrument:

Dilution:

Lab Sample ID:12010948Matrix:TISSUEClient Sample:QC for batch 26438Client ID:LCS for batch 26438Prep Basis:As ReceivedBatch ID:26440Method:EPA Method 1613B

Client:

Analyst:

Data File: b22jul14a_3-1
Prep Batch: 26438 Prep Method: SW846 3540C

ren Date: 18 HH 14 Pren Aliquot: 10 g

Prep Date:	18-JUL-14	Prep Aliquot:	10 g					
CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL	
1746-01-6	2,3,7,8-TCDD		20.1		pg/g	0.374	1.00	
40321-76-4	1,2,3,7,8-PeCDD		98.6		pg/g	0.378	5.00	
39227-28-6	1,2,3,4,7,8-HxCDD		102		pg/g	0.578	5.00	
57653-85-7	1,2,3,6,7,8-HxCDD		101		pg/g	0.562	5.00	
19408-74-3	1,2,3,7,8,9-HxCDD		106		pg/g	0.604	5.00	
35822-46-9	1,2,3,4,6,7,8-HpCDD		97.2		pg/g	0.816	5.00	
3268-87-9	1,2,3,4,6,7,8,9-OCDD		188		pg/g	1.45	10.0	
51207-31-9	2,3,7,8-TCDF		20.7		pg/g	0.236	1.00	
57117-41-6	1,2,3,7,8-PeCDF		103		pg/g	0.460	5.00	
57117-31-4	2,3,4,7,8-PeCDF		98.8		pg/g	0.404	5.00	
70648-26-9	1,2,3,4,7,8-HxCDF		110		pg/g	0.904	5.00	
57117-44-9	1,2,3,6,7,8-HxCDF		112		pg/g	0.844	5.00	
60851-34-5	2,3,4,6,7,8-HxCDF		110		pg/g	0.976	5.00	
72918-21-9	1,2,3,7,8,9-HxCDF		119		pg/g	1.51	5.00	
67562-39-4	1,2,3,4,6,7,8-HpCDF		106		pg/g	0.622	5.00	
55673-89-7	1,2,3,4,7,8,9-HpCDF		108		pg/g	1.08	5.00	
39001-02-0	1,2,3,4,6,7,8,9-OCDF		213		pg/g	2.98	10.0	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		182	200	pg/g	91.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		186	200	pg/g	93.1	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		174	200	pg/g	86.9	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		175	200	pg/g	87.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		195	200	pg/g	97.4	(22%-166%)
13C-OCDD		328	400	pg/g	81.9	(13%-199%)
13C-2,3,7,8-TCDF		194	200	pg/g	97.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		176	200	pg/g	87.9	(21%-192%)
13C-2,3,4,7,8-PeCDF		193	200	pg/g	96.3	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		178	200	pg/g	89.1	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		175	200	pg/g	87.3	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		180	200	pg/g	89.9	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		173	200	pg/g	86.6	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		182	200	pg/g	91.0	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		186	200	pg/g	92.9	(20%-186%)
37Cl-2,3,7,8-TCDD		20.7	20.0	pg/g	103	(31%-191%)

Comments:

SDG Number:

Run Date:

6324

07/23/2014 06:54

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans Certificate of Analysis Sample Summary

TRCC001 Client: TRCC00314 SDG Number: 6324 **Project:** 12010949 TISSUE Lab Sample ID: Matrix:

QC for batch 26438 **Client Sample:** Client ID: LCSD for batch 26438

Parmname

Batch ID: 26440

07/23/2014 07:41 **Run Date:**

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

1,2,3,4,6,7,8,9-OCDD

Data File: b22jul14a_3-2

26438 Prep Batch: **Prep Date:** 18-JUL-14

CAS No.

1746-01-6

40321-76-4

39227-28-6 57653-85-7

19408-74-3

35822-46-9

3268-87-9

Method: EPA Method 1613B

Analyst: JTF

SW846	3540C
DIII	JJ-10C

Prep Method: SW846 3540C Prep Aliquot: 10 g		5540C				
	Qual	Result	EMPC	Units	EDL	PQL
		21.0		pg/g	0.770	1.00
		101		pg/g	0.488	5.00
		103		pg/g	0.704	5.00
		106		pg/g	0.662	5.00
		115		pg/g	0.724	5.00
		102		pg/g	0.822	5.00
		200		pg/g	1.94	10.0
		20.5		pg/g	0.226	1.00
		108		pg/g	0.384	5.00

Prep Basis:

Instrument:

Dilution:

Page 1

As Received

HRP763

1

of 1

51207-31-9	2,3,7,8-TCDF			20.5		pg/g	0.226	1.00
57117-41-6	1,2,3,7,8-PeCDF			108		pg/g	0.384	5.00
57117-31-4	2,3,4,7,8-PeCDF			107		pg/g	0.348	5.00
70648-26-9	1,2,3,4,7,8-HxCDF			118		pg/g	0.664	5.00
57117-44-9	1,2,3,6,7,8-HxCDF			110		pg/g	0.602	5.00
60851-34-5	2,3,4,6,7,8-HxCDF			113		pg/g	0.686	5.00
72918-21-9	1,2,3,7,8,9-HxCDF			123		pg/g	1.01	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF			113		pg/g	0.662	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF			110		pg/g	1.11	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF			226		pg/g	2.18	10.0
Surrogate/Tracer recovery		Qual	Result	Nominal	Units	Recovery%	Acceptable	Limits

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits	_
13C-2,3,7,8-TCDD		192	200	pg/g	96.2	(20%-175%)	
13C-1,2,3,7,8-PeCDD		192	200	pg/g	96.0	(21%-227%)	
13C-1,2,3,4,7,8-HxCDD		183	200	pg/g	91.6	(21%-193%)	
13C-1,2,3,6,7,8-HxCDD		177	200	pg/g	88.7	(25%-163%)	
13C-1,2,3,4,6,7,8-HpCDD		202	200	pg/g	101	(22%-166%)	
13C-OCDD		338	400	pg/g	84.4	(13%-199%)	
13C-2,3,7,8-TCDF		206	200	pg/g	103	(22%-152%)	
13C-1,2,3,7,8-PeCDF		188	200	pg/g	94.2	(21%-192%)	
13C-2,3,4,7,8-PeCDF		200	200	pg/g	100	(13%-328%)	
13C-1,2,3,4,7,8-HxCDF		178	200	pg/g	88.8	(19%-202%)	
13C-1,2,3,6,7,8-HxCDF		187	200	pg/g	93.3	(21%-159%)	
13C-2,3,4,6,7,8-HxCDF		189	200	pg/g	94.4	(22%-176%)	
13C-1,2,3,7,8,9-HxCDF		180	200	pg/g	90.2	(17%-205%)	
13C-1,2,3,4,6,7,8-HpCDF		185	200	pg/g	92.7	(21%-158%)	
13C-1,2,3,4,7,8,9-HpCDF		199	200	pg/g	99.4	(20%-186%)	
37Cl-2,3,7,8-TCDD		21.8	20.0	pg/g	109	(31%-191%)	

Comments:

Analyte was analyzed for, but not detected above the specified detection limit.

APPENDIX E

PEER REVIEW COMMENT LETTER



Scientific Research and Consulting

July 9, 2015

Ms. Karen Vetrano, Ph.D.
Manager, Risk Assessment and Toxicology
TRC Environmental Corporation
142 Ralyn Rd
Cotuit, MA 02635

Dear Karen,

I have had the opportunity to review the February 2015 revised final draft of the Fifth Operational Phase Non-Air Media Monitoring report prepared by TRC Associates regarding the Montgomery County Resource Recovery Facility (RRF).

In this peer review, I evaluated the revised final draft in light of the comments submitted from my earlier review of the January 2015 draft. My review also considered previous peer review comments on the fourth operational phase non-air media monitoring program, conducted in 2007, that were included in Attachment I of Montgomery County's RRF Request for Proposal.¹

It should be noted that I did not independently verify or validate the data values presented in the report. It is my understanding that these items have been independently quality assured and validated by TRC as part of its quality assurance methods for this project. I also accepted as accurate maps and figures provided in the draft report.

TRC did a thorough job of addressing my prior comments. I compared the revised draft section by section and confirmed that TRC addressed my previous technical comments and edited the report text to help make it more understandable to a less technical audience. The revised draft report also has considered and appropriately addressed peer review comments on the fourth operational phase non-air media monitoring program. For example, TRC has provided additional description and discussion of detection limits and the treatment of non-detected sampling results in the draft report, as well as the potential impacts of these factors on the statistical evaluation of concentration trends over time.

The non-air media monitoring program was conducted in accordance with standard sampling and analytical methods that are currently used for these types of environmental monitoring studies. The sampling, analysis and validation methods are clearly summarized in the draft report and compared to those used in previous non-air media monitoring programs. Documentation related to data validation and the detailed laboratory results are provided in appendices to the final draft report.

¹ Montgomery County. 2013. Request for Proposals #1016212. Resource Recovery Facility Human Risk Assessment Update, Ambient Environmental Media Monitoring and Technical Assistance. January 11, 2013

Overall, the methodologies followed were consistent with current scientific norms for this type of study, and the conclusions were consistent with findings in other environmental monitoring studies of similar waste to energy facilities.

In summary, it is my conclusion that the non-air media monitoring program relied on well-accepted and appropriate methodologies to evaluate potential environmental impacts associated with air emissions from the waste to energy facility. The study shows no measurable changes in the environmental concentrations of the evaluated compounds (dioxins and furans and selected trace metals) that can be attributed to the facility.

Please feel free to contact me for any further clarification or if you have any questions.

Sincerely,

Sarah Foster, Principal CPF Associates, Inc.

Saran Josta