PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT FOR THE FORMER MILL SITE (APN 534-151-020) LOCATED ON HIGHWAY 169 NEAR WEITCHPEC, CALIFORNIA

Prepared for:
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September 15, 2011

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

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ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Cleanup, and Liability Act
CFR	Code of Federal Regulations
CHHSL	California Human Health Screening Levels
CLP	Contract laboratory program
CWA	Clean Water Act
DQA	Data quality assessment
DQI	Data quality indicators
DQO	Data quality objectives
EPA	U.S. Environmental Protection Agency
ESA	Environmental site assessment
ESL	Environmental Screening Levels
FES	Freshwater Environmental Services
FSP	Field sampling plan
GPS	Global Positioning System
GC/MS	Gas chromatography and mass spectrometry
IDW	Investigation-derived waste
IRIS	Integrated Risk Information System (USEPA)
LCS/LCSD	Laboratory control sample and laboratory control sample duplicates
MDL	Method detection limit
MPC	Measurement Performance Criteria
MQO	Measurement quality objective
MS/MSD	Matrix spike and matrix spike duplicate
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
NRCS	Natural Resource Conservation Service
pg/g	Picograms per gram
pg/L	Picograms per liter
PARCCS	Precision, accuracy, representativeness, completeness, comparability, and sensitivity
PCP	Pentachlorophenol
PE	Performance evaluation
PRG	Preliminary remediation goal
PRQL	Project-required quantitation limit
QA	Quality assurance
QA/QC	Quality assurance/quality control
QAPP	Quality assurance project plan
QC	Quality control
QL	Quantitation limit
RCRA	Resource Conservation and Recovery Act
RPD	Relative percent difference
RSls	Residential Screening Levels
%R	Percent recovery
SAP	Sampling and analysis plan (an integrated FSP and QAPP)
SOP	Standard operating procedures
SOW	Statement of work

SVOC	Semi-volatile organic compound
TCP	Tetrachlorophenol
TEF	Toxic Equivalency Factors
TEQ	Toxic Equivalency
TPH D/MO	Total Petroleum Hydrocarbon reported as diesel and motor oil range organics
µg/L	Micrograms per liter
USCS	Unified Soil Classification System
USDA	United States Department of Agriculture
USGS	United States Geological Survey
VOC	Volatile organic compound
WHO	World Health Organization
YTEP	Yurok Tribe Environmental Program

1.0 INTRODUCTION

Freshwater Environmental Services (FES) has prepared this report of findings for the Phase II Environmental Site Assessment (ESA) at the former lumber mill (APN 534-151-020), located on the north side of State Highway 169 near the intersection of Gibbens Road and State Highway 169 near Weitchpec, Humboldt County, California (hereinafter referred to as the Site). The Site location is shown on Figure 1.

This report conforms to the process and principles recommended in the *Standard Guide for Environmental Assessments: Phase II Environmental Site Assessment Process*, E-1903, (ASTM, 2002). This report documents the soil borings, soil sampling, and surface water sampling performed at the Site. The location of the parcel that contains the Site is shown on Figure 1, Figure 2, and Figure 3.

The primary objectives of this Phase II ESA were to assess and evaluate the recognized environmental conditions identified in the Phase I ESA prepared by FES dated September 9, 2009, and to provide sufficient information regarding the presence or absence of contamination on the Site (ASTM, 2002). The scope of work developed by FES for this assessment was based on the findings of the Phase I Environmental Site Assessment. The following Recognized Environmental Conditions (RECs) were identified in the Phase I ESA:

- Former use of the Site as a sawmill utilizing petroleum products for equipment maintenance and for fueling the conical burner.
- Former use of the Site for truck maintenance that is reported to have included the storage and dispensing of fuel.
- Likely former presence of onsite septic systems connected to the sawmill and truck shop facilities that generated waste petroleum products and solvents. There is the potential for soil and or groundwater impact in the area of the former septic system(s).
- The conical burner on the adjacent property contains a thick layer of wood ash and charcoal that likely contain metals and dioxin and furan compounds. The ash is eroding from under the edge of the conical burner and may be entering the creek.

Even though the Phase I ESA did not indicate that wood-treatment chemicals were used at the Site, specific areas of the former lumber mill site were tested for the presence of wood-treatment chemicals pentachlorophenol (PCP) tetrachlorophenol (TCP).

The two principal study questions for this project are:

- Does the Site contain contaminated soils, resulting from the former use as a lumber mill and truck shop, above concentrations regarded as safe for reuse of the Site?
- Has the former use of the Site as a lumber mill resulted in impacts to surface water quality to the onsite creek above concentrations regarded as safe for human and/or ecological receptors?

2.0 SITE BACKGROUND

The Site occupies a portion of approximately 10 acres in a forested rural undeveloped area. The Site is limited to the southwest corner of the parcel and consists of the area occupied by the former lumber mill and former truck shop. The Site is currently vacant undeveloped land on the Yurok Indian Reservation. The conical burner associated with the former lumber mill is the only remaining structure from the former lumber mill and is located on the adjacent parcel to the west. Most of the Site is forested with some areas of grass in the area near the former sawmill and Gibbens Road. The areas surrounding the Site are forested. There is evidence of a former loop driveway through the Site. The specific location of the Site is shown in Figure 4.

The Phase I ESA, (FES, 2009) indicated that the oldest historic documentation is a 1947 Historical Topographic Map that does not indicate the presence of any structures on the Site. A 1948 aerial photograph shows a log pond and a small structure adjacent to the log pond. The Site was used as a sawmill beginning in the late 1940s and reportedly burned down in the 1960s. Historical aerial photographs from 1965 and 1966 show that the mill buildings (other than the conical burner) are no longer present and that the log pond has been breached and has eroded the area downhill. Other than the mill and associated activities including a truck shop there has not been any other known use of the Site. Figure 4 shows the approximate locations of the features discussed above.

3.0 SITE GEOLOGY AND HYDROLOGY

The Site has an elevation of approximately 360 feet above mean sea level. The topography in the area around the Site generally slopes gently to the south. The nearest stream shown on the USGS topographic map is Devil Creek which is near the eastern boundary of APN 534-151-020. Based on data obtained from the United States Department of Agriculture, the average annual precipitation at the Site is approximately 75 inches.

The Site is shown on the "Geologic Map of the Weed Quadrangle, California" (Wagner and Saucedo, 1987) as being underlain by the South Fork Mountain Schist. Schist is a metamorphic rock type with sub-parallel orientation of micaceous minerals which typically dominant the composition. The nearest fault zone mapped as active (within the last 11,000 years) under the Alquist-Priolo Earthquake Fault Zoning Act, is approximately 23 miles southwest of the Site.

The following information on soils at the Site is based on Natural Resource Conservation Service (NRCS) maps and data. The depth to bedrock at the Site ranges from approximately 20 inches to greater than 80 inches. The depth to water is listed as greater than 80 inches. The soil texture ranges from clay loams to extremely gravelly loams.

There is a stream channel present on the Site that runs from north to south through the former log pond and parts of the former mill and flows under Highway 169 through a culvert at the southwestern corner of the Site. The channel is eroding material from near the eastern edge of the conical burner. The channel has been actively eroding material uphill of the conical burner possibly in response to the breaching of the log pond which probably occurred during the 1964 flood. At the time of the sampling for the Phase II ESA (May 10-12, 2011) there was flowing water in the channel. It is likely that the flow extends to the Klamath River which is approximately 750 feet south of the Site. The USGS 7.5 minute Johnsons quadrangle shows a perennial stream (Devil Creek) near the eastern boundary of APN 534-151-020. An unnamed tributary of Devil Creek is shown as crossing the northeast corner of the parcel.

Most of the borings advanced for this Phase II ESA encountered sand to depths of approximately 3.5 feet below ground surface (bgs). Boring FM-5 encountered silt from the surface to the bottom of the boring at 0.5 feet bgs. Boring FM-7 encountered gravel from the surface to the bottom of the boring at 0.5 feet bgs. Boring TM-2 encountered organics from the surface to 0.5 feet bgs. Boring logs are included in Appendix C.

4.0 SAMPLING METHODS AND ANALYSIS

4.1 Field Methods

The Yurok Tribe Environmental Program (YTEP) was responsible for determining whether subsurface utilities were present at the Site in the areas where borings were to be advanced. FES acquired a boring permit from Humboldt County which is included in Appendix B. Soil borings were advanced to depths from approximately 0.5 to 3.5 feet bgs. The soil borings were advanced using a stainless steel hand auger. Boring logs were prepared for each boring and are included in Appendix C.

4.2 Soil Sampling

Soil samples were collected in the vicinity of the conical burner based on the potential for petroleum (total petroleum hydrocarbon (TPH) reported as diesel range and motor oil range organics (D/MO)), dioxins/furans, and metal contamination (arsenic, chromium, copper, nickel, lead, and zinc) from the operation of the burner. Two soil samples were collected in the vicinity of the burner. One sample was co-located (field duplicate from the same boring and same depth interval) for quality control. The depths of the borings in the conical burner area ranged from 1.0 feet to 1.75 feet bgs. The auger could not be advanced beyond these depths because of rocks.

Soil samples were collected in the vicinity of the former mill area based on the potential for petroleum contamination from mill operations. In addition to TPH-D/MO analyses these samples were analyzed for PCP/TCP. Six soil samples were collected in the vicinity of the former mill area and analyzed for TPH-D/MO and PCP/TCP. One sample was co-located for quality control. The depths of the borings in the former mill area ranged from 0.5 feet to 3.5 feet bgs. The auger could not be advanced beyond these depths because of rocks.

Soil samples were collected in the vicinity of the former truck maintenance area based on the potential for petroleum contamination from maintenance and fueling activities. Ten soil samples were collected in the vicinity of the former truck maintenance area and analyzed for TPH-D/MO. Two of the samples were co-located for quality control. The depths of the borings in the former truck maintenance area ranged from 0.5 feet to 3.5 feet bgs. The auger could not be advanced beyond these depths because of rocks.

The approximate boring locations are shown on Figures 4 through 6.

4.3 Surface Water Sampling

One surface water sample (SW-1) was collected from the unnamed stream near the conical burner that runs through the Site and was analyzed for TPH-D/MO, PCP/TCP, dioxins/furans, and metals. The sample was collected directly upstream of the culvert that runs beneath Highway 169. Most of the former sawmill and conical burner footprints drain to this location. The sample was collected using a peristaltic pump with dedicated disposable tubing. Sample SW-2 was collected from the same location as SW-1 within a time interval of approximately 10 minutes.

4.4 Chemical Analysis Methods

The samples were analyzed by North Coast Laboratories, Ltd. (North Coast) of Arcata, California and TestAmerica of West Sacramento, California. North Coast subcontracted the soil samples for metal analysis to Alpha Analytical, Inc. of Sparks, Nevada. TestAmerica conducted the dioxin analyses. All of these laboratories are certified by the California Department of Public Health for the requested analyses.

4.5 Modifications to the Approved Sampling and Analysis Plan

Because of conditions in the field there were some modifications to the Sampling and Analysis Plan (SAP). These modification included:

- The SAP indicated that two depth intervals from each soil boring would be sampled. Soil samples were only collected from a single depth interval because the presence of rocks in the subsurface prevented advancing any of the borings beyond approximately 3.5 feet bgs.

- Some of the co-located soil samples were collected from different locations than were indicated in the SAP.

- The samples analyzed by North Coast included matrix spikes but not matrix spike duplicates.

- The samples analyzed by Alpha Analytical included laboratory control spikes but not laboratory control spike duplicates.

- The samples analyzed by TestAmerica for dioxins/furans did not include matrix spikes or matrix spike duplicates because it is not part of EPA Method 1613B.

- One additional sample (FM-7) was collected from the former mill area that was not proposed in the SAP.

5.0 CHEMICAL ANALYSIS RESULTS

5.1 Soil Analytical Results

The laboratory analytical reports are included in Appendix D. Results for soil samples with analytes detected at concentrations above the detection limits are provided in the table below. There were a total of four soil samples in which the concentrations exceeded the screening levels. Arsenic was detected at concentrations exceeding the screening level in the samples collected near the conical burner. Motor oil was detected in one of the samples in the former truck maintenance area. The concentrations of the analytes in all of the other soil samples were either less than the screening levels or below the detection limits. There were no detections of PCP/TCP in the soil samples.

SUMMARY OF CHEMICAL CONCENTRATIONS IN SOIL SAMPLES FROM THE MAY 10-12, 2011 SAMPLING EVENT

Sample ID	Date	TPH-D (mg/kg)	TPH-MO (mg/kg)	As (mg/kg)	Cr (mg/kg)	Cu (mg/kg)	Pb (mg/kg)	Ni (mg/kg)	Zn (mg/kg)	Dioxins/ Furans (pg/g)
	Screen-ing Level	83	370	0.39	180,000	3,100	400	1,600	23,000	4.5
CB-1-0.0'-1.0'	5/10/11	<1.0	<10	**3.6**	170	38	23	100	150	4.1
CB-2-0.0'-1.75'	5/10/11	<1.0	<10	**4.4**	190	51	62	100	86	2.3
CB-3-0.0'-1.75' (Duplicate of CB-2)	5/10/11	<1.0	<10	**3.0**	170	35	44	91	80	2.5
FM-4-0.0'-1.0'	5/11/11	<1.0	11	--	--	--	--	--	--	--
FM-5-0.0'-0.5'	5/11/11	<1.0	30	--	--	--	--	--	--	--
TM-1-1.0'-2.0'	5/11/11	4.4	16	--	--	--	--	--	--	--
TM-2-1.0'-2.0'	5/11/11	43.8	240	--	--	--	--	--	--	--
TM-4-0.0'-2.0'	5/11/11	9.2	**510**	--	--	--	--	--	--	--
TM-5-0.0'-1.5'	5/11/11	2.2	76	--	--	--	--	--	--	--

NOTES: Detections at or above the residential screening level shown in red **bold**.
Dioxins/Furans reported as Toxic Equivalency (TEQ) based on the 2005 World Health Organization toxic equivalency factors.
Some TPH concentrations are flagged in the lab report as shown in Table 1.

Screening Levels — Sources of screening levels are included in Table 1.
mg/kg — Milligrams per kilogram
pg/g — Picogram per gram.
TPH — Total Petroleum Hydrocarbon
-- — Not analyzed

5.2 Surface Water Analytical Results

The temperature, conductivity and pH of the water from which the surface water samples were collected were measured with a Myron Ultrameter II™ 6P. The temperature of the water was measured at 10.0 °C, the conductivity was measured at 72.8 microseimens, and the pH was measured at 7.3.

The laboratory analytical reports are included in Appendix D. Results for water samples with analytes detected at concentrations above the detection limits are provided in the table below. There were a total of two surface water samples (excluding the equipment blank) in which the concentrations exceeded the screening levels. Arsenic and dioxin/furan compounds were detected at concentrations exceeding the screening level in the surface water sample collected downstream of the conical burner. The concentrations of all of the other analytes in the surface water samples were either less than the screening levels or below the detection limits. There were no detections of TPH as D/MO or PCP/TCP in the surface water samples.

SUMMARY OF CHEMICAL CONCENTRATIONS IN WATER SAMPLES FROM THE MAY 10-12, 2011 SAMPLING EVENT

Sample ID	Date	As (µg/L)	Pb (µg/L)	Dioxins/Furans (pg/L)
	Screening Level	0.018	2.5	0.005
SW-1	5/10/11	<2.0	<1.0	**4.1**
SW-2 (Duplicate of SW-1)	5/10/11	**2.6**	<1.0	0.00
SW-3 (Equipment Blank)	5/10/11	<2.0	1.0	**0.13**

NOTES: Detections at or above the residential screening level shown in red **bold**.
Dioxins/Furans reported as Toxic Equivalency (TEQ) based on the 2005 World Health Organization toxic equivalency factors.
Screening Level Sources of screening levels are included in Table 3.
µg/L Micrograms per liter
pg/L Picograms per liter

6.0 DATA QUALITY EVALUATION

6.1 Review of Laboratory Reports

The laboratory analytical reports are included in Appendix D. FES reviewed the laboratory analytical reports to determine if there were any data quality issues.

North Coast Laboratories

North Coast analyzed all of the analytes except metals in soil and dioxins/furans in soil and water. The analyses for metals in soil was subcontracted to Alpha Analytical and are included in the North Coast lab report. The North Coast lab report dated June 16, 2011 is an amended report because PCP/TCP and copper analyses for some of the samples were inadvertently left off of the chain-of-custody. The reporting limits in the amended report for PCP/TCP in soil and water and for arsenic, chromium, and lead in water were lowered. The soil samples that were not initially analyzed for PCP/TCP were from FM-4, FM-5, FM-6, and FM-7. Because of this error these samples were extracted 19 days after the 14-day holding time.

A second amended report was issued on July 14, 2011 to explain the apparent detections of PCP in the samples selected for matrix spikes at concentrations below the reporting limits. The explanation is included in the case narrative and indicates that they are not valid detections and were the result of "detector baseline noise" and that there was no PCP in the samples chosen for the matrix spikes.

The method blanks for all analytes analyzed by North Coast were non-detect. All of the laboratory control spikes and laboratory control spike duplicates had percent recoveries within the lab's limits. Matrix spike analysis was conducted for samples collected from SW-2, SW-3, FM-1, FM-5, FM-5 and TM-9. All of the recoveries were within the limits used by North Coast. No matrix spike duplicates were created. The Sampling and Analysis Plan indicated that samples from TM-1, FM-1, CB-1, and SW-1 would include matrix spikes and matrix spike duplicates. This was inadvertently not indicated on the chain-of-custody so the lab used their normal procedure of selecting samples for matrix spike analysis with no matrix spike duplicates. The data was all accepted based on the laboratory control spikes, laboratory control spike duplicates, and matrix spikes.

Alpha Analytical (subcontracted by North Coast)

The initial lab report did not include the results for copper from CB-1, CB-2, and CB-3. These results were reported in the amended report without having to reanalyze the samples.

The method blanks for metals in soil were all non-detect. The laboratory control spike for metals in soil were within the recovery limits for Alpha Analytical. The percent recovery of lead in the matrix spike and matrix spike duplicate were several times less than the spike reference value. The percent recovery of nickel in the matrix spike duplicate was 68% which is less than the lower control limit of 75%. The percent recovery for copper in the matrix spike duplicate was 1440% compared to the upper control limit of 125% which resulted in an exceedance of the relative percent difference limit. The matrix spike and matrix spike duplicate used a sample that was not part of this project.

TestAmerica (Dioxins/Furans Only)

Some of the sampling times written on the containers did not match the times on the chain-of-custody. The times on the chain-of-custody were used for logging in the samples. There were detections of analytes in the method blanks. The results for analytes that were detected in the method blanks are flagged with the "B" qualifier symbol. Numerous analytes in all of the samples were detected below the reporting limit and are flagged with the "J" qualifier symbol. Several of the analytes were flagged with the "EMPC" qualifier indicating the concentration is an estimated maximum possible concentration. The case narrative for the laboratory control sample associated with the batch that included SW-1, SW-2, and SW-3 stated that the instrument "exhibited elevated instrument noise for 2,3,7,8 TCDF requiring the detection limit to be raised appropriately".

Sample SW-2 was collected from the same location as SW-1 within a time interval of approximately 10 minutes from 11:32 AM and 11:42 AM on May 10, 2011. The chain-of-custody for the dioxin/furan samples sent to TestAmerica show the times as 1:53 PM for SW-1 and 2:00 PM for SW-2. The correct times are on the North Coast chain-of-custody.

6.2 Assessment of Field Variability of Co-Located Soil Samples

A total of four co-located soil samples were collected for this project. The sample results are shown in the table below. There were no detections above the reporting limits for PCP/TCP and TPH-D/MO so these analytes are not included in the table. The relative percent differences (RPD) were calculated for the sample from CB-1 and the co-located sample CB-2. The RPDs are shown on the table below. The highest RPDs were for arsenic, copper, and lead which ranged from 34.0% to 37.8%. The RPD values for arsenic and copper are slightly over the generally accepted 35%. The RPD values for chromium, nickel, zinc, and dioxins/furans ranged from 7.2% to 11.1% and are well below 35%.

SUMMARY OF CHEMICAL CONCENTRATIONS IN CO-LOCATED SOIL SAMPLES FROM THE MAY 10-12, 2011 SAMPLING EVENT

Sample ID	Date	As (mg/kg)	Cr (mg/kg)	Cu (mg/kg)	Pb (mg/kg)	Ni (mg/kg)	Zn (mg/kg)	Dioxins/ Furans (pg/g)
	Screen-ing Level	0.39	180,000	3,100	400	1,600	23,000	4.5
CB-2-0.0'-1.75'	5/10/11	**4.4**	190	51	62	100	86	2.3
CB-3-0.0'-1.75' (Co-located sample of CB-2)	5/10/11	**3.0**	170	35	44	91	80	2.5
Relative Percent Difference for CB-2 and CB-3		**37.8%**	**11.1%**	**37.2%**	**34.0%**	**9.4%**	**7.2%**	**8.3%**
FM-1-0.0'-1.0'	5/10/11	--	--	--	--	--	--	--
FM-6-0.0'-1.0' (Co-located sample of FM-1)	5/10/11	--	--	--	--	--	--	--
TM-7-0.0'-0.5'	5/11/11	--	--	--	--	--	--	--

TM-11-0.0'-0.5' (Co-located sample of TM-7)	5/11/11	--	--	--	--	--	--	--
TM-10-0.0'-1.0'	5/12/11	--	--	--	--	--	--	--
TM-10-0.0'-1.0' (Co-located sample of TM-7)	5/12/11	--	--	--	--	--	--	--

NOTES: Detections at or above the residential screening level shown in red **bold**.
Dioxins/Furans reported as Toxic Equivalency (TEQ) based on the 2005 World Health Organization toxic equivalency factors.
Screening Levels Sources of screening levels are included in Table 1.
mg/kg Milligrams per kilogram
pg/g Picogram per gram.
TPH Total Petroleum Hydrocarbon
-- Not analyzed

6.3 Assessment of Field Variability of Co-Located Water Samples

One co-located surface water sample was collected for this project. The sample results are shown in the table below. There were no detections above the reporting limits for PCP/TCP, TPH-D/MO, chromium, copper, lead, nickel, and zinc so these analytes are not included in the table. Arsenic was not detected in SW-1 above the reporting limit of 2.0 µg/L but was detected in SW-2 at a concentration of 2.6 µg/L.

The dioxin/furan concentration in Toxic Equivalency (TEQ) based on the World Health Organization's 2005 Toxic Equivalency Factors (TEFs) for SW-1 was 4.1 pg/L but dioxins/furans were not detected in SW-2. RPD values were not calculated because arsenic was not detected in SW-1 and dioxins/furans were not detected in SW-2.

SUMMARY OF CHEMICAL CONCENTRATIONS IN CO-LOCATED WATER SAMPLES FROM THE MAY 10-12, 2011 SAMPLING EVENT

Sample ID	Date	As (µg/L)	Dioxins/Furans (pg/L)
	Screening Level	0.018	0.005
SW-1	5/10/11	<2.0	**4.1**
SW-2(Co-located sample of SW-1)	5/10/11	**2.6**	0.00

NOTES: Detections at or above the residential screening level shown in red **bold**.
Dioxins/Furans reported as Toxic Equivalency (TEQ) based on the 2005 World Health Organization toxic equivalency factors.
Screening Level Sources of screening levels are included in Table 3.
µg/L Micrograms per liter
pg/L Picograms per liter

6.4 Equipment Blanks

Equipment blanks were collected May 10, 2011 and were analyzed for all analytes related to this project. The equipment blanks were collected by decontaminating the

hand-auger with Liquinox® followed by a tap water rinse and a final rinse with distilled water. Lead was detected in the equipment blank at a concentration of 1.0 µg/L which is equal to the reporting limit. Dioxins/furans were detected at a TEQ concentration of 0.13 pg/L (WHO, 2005) in the equipment blank. The dioxin/furan congener concentrations were all below the reporting limits and are estimated results as shown in Table 4. Additionally two of the three congeners that were detected were also detected in the method blank which could cause a high bias in the results.

6.5 Investigation Derived Wastes

All solid investigation derived wastes were placed back in the holes where they were collected except for the soil from TM-1 which is being stored in a 5-gallon bucket in a secure location. Water used for decontamination was poured on the ground in the area near each boring.

7.0 MEASUREMENT QUALITY OBJECTIVES (MQOs)

Data assessment criteria are used to evaluate the quality of the field sampling and laboratory performance for the sampling event, and are expressed in terms of analytical precision, accuracy, representativeness, completeness, and comparability, which are described below.

7.1 Precision

Precision is the degree of mutual agreement between or among independent measurements of a similar property usually reported as relative percent difference (RPD). This indicator relates to the analysis of duplicate laboratory samples, duplicate matrix spikes, and field duplicates. An RPD of <20% for water and <35% for soil, depending upon the chemical being analyzed, is generally acceptable.

RDPs for the co-located soil samples ranged from 7.2% to 37.8%. Although the maximum RPD slightly exceeds the maximum target RPD, given the relatively coarse grained nature of the soils samples resulting in gross heterogeneity this is an acceptable levels of precision.

Surface water duplicates did not contain contaminants common to both samples and RPDs could not be calculated. Minor differences of turbidity during the period of sample collection may account for the differing concentrations of arsenic and dioxins/furans.

Laboratory precision was assessed using laboratory control samples and laboratory control sample duplicates (LCS/LCSD) and matrix spikes and matrix spike duplicates (MS/MSD). Precision was expressed in terms of RPD between the values resulting from duplicate analysis. RPDs for all laboratory analysis were in acceptable ranges for the specific analytical techniques.

7.2 Accuracy/Bias

Accuracy is the degree of agreement of a measurement with a known or true value. To determine accuracy, a laboratory value was compared to a known or true concentration. Accuracy for this project was determined by laboratory control samples and laboratory control sample duplicates and matrix spikes and matrix spike duplicates. Accuracy is expressed as a bias (high or low) and is determined by calculating percent recovery (%R) from MSs/MSDs and LCSs/LCSDs.

LCS %Rs indicates accuracy relevant to an analytical batch lot and is a measure of analytical accuracy conditions independent of samples and matrices. MS/MSD and surrogate spike %Rs indicate accuracy relevant to a unique sample matrix. The %R of an analyte, and the resulting degree of accuracy expected for the analysis of spiked samples, are dependent upon the sample matrix, method of analysis, and the compound or element being measured. The concentration of the analyte relative to the detection limit of the method also is a significant factor in determining the accuracy of the measurement.

QC samples that were used in this investigation to measure accuracy/bias include the following:

- Matrix spikes - To monitor sample preparation/analysis methodology, as well as, to represent the actual sample matrix itself; and

- Standard reference materials and/or laboratory control samples to monitor sample preparation/analysis methodology and often of a similar media (such as water, soil, sediment) as the field samples.

All laboratory matrix spikes and laboratory control samples have %Rs that are within the range of acceptance criteria (80 percent to 120 percent for LCSs).

7.3 Representativeness

Representativeness is the expression of the degree to which data accurately and precisely represent a characteristic of an environmental condition or a population. It relates both to the area of interest and to the method of taking the individual sample. The two principal study questions for this project are:

- Does the Site contain contaminated soils, resulting from the former use as a lumber mill and truck shop, above concentrations regarded as safe for reuse of the Site?

- Has the former use of the Site as a lumber mill resulted in impacts to surface water quality to the onsite creek above concentrations regarded as safe for human and/or ecological receptors?

This project collected judgmental samples in areas that the Phase I identified as the most likely to contain contaminants.

Factors that affect representativeness include:

- Use of appropriate sampling procedures, including equipment and equipment decontamination and sampling holding temperatures;

- Use of appropriate analytical methods for the required parameters and project reporting limits; and

- Analysis of samples within the required holding times,

The portion of each collected sample that was chosen for analysis also affects sample representativeness. The laboratory adequately and appropriately homogenized all samples prior to taking aliquots for analysis to ensure that the reported results were representative of the sample received.

This investigation used sampling and analytical methods for ensuring the data collected reflects the environmental conditions in the areas sampled. To further ensure the representativeness of the data collected, chain-of-custody procedures, sample preservation, and maximum sample holding times were followed with the exception of

the analysis of PCP/TCP in three samples that were analyzed past their holding time due to errors on the chain of custody. Although analyzed past the acceptable holding times, PCP/TCP are semi volatile organic compounds that are relatively stable and the results which were all non detect, are considered to be representative of the Site.

QC samples that were used in this investigation to quantitatively measure representativeness did not included the use of temperature blanks but rather used sample temperature recorded upon receipt of the samples by the laboratories to serve as a QC check for temperature-related sample preservation. All samples were received within the acceptance criteria for samples requiring preservation at 4°C +/- 2°C.

A qualitative measure of representativeness included verification that documented sample collection and analytical methods (including sample handling, chain-of-custody procedures, sample preservation, and sample holding times protocols) were followed to ensure that the data reflects the environmental conditions. Errors were made on the chain-of-custody that resulted in the analysis of three samples for PCP/TCP past their holding times. Chain of custody errors were identified during the course of this investigation and were corrected at the time of discovery.

7.4 Comparability

Comparability expresses the confidence with which one dataset can be compared to another. The use of methods from EPA or "Standard Methods" or from some other recognized sources allows the data to be compared facilitating evaluation of trends or changes at a site. Comparability also refers to the reporting of data in comparable units so direct comparisons are simplified. Comparability during analysis is dependent upon analytical methods, detection limits, laboratories, units of measure, and sample preparation procedures. Comparability is determined on a qualitative rather than quantitative basis. For this project, comparability of all data collected was ensured by adherence to standard sample collection procedures, standard field measurement procedures, and standard analysis and reporting methods, including consistent units.

7.5 Completeness

Completeness is expressed as percent of valid usable data actually obtained compared to the amount that was expected.

The field plan was to collect two soil samples at each boring location with depth intervals of 0.0'-1.5' and 3.0'-4.5'. Because of the presence of rocks at shallow depths, soil boring were shallower than expected. All of the soil borings were 2.5 feet or less in total depth with the exception of two borings that were 3.5 feet. Due to the shallow nature of the borings it was decided to collect only the shallow sample interval from each boring except in a single boring in which two samples were collected. This allowed the sampling from 17 locations instead of the proposed 16 locations. A total of 18 soil samples (excluding co-located samples) were collected from the 17 locations. The Sampling and Analysis Plan called for the collection of 32 soil samples from 16 locations. The percent completeness is 56% based on the number of samples planned, versus the number of samples analyzed. Although this is below the acceptance criteria one additional location was sampled. Because all of the borings encountered rocks

which resulted in refusal at 2.5' except for two locations where refusal was encountered at 3.5', it was considered unnecessary to collect additional depth intervals.

7.6 Sensitivity

Laboratory methods utilized in the assessment were sensitive enough to be able to quantify the parameters of concern at or below the regulatory standards except for the following:

- TPH as motor oil in groundwater has a regulatory limit of 100 µg/l and a detection limit of 170 µg/l; and

- Arsenic in surface water has a regulatory limit of 0.018 µg/l and a detection limit of 2 µg/l;

The analyses utilized for this assessment were the most sensitive EPA methods available at that time. Beyond the two exceptions noted above the remaining dataset met the acceptance criteria for sensitivity.

8.0 DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

8.1 Conical Burner Area

Sample Location Descriptions

The samples were collected within approximately 30 feet to the west (CB-1) and to the southwest (CB-2). These were the closest locations that could be sampled because the burner is on the adjacent property. The samples were collected from the tops of small ridges that appeared to be remnant surfaces above the surrounding eroded areas (see Photos 2 and 3 in Appendix A). The sample locations were several feet above the current elevation of the conical burner.

Discussion

A total of two soil samples (CB-1 and CB-2) were collected in the conical burner area and analyzed for TPH-D/MO, metals, and dioxins/furans. One co-located soil sample (CB-3) was collected from CB-2.

The only analyte that exceeded the screening level was for arsenic which was detected at concentrations ranging from 3.0 to 4.4 mg/kg. The screening level for arsenic for this project was 0.39 mg/kg based on the November, 2010, USEPA Preliminary Remediation Goals (PRGs). All of the other metals analyzed (chromium, copper, lead, nickel, and zinc were well below the screening levels for this project.

The concentrations of dioxins/furans expressed as TEQ ranged from 2.3 to 4.1 picograms/gram (pg/g) and were below the screening level of 4.5 pg/g based on the PRGs. These concentrations may be the result of ash from the conical burner which may have been deposited in the vicinity when the mill was in operation. Most of the area on the western side of the conical burner has been eroded significantly as evidenced by the incised stream channel. The concentration of dioxins/furans could be significantly higher within and closer to the conical burner which is located on the adjacent property.

Conclusion

Background concentrations for arsenic in soils for this area of northwestern California range from approximately 3 to 4 mg/kg (USGS, 2001). The concentrations of arsenic in soils near the conical burner are probably not elevated compared to this area of California.

The samples collected near the conical burner probably contain ash which is known to contain dioxins/furans. The distribution of dioxin/furan congeners as shown in Table 2 appears to be consistent with the distribution in ash-related sources.

Recommendations

There are no recommendations for further soil sampling activities in the conical burner area as the concentration of arsenic is probably consistent with background concentrations and the concentrations of dioxins/furans are below the screening level.

8.2 Surface Water Sample

Sample Location Descriptions

The surface water sample was collected approximately 40 feet downstream of the conical burner and approximately 20 feet downstream of the confluence of the stream that runs onto the Site from the adjacent property and the stream that runs through the Site (see Photo 1 in Appendix A).

Discussion

One surface water sample (SW-1) and one co-located sample (SW-2) were collected from the unnamed stream that runs through the Site near the conical burner. The surface water samples were collected using a peristaltic pump with disposable tubing.

Arsenic was detected slightly above the reporting limit (2.0 µg/L) at a concentration of 2.6 µg/L in SW-2 which is above the screening level of 0.018 µg/L from the PRGs. Arsenic was not detected above the reporting limit (2.0 µg/L) in SW-1.

Dioxins/Furans were detected at a TEQ of 4.1 pg/L in SW-1 but were not detected in SW-2. The screening level for dioxins/furans in surface water for this project was 0.005 pg/L.

Conclusion

The detection of arsenic at a concentration of 2.6 µg/L exceeding the screening level for this project of 0.018 µg/L may be due to the presence of ash from near the conical burner being washed into the stream. The production of ash is known to concentrate metals and arsenic oxides are readily soluble in water.

Since the solubility of dioxins/furans in water is very low the detection of dioxins/furans at a TEQ of 4.1 pg/L in SW-1 may be due to sediment that may have been inadvertently introduced into the sample during the collection process. It was necessary to walk down the stream to access the sample point and although the sample was collected after the water cleared up there may have been residual suspended particles in the water column. Additionally the end of the tubing used for collection of the surface water samples could have came in contact with creek sediments during sample collection.

Human Risk

The detection of arsenic at a concentration of 2.6 µg/L exceeding the screening level for this project of 0.018 µg/L which is based on human risk from drinking water and human risk from fish consumption. There are no known direct uses of the water or wildlife in the creek by humans.

The concentration of dioxin/furan compounds exceeds the screening level of 0.005 pg/L which is based on human risk from drinking water and human risk from fish consumption. There are no known direct uses of the water or wildlife in the creek by humans.

Ecological Risk

The arsenic concentration detected in the surface water is well below the concentrations determined by the USEPA for the national recommended water quality criteria for the protection of freshwater aquatic life which are 150 µg/L (4-day continuous concentration) and 340 µg/L (1-hour maximum concentration).

The screening level for freshwater aquatic life protection determined by the USEPA for the national recommended water quality criteria is 10 pg/L for chronic exposure to 2,3,7,8-TCDD. The TEQ concentration of dioxins/furans was 4.1 pg/L which is less than half of the screening level.

Because of the configuration of the culvert underneath Highway 169 just west of the Site, it is unlikely that fish are able to migrate above the culvert. Because the presence of dioxins/furans was detected in the water it is likely that the source is residual ash in the vicinity of the conical burner. The ash and ash-containing sediment and soil are very likely being transported downstream during high flows and probably are impacting water quality all of the way to the where the stream enters the Klamath River approximately 900 feet south of the Site.

The list of threatened, endangered and candidate species for the Johnsons 7.5 minute USGS Topographic Map that includes the Site includes the following species:

Fish: green sturgeon and coho salmon

Birds: marbled murrelet, western yellow-billed cuckoo, and the northern spotted owl

Mammals: fisher

Recommendations

The concentration of dioxins/furans in SW-1 significantly exceeds the screening level which is based on human health protection for the consumption of water and fish by humans. The water from this stream flows into the Klamath River approximately 900 feet downstream of the sample collection point. There are no known uses of the creek water between the Site and the Klamath River. If the Yurok Tribe desires additional information regarding dioxin levels in the creek FES recommends additional sampling which may include sampling of creek sediment and surface waters upstream of the Site, at the Site, and downstream of the Site between the Site and the Klamath River.

8.3 Former Mill Site Area

Sample Location Descriptions

A total of six soil samples (FM-1 through FM-6) and one co-located sample (FM-7) were collected in the vicinity of the former mill footprint. The samples from FM-1 and FM-2 were collected near the southern edge of the former log pond on what could have been remnants of the dam. The sample from FM-3 was collected from the eroded area near the stream channel that runs through the former mill footprint. Samples FM-4, FM-5, and FM-7 were collected from the surface that includes the large clearing to the east of the former mill site. Photographs of the sample locations (FM-1 through FM-5 and FM-7) are included in Appendix A

Discussion

A total of six soil samples (FM-1 through FM-6) and one co-located sample (FM-7) were collected in the vicinity of the former mill footprint. All of the samples were analyzed for TPH-D/MO and PCP/TCP. There were no detections above the reporting limits for PCP/TCP or for TPH-Diesel.

TPH-Motor Oil was detected in the samples from borings FM-4 and FM-5 at concentrations of 11 and 30 mg/kg respectively. These concentrations are well below the screening level from the PRG which is 370 mg/kg. The result for FM-4 was qualified with the statement in the case narrative that "The sample does not have the typical pattern of fresh motor oil. The material is heavier than motor oil. However, the result reported represents the amount of material in the motor oil range." The result for FM-5 was qualified with the statement in the case narrative that "The sample does not have the typical pattern of fresh motor oil. However, the result reported represents the amount of material in the motor oil range." Based on these results it does not appear that there is significant petroleum contamination in the area and at the depths sampled.

Conclusion

The concentrations of motor oil detected in two of the samples from the former mill area are less than 10% of the screening level and do not appear to indicate significant petroleum contamination in the areas sampled.

Recommendations

There are no recommendations for further soil sampling activities in the former mill area as the concentrations of TPH-Motor Oil in the two samples that had detections are well below the residential screening level.

8.4 Former Truck Maintenance Area

Sample Location Descriptions

A total of ten soil samples (TM-1 through TM-10) and two co-located samples (TM-11 and TM-12) were collected in the vicinity of the former truck maintenance area. Photographs of the sample locations are included in Appendix A. Sample locations TM-1 through TM-5 were collected from small “pits” which ranged from approximately 1.5 feet to 3 feet deep and up to approximately 10 feet in diameter. The pits do not appear to be tank-related as they are shallow and there is rock very near to the surface that does not appear to be fill. There are lengths of approximately 1 inch diameter metal piping in the vicinity of TM-1 through TM-4. Sample locations TM-1 through TM-4 are located just to the east of the estimated locations of three of the truck maintenance buildings.

Discussion

All of the samples were analyzed for TPH-D/MO. There were detections of TPH-Diesel and TPH-Motor Oil above the reporting limits in soil samples TM-1, TM-2, TM-4, and TM-5.

The concentrations of TPH-D ranged from 2.2 mg/kg in the sample from TM-5 to 9.2 mg/kg in the sample from TM-4. The detections were well below the screening level of 83 mg/kg listed in the PRGs. The TPH-D results for the samples from TM-1 and TM-5 were qualified with the statement in the case narrative that "The sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil." The results for the samples from TM-2 and TM-4 were qualified with the statement in the case narrative that "The sample does not have the typical pattern of fresh diesel. The material is the lighter portion of the material in the motor oil range."

The concentrations of TPH-MO ranged from 16 mg/kg in the sample from TM-1 to 510 mg/kg in the sample from TM-4. The only soil sample that exceeded the screening level

of 370 mg/kg was from boring TM-4 which had a concentration of 510 mg/kg. The TPH-MO results for the samples from TM-1, TM-2, and TM-5 were qualified with the statement in the case narrative that "The sample does not have the typical pattern of fresh motor oil. However, the result reported represents the amount of material in the motor oil range." The TPH-MO results for the samples from TM-4 were qualified with the statement in the case narrative that "The sample does not have the typical pattern of fresh motor oil. The material is heavier than motor oil. However, the result reported represents the amount of material in the motor oil range."

Conclusion

The only soil samples in the truck maintenance area where TPH-D/MO was detected was from the small pits. All except one of the samples were below the screening level of 370 mg/kg. It appears that there is low-level petroleum impact in the vicinity of the former truck maintenance area which in at least in one area exceeds the screening level for TPH-Motor Oil.

Recommendations

Because of the detection of TPH-Motor Oil exceeding the screening level in TM-4, FES recommends additional borings in the area surrounding TM-4 and further excavation into the pit structure to better understand the origin of the pit.

8.5 Principal Study Questions

The two principal study questions for this project are:

- Does the Site contain contaminated soils, resulting from the former use as a lumber mill and truck shop, above concentrations regarded as safe for reuse of the Site?

- Has the former use of the Site as a lumber mill resulted in impacts to surface water quality to the onsite creek above concentrations regarded as safe for human and/or ecological receptors?

The assessment has concluded that the Site does not contain contaminated soils resulting from former use as a lumber mill above concentrations regarded as safe for reuse of the Site.

The assessment has concluded that the Site does contain contaminated soils resulting from former use as a truck shop at one location that is above concentrations regarded as safe for reuse of the Site.

The former use of the Site as a lumber mill has not likely resulted in impacts to surface water quality to the onsite creek above concentrations regarded as safe for human and/or ecological receptors.

The former use of the adjacent property as a conical burner associated with the former lumber mill located at the Site has likely resulted in impacts to surface water quality to the onsite creek above concentrations regarded as safe for human and/or ecological receptors.

9.0 REFERENCES

ASTM E1903 – 97, 2002, Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process.

California Environmental Protection Agency, 2005, Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties, January 2005.

California Regional Water Quality Control Board San Francisco Bay Region, 2008, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, INTERIM FINAL- November 2007 (Revised May 2008).

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U.S. Geological Survey Professional Paper 1648, 2001, Geochemical Landscapes of the Conterminous United States— New Map Presentations for 22 Elements.

Wagner and Saucedo, 1987, “Geologic Map of the Weed Quadrangle, California”, California Division of Mines and Geology.

TABLES

TABLE 1
SUMMARY OF CHEMICAL ANALYSES OF SOIL SAMPLES
FORMER MILL SITE
Humboldt County, California

		TPH-D/MO (EPA 8015B) (with silica gel)		Metals (EPA 6020)						PCP/TCP (Canadian Pulp Method)	
	Date Sampled	TPH-Diesel (mg/kg)	TPH-Motor Oil (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Pentachlorophenol (mg/kg)	2,3,4,6-Tetrachlorophenol (mg/kg)
Sample ID	Residential Screening Level	83 [a]	370 [a]	0.39 [b]	180,000 [b]	3,100 [b]	400 [b]	1,600 [c]	23,000 [b]	0.89 [b]	1,800 [b]
CB-1-0.0'-1.0'	10-May-11	<1.0	<10	**3.6**	170	38	23	100	150	--	--
CB-2-0.0'-1.75'	10-May-11	<1.0	<10	**4.4**	190	51	62	100	86	--	--
CB-3-0.0'-1.75' [1]	10-May-11	<1.0	<10	**3.0**	170	35	44	91	80	--	--
FM-1-0.0'-1.0'	10-May-11	<1.0	<10	--	--	--	--	--	--	<0.5	<1.0
FM-2-0.0'-1.5'	10-May-11	<1.0	<10	--	--	--	--	--	--	<0.5	<1.0
FM-2-3.0'-3.5'	10-May-11	<1.0	<10	--	--	--	--	--	--	<0.5	<1.0
FM-3-0.0'-1.0'	10-May-11	<1.0	<10	--	--	--	--	--	--	<0.5	<1.0
FM-4-0.0'-1.0'	11-May-11	<1.0	11 [2]	--	--	--	--	--	--	<0.5	<1.0
FM-5-0.0'-0.5'	11-May-11	<1.0	30 [3]	--	--	--	--	--	--	<0.5	<1.0
FM-6-0.0'-1.0' [4]	10-May-11	<1.0	<10	--	--	--	--	--	--	<0.5	<1.0
FM-7-0.0'-0.5'	11-May-11	<1.0	<10	--	--	--	--	--	--	<0.5	<1.0
TM-1-0.0'-2.0'	11-May-11	4.4 [5]	16 [3]	--	--	--	--	--	--	--	--
TM-2-0.0'-1.5'	11-May-11	3.8 [6]	240 [3]	--	--	--	--	--	--	--	--
TM-3-0.0'-2.0'	11-May-11	<1.0	<10	--	--	--	--	--	--	--	--
TM-4-0.0'-2.0'	11-May-11	9.2 [6]	**510** [2]	--	--	--	--	--	--	--	--
TM-5-0.0'-1.5'	11-May-11	2.2 [5]	76 [3]	--	--	--	--	--	--	--	--
TM-6-0.0'-1.5'	11-May-11	<1.0	<10	--	--	--	--	--	--	--	--
TM-7-0.0'-0.5'	11-May-11	<1.0	<10	--	--	--	--	--	--	--	--
TM-8-0.0'-1.0'	12-May-11	<1.0	<10	--	--	--	--	--	--	--	--
TM-9-0.0'-1.0'	12-May-11	<1.0	<10	--	--	--	--	--	--	--	--
TM-10-0.0'-1.0'	12-May-11	<1.0	<10	--	--	--	--	--	--	--	--
TM-11-0.0'-0.5' [7]	11-May-11	<1.0	<10	--	--	--	--	--	--	--	--
TM-12-0.0'-1.0' [8]	12-May-11	<1.0	<10	--	--	--	--	--	--	--	--

TABLE 1
SUMMARY OF CHEMICAL ANALYSES OF SOIL SAMPLES
FORMER MILL SITE
Humboldt County, California

Notes:

All samples with detections of TPH-Diesel and/or TPH- Motor Oil were subjected to a silica gel cleanup.

3.6 Red bold indicates a result that exceeds a screening level.

mg/kg milligrams per kilogram or parts per million

a Table A Surface Water Screening Levels, Freshwater Habitats. California Regional Water Quality Control Board San Francisco Bay Region, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, November 2007, revised May 2008. The environmental screening level for TPH (residual fuels) was applied to motor oil.

b USEPA - Residential Preliminary Remediation Goals, November 2010.

c California Environmental Protection Agency (CALEPA), Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties, January 2005.

1 Sample CB-3-0.0'-1.75' is a duplicate of CB-2-0.0'-1.75'.

2 The laboratory reported that "The sample does not have the typical pattern of fresh motor oil. The material is heavier than motor oil. However, the result reported represents the amount of material in the motor oil range."

3 The laboratory reported that "The sample does not have the typical pattern of fresh motor oil. However, the result reported represents the amount of material in the motor oil range."

4 Sample FM-6-0.0'-1.0' is a duplicate of FM-1-0.0'-1.0'.

5 The laboratory reported that "The sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil."

6 The laboratory reported that "The sample does not have the typical pattern of fresh diesel. The material is the lighter portion of the material in the motor oil range."

7 Sample TM-11-0.0'-0.5' is a duplicate of TM-7-0.0'-0.5'.

8 Sample TM-12-0.0'-1.0' is a duplicate of TM-10-0.0'-1.0'.

TABLE 2
SUMMARY OF CHEMICAL ANALYSES OF SOIL SAMPLES FOR DIOXINS AND FURANS
FORMER MILL SITE
Humboldt County California

		2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	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	OCDF	Total TEQ (0) (WHO 2005)
	Units	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)	(pg/g)
USEPA PRGs (November 2010)		4.5 [a]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 [a]
Sample ID	Date Sampled																		
CB-1-0.0'-1.0'	10-May-11	<1.2	1.0 [J]	1.7 [J]	4.6 [J]	4.2 [J]	150 [B]	500 [B]	<1.2 [CON]	<5.8	<5.8	1.5 [J B]	0.92 [J B]	0.65 [J]	<5.8	7.1 [B]	0.76 [J B]	14 [B]	4.1
CB-2-0.0'-1.75'	10-May-11	<1.2	<5.8	0.61 [J Q]	0.91 [J]	0.94 [J Q]	14 [B]	53 [B]	1.1 [J Q CON]	1.4 [J]	2.2 [J]	5.2 [J B]	2.5 [J B]	2.3 [J]	<5.8	8.5 [B]	0.68 [J B]	3.2 [J B]	2.3
CB-3-0.0'-1.75 [1]	10-May-11	<1.1	<5.7	0.41 [J Q]	0.97 [J]	1.0 [J]	13 [B]	57 [B]	1.9 [CON]	1.5 [J]	2.4 [J]	5.3 [J B]	2.5 [J Q B]	2.3 [J]	<5.7	9.4 [B]	0.76 [J B]	4.3 [J B]	2.5

Notes:

Dioxins and furans analyzed using EPA Method 1613B.
WHO 2005 World Health Organization 2005.
TEQ (0) Total TEQs calculated with non-detections calculated as zero.
pg/g picograms per gram or parts per trillion.
< Analyte not detected at or above the reporting limit.

a USEPA - Residential Preliminary Remediation Goals, November 2010. Based on 2,3,7,8-TCDD.

CON The result for 2,3,7,8-TCDF is reported from the confirmation analysis that occurred on June 3, 2011.
B Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J Estimated result.
Q Estimated maximum possible concentration (EMPC).

TABLE 3
SUMMARY OF CHEMICAL ANALYSES OF SURFACE WATER SAMPLES AND EQUIPMENT BLANK
FORMER MILL SITE
Humboldt County, California

		TPH-D/MO (EPA 8015B) (with silica gel)		Metals (EPA 200.8)						PCP/TCP (Canadian Pulp Method)	
	Date Sampled	TPH-Diesel (ug/L)	TPH-Motor Oil (ug/L)	Arsenic (ug/L)	Chromium (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)	Zinc (ug/L)	Pentachlorophenol (ug/L)	2,3,4,6-Tetrachlorophenol (ug/L)
Sample ID	Surface Water Screening Level	56 [a]	100 [b]	0.018 [c]	50 [b]	9 [b]	2.5 [b]	52 [b]	120 [b]	0.27 [c]	210 [a]
SW-1 [1]	10-May-11	<50	<170	<2.0	<2.0	<5.0	<1.0	<5.0	<10	<0.25	<0.50
SW-2 [1 2]	10-May-11	<50	<170	**2.6**	<2.0	<5.0	<1.0	<5.0	<10	<0.25	<0.50
SW-3 [3] (Equipment Blank)	10-May-11	<50	<170	<2.0	<2.0	<5.0	1.0	<5.0	<10	<0.25	<0.50

Notes:

2.6 Red bold indicates a result that exceeds a screening level.

ug/L micrograms per liter or parts per billion

a Integrated Risk Information System (IRIS) Reference Dose as Drinking Water, USEPA.

b Table F-2a Surface Water Screening Levels, Freshwater Habitats. California Regional Water Quality Control Board San Francisco Bay Region, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater,* November 2007, revised May 2008. The environmental screening level for TPH (residual fuels) was applied to motor oil.

c National Ambient Water Quality Criteria, Human Health & Welfare Protection (Water & Fish Consumption), USEPA.

1 Dissolved metals.

2 SW-2 is a duplicate of SW-1.

3 SW-3 is an equipment blank collected by decontaminating the hand auger and pouring distilled water over the auger. The sample was analyzed for total metals.

TABLE 4
SUMMARY OF CHEMICAL ANALYSES OF WATER SAMPLES FOR DIOXINS AND FURANS
FORMER MILL SITE
Humboldt County California

		2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	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	OCDF	Total TEQ (0) (WHO 2005)
	Units	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)
USEPA PRGs (November 2010)		0.005 [a]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 [a]
Sample ID	Date Sampled																		
SW-1	10-May-11	<10	<52	4.8 J	6.2 J	4.9 J Q	10 J B	32 J B	<10	<52	<52	6.9 J	5.2 J	5.4 J	5.7 J Q	6.3 J Q	5.7 J	16 J	**4.1**
SW-2	10-May-11	<11	<54	<54	<54	<54	<54	<110	<11	<54	<54	<54	<54	<54	<54	<54	<54	<110	0.00
SW-3 (Equipment Blank)	10-May-11	<11	<56	<56	<56	<56	7.2 J Q B	72 J B	<11	<56	<56	<56	<56	<56	<56	2.9 J	<56	11 J	**0.13**

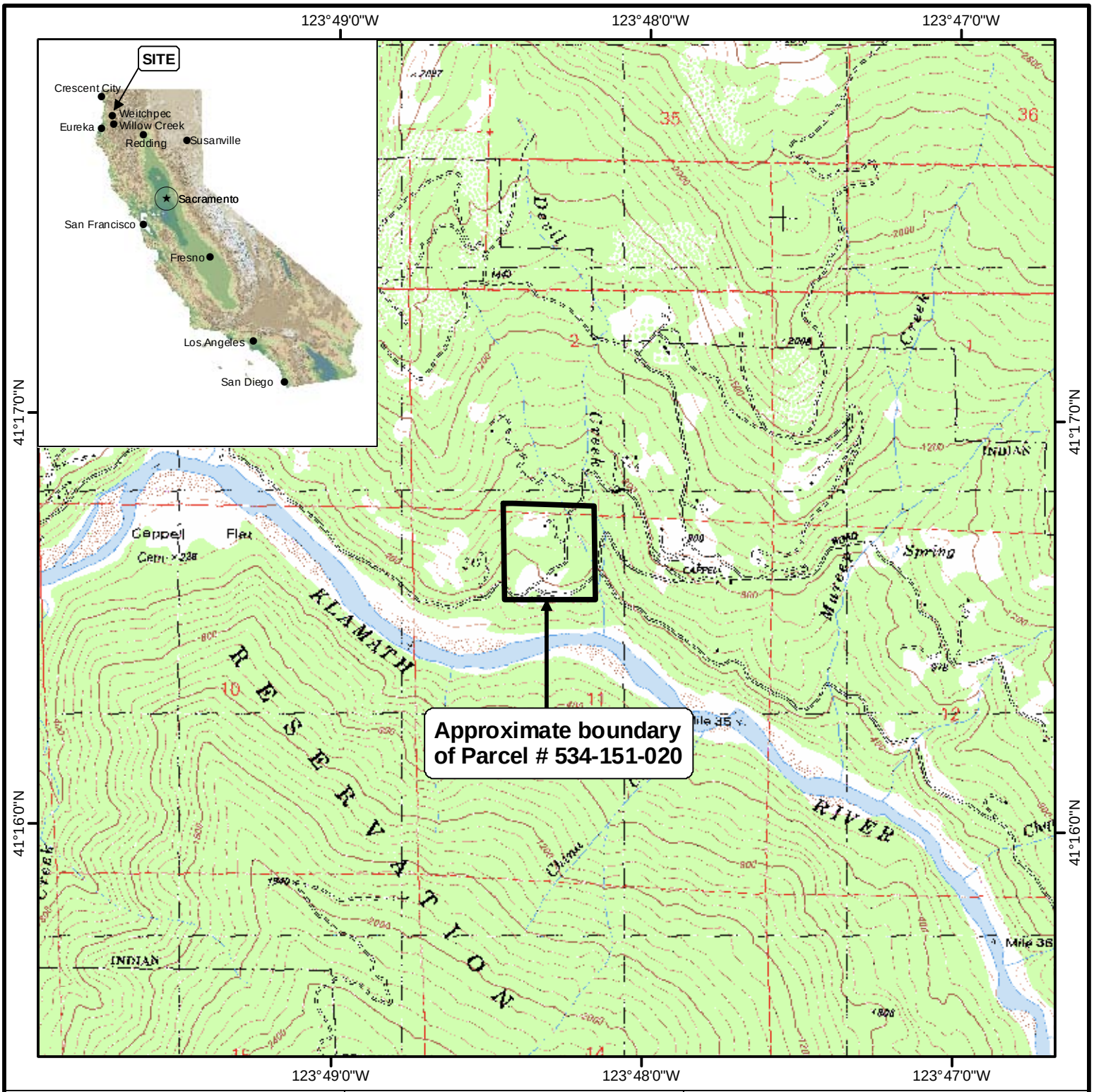
Notes:

4.1 Red bold indicates a result that exceeds a screening level.
Dioxins and furans analyzed using EPA Method 1613B.
WHO 2005 World Health Organization 2005.
TEQ (0) Total TEQs calculated with non-detections calculated as zero.
pg/L Picograms per liter or parts per quadrillion.
< Analyte not detected at or above the reporting limit.

a National Ambient Water Quality Criteria, Human Health & Welfare Protection (Water & Fish Consumption), USEPA. Based on 2,3,7,8-TCDD.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J Estimated result.
Q Estimated maximum possible concentration (EMPC).

FIGURES



N
W E
S

Feet
0 500 1,000 2,000 3,000 4,000

LEGEND

Base Image Data Source:
Johnsons, California
USGS 7.5' Quadrangle
editied 1982

ALL LOCATIONS APPROXIMATE

Yurok Tribe
Environmental Program

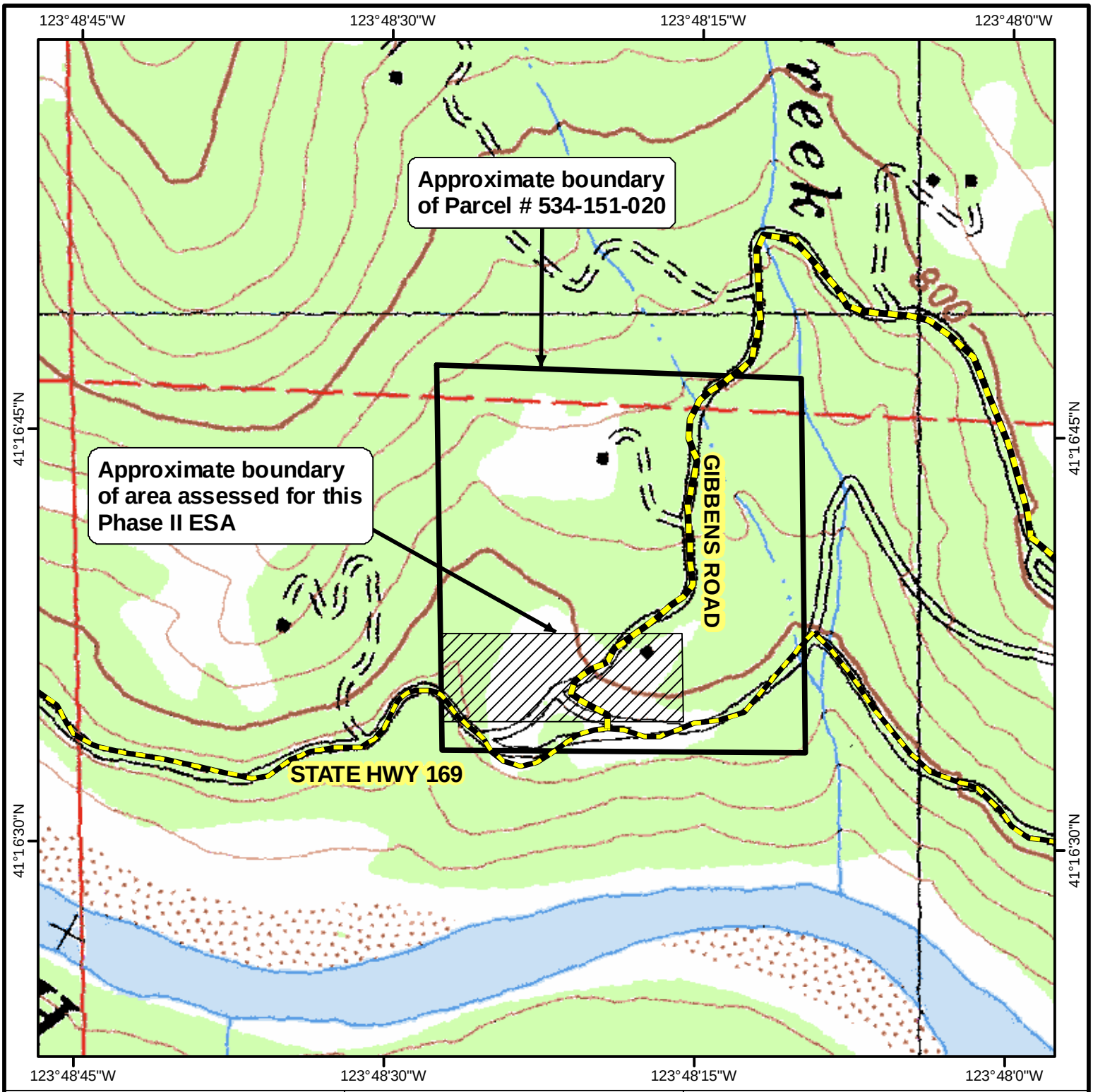
Figure 1

Site Location Map
Former Mill Site
Humboldt County, California

Freshwater Environmental Services

Date: 7-11-11

By: SJT



N
W E
S

Feet
0 100 200 400 600 800 1,000

LEGEND

Base Image Data Source:
Johnsons, California
USGS 7.5' Quadrangle
editied 1982

ALL LOCATIONS APPROXIMATE

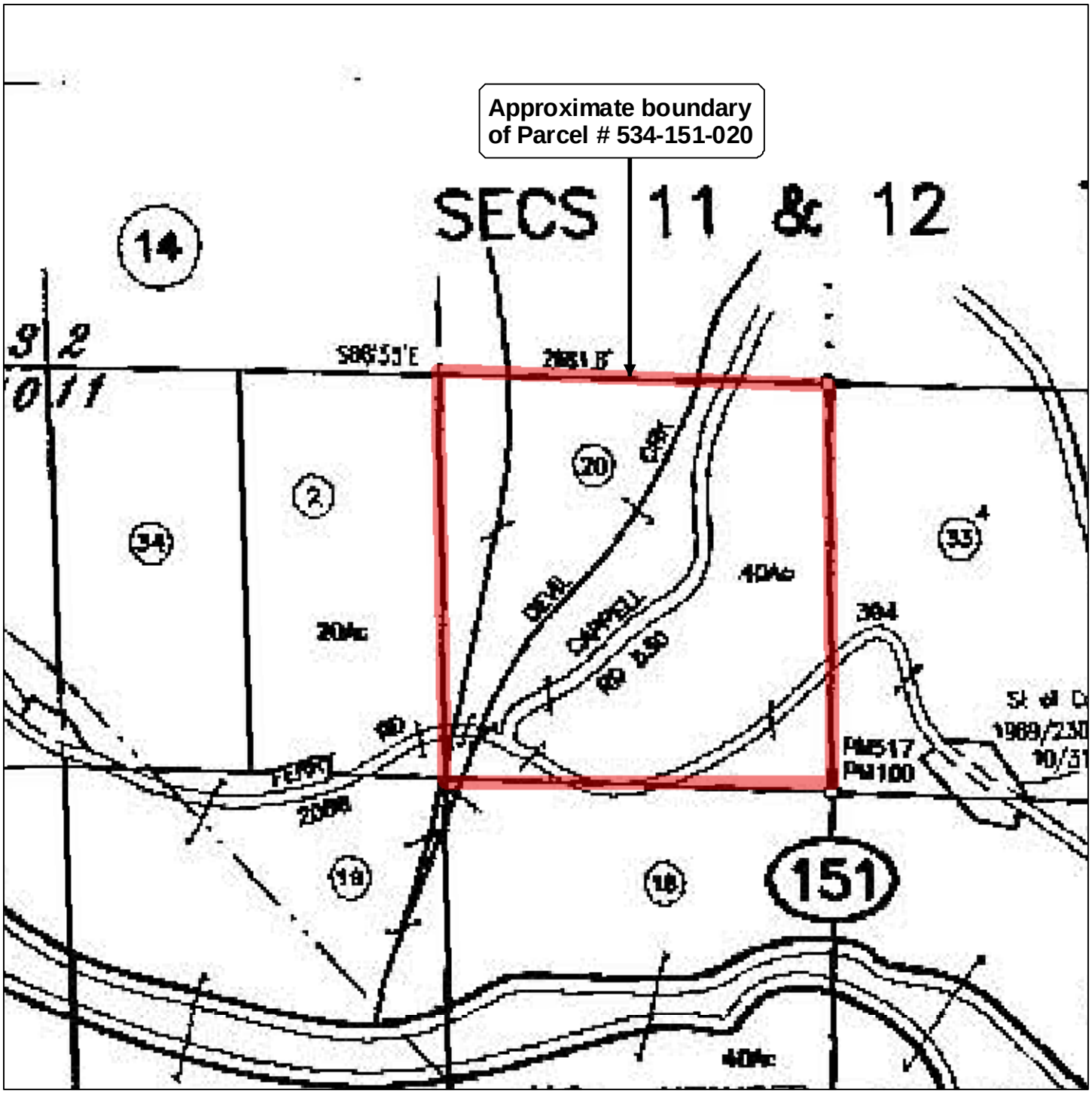
Yurok Tribe
Environmental Program

Figure 2
USGS 7.5' Topographic Map
Former Mill Site
Humboldt County, California

Freshwater Environmental Services

Date: 7-11-11

By: SJT



LEGEND

Parcel Map optained from ParcelQuest.com

ALL LOCATIONS APPROXIMATE

Yurok Tribe
Environmental Program

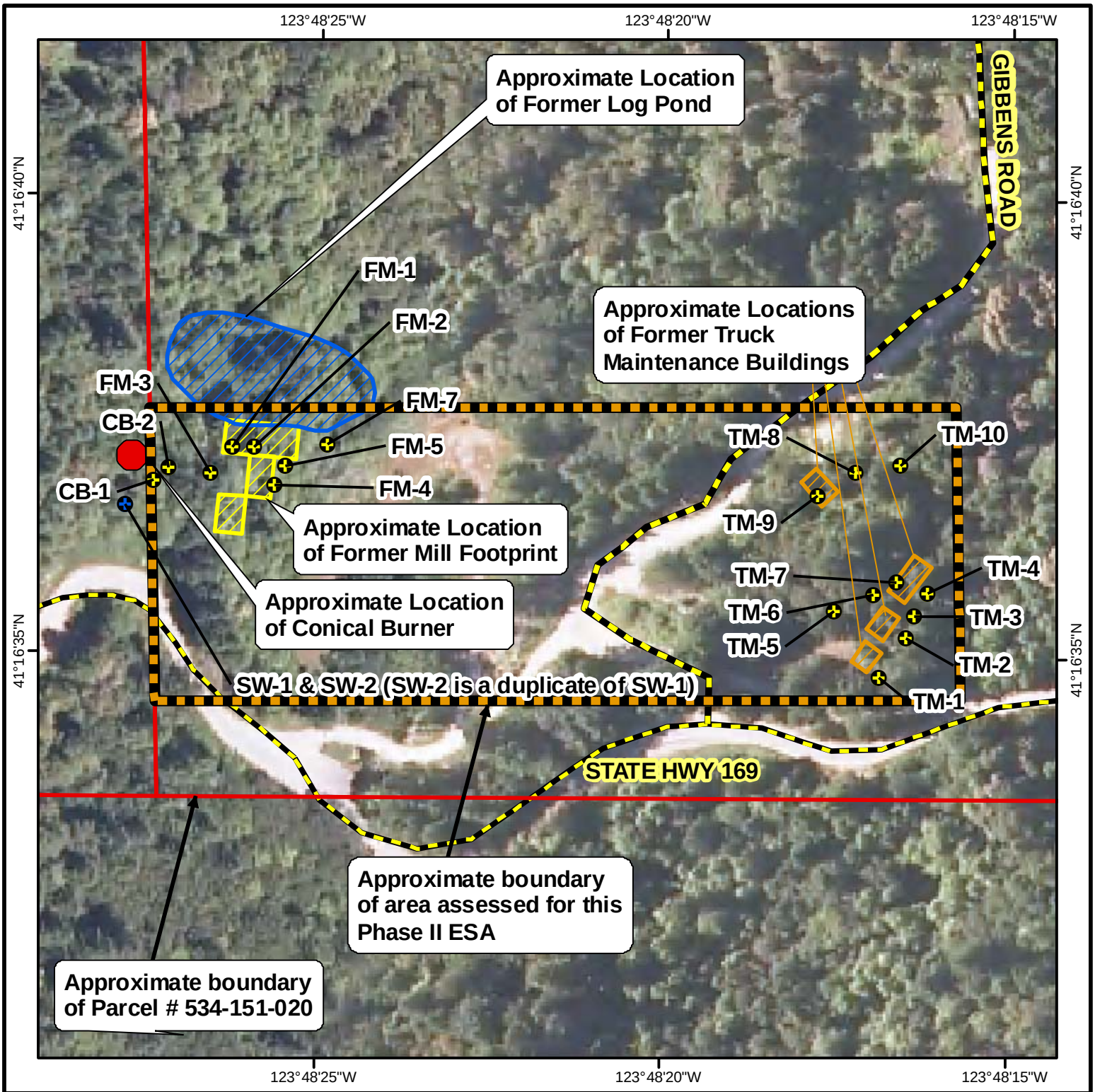
Figure 3

Parcel Map
Former Mill Site
Humboldt County, California

Freshwater Environmental Services

Date: 7-11-11

By: SJT



N
W E
S

Feet
0 50 100 200 300

LEGEND

Base Image Data Source:USDA-FSA Aerial Photography Field Office Color Digital Ortho Photo Quad, Image Date June 13, 2010.

Boring Location
Surface Water Sample

ALL LOCATIONS APPROXIMATE

Yurok Tribe
Environmental Program

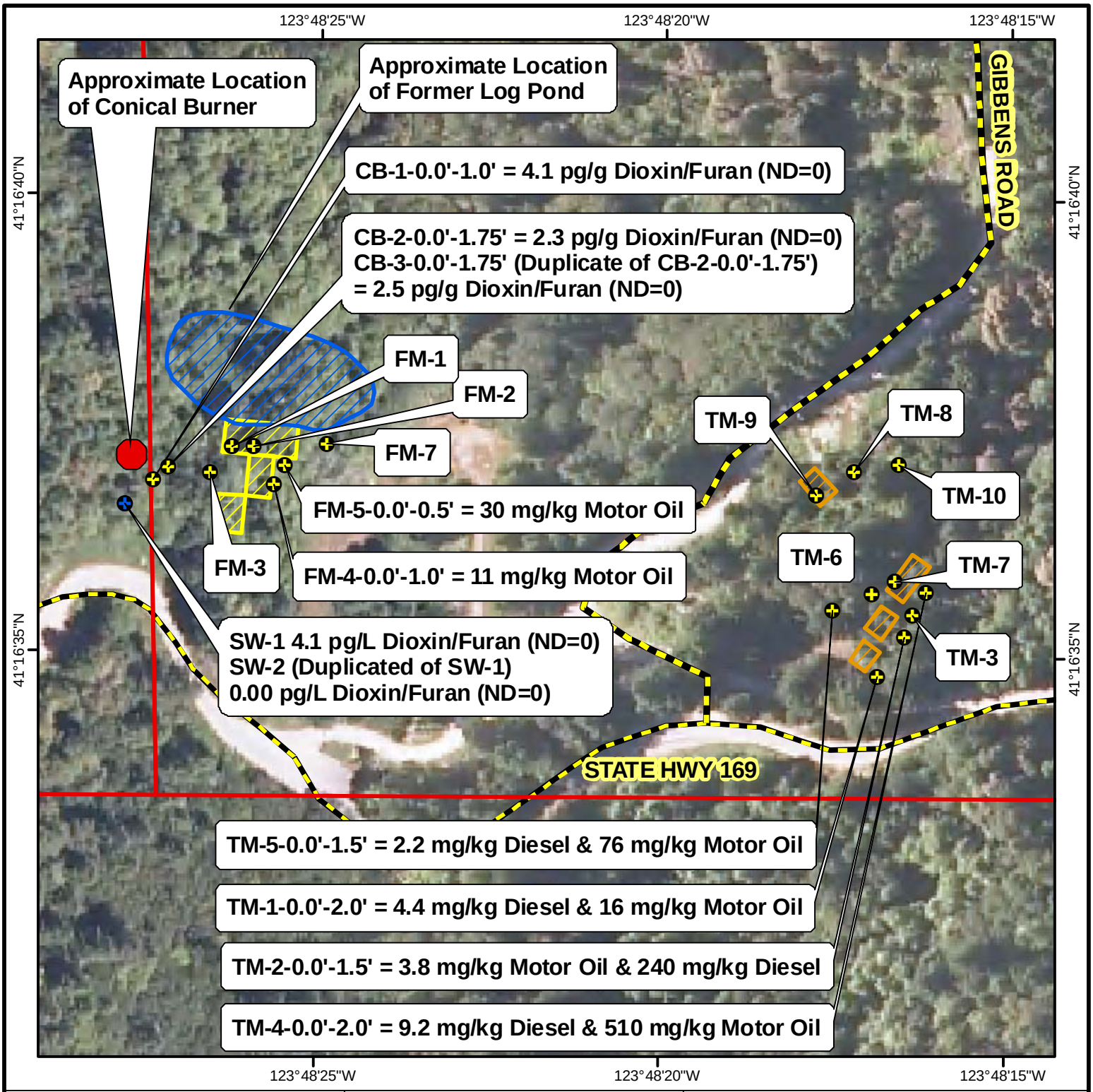
Figure 4

Boring and Surface Water Sample Locations - Former Mill Site
Humboldt County, California

Freshwater Environmental Services

Date: 7-11-11

By: SJT



N
W E
S

Feet

0 50 100 200 300

LEGEND

Base Image Data Source:USDA-FSA Aerial Photography Field Office Color Digital Ortho Photo Quad, Image Date June 13, 2010.

Boring Location
Surface Water Sample

ALL LOCATIONS APPROXIMATE

Yurok Tribe
Environmental Program

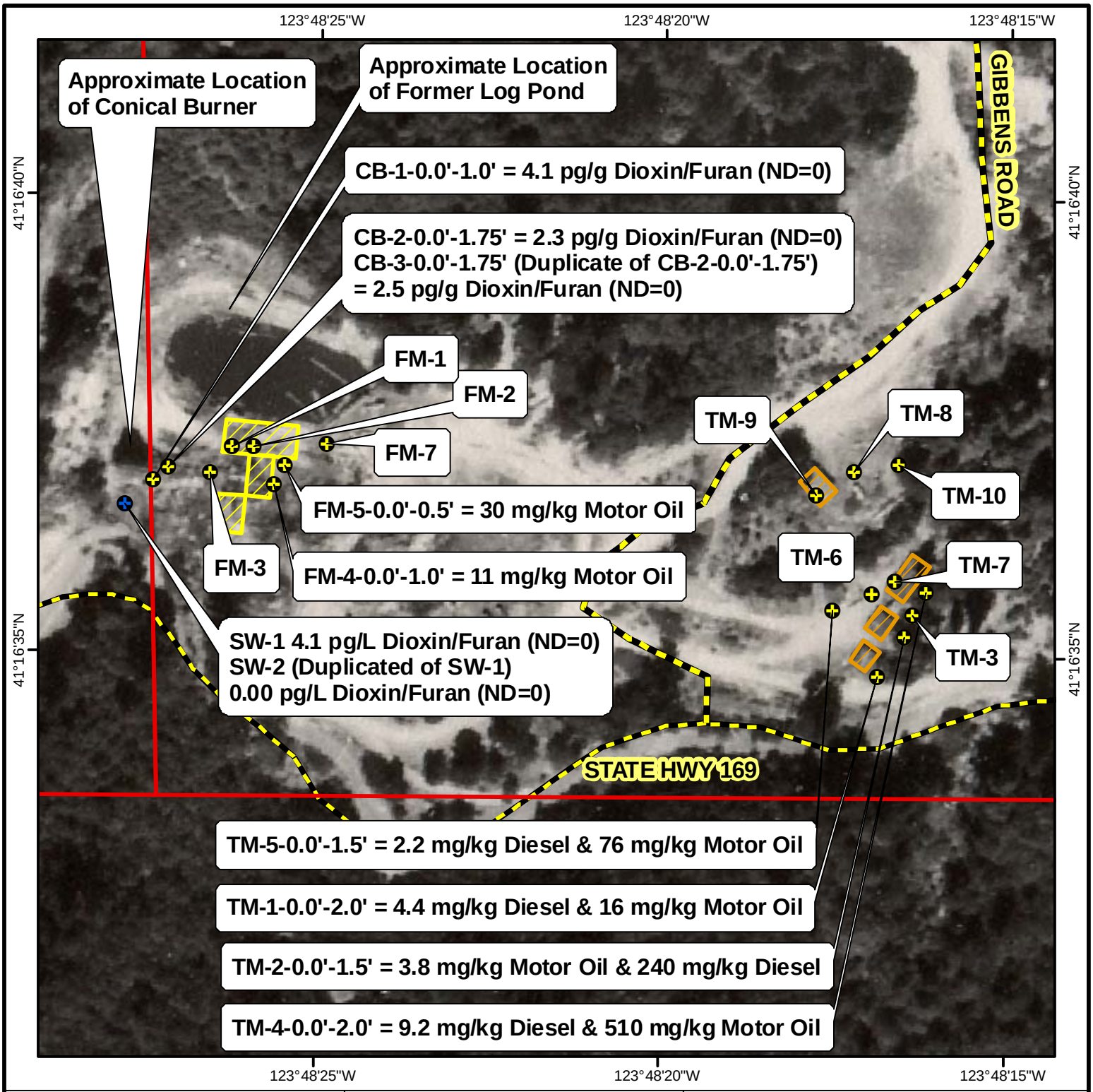
Figure 5

Sample Locations and Results on 2010 Aerial - Former Mill Site
Humboldt County, California

Freshwater Environmental Services

Date: 7-11-11

By: SJT



N
W E
S

Feet
0 50 100 200 300

LEGEND

Base Image Data Source: 1966 aerial photograph scan obtained by FES from Humboldt County Public Works Department.

Boring Location
Surface Water Sample

ALL LOCATIONS APPROXIMATE

Yurok Tribe
Environmental Program

Figure 6

Sample Locations and Results on 1966 Aerial - Former Mill Site
Humboldt County, California

Freshwater Environmental Services

Date: 7-11-11

By: SJT

APPENDIX A
Sample Location Photographs

Photo 1 (SW-1). Sample location for SW-1 looking upstream (north) towards conical burner area. Image date: May 11, 2011.

Photo 2 (CB-1). Sample location for CB-1 looking west towards conical burner area. Image date: May 10, 2011.

Photo 3 (CB-2). Sample location for CB-2 looking west towards conical burner area. Image date: May 11, 2011.

Photo 4 (FM-1). Sample location for FM-1 looking west towards conical burner area. Sample FM-6 is co-located duplicate of FM-1. Image date: May 10, 2011.

Photo 5 (FM-2). Sample location for FM-2 looking west towards conical burner area. Image date: May 10, 2011.

Photo 6 (FM-3). Sample location for FM-3. Image date: May 11, 2011.

Photo 7 (FM-4). Sample location for FM-4. Image date: May 11, 2011.

Photo 8 (FM-5). Sample location for FM-5. Image date: May 11, 2011.

Photo 9 (FM-7). Sample location for FM-7. Image date: May 11, 2011.

Photo 10 (TM-1). Sample location for TM-1. Image date: May 11, 2011.

Photo 11 (TM-2). Sample location for TM-2. Image date: May 11, 2011.

Photo 12 (TM-4). Sample location for TM-4. Image date: May 11, 2011.

Photo 13 (TM-5). Sample location for TM-5. Image date: May 11, 2011.

Photo 14 (TM-6). Sample location for TM-6. Image date: May 11, 2011.

Photo 15 (TM-7). Sample location for TM-7. Image date: May 11, 2011.

Photo 16 (TM-8). Sample location for TM-8. Image date: May 12, 2011.

Photo 17 (TM-9). Sample location for TM-9. Image date: May 12, 2011.

Photo 18 (TM-10). Sample location for TM-10. Image date: May 12, 2011.

APPENDIX B
Humboldt County Boring Permit

RECEIVED

MAY - 9 2011

HUMBOLDT COUNTY DIVISION of ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS UNIT
WELL and BORING PERMIT APPLICATION

HUMBOLDT CO. DIVISION OF ENVIRONMENTAL HEALTH

Facility ID # 534-151-020 Permit # 534-151-020-A

Facility Name: Former Lumber Mill Site

Site Address: Highway 169 and Gibbens Road near Weitchpec, CA

Site Owner: United States of America - Yurok Tribal Allotment Telephone: 707-482-1822

Address: PO Box 1027, Klamath, CA 95548 APN: 534-151-020

RP Name: Ken Henderson Telephone: 707-443-1271

Address: PO Box 1027, Klamath, CA 95548

Consultant: Freshwater Environmental Services Telephone: 707 839-0091

Address: 78 Sunny Brae Center, Arcata, CA 95521 Reg.#/Type: P.G. 7990

Driller: Hand-Augered by Freshwater Environmental Services Telephone: 707 839-0091

Address: 78 Sunny Brae Center, Arcata, CA 95521 C-57 Lic.#:

# On-site		# Off-site	
Wells	Borings: 16	Wells	Borings

Activity: ☒ Construct ☒ Destroy ☐ Repair/Modify Electrode Type:

Well Type: ☐ Monitoring Well ☐ Injection Well ☐ Vapor Extraction ☐ Geologic Boring
☐ Extraction Well ☐ Piezometer ☐ Vapor Point ☐ Soil Gas Survey
☐ Vadose Well ☐ Cathodic Protection ☐ Direct Push Boring ☐ Temporary Well Point

Investigation Type: ☒ Site Assessment ☐ Disposal Practice ☐ UST ☐ Other*
☐ Surface Contamination ☐ Surface Impoundment ☐ AST
*Specify:

Investigation Phase: ☒ Initial ☐ Subsequent ☐ Remediation ☐ Closure

Suspected Contaminants: Petroleum, pentachlorophenol, metals, and dioxins/furans.

Disposal/Containment for Soil Cuttings: Cuttings will be placed back in boring unless there are indications of contamination.

Disposal/Containment for Rinsate: Poured on ground unless there are indications of contamination.

Disposal/Containment for Development Water: NA

Permits will not be processed with out the following information:

- ☒ Sealed Construction Detail
- ☒ Detailed Site Plan
- ☒ Lead Agency Approval Letter
- ☐ Off Site Well Requirements:
  - ☐ Legal Right of Entry
  - ☐ Off Site Address/Location
  - ☐ Encroachment Permit
  - ☐ Coastal Zone Permit
- ☒ Appropriate Fees
- ☒ Copy of Workplan (if not on file at HCDEH)

Proposed Work Date: May 10, 2011

rev. 6/98

FA 4790

HUMBOLDT COUNTY DIVISION of ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS UNIT
WELL and BORING PERMIT APPLICATION

Facility ID # 534-151-020 **Permit #** 534-151-020-A

I hereby agree to comply with all laws, ordinances and regulations of the county of Humboldt and State of California pertaining to water well construction. I will contact the Humboldt County Hazardous Materials Unit at (707) 445-6215 five (5) working days prior to commencing this work. I will furnish to the County of Humboldt, Division of Environmental Health, and the owner a legible copy of the State Water Well Completion Report (form DWR 188) within fifteen (15) days after completion of work to obtain final approval of the well(s). I acknowledge that the application will become a permit ONLY after site approval by the Local Implementing Agency (HCDEH, NCRWQCB, DTSC, EPA). I understand this permit is not transferable and expires one hundred twenty (120) days from the date of issuance.

Certificates of Insurance:

☐ A currently effective General Liability Certificate of Insurance is on file with this office, endorsed to include the Humboldt County Division of Environmental Health as additional named insured.

☐ A currently effective Worker's Compensation Certificate of Insurance is on file with this office, endorsed to include the Humboldt County Division of Environmental Health as additional named insured.

Signature of Well Driller - no proxies - original signature only in blue ink _____ Date _____

- **Well identification number and type must be affixed to exterior surface of security structure.**
- **The applicant is responsible for notifying Underground Services Alert at least 48 hours prior to the scheduled work date.**
- **A State of California Department of Water resources Well Completion Report (Form DWR 1-88) must be filed within 15 days of completion of work for all well completions and destructions.**
- **A licensed California C-57 Well Driller is required for all wells and direct push work.**

FOR OFFICE USE ONLY

Permit Approval: Norman Crawford **Date:** 5-10-2011

Fee: 183.00 **Date:** 5-9-11 **Receipt:** 215222 2693

Initial Inspection: _____ **Date:** _____

Final Inspection: N Crawford **Date:** 7/6/2011 SR 168

rev. 6/98

APPENDIX C
Boring Logs

Log of Boring **CB-1**

Date Started: May 10, 2011
Date Completed: May 10, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25	~75% sand, fine to coarse, subangular to subrounded, ~10% gravel up to 1" (composed of schist), ~15% silt, moist, 10YR 3/1 (very dark gray).	SW	**Soil Sample:** CB-1-0.0'-1.0'
	0.5			
	0.75			
	1.0			**BOH ~ 1.0'** **(refusal due to rocks)**
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 1.0 feet

CB-1

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Freshwater Environmental Services

Log of Boring **CB-2**

Date Started: May 10, 2011
Date Completed: May 10, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0 – 1.75	~75% sand, fine to coarse, angular to subrounded, ~20% gravel up to 3", angular to subrounded, ~5% silt, moist, 10YR 4/1 (dark gray).	SW	**Soil Sample:** CB-2-0.0'-1.75'
	1.75			**BOH ~ 1.75'** **(refusal due to rocks)**

0.25 0.5 0.75 1.0 1.25 1.5 2.0 2.25 2.5 2.75 3.0 3.25 3.5 3.75

Total Depth: ~ 1.75 feet

Freshwater Environmental Services

CB-2

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **CB-3**

Date Started: May 10, 2011
Date Completed: May 10, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0	**Ground Surface**		
100%	0 – 1.75	~75% sand, fine to coarse, angular to subrounded, ~20% gravel up to 3", angular to subrounded, ~5% silt, moist, 10YR 4/1 (dark gray).	SW	**Soil Sample:** CB-3-0.0'-1.75'
	1.75	**BOH ~ 1.75'** **(refusal due to rocks)**		

0 0.25 0.5 0.75 1.0 1.25 1.5 1.75 2.0 2.25 2.5 2.75 3.0 3.25 3.5 3.75

CB-3 is a duplicate of CB-2

Total Depth: ~ 1.75 feet

Freshwater Environmental Services

CB-3

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **FM-1**

Date Started: May 10, 2011
Date Completed: May 10, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0	**Ground Surface**		
100%	0.25	~60% sand, fine to coarse, ~25% gravel up to 2", subangular to subrounded, (composed of schist), ~15% silt, moist, 10YR 3/1 (very dark gray).	SW	**Soil Sample:** FM-1-0.0'-1.0'
	0.5			
	0.75			
	1.0			**BOH ~ 1.0'** **(refusal due to rocks)**
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 1.0 feet

Freshwater Environmental Services

FM-1

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **FM-2**

Date Started: May 10, 2011
Date Completed: May 10, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%.	0.25	~60% sand, fine to coarse, ~25% gravel up to 1", subangular to subrounded, ~15% silt, moist, 10YR 4/3 (brown).	SW	**Soil Sample:** FM-2-0.0'-1.5'
	0.5			
	0.75			
	1.0			
	1.25			
	1.5			
	1.75			
	2.0	~60% sand, very fine to coarse, angular to subrounded, ~5% gravel up to 3/4", angular to subrounded, ~30% silt, ~5% clay, wet, 10YR 4/4 (dark yellowish brown).	SW	
	2.25			
	2.5			
	2.75			
	3.0			**Soil Sample:** FM-2-3.0'-3.5'
	3.25			
	3.5			**BOH ~ 3.5'** **(refusal due to rocks)**
	3.75			

Total Depth: ~ 3.5 feet

FM-2

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Freshwater Environmental Services

Log of Boring **FM-3**

Date Started: May 10, 2011
Date Completed: May 10, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25	~60% sand, very fine to coarse, angular to subrounded, ~25% gravel up to 3", angular to subangular, ~15% silt, moist, 10YR 4/2 (dark grayish brown).	SW	**Soil Sample:** FM-3-0.0'-1.0'
	0.5	~55% gravel up to 2", subangular to subrounded, ~40% sand, very fine to coarse, angular to subrounded, ~5% silt, moist, 10YR 4/2 (dark grayish brown).	GW	
	0.75			
	1.0			**BOH ~ 1.0'** **(refusal due to rocks)**
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 1.0 feet

FM-3

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Freshwater Environmental Services

Log of Boring **FM-4**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25	~75% sand, fine to coarse, angular to subrounded, ~20% gravel up to 2", angular to subrounded, ~5% silt, moist, 10YR 4/3 (brown).	SW	**Soil Sample:** FM-4-0.0'-1.0'
	0.5			
	0.75			
	1.0			**BOH ~ 1.0'** **(refusal due to rocks)**
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 1.0 feet

Freshwater Environmental Services

FM-4

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **FM-5**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0	**Ground Surface**		
100%	0.25	~60% silt, ~20% sand, very fine to fine, ~10% gravel up to 1/2", angular to subangular, ~10% clay, moist, 10YR 3/1 (very dark gray).	ML	**Soil Sample:** FM-5-0.0'-0.5'
	0.5	**BOH ~ 0.5'** **(refusal due to rocks)**		
	0.75			
	1.0			
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 0.5 feet

Freshwater Environmental Services

FM-5

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **FM-6**

Date Started: May 10, 2011
Date Completed: May 10, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0	**Ground Surface**		
100%	0.25 – 1.0	~60% sand, fine to coarse, ~25% gravel up to 2" subangular to subrounded, (composed of schist), ~15% silt, moist, 10YR 3/1 (very dark gray).	SW	**Soil Sample:** FM-6-0.0'-1.0'
	1.0	**BOH ~ 1.0' (refusal due to rocks)**		

1.25 1.5 1.75 2.0 2.25 2.5 2.75 3.0 3.25 3.5 3.75

FM-6 is a duplicate of FM-1

Total Depth: ~ 1.0 feet

Freshwater Environmental Services

FM-6

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **FM-7**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0	**Ground Surface**		
100%	0.25	~55% gravel up to 1", angular to subrounded, ~35% sand, very fine to fine, ~10% silt, moist, 10YR 3/1 (very dark gray).	GW	**Soil Sample:** FM-7-0.0'-0.5'
	0.5	**BOH ~ 0.5'** **(refusal due to rocks)**		
	0.75			
	1.0			
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 0.5 feet

Freshwater Environmental Services

FM-7

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **TM-1**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25	~70% sand, fine to coarse, subangular to subrounded, ~20% organics, ~10% gravel up to 1", (composed of schist), angular to subangular, moist, 10YR 3/1 (very dark gray).	SW	
	0.5	sand, fine to coarse, angular to subrounded, some charcoal, orange "burnt" color on some sand, moist, 10 YR 3/1, (very dark gray).	SW	
	0.75			
	1.0	~55% gravel up to to 3", angular to subrounded, ~35% sand, fine to coarse, ~10% silt, moist, 10 YR 2/1 (black).	GW	**Soil Sample:** TM-1-0.0'-2.0'
	1.25			
	1.5			
	1.75			
	2.0	~55% gravel up to to 2", angular to subrounded, ~35% sand, fine to coarse, ~10% silt, moist, 10 YR 3/1 (very dark gray).	GW	
	2.25			
	2.5			**BOH ~ 2.5'** **(refusal due to rocks)**
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 2.5 feet

Freshwater Environmental Services

TM-1

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **TM-2**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25	~80% organics, ~20% coarse sand, moist, 10 YR 3/1 (very dark gray).	PT	
	0.5	~65% sand, fine to coarse, subangular to subrounded, ~30% gravel up to 2" (composed of schist), angular to subrounded, ~5% silt, moist, 10 YR 4/1 (dark gray). Debris encountered at approximately 1.5' includes a car door handle and pieces of a glass window.	SW	**Soil Sample:** TM-2-0.0'-1.5'
	0.75			
	1.0			
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			**BOH ~ 2.5'** **(refusal due to rocks)**
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 2.5 feet

Freshwater Environmental Services

TM-2

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **TM-3**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25 – 2.0	~55% sand, fine to coarse, angular to subrounded, ~35% gravel up to 1", (composed of schist), angular to subrounded, ~10% silt, moist, 10 YR 4/1 (dark gray).	SW	**Soil Sample:** TM-3-0.0'-2.0'
	2.5			**BOH ~ 2.5'** **(refusal due to rocks)**
	2.75 – 3.75			

Total Depth: ~ 2.5 feet

Freshwater Environmental Services

TM-3

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **TM-4**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25	~75% sand, fine to coarse, ~15% gravel, (composed of schist), angular to subrounded, ~10% silt, moist, 10 YR 4/1 (dark gray).	SW	**Soil Sample:** TM-4-0.0'-2.0'
	0.5			
	0.75			
	1.0			
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			**BOH ~ 3.5'** **(refusal due to rocks)**
	3.75			

Total Depth: ~ 3.5 feet

TM-4

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Freshwater Environmental Services

Log of Boring **TM-5**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25	~65% sand, fine to coarse, subangular to subrounded, ~25% gravel up to 2", angular to subrounded, (composed of schist), ~10% silt, moist, 10 YR 4/1 (dark gray).	SW	**Soil Sample:** TM-5-0.0'-1.5'
	0.5			
	0.75			
	1.0			
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			**BOH ~ 3.5'** **(refusal due to rocks)**
	3.75			

Total Depth: ~ 3.5 feet

TM-5

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Freshwater Environmental Services

Log of Boring **TM-6**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25	~75% sand, fine to coarse, angular to subrounded, ~15% gravel up to 2", angular to subrounded, (composed of schist), ~10% silt, moist, 10 YR 4/1 (dark gray).	SW	**Soil Sample:** TM-6-0.0'-1.5'
	0.5	Color change to 10 YR 5/1 (gray).		
	0.75			
	1.0			
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			**BOH ~ 2.5'** **(refusal due to rocks)**
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 2.5 feet

Freshwater Environmental Services

TM-6

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **TM-7**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0	**Ground Surface**		
100%	0.25	~80% sand, fine to coarse, angular to subrounded, ~10% gravel up to 1", angular to subrounded, ~10% silt, moist, 10 YR 4/1 (dark gray).	SW	**Soil Sample:** TM-7-0.0'-0.5'
	0.5	**BOH ~ 0.5'** **(refusal due to rocks)**		
	0.75			
	1.0			
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 0.5 feet

TM-7

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Freshwater Environmental Services

Date: 7-6-11 | By: SJT

Log of Boring **TM-8**

Date Started: May 12, 2011
Date Completed: May 12, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0	**Ground Surface**		
100%	0.25 – 0.5 – 0.75 – 1.0	~80% sand, fine to coarse, angular to subrounded, ~20% gravel up to 1", angular to subrounded, ~10% silt, moist, 10 YR 4/1 (dark gray).	SW	**Soil Sample:** TM-8-0.0'-1.0'
	1.25 – 1.5 – 1.75 – 2.0 – 2.25 – 2.5 – 2.75 – 3.0 – 3.25 – 3.5 – 3.75	**BOH ~ 1.0'** **(refusal due to rocks)**		

Total Depth: ~ 1.0 feet

Freshwater Environmental Services

TM-8

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **TM-9**

Date Started: May 12, 2011
Date Completed: May 12, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25	~60% sand, fine to coarse, angular to subrounded, ~20% gravel up to 2", angular to subrounded, (composed of schist), ~20% silt, moist, 10 YR 4/1 (dark gray).	SW	**Soil Sample:** TM-9-0.0'-1.0'
	0.5			
	0.75			
	1.0			**BOH ~ 1.0'** **(refusal due to rocks)**
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

Total Depth: ~ 1.0 feet

TM-9

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Freshwater Environmental Services

Log of Boring **TM-10**

Date Started: May 12, 2011
Date Completed: May 12, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25 – 0.5 – 0.75 – 1.0	~70% sand, fine to coarse, angular to subrounded, ~20% gravel up to 4", angular to subrounded, ~10% silt, moist, 10 YR 4/2 (dark grayish brown).	SW	**Soil Sample:** TM-10-0.0'-1.0'
	1.25 – 1.5 – 1.75 – 2.0 – 2.25 – 2.5 – 2.75 – 3.0 – 3.25 – 3.5 – 3.75			**BOH ~ 1.0'** **(refusal due to rocks)**

Total Depth: ~ 1.0 feet

Freshwater Environmental Services

TM-10

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

Log of Boring **TM-11**

Date Started: May 11, 2011
Date Completed: May 11, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0	**Ground Surface**		
100%	0.25	~80% sand, fine to coarse, angular to subrounded, ~10% gravel up to 1", angular to subrounded, ~10% silt, moist, 10 YR 4/1 (dark gray).	SW	**Soil Sample:** TM-11-0.0'-0.5'
	0.5	**BOH ~ 0.5' (refusal due to rocks)**		
	0.75			
	1.0			
	1.25			
	1.5			
	1.75			
	2.0			
	2.25			
	2.5			
	2.75			
	3.0			
	3.25			
	3.5			
	3.75			

TM-11 is a duplicate of TM-7

Total Depth: ~ 0.5 feet

TM-11

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Freshwater Environmental Services

Date: 7-6-11 | By: SJT

Log of Boring **TM-12**

Date Started: May 12, 2011
Date Completed: May 12, 2011

Driller: Freshwater Environmental Services
Drilling Method: Hand-Auger

Recovery	Depth (ft)	Description	USCS	Remarks
	0			**Ground Surface**
100%	0.25 – 0.5 – 0.75 – 1.0	~70% sand, fine to coarse, angular to subrounded, ~20% gravel up to 4", angular to subrounded, ~10% silt, moist, 10 YR 4/2 (dark grayish brown).	SW	**Soil Sample:** TM-12-0.0'-1.0'
	1.0			**BOH ~ 1.0'** **(refusal due to rocks)**
	1.25 – 1.5 – 1.75 – 2.0 – 2.25 – 2.5 – 2.75 – 3.0 – 3.25 – 3.5 – 3.75			

TM-12 is a duplicate of TM-10

Total Depth: ~ 1.0 feet

Freshwater Environmental Services

TM-12

Yurok Tribe Environmental Program
Former Mill Site (APN 534-151-020)

Date: 7-6-11 | By: SJT

APPENDIX D
Laboratory Reports and Chain-of-Custody Records

NORTH COAST LABORATORIES LTD.

July 14, 2011

Freshwater Environmental Services
78 Sunny Brae Center
Arcata, CA 95521

Attn: Stan Thiesen

RE: Yurok Phase II

Order No.: 1105292
Invoice No.: 96716
PO No.:
ELAP No.1247-Expires July 2012

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	SW-1
01C	SW-1
01D	SW-1(DISSOLVED)
02A	SW-2
02A	SW-2
02C	SW-2
02D	SW-2(DISSOLVED)
03A	SW-3
04A	CB-1-0.0'-1.0'
04B	CB-1-0.0'-1.0' (Subcontracted)
05A	CB-2-0.0'-1.75'
05B	CB-2-0.0'-1.75' (Subcontracted)
06A	CB-3-0.0'-1.75'
06B	CB-3-0.0'-1.75' (Subcontracted)
07A	FM-1-0.0'-1.0'
07B	FM-1-0.0'-1.0'
08A	FM-2-0.0'-1.5'
08B	FM-2-0.0'-1.5'
09A	FM-2-3.0'-3.5'
09B	FM-2-3.0'-3.5'
10A	FM-3-0.0'-1.0'
10B	FM-3-0.0'-1.0'
11A	FM-4-0.0'-1.0'
12A	FM-5-0.0'-0.5'
13A	FM-6-0.0'-1.0'
14A	FM-7-0.0'-0.5'
15A	TM-1-0.0'-2.0'
16A	TM-2-0.0'-1.5'
17A	TM-3-0.0'-2.0'

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit
Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Unit

Jesse G. Chaney, Jr.
Laboratory Director

July 14, 2011

Freshwater Environmental Services
78 Sunny Brae Center
Arcata, CA 95521

Order No.: 1105292
Invoice No.: 96716
PO No.:
ELAP No.1247-Expires July 2012

Attn: Stan Thiesen

RE: Yurok Phase II

SAMPLE IDENTIFICATION

18A	TM-4-0.0'-2.0'
19A	TM-5-0.0'-1.5'
20A	TM-6-0.0'-1.5'
21A	TM-7-0.0'-0.5'
22A	TM-8-0.0'-1.0'
23A	TM-9-0.0'-1.0'
24A	TM-10-0.0'-1.0'
25A	TM-11-0.0'-0.5'
26A	TM-12-0.0'-1.0'
27A	SW-3
27B	SW-3

North Coast Laboratories, Ltd. **Date:** 14-Jul-2011

CLIENT: Freshwater Environmental Services
Project: Yurok Phase II
Lab Order: 1105292

CASE NARRATIVE

THIS IS AN AMENDED REPORT. The following changes were made:
-PCP/TCP were added to soil samples FM-4-0.0'-1.0', FM-5-0.0'-0.5', FM-6-0.0'-1.0', and FM-7-0.0'-0.5.' (The case narrative was updated)
-The reporting limit for PCP (soil) was lowered to 0.5 mg/kg.
-The reporting limit for PCP (water) was lowered to 0.25 ug/L and for TCP (water) was lowered to 0.5 ug/L.
-Copper was added to water samples SW-1, SW-2, and SW-3.
-Copper was added to soil samples CB-1-0.0'-1.0', CB-2-0.0'-1.75', and CB-3-0.0'-1.75'.
-The reporting limits for arsenic, chromium, and lead (water) were lowered.

Due to the nature of the software used to generate reports, the original report contained information that made it appear that the soil samples chosen to spike for tetrachlorophenol and pentachlorophenol (FM-1-0.0'-1.0' and FM-5-0.0'-0.5') contained trace amounts of pentachlorophenol. After close review of the raw data it was determined that detector baseline noise was integrated resulting in the erroneous results. This anomolous behavior is compounded by the extreme sensitivity of the detector used in this analysis and any slight response variation affecting the y-intercept of the curve used to calculate sample results. The report was re-issued to remove the false positive results for pentachlorophenol.

D3: The sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.

D7: The sample does not have the typical pattern of fresh diesel. The material is the lighter portion of the material in the motor oil range.

M2: The sample does not have the typical pattern of fresh motor oil. The material is heavier than motor oil. However, the result reported represents the amount of material in the motor oil range.

M3: The sample does not have the typical pattern of fresh motor oil. However, the result reported represents the amount of material in the motor oil range.

TPH as Diesel or Diesel/Motor Oil with Silica Gel Cleanup:
All samples for these analyses were initially analyzed for diesel or diesel/motor oil. Samples that did not show material in the diesel or motor oil range were not subjected to the silica gel cleanup.

PCP/TCP (Soil):
Samples FM-4-0.0'-1.0', FM-5-0.0'-0.5', FM-6-0.0'-1.0', and FM-7-0.0'-0.5' were extracted and analyzed past the holding time per client request.

NORTH COAST LABORATORIES
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Date: 14-Jul-2011
WorkOrder: 1105292

ANALYTICAL REPORT

Client Sample ID: SW-1
Lab ID: 1105292-01A

Received: 5/13/2011
Collected: 5/10/2011 11:32

Test Name: TPH as Diesel/Motor Oil **Reference:** LUFT/EPA 3511/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	5/19/2011	5/20/2011
TPHC Motor Oil	ND		170	µg/L	1.0	5/19/2011	5/20/2011

Client Sample ID: SW-1
Lab ID: 1105292-01C

Received: 5/13/2011
Collected: 5/10/2011 11:32

Test Name: Chlorinated Phenols **Reference:** Canadian Pulp Report

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		0.50	µg/L	1.0	5/17/2011	5/25/2011
Pentachlorophenol	ND		0.25	µg/L	1.0	5/17/2011	5/25/2011
Surrogate: Dibromophenol	101		70.5-124	% Rec	1.0	5/17/2011	5/25/2011

Client Sample ID: SW-1(DISSOLVED)
Lab ID: 1105292-01D

Received: 5/13/2011
Collected: 5/10/2011 11:32

Test Name: ICP-MS Metals **Reference:** EPA 200.8 Rev 5.4 (1998)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	ND		2.0	µg/L	1.0	5/23/2011	5/25/2011
Chromium	ND		2.0	µg/L	1.0	5/23/2011	5/25/2011
Copper	ND		5.0	µg/L	1.0	5/23/2011	5/25/2011
Lead	ND		1.0	µg/L	1.0	5/23/2011	5/25/2011
Nickel	ND		5.0	µg/L	1.0	5/23/2011	5/25/2011
Zinc	ND		10	µg/L	1.0	5/23/2011	5/25/2011

Client Sample ID: SW-2
Lab ID: 1105292-02A

Received: 5/13/2011
Collected: 5/10/2011 11:42

Test Name: TPH as Diesel/Motor Oil **Reference:** LUFT/EPA 3511/EPA 8015B

Parameter	Resnlt	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	5/19/2011	5/20/2011
TPHC Motor Oil	ND		170	µg/L	1.0	5/19/2011	5/20/2011

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ANALYTICAL REPORT

Client Sample ID: SW-2
Lab ID: 1105292-02C

Received: 5/13/2011
Collected: 5/10/2011 11:42

Test Name: Chlorinated Phenols **Reference:** Canadian Pulp Report

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		0.50	µg/L	1.0	5/17/2011	5/25/2011
Pentachlorophenol	ND		0.25	µg/L	1.0	5/17/2011	5/25/2011
Surrogate: Dibromophenol	98.9		70.5-124	% Rec	1.0	5/17/2011	5/25/2011

Client Sample ID: SW-2(DISSOLVED)
Lab ID: 1105292-02D

Received: 5/13/2011
Collected: 5/10/2011 11:42

Test Name: ICP-MS Metals **Reference:** EPA 200.8 Rev 5.4 (1998)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	2.6		2.0	µg/L	1.0	5/23/2011	5/25/2011
Chromium	ND		2.0	µg/L	1.0	5/23/2011	5/25/2011
Copper	ND		5.0	µg/L	1.0	5/23/2011	5/25/2011
Lead	ND		1.0	µg/L	1.0	5/23/2011	5/25/2011
Nickel	ND		5.0	µg/L	1.0	5/23/2011	5/25/2011
Zinc	ND		10	µg/L	1.0	5/23/2011	5/25/2011

Client Sample ID: SW-3
Lab ID: 1105292-03A

Received: 5/13/2011
Collected: 5/10/2011 14:04

Test Name: TPH as Diesel/Motor Oil **Reference:** LUFT/EPA 3511/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	5/19/2011	5/20/2011
TPHC Motor Oil	ND		170	µg/L	1.0	5/19/2011	5/20/2011

Client Sample ID: CB-1-0.0'-1.0'
Lab ID: 1105292-04A

Received: 5/13/2011
Collected: 5/10/2011 13:25

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/21/2011

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ANALYTICAL REPORT

Client Sample ID: CB-2-0.0'-1.75'
Lab ID: 1105292-05A
Received: 5/13/2011
Collected: 5/10/2011 13:40

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/21/2011

Client Sample ID: CB-3-0.0'-1.75'
Lab ID: 1105292-06A
Received: 5/13/2011
Collected: 5/10/2011 13:44

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/21/2011

Client Sample ID: FM-1-0.0'-1.0'
Lab ID: 1105292-07A
Received: 5/13/2011
Collected: 5/10/2011 14:55

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/21/2011

Client Sample ID: FM-1-0.0'-1.0'
Lab ID: 1105292-07B
Received: 5/13/2011
Collected: 5/10/2011 14:55

Test Name: Chlorinated Phenols **Reference:** Canadian Pulp Report Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		1.0	mg/kg	1.0	5/24/2011	5/27/2011
Pentachlorophenol	ND		0.50	mg/kg	1.0	5/24/2011	5/27/2011
Surrogate: Dibromophenol	95.7		47.4-110	% Rec	1.0	5/24/2011	5/27/2011

Client Sample ID: FM-2-0.0'-1.5'
Lab ID: 1105292-08A
Received: 5/13/2011
Collected: 5/10/2011 15:12

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/21/2011

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ANALYTICAL REPORT

Client Sample ID: FM-2-0.0'-1.5'
Lab ID: 1105292-08B
Received: 5/13/2011
Collected: 5/10/2011 15:12

Test Name: Chlorinated Phenols
Reference: Canadian Pulp Report Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		1.0	mg/kg	1.0	5/24/2011	5/27/2011
Pentachlorophenol	ND		0.50	mg/kg	1.0	5/24/2011	5/27/2011
Surrogate: Dibromophenol	92.4		47.4-110	% Rec	1.0	5/24/2011	5/27/2011

Client Sample ID: FM-2-3.0'-3.5'
Lab ID: 1105292-09A
Received: 5/13/2011
Collected: 5/10/2011 15:15

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/19/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/19/2011

Client Sample ID: FM-2-3.0'-3.5'
Lab ID: 1105292-09B
Received: 5/13/2011
Collected: 5/10/2011 15:15

Test Name: Chlorinated Phenols
Reference: Canadian Pulp Report Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		1.0	mg/kg	1.0	5/24/2011	5/27/2011
Pentachlorophenol	ND		0.50	mg/kg	1.0	5/24/2011	5/27/2011
Surrogate: Dibromophenol	91.7		47.4-110	% Rec	1.0	5/24/2011	5/27/2011

Client Sample ID: FM-3-0.0'-1.0'
Lab ID: 1105292-10A
Received: 5/13/2011
Collected: 5/10/2011 15:20

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/21/2011

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ANALYTICAL REPORT

Client Sample ID: FM-3-0.0'-1.0'
Lab ID: 1105292-10B

Received: 5/13/2011
Collected: 5/10/2011 15:20

Test Name: Chlorinated Phenols
Reference: Canadian Pulp Report Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		1.0	mg/kg	1.0	5/24/2011	5/27/2011
Pentachlorophenol	ND		0.50	mg/kg	1.0	5/24/2011	5/27/2011
Surrogate: Dibromophenol	90.6		47.4-110	% Rec	1.0	5/24/2011	5/27/2011

Client Sample ID: FM-4-0.0'-1.0'
Lab ID: 1105292-11A

Received: 5/13/2011
Collected: 5/11/2011 11:15

Test Name: Chlorinated Phenols
Reference: Canadian Pulp Report Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		1.0	mg/kg	1.0	6/12/2011	6/13/2011
Pentachlorophenol	ND		0.50	mg/kg	1.0	6/12/2011	6/13/2011
Surrogate: Dibromophenol	80.0		47.4-110	% Rec	1.0	6/12/2011	6/13/2011

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	***11***	M2	10	mg/kg	1.0	5/18/2011	5/21/2011

Client Sample ID: FM-5-0.0'-0.5'
Lab ID: 1105292-12A

Received: 5/13/2011
Collected: 5/11/2011 11:00

Test Name: Chlorinated Phenols
Reference: Canadian Pulp Report Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		1.0	mg/kg	1.0	6/12/2011	6/13/2011
Pentachlorophenol	ND		0.50	mg/kg	1.0	6/12/2011	6/13/2011
Surrogate: Dibromophenol	76.7		47.4-110	% Rec	1.0	6/12/2011	6/13/2011

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	***30***	M3	10	mg/kg	1.0	5/18/2011	5/21/2011

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ANALYTICAL REPORT

Client Sample ID: FM-6-0.0'-1.0'
Lab ID: 1105292-13A

Received: 5/13/2011
Collected: 5/10/2011 15:00

Test Name: Chlorinated Phenols
Reference: Canadian Pulp Report Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		1.0	mg/kg	1.0	6/12/2011	6/13/2011
Pentachlorophenol	ND		0.50	mg/kg	1.0	6/12/2011	6/13/2011
Surrogate: Dibromophenol	78.0		47.4-110	% Rec	1.0	6/12/2011	6/13/2011

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/21/2011

Client Sample ID: FM-7-0.0'-0.5'
Lab ID: 1105292-14A

Received: 5/13/2011
Collected: 5/11/2011 11:45

Test Name: Chlorinated Phenols
Reference: Canadian Pulp Report Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		1.0	mg/kg	1.0	6/12/2011	6/13/2011
Pentachlorophenol	ND		0.50	mg/kg	1.0	6/12/2011	6/13/2011
Surrogate: Dibromophenol	78.1		47.4-110	% Rec	1.0	6/12/2011	6/13/2011

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/21/2011

Client Sample ID: TM-1-0.0'-2.0'
Lab ID: 1105292-15A

Received: 5/13/2011
Collected: 5/11/2011 12:55

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***4.4***	D3	1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	***16***	M3	10	mg/kg	1.0	5/18/2011	5/21/2011

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ANALYTICAL REPORT

Client Sample ID: TM-2-0.0'-1.5'
Lab ID: 1105292-16A
Received: 5/13/2011
Collected: 5/11/2011 13:10

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***3.8***	D7	1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	***240***	M3	100	mg/kg	10	5/18/2011	5/21/2011

Client Sample ID: TM-3-0.0'-2.0'
Lab ID: 1105292-17A
Received: 5/13/2011
Collected: 5/11/2011 13:38

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/21/2011

Client Sample ID: TM-4-0.0'-2.0'
Lab ID: 1105292-18A
Received: 5/13/2011
Collected: 5/11/2011 14:00

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***9.2***	D7	1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	***510***	M2	100	mg/kg	10	5/18/2011	5/23/2011

Client Sample ID: TM-5-0.0'-1.5'
Lab ID: 1105292-19A
Received: 5/13/2011
Collected: 5/11/2011 14:22

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***2.2***	D3	1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	***76***	M3	10	mg/kg	1.0	5/18/2011	5/21/2011

Client Sample ID: TM-6-0.0'-1.5'
Lab ID: 1105292-20A
Received: 5/13/2011
Collected: 5/11/2011 15:04

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/21/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/21/2011

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ANALYTICAL REPORT

Client Sample ID: TM-7-0.0'-0.5'
Lab ID: 1105292-21A
Received: 5/13/2011
Collected: 5/11/2011 15:10

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/23/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/23/2011

Client Sample ID: TM-8-0.0'-1.0'
Lab ID: 1105292-22A
Received: 5/13/2011
Collected: 5/12/2011 10:28

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/23/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/23/2011

Client Sample ID: TM-9-0.0'-1.0'
Lab ID: 1105292-23A
Received: 5/13/2011
Collected: 5/12/2011 10:47

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/23/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/23/2011

Client Sample ID: TM-10-0.0'-1.0'
Lab ID: 1105292-24A
Received: 5/13/2011
Collected: 5/12/2011 11:05

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/23/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/23/2011

Client Sample ID: TM-11-0.0'-0.5'
Lab ID: 1105292-25A
Received: 5/13/2011
Collected: 5/11/2011 16:15

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/23/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/23/2011

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Date: 14-Jul-2011
WorkOrder: 1105292

ANALYTICAL REPORT

Client Sample ID: TM-12-0.0'-1.0'
Lab ID: 1105292-26A

Received: 5/13/2011
Collected: 5/12/2011 11:15

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	5/18/2011	5/23/2011
TPHC Motor Oil	ND		10	mg/kg	1.0	5/18/2011	5/23/2011

Client Sample ID: SW-3
Lab ID: 1105292-27A

Received: 5/13/2011
Collected: 5/10/2011 15:45

Test Name: Chlorinated Phenols **Reference:** Canadian Pulp Report

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
2,3,4,6-Tetrachlorophenol	ND		0.50	µg/L	1.0	5/17/2011	5/25/2011
Pentachlorophenol	ND		0.25	µg/L	1.0	5/17/2011	5/25/2011
Surrogate: Dibromophenol	99.1		70.5-124	% Rec	1.0	5/17/2011	5/25/2011

Client Sample ID: SW-3
Lab ID: 1105292-27B

Received: 5/13/2011
Collected: 5/10/2011 15:45

Test Name: ICP-MS Metals **Reference:** EPA 200.8 Rev 5.4 (1998)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	ND		2.0	µg/L	1.0	5/18/2011	5/19/2011
Chromium	ND		2.0	µg/L	1.0	5/18/2011	5/19/2011
Copper	ND		5.0	µg/L	1.0	5/18/2011	5/19/2011
Lead	1.0		1.0	µg/L	1.0	5/18/2011	5/19/2011
Nickel	ND		5.0	µg/L	1.0	5/18/2011	5/19/2011
Zinc	ND		10	µg/L	1.0	5/18/2011	5/19/2011

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CLIENT: Freshwater Environmental Services
Work Order: 1105292
Project: Yurok Phase II

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-25761** Batch ID: **25761** Test Code: **ICPMSW** Units: **µg/L** Analysis Date: **5/19/2011 1:20:13 PM** Prep Date: **5/18/2011**
Client ID: Run ID: **ICPMS_110519B** SeqNo: **962709**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	2.0									
Chromium	ND	2.0									
Copper	ND	5.0									
Lead	ND	1.0									
Nickel	ND	5.0									
Zinc	ND	10									

Sample ID: **MB-25789** Batch ID: **25789** Test Code: **ICPMSW** Units: **µg/L** Analysis Date: **5/25/2011 10:52:14 AM** Prep Date: **5/23/2011**
Client ID: Run ID: **ICPMS_110525A** SeqNo: **963702**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	2.0									
Chromium	ND	2.0									
Copper	ND	5.0									
Lead	ND	1.0									
Nickel	ND	5.0									
Zinc	ND	10									

Sample ID: **MB-25800** Batch ID: **25800** Test Code: **PCPTS** Units: **mg/kg** Analysis Date: **5/27/2011 8:53:38 AM** Prep Date: **5/24/2011**
Client ID: Run ID: **ORGC6_110527A** SeqNo: **964344**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	ND	1.0									
Pentachlorophenol	ND	0.50									
Surrogate: Dibromophenol	4.88	1.0	5.00	0	97.7%	47	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

CLIENT: Freshwater Environmental Services
Work Order: 1105292
Project: Yurok Phase II

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-25888** Batch ID: **25888** Test Code: **PCPTS** Units: **mg/kg** Analysis Date: **6/13/2011 7:09:38 PM** Prep Date: **6/12/2011**
Client ID: Run ID: **ORGC6_110613A** SeqNo: **966897**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	ND	1.0									
Pentachlorophenol	ND	0.50									
Surrogate: Dibromophenol	4.00	1.0	5.00	0	79.9%	47	110	0			

Sample ID: **MB-25760** Batch ID: **25760** Test Code: **PCPTW** Units: **µg/L** Analysis Date: **5/25/2011 8:25:10 PM** Prep Date: **5/17/2011**
Client ID: Run ID: **ORGC6_110525A** SeqNo: **964327**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	ND	0.50									
Pentachlorophenol	ND	0.25									
Surrogate: Dibromophenol	5.20	0.10	5.00	0	104%	71	124	0			

Sample ID: **MB-25765** Batch ID: **25765** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date: **5/21/2011 1:45:55 AM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110523A** SeqNo: **963529**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Sample ID: **MB-25771** Batch ID: **25771** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date: **5/24/2011 12:59:10 AM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110523B** SeqNo: **963565**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Freshwater Environmental Services
Work Order: 1105292
Project: Yurok Phase II

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-25764** Batch ID: **25764** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date: **5/19/2011 11:16:27 AM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110519A** SeqNo: **962929**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Sample ID: **MB-25770** Batch ID: **25770** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date: **5/20/2011 2:32:19 AM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110519A** SeqNo: **962954**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Sample ID: **MB-25776** Batch ID: **25776** Test Code: **TPHDMW** Units: **µg/L** Analysis Date: **5/20/2011 8:14:09 PM** Prep Date: **5/19/2011**
Client ID: Run ID: **ORGC14_110520A** SeqNo: **963273**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	50									
TPHC Motor Oil	ND	170									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Freshwater Environmental Services
Work Order: 1105292
Project: Yurok Phase II

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **1105292-27BMS** Batch ID: **25761** Test Code: **ICPMSW** Units: **µg/L** Analysis Date: **5/19/2011 1:37:20 PM** Prep Date: **5/18/2011**
Client ID: **SW-3** Run ID: **ICPMS_110519B** SeqNo: **962713**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	472.6	2.0	500	0	94.5%	70	130	0			
Chromium	474.4	2.0	500	0.340	94.8%	70	130	0			
Copper	472.1	5.0	500	0.260	94.4%	70	130	0			
Lead	451.8	1.0	500	1.04	90.2%	70	130	0			
Nickel	471.7	5.0	500	0.480	94.2%	70	130	0			
Zinc	467.4	10	500	3.31	92.8%	70	130	0			

Sample ID: **1105292-02DMS** Batch ID: **25789** Test Code: **ICPMSW** Units: **µg/L** Analysis Date: **5/25/2011 11:13:32 AM** Prep Date: **5/23/2011**
Client ID: **SW-2(DISSOLVED)** Run ID: **ICPMS_110525A** SeqNo: **963707**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	448.0	2.0	500	2.58	89.1%	70	130	0			
Chromium	444.0	2.0	500	0	88.8%	70	130	0			
Copper	447.3	5.0	500	0.350	89.4%	70	130	0			
Lead	427.9	1.0	500	0	85.6%	70	130	0			
Nickel	445.9	5.0	500	3.02	88.6%	70	130	0			
Zinc	434.9	10	500	2.95	86.4%	70	130	0			

Sample ID: **1105292-07BMS** Batch ID: **25800** Test Code: **PCPTS** Units: **mg/kg** Analysis Date: **5/27/2011 10:04:37 AM** Prep Date: **5/24/2011**
Client ID: **FM-1-0.0'-1.0'** Run ID: **ORGC6_110527A** SeqNo: **964347**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	4.628	1.0	5.00	0	92.6%	70	111	0			
Pentachlorophenol	4.886	0.50	5.00	0	97.7%	70	110	0			
Surrogate: Dibromophenol	4.79	1.0	5.00	0	95.8%	47	110	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Freshwater Environmental Services
Work Order: 1105292
Project: Yurok Phase II

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **1105292-12AMS** Batch ID: **25888** Test Code: **PCPTS** Units: **mg/kg** Analysis Date: **6/13/2011 8:21:26 PM** Prep Date: **6/12/2011**
Client ID: **FM-5-0.0'-0.5'** Run ID: **ORGC6_110613A** SeqNo: **966900**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	4.269	1.0	5.00	0	85.4%	70	111	0			
Pentachlorophenol	4.640	0.50	5.00	0	92.8%	70	110	0			
Surrogate: Dibromophenol	3.68	1.0	5.00	0	73.7%	47	110	0			

Sample ID: **1105292-07AMS** Batch ID: **25765** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date: **5/21/2011 3:16:45 AM** Prep Date: **5/18/2011**
Client ID: **FM-1-0.0'-1.0'** Run ID: **ORGC14_110523A** SeqNo: **963532**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.600	1.0	10.0	0	96.0%	70	132	0			
TPHC Motor Oil	24.04	10	20.0	0	120%	69	136	0			

Sample ID: **1105292-23AMS** Batch ID: **25771** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date: **5/23/2011 11:29:35 PM** Prep Date: **5/18/2011**
Client ID: **TM-9-0.0'-1.0'** Run ID: **ORGC14_110523B** SeqNo: **963562**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.916	1.0	10.0	0	99.2%	70	132	0			
TPHC Motor Oil	21.13	10	20.0	0	106%	69	136	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Freshwater Environmental Services
Work Order: 1105292
Project: Yurok Phase II

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-25761** Batch ID: **25761** Test Code: **ICPMSW** Units: **µg/L** Analysis Date: **5/19/2011 1:24:30 PM** Prep Date: **5/18/2011**
Client ID: Run ID: **ICPMS_110519B** SeqNo: **962710**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	462.8	2.0	500	0	92.6%	85	115	0			
Chromium	457.8	2.0	500	0.810	91.4%	85	115	0			
Copper	450.5	5.0	500	0.110	90.1%	85	115	0			
Lead	448.6	1.0	500	0	89.7%	85	115	0			
Nickel	454.5	5.0	500	0.670	90.8%	85	115	0			
Zinc	457.4	10	500	2.61	91.0%	85	115	0			

Sample ID: **LCSD-25761** Batch ID: **25761** Test Code: **ICPMSW** Units: **µg/L** Analysis Date: **5/19/2011 1:28:47 PM** Prep Date: **5/18/2011**
Client ID: Run ID: **ICPMS_110519B** SeqNo: **962711**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	451.7	2.0	500	0	90.3%	85	115	463	2.43%	20	
Chromium	453.4	2.0	500	0.810	90.5%	85	115	458	0.972%	20	
Copper	451.5	5.0	500	0.110	90.3%	85	115	450	0.213%	20	
Lead	431.3	1.0	500	0	86.3%	85	115	449	3.92%	20	
Nickel	453.8	5.0	500	0.670	90.6%	85	115	454	0.152%	20	
Zinc	452.5	10	500	2.61	90.0%	85	115	457	1.07%	20	

Sample ID: **LCS-25789** Batch ID: **25789** Test Code: **ICPMSW** Units: **µg/L** Analysis Date: **5/25/2011 10:56:30 AM** Prep Date: **5/23/2011**
Client ID: Run ID: **ICPMS_110525A** SeqNo: **963703**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	444.0	2.0	500	0.830	88.6%	85	115	0			
Chromium	448.4	2.0	500	0	89.7%	85	115	0			
Copper	449.4	5.0	500	0	89.9%	85	115	0			
Lead	428.6	1.0	500	0	85.7%	85	115	0			
Nickel	452.9	5.0	500	0.190	90.5%	85	115	0			
Zinc	435.4	10	500	3.56	86.4%	85	115	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Freshwater Environmental Services
Work Order: 1105292
Project: Yurok Phase II

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-25789** Batch ID: **25789** Test Code: **ICPMSW** Units: **µg/L** Analysis Date: **5/25/2011 11:00:45 AM** Prep Date: **5/23/2011**
Client ID: Run ID: **ICPMS_110525A** SeqNo: **963704**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	449.6	2.0	500	0.830	89.7%	85	115	444	1.24%	20	
Chromium	444.5	2.0	500	0	88.9%	85	115	448	0.871%	20	
Copper	448.2	5.0	500	0	89.6%	85	115	449	0.267%	20	
Lead	428.3	1.0	500	0	85.7%	85	115	429	0.0607%	20	
Nickel	453.0	5.0	500	0.190	90.6%	85	115	453	0.00442%	20	
Zinc	432.5	10	500	3.56	85.8%	85	115	435	0.673%	20	

Sample ID: **LCS-25800** Batch ID: **25800** Test Code: **PCPTS** Units: **mg/kg** Analysis Date: **5/27/2011 9:17:14 AM** Prep Date: **5/24/2011**
Client ID: Run ID: **ORGC6_110527A** SeqNo: **964345**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	4.753	1.0	5.00	0	95.1%	70	111	0			
Pentachlorophenol	4.907	0.50	5.00	0	98.1%	70	110	0			
Surrogate: Dibromophenol	4.77	1.0	5.00	0	95.4%	47	110	0			

Sample ID: **LCSD-25800** Batch ID: **25800** Test Code: **PCPTS** Units: **mg/kg** Analysis Date: **5/27/2011 9:40:56 AM** Prep Date: **5/24/2011**
Client ID: Run ID: **ORGC6_110527A** SeqNo: **964346**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	4.691	1.0	5.00	0	93.8%	70	111	4.75	1.32%	30	
Pentachlorophenol	4.957	0.50	5.00	0	99.1%	70	110	4.91	1.02%	30	
Surrogate: Dibromophenol	4.78	1.0	5.00	0	95.6%	47	110	4.77	0.179%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Freshwater Environmental Services
Work Order: 1105292
Project: Yurok Phase II

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-25888** Batch ID: **25888** Test Code: **PCPTS** Units: **mg/kg** Analysis Date: **6/13/2011 7:33:38 PM** Prep Date: **6/12/2011**
Client ID: Run ID: **ORGC6_110613A** SeqNo: **966898**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	4.888	1.0	5.00	0	97.8%	70	111	0			
Pentachlorophenol	5.285	0.50	5.00	0	106%	70	110	0			
Surrogate: Dibromophenol	4.31	1.0	5.00	0	86.3%	47	110	0			

Sample ID: **LCSD-25888** Batch ID: **25888** Test Code: **PCPTS** Units: **mg/kg** Analysis Date: **6/13/2011 7:57:31 PM** Prep Date: **6/12/2011**
Client ID: Run ID: **ORGC6_110613A** SeqNo: **966899**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	4.669	1.0	5.00	0	93.4%	70	111	4.89	4.58%	30	
Pentachlorophenol	5.123	0.50	5.00	0	102%	70	110	5.28	3.10%	30	
Surrogate: Dibromophenol	4.12	1.0	5.00	0	82.4%	47	110	4.31	4.62%	30	

Sample ID: **LCS-25760** Batch ID: **25760** Test Code: **PCPTW** Units: **µg/L** Analysis Date: **5/25/2011 8:48:53 PM** Prep Date: **5/17/2011**
Client ID: Run ID: **ORGC6_110525A** SeqNo: **964328**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	5.130	0.50	5.00	0	103%	72	125	0			
Pentachlorophenol	1.451	0.25	1.50	0	96.7%	70	133	0			
Surrogate: Dibromophenol	5.18	0.10	5.00	0	104%	71	124	0			

Sample ID: **LCSD-25760** Batch ID: **25760** Test Code: **PCPTW** Units: **µg/L** Analysis Date: **5/25/2011 9:12:33 PM** Prep Date: **5/17/2011**
Client ID: Run ID: **ORGC6_110525A** SeqNo: **964329**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,3,4,6-Tetrachlorophenol	5.026	0.50	5.00	0	101%	72	125	5.13	2.05%	30	
Pentachlorophenol	1.419	0.25	1.50	0	94.6%	70	133	1.45	2.22%	30	
Surrogate: Dibromophenol	5.12	0.10	5.00	0	102%	71	124	5.18	1.21%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Freshwater Environmental Services
Work Order: 1105292
Project: Yurok Phase II

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-25765** Batch ID: **25765** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date: **5/21/2011 2:16:13 AM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110523A** SeqNo: **963530**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.37	1.0	10.0	0	104%	70	132	0			
TPHC Motor Oil	21.47	10	20.0	4.09	86.9%	69	136	0			

Sample ID: **LCSD-25765** Batch ID: **25765** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date: **5/21/2011 2:46:33 AM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110523A** SeqNo: **963531**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.766	1.0	10.0	0	97.7%	70	132	10.4	5.97%	30	
TPHC Motor Oil	20.58	10	20.0	4.09	82.4%	69	136	21.5	4.23%	30	

Sample ID: **LCSD-25771** Batch ID: **25771** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date: **5/23/2011 11:59:28 PM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110523B** SeqNo: **963563**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.36	1.0	10.0	0	104%	70	132	10.2	1.92%	30	
TPHC Motor Oil	20.89	10	20.0	0	104%	69	136	20.4	2.22%	30	

Sample ID: **LCS-25771** Batch ID: **25771** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date: **5/24/2011 12:29:19 AM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110523B** SeqNo: **963564**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.17	1.0	10.0	0	102%	70	132	0			
TPHC Motor Oil	20.43	10	20.0	0	102%	69	136	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Freshwater Environmental Services
Work Order: 1105292
Project: Yurok Phase II

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-25764** Batch ID: **25764** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date: **5/19/2011 11:46:52 AM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110519A** SeqNo: **962930**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	11.63	1.0	10.0	0.521	111%	80	119	0			
TPHC Motor Oil	22.59	10	20.0	0	113%	89	116	0			

Sample ID: **LCSD-25764** Batch ID: **25764** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date: **5/19/2011 12:17:24 PM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110519A** SeqNo: **962931**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	11.49	1.0	10.0	0.521	110%	80	119	11.6	1.14%	30	
TPHC Motor Oil	22.22	10	20.0	0	111%	89	116	22.6	1.64%	30	

Sample ID: **LCS-25770** Batch ID: **25770** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date: **5/20/2011 3:02:15 AM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110519A** SeqNo: **962955**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	11.06	1.0	10.0	0.441	106%	80	119	0			
TPHC Motor Oil	22.73	10	20.0	0	114%	89	116	0			

Sample ID: **LCSD-25770** Batch ID: **25770** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date: **5/20/2011 3:32:11 AM** Prep Date: **5/18/2011**
Client ID: Run ID: **ORGC14_110519A** SeqNo: **962956**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	11.08	1.0	10.0	0.441	106%	80	119	11.1	0.202%	30	
TPHC Motor Oil	22.87	10	20.0	0	114%	89	116	22.7	0.634%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Freshwater Environmental Services
Work Order: I105292
Project: Yurok Phase II

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-25776** Batch ID: **25776** Test Code: **TPHDMW** Units: **µg/L** Analysis Date: **5/20/2011 8:44:36 PM** Prep Date: **5/19/2011**
Client ID: Run ID: **ORGC14_110520A** SeqNo: **963274**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	501.7	50	500	0	100%	74	120	0			
TPHC Motor Oil	1,013	170	1,000	34.4	97.8%	81	126	0			

Sample ID: **LCSD-25776** Batch ID: **25776** Test Code: **TPHDMW** Units: **µg/L** Analysis Date: **5/20/2011 9:14:57 PM** Prep Date: **5/19/2011**
Client ID: Run ID: **ORGC14_110520A** SeqNo: **963275**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	511.9	50	500	0	102%	74	120	502	2.01%	30	
TPHC Motor Oil	1,025	170	1,000	34.4	99.1%	81	126	1,010	1.22%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

Res
RC

LABORATORY NUMBER: 1105292

Attention: Stan Thiesen
Results & Invoice to: Freshwater Environmental Services
Address: 78 Sunny Brae Center, Arcata, CA, 95521
Please send invoice to Freshwater Environmental Services
Phone: 707 839-0091
Copies of Report to: Stan Thiesen
stan@freshwaterenvironmentalservices.com
Sampler (Sign & Print): Orrin Plocher

TAT: [ ] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[✓] STD (2–3 Wk) [ ] Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By: ___
Final Report: FAX [ ] Verbal [ ] By: ___

PROJECT INFORMATION
Project Number:
Project Name: Yurok Phase II
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	TPH-D/MO (8015B)	PCP/TCP (Canadian Pulp)	Metals (filtered) (200.8)	TPH-D/MO (8015B)	PCP/TCP (Canadian Pulp)	Metals (6020)
					PRESERVATIVE: none	none	HNO3	none	none	none
					CONTAINER: 2 60 ml VOAS	125 ml amber	250 ml poly	8 oz soil jar	8 oz soil jar	8 oz soil jar
	SW-1	05/10/2011	11:32	SW	X	X	X			
	SW-2	05/10/2011	11:42	SW	X	X	X			
	SW-3	05/10/2011	14:04	SW	X					
	CB-1-0.0'-1.0'	05/10/2011	13:25	S				X		X
	CB-2-0.0'-1.75'	05/10/2011	13:40	S				X		X
	CB-3-0.0'-1.75'	05/10/2011	13:44	S				X		X
	FM-1-0.0'-1.0'	05/10/2011	14:55	S				X	X	
	FM-2-0.0'-1.5'	05/10/2011	15:12	S				X	X	
	FM-2-3.0'-3.5'	05/10/2011	15:15	S				X	X	
	FM-3-0.0'-1.0'	05/10/2011	15:20	S				X	X	

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

Metals include: arsenic, chromium (total), nickel, lead, zinc.
Metals in water using EPA Method 200.8
Metals in soil using EPA Method 6020
All TPH-D/MO need silica gel Cleanup as per Stan Thiesen. RC 5/10/11
Please record cooler temperature: 1.8° Celsius

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Orrin Plocher	5/15/11 1155		
		5/13/11	1200

SAMPLE DISPOSAL
[✓] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1105292

Attention: Stan Thiesen
Results & Invoice to: Freshwater Environmental Services
Address: 78 Sunny Brae Center, Arcata, CA, 95521
Please send invoice to Freshwater Environmental Services
Phone: 707 839-0091
Copies of Report to: Stan Thiesen
stan@freshwaterenvironmentalservices.com
Sampler (Sign & Print): Orrin Plocher

PROJECT INFORMATION
Project Number:
Project Name: Yurok Phase II
Purchase Order Number:

TAT: [ ] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[✓] STD (2–3 Wk) [ ] Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By:
Final Report: FAX [ ] Verbal [ ] By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_4$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS
					none	8 oz soil jar	TPH-D/MO (8015B)
	FM-4-0.0'-1.0'	05/11/2011	11:15	S			X
	FM-5-0.0'-0.5'	05/11/2011	11:00	S			X
	FM-6-0.0'-1.0'	05/10/2011	15:00	S			X
	FM-7-0.0'-0.5'	05/11/2011	11:45	S			X
	TM-1-0.0'-2.0'	05/11/2011	12:55	S			X
	TM-2-0.0'-1.5'	05/11/2011	13:10	S			X
	TM-3-0.0'-2.0'	05/11/2011	13:38	S			X
	TM-4-0.0'-2.0'	05/11/2011	14:00	S			X
	TM-5-0.0'-1.5'	05/11/2011	14:22	S			X
	TM-6-0.0'-1.5'	05/11/2011	15:04	S			X

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

Please record cooler temperature: 1.8° Celsius

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Orrin Plocher	5/13/11 1615	[signature] 5/13/11	1200

SAMPLE DISPOSAL
[✓] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1105292

Attention: Stan Thiesen
Results & Invoice to: Freshwater Environmental Services
Address: 78 Sunny Brae Center, Arcata, CA, 95521
Please send invoice to Freshwater Environmental Services
Phone: 707 839-0091
Copies of Report to: Stan Thiesen
stan@freshwaterenvironmentalservices.com
Sampler (Sign & Print): Orrin Plocher

TAT: [ ] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[✓] STD (2–3 Wk) [ ] Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By: ___, ___, ___
Final Report: FAX [ ] Verbal [ ] By: ___, ___, ___

PROJECT INFORMATION
Project Number: _____
Project Name: Yurok Phase II
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS: TPH-D/MO (8015B)	PCP/TCP (Canadian Pulp)	Metals (NOT-filtered) (200.8)
					CONTAINER: 8 oz soil jar	125 ml amber	250 ml poly
					PRESERVATIVE: none	none	HNO3
	TM-7-0.0'-0.5'	05/11/2011	15:10	S	X		
	TM-8-0.0'-1.0'	05/12/2011	10:28	S	X		
	TM-9-0.0'-1.0'	05/12/2011	10:47	S	X		
	TM-10-0.0'-1.0'	05/12/2011	11:05	S	X		
	TM-11-0.0'-0.5'	05/11/2011	16:15	S	X		
	TM-12-0.0'-1.0'	05/12/2011	11:15	S	X		
	SW-3	05/10/2011	15:45	SW		X	X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

Metals include: arsenic, chromium (total), nickel, lead, zinc.
Metals in water using EPA Method 200.8

Please record cooler temperature: 1.8° Celsius

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Orrin Plocher Omi Plocher	5/13/11 1151		
		5/13/11	1200

SAMPLE DISPOSAL
[✓] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA [ ]
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

Northcoast Laboratories
5680 West End Road
Arcata, CA 95521

Attn: Laura Miller
Phone: (707) 822-4649
Fax: (707) 822-6831
Date Received : 05/17/11

Job: 1105292

Metals by ICPMS
EPA Method SW6020 / SW6020A

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **1105292-04B/CB-1-0.0ft-1.0ft**				
Lab ID: NOC11051726-01A Chromium (Cr)	170	1.0 mg/Kg	05/18/11	05/18/11
Date Sampled 05/10/11 13:25 Nickel (Ni)	100	2.0 mg/Kg	05/18/11	05/18/11
Copper (Cu)	38	2.0 mg/Kg	05/18/11	05/18/11
Zinc (Zn)	150	20 mg/Kg	05/18/11	05/18/11
Arsenic (As)	3.6	1.0 mg/Kg	05/18/11	05/18/11
Lead (Pb)	23	1.0 mg/Kg	05/18/11	05/18/11
Client ID: **1105292-05B/CB-2-0.0ft-1.75ft**				
Lab ID: NOC11051726-02A Chromium (Cr)	190	1.0 mg/Kg	05/18/11	05/18/11
Date Sampled 05/10/11 13:40 Nickel (Ni)	100	2.0 mg/Kg	05/18/11	05/18/11
Copper (Cu)	51	2.0 mg/Kg	05/18/11	05/18/11
Zinc (Zn)	86	20 mg/Kg	05/18/11	05/18/11
Arsenic (As)	4.4	1.0 mg/Kg	05/18/11	05/18/11
Lead (Pb)	62	1.0 mg/Kg	05/18/11	05/18/11
Client ID: **1105292-06B/CB-3-0.0ft-1.75ft**				
Lab ID: NOC11051726-03A Chromium (Cr)	170	1.0 mg/Kg	05/18/11	05/18/11
Date Sampled 05/10/11 13:44 Nickel (Ni)	91	2.0 mg/Kg	05/18/11	05/18/11
Copper (Cu)	35	2.0 mg/Kg	05/18/11	05/18/11
Zinc (Zn)	80	20 mg/Kg	05/18/11	05/18/11
Arsenic (As)	3.0	1.0 mg/Kg	05/18/11	05/18/11
Lead (Pb)	44	1.0 mg/Kg	05/18/11	05/18/11

This replaces the report originally signed 5/26/11, due to a change in the analyte list, per client request.

Sample results were calculated on a wet weight basis.

Roger Scholl Randy Gardner Walter Hinchman

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (714) 386-2901 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

6/14/11
Report Date

Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: *14-Jun-11*

QC Summary Report

Work Order: 11051726

Method Blank

Type **MBLK** Test Code: **EPA Method SW6020 / SW6020A**

File ID: **051811.B\018_M1.D** Batch ID: **26569** Analysis Date: **05/18/2011 13:04**

Sample ID: **MB-26569** Units : **mg/Kg** Run ID: **ICP/MS_110518A** Prep Date: **05/18/2011 13:41**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	1								
Nickel (Ni)	ND	2								
Copper (Cu)	ND	2								
Zinc (Zn)	ND	20								
Arsenic (As)	ND	1								
Lead (Pb)	ND	1								

Laboratory Control Spike

Type **LCS** Test Code: **EPA Method SW6020 / SW6020A**

File ID: **051811.B\020_M.D** Batch ID: **26569** Analysis Date: **05/18/2011 15:36**

Sample ID: **LCS-26569** Units : **mg/Kg** Run ID: **ICP/MS_110518A** Prep Date: **05/18/2011 13:41**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	21.8	1	25		87	80	120			
Nickel (Ni)	21.1	2	25		85	80	120			
Copper (Cu)	22.2	2	25		89	80	120			
Zinc (Zn)	22.8	20	25		91	80	120			
Arsenic (As)	23.6	1	25		95	80	120			
Lead (Pb)	24.4	1	25		97	80	120			

Sample Matrix Spike

Type **MS** Test Code: **EPA Method SW6020 / SW6020A**

File ID: **051811.B\025_M.D** Batch ID: **26569** Analysis Date: **05/18/2011 16:04**

Sample ID: **11051601-01AMS** Units : **mg/Kg** Run ID: **ICP/MS_110518A** Prep Date: **05/18/2011 13:41**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	52.9	1	25	24.7	113	75	125			
Nickel (Ni)	44.5	2	25	23.19	85	75	125			
Copper (Cu)	55.6	2	25	32.22	93	75	125			
Zinc (Zn)	90.9	20	25	60.61	121	75	125			
Arsenic (As)	26.3	1	25	4.907	85	75	125			
Lead (Pb)	88	1	25	206.7	-480	75	125			M3

Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW6020 / SW6020A**

File ID: **051811.B\026_M.D** Batch ID: **26569** Analysis Date: **05/18/2011 16:09**

Sample ID: **11051601-01AMSD** Units : **mg/Kg** Run ID: **ICP/MS_110518A** Prep Date: **05/18/2011 13:41**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	48	1	25	24.7	93	75	125	52.86	9.7(20)	
Nickel (Ni)	40.2	2	25	23.19	68	75	125	44.45	10.0(20)	M2
Copper (Cu)	393	2	25	32.22	1440	75	125	55.56	150.0(20)	M1 R58
Zinc (Zn)	82.1	20	25	60.61	86	75	125	90.9	10.1(20)	
Arsenic (As)	26.1	1	25	4.907	85	75	125	26.26	0.5(20)	
Lead (Pb)	61.3	1	25	206.7	-580	75	125	87.95	35.7(20)	M3 R58

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

R58 = MS/MSD RPD exceeded the laboratory control limit.

M1 = Matrix spike recovery was high, the method control sample recovery was acceptable.

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to the spike level. The method control sample recovery was acceptable.

Billing Information :

CHAIN-OF-CUSTODY RECORD

AMENDED

CA

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

WorkOrder : NOC11051726

Report Due By : 5:00 PM On : 27-May-11

Client:
Northcoast Laboratories
5680 West End Road

Arcata, CA 95521

PO : 1105292

Client's COC # : none Job : 1105292

Report Attention	Phone Number	EMail Address
Laura Miller	(707) 822-4649 x	llmiller@northcoastlabs.com
Trudie Blasi	(707) 822-4649 x	tblasi@northcoastlabs.com

EDD Required : **No**

Sampled by : Client

Cooler Temp	Samples Received	Date Printed
12 °C	17-May-11	**14-Jun-11**

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests: METALS_SO	Sample Remarks
NOC11051726-01A	1105292-04B/CB-1-0.0ft-1.0ft	SO	05/10/11 13:25	1	0	8	As, Cr, Ni, Pb, Zn, Cu	
NOC11051726-02A	1105292-05B/CB-2-0.0ft-1.75ft	SO	05/10/11 13:40	1	0	8	As, Cr, Ni, Pb, Zn, Cu	
NOC11051726-03A	1105292-06B/CB-3-0.0ft-1.75ft	SO	05/10/11 13:44	1	0	8	As, Cr, Ni, Pb, Zn, Cu	

Comments: No security seals. No ice. Amended 6/14/11 07:50 to add Cu, per email from Laura,KM :

	Signature	Print Name	Company	Date/Time
Logged in by:	K Murray	K Murray	**Alpha Analytical, Inc.**	6/14/11 0750

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.
The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.
Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information :

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

CA

WorkOrder : NOC11051726

Report Due By : 5:00 PM On : 27-May-11

Client:
Northcoast Laboratories
5680 West End Road

Arcata, CA 95521

PO : 1105292

Client's COC # : none Job : 1105292

Report Attention	Phone Number	EMail Address
Laura Miller	(707) 822-4649 x	llmiller@northcoastlabs.com
Trudie Blasi	(707) 822-4649 x	tblasi@northcoastlabs.com

EDD Required : No

Sampled by : Client

Cooler Temp	Samples Received	Date Printed
12 °C	17-May-11	17-May-11

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests: METALS_SO	Sample Remarks
NOC11051726-01A	1105292-04B/CB-1-0.0ft-1.0ft	SO	05/10/11 13:25	1	0	8	As, Cr, Ni, Pb, Zn	
NOC11051726-02A	1105292-05B/CB-2-0.0ft-1.75ft	SO	05/10/11 13:40	1	0	8	As, Cr, Ni, Pb, Zn	
NOC11051726-03A	1105292-06B/CB-3-0.0ft-1.75ft	SO	05/10/11 13:44	1	0	8	As, Cr, Ni, Pb, Zn	

Comments: No security seals. No ice. :

	Signature	Print Name	Company	Date/Time
Logged in by:	Kmurray	K Murray	Alpha Analytical, Inc.	5/17/11 1320

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

NORTH COAST LABORATORIES LTD.

Sub-Contract Chain of Custody Record

Date Shipped: 5/16/2011
Date Due: 5/27/2011
PO #: 1105292

Subcontractor: Alpha Analytical - Nevada
255 Glendale Ave, #21
Sparks, NV 89431-5778

Attn: Sample Receiving 775-355-1044

Send Results to: North Coast Labs
5680 West End Road
Arcata, CA 95521

Attn: Laura Miller or Trudie Haughy (707) 822-4649

NOC1105172G

	NCL Sample # / Sample ID	Collection Date / Bottle	Matrix / Source	State Form System / Employer	Sampler	Analysis / Remarks
01	**1105292-04B** CB-1-0.0'-1.0'	5/10/2011 01:25 pm 8-oz soil jar	Soil			Subcontract Metals As, Cr, Ni, Pb, & Zn TTLC
02	**1105292-05B** CB-2-0.0'-1.75'	5/10/2011 01:40 pm 8-oz soil jar	Soil			Subcontract Metals As, Cr, Ni, Pb, & Zn TTLC
03	**1105292-06B** CB-3-0.0'-1.75'	5/10/2011 01:44 pm 8-oz soil jar	Soil			Subcontract Metals As, Cr, Ni, Pb, & Zn TTLC

		Date/Time			Date/Time
Relinquished by:	Ronald Cy	5/16/11 1015	**Received by:**	K Murray	5/17/11 1310
Relinquished by:			**Received by:**		

Special Instructions: Please include NCL Sample #, Sample ID, and QC data on all analytical work; include PO # on invoice.

4R

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

Res
RC

LABORATORY NUMBER: 1105292

Attention: Stan Thiesen
Results & Invoice to: Freshwater Environmental Services
Address: 78 Sunny Brae Center, Arcata, CA, 95521
Please send invoice to Freshwater Environmental Services
Phone: 707 839-0091
Copies of Report to: Stan Thiesen
stan@freshwaterenvironmentalservices.com
Sampler (Sign & Print): Orrin Plocher

PROJECT INFORMATION
Project Number:
Project Name: Yurok Phase II
Purchase Order Number:

TAT: | | 24 Hr | | 48 Hr | | 5 Day | | 5–7 Day
|✓| STD (2–3 Wk) | | Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms | |
Preliminary: FAX | | Verbal | | By:
Final Report: FAX | | Verbal | | By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	TPH-D/MO (8015B)	PCP/TCP (Canadian Pulp)	Metals (filtered) (200.8)		TPH-D/MO (8015B)	PCP/TCP (Canadian Pulp)	Metals (6020)
					none	2 60 ml VOAS							
					none	125 ml amber							
					HNO3	250 ml poly							
					none	8 oz soil jar							
					none	8 oz soil jar							
					none	8 oz soil jar							
	SW-1	05/10/2011	11:32	SW			X	X	X				
	SW-2	05/10/2011	11:42	SW			X	X	X				
	SW-3	05/10/2011	14:04	SW			X						
	CB-1-0.0'-1.0'	05/10/2011	13:25	S							X		X
	CB-2-0.0'-1.75'	05/10/2011	13:40	S							X		X
	CB-3-0.0'-1.75'	05/10/2011	13:44	S							X		X
	FM-1-0.0'-1.0'	05/10/2011	14:55	S							X	X	
	FM-2-0.0'-1.5'	05/10/2011	15:12	S							X	X	
	FM-2-3.0'-3.5'	05/10/2011	15:15	S							X	X	
	FM-3-0.0'-1.0'	05/10/2011	15:20	S							X	X	

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

Metals include: arsenic, chromium (total), nickel, lead, zinc.
Metals in water using EPA Method 200.8
Metals in soil using EPA Method 6020
All TPH-D/MO need Silica gel Clean up as per Stan Thiesen. RC 5/16/11
Please record cooler temperature: 1.8° Celsius

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Orrin Plocher	5/15/11 1155		
		RS 5/13/11	1200

SAMPLE DISPOSAL
|✓| NCL Disposal of Non-Contaminated
| | Return | | Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1105292

Attention: Stan Thiesen
Results & Invoice to: Freshwater Environmental Services
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Please send invoice to Freshwater Environmental Services
Phone: 707 839-0091
Copies of Report to: Stan Thiesen
stan@freshwaterenvironmentalservices.com
Sampler (Sign & Print): Orrin Plocher

TAT: | | 24 Hr | | 48 Hr | | 5 Day | | 5–7 Day
☑ STD (2–3 Wk) | | Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms | |
Preliminary: FAX | | Verbal | | By: ___, ___, ___
Final Report: FAX | | Verbal | | By: ___, ___, ___

PROJECT INFORMATION
Project Number: _____
Project Name: Yurok Phase II
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE: none	CONTAINER: 8 oz soil jar	ANALYSIS: TPH-D/MO (8015B)
	FM-4-0.0'-1.0'	05/11/2011	11:15	S			X
	FM-5-0.0'-0.5'	05/11/2011	11:00	S			X
	FM-6-0.0'-1.0'	05/10/2011	15:00	S			X
	FM-7-0.0'-0.5'	05/11/2011	11:45	S			X
	TM-1-0.0'-2.0'	05/11/2011	12:55	S			X
	TM-2-0.0'-1.5'	05/11/2011	13:10	S			X
	TM-3-0.0'-2.0'	05/11/2011	13:38	S			X
	TM-4-0.0'-2.0'	05/11/2011	14:00	S			X
	TM-5-0.0'-1.5'	05/11/2011	14:22	S			X
	TM-6-0.0'-1.5'	05/11/2011	15:04	S			X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

Please record cooler temperature: 1.8° Celsius

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Orrin Plocher	5/13/11 1615	[signature] 5/13/11	1200

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
[ ] Return | | Pickup

CHAIN OF CUSTODY SEALS Y/N/NA [ ]
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1105292

Attention: Stan Thiesen
Results & Invoice to: Freshwater Environmental Services
Address: 78 Sunny Brae Center, Arcata, CA, 95521
Please send invoice to Freshwater Environmental Services
Phone: 707 839-0091
Copies of Report to: Stan Thiesen
stan@freshwaterenvironmentalservices.com
Sampler (Sign & Print): Orrin Plocher

TAT: [ ] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[✓] STD (2–3 Wk) [ ] Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By: ___, ___, ___
Final Report: FAX [ ] Verbal [ ] By: ___, ___, ___

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_4$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number:
Project Name: Yurok Phase II
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPH-D/MO (8015B)	PCP/TCP (Canadian Pulp)	Metals (NOT-filtered) (200.8)
					none	8 oz soil jar			
					none	125 ml amber			
					HNO3	250 ml poly			
	TM-7-0.0'-0.5'	05/11/2011	15:10	S			X		
	TM-8-0.0'-1.0'	05/12/2011	10:28	S			X		
	TM-9-0.0'-1.0'	05/12/2011	10:47	S			X		
	TM-10-0.0'-1.0'	05/12/2011	11:05	S			X		
	TM-11-0.0'-0.5'	05/11/2011	16:15	S			X		
	TM-12-0.0'-1.0'	05/12/2011	11:15	S			X		
	SW-3	05/10/2011	15:45	SW				X	X

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

Metals iuclude: arsenic, chromium (total), nickel, lead, zinc.
Metals in water using EPA Method 200.8

Please record cooler temperature: 1.8° Celsius

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Orrin Plocher omplocher	5/13/11 1157		
		5/13/11	1200

SAMPLE DISPOSAL
[✓] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

June 6, 2011

TestAmerica Project Number: G1E180464
PO/Contract:

Orrin Plocher
Freshwater Environmental Services
78 Sunny Brae Center
Arcata, CA 95521

Dear Mr. Plocher,

This report contains the analytical results for the samples received under chain of custody by TestAmerica on May 18, 2011. These samples are associated with your Yurok Phase II, Former Mill Site project.

The test results in this report meet all NELAC requirements for parameters that accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916) 374-4383.

Sincerely,

DAVID R. ALLTUCKER
Project Manager

Table of Contents

TestAmerica West Sacramento Project Number G1E180464

Case Narrative

TestAmerica West Sacramento Project Number G1E180464

General Comments
Sampling times listed on containers did not match the times listed on the Chain of Custody. Samples were logged in based on the Chain of Custody.

SOLID, 1613B, Dioxins/Furans, HRGC/HRMS
Sample(s): 1, 2, 3
The result for 2, 3, 7, 8-TCDF is reported from the confirmation analysis that occurred on June 3, 2011.

Sample(s): 2, 3
Several analytes in the samples and in the method blank (MB) have been qualified with a "Q" flag due to the ion abundance ratios being outside of criteria. The analytes have been reported as an "estimated maximum possible concentration" (EMPC) because the quantitation is based on the theoretical ion abundance ratio for these analytes.

WATER, 1613B, Dioxins/Furans, HRGC/HRMS
Sample(s): 4, 5, 6
The laboratory control sample (LCS) associated with this extraction batch exhibited elevated instrument noise for 2,3,7,8 TCDF requiring the detection limit to be raised appropriately. This analyte was flagged with the "G" qualifier.

Sample(s): 4, 6
Several analytes in the above samples have been qualified with a "Q" flag due to the ion abundance ratios being outside of criteria. The analytes have been reported as an "estimated maximum possible concentration" (EMPC) because the quantitation is based on the theoretical ion abundance ratio for these analytes.

There were no other anomalies associated with this project.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ACCREDITED IN ACCORDANCE WITH nelac

TestAmerica Laboratories West Sacramento Certifications/Accreditations

Certifying State	Certificate #	Certifying State	Certificate #
A2LA (DoD-ELAP)	2928-01	New Mexico	NA
Alaska	UST-055	New York*	11666
Arizona	AZ0708	Oregon*	CA 200005
Arkansas	88-0691	Pennsylvania*	68-1272
California*	01119CA	South Carolina	87014
Colorado	NA	Texas*	T104704399-08-TX
Connecticut	PH-0691	UCMR	CA00044
Florida*	E87570	US Fish & Wildlife	LE148388-0
Georgia	960	USDA Foreign Plant	37-82605
Guam	10-009r	USDA Foreign Soil	P330-09-00055
Hawaii	NA	Utah*	QUAN1
Illinois*	002701	Virginia	178
Kansas*	E-10375	Washington	C581
Louisiana*	01944	West Virginia	9930C, 334
Michigan	9947	Wisconsin	998204680
Nevada	CA44	Wyoming	8TMS-Q
New Jersey*	CA005		

*NELAP accredited. A more detailed parameter list is available upon request. *Updated 5/25/2011*

QC Parameter Definitions

QC Batch: The QC batch consists of a set of up to 20 field samples that behave similarly (i.e., same matrix) and are processed using the same procedures, reagents, and standards at the same time.

Method Blank: An analytical control consisting of all reagents, which may include internal standards and surrogates, and is carried through the entire analytical procedure. The method blank is used to define the level of laboratory background contamination.

Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD): An aliquot of blank matrix spiked with known amounts of representative target analytes. The LCS (and LCSD as required) is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. If an LCSD is performed, it may also be used to evaluate the precision of the process.

Duplicate Sample (DU): Different aliquots of the same sample are analyzed to evaluate the precision of an analysis.

Surrogates: Organic compounds not expected to be detected in field samples, which behave similarly to target analytes. These are added to every sample within a batch at a known concentration to determine the efficiency of the sample preparation and analytical process.

Matrix Spike and Matrix Spike Duplicate (MS/MSD): An MS is an aliquot of a matrix fortified with known quantities of specific compounds and subjected to an entire analytical procedure in order to indicate the appropriateness of the method for a particular matrix. The percent recovery for the respective compound(s) is then calculated. The MSD is a second aliquot of the same matrix as the matrix spike, also spiked, in order to determine the precision of the method.

Isotope Dilution: For isotope dilution methods, isotopically labeled analogs (internal standards) of the native target analytes are spiked into the sample at time of extraction. These internal standards are used for quantitation, and monitor and correct for matrix effects. Since matrix effects on method performance can be judged by the recovery of these analogs, there is little added benefit of performing MS/MSD for these methods. MS/MSD are only performed for client or QAPP requirements.

Control Limits: The reported control limits are either based on laboratory historical data, method requirements, or project data quality objectives. The control limits represent the estimated uncertainty of the test results.

Sample Summary

TestAmerica West Sacramento Project Number G1E180464

WO#	Sample #	Client Sample ID	Sampling Date	Received Date
MJJX7	1	CB-1-0.0'-1.0'	5/10/2011 11:32 AM	5/18/2011 09:05 AM
MJJ0A	2	CB-2-0.0'-1.75'	5/10/2011 11:42 AM	5/18/2011 09:05 AM
MJJ0D	3	CB-3-0.0'-1.75'	5/10/2011 02:04 PM	5/18/2011 09:05 AM
MJJ0E	4	SW-1	5/10/2011 01:53 PM	5/18/2011 09:05 AM
MJJ0H	5	SW-2	5/10/2011 02:00 PM	5/18/2011 09:05 AM
MJJ0K	6	SW-3	5/10/2011 02:07 PM	5/18/2011 09:05 AM

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

West Sacramento
880 Riverside Parkway

West Sacramento, CA 95605
phone 916.374.4378 fax 916.372.1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Orrin Plocher	Site Contact: Stan Thiesen	Date: 5-16-11	COC No:
Freshwater Environmental Services	Tel/Fax: 707 839-0091	Lab Contact: David Alltucker/Jill K.	Carrier: FedEx	1 of 1 COCs
78 Sunny Brae Center	Analysis Turnaround Time			Job No.
Arcata, CA 95521	Calendar (C) or Work Days (W) ____			
(707) 839-0091 Phone	TAT if different from Below ____			
(xxx) xxx-xxxx FAX	■ 2 weeks			
Project Name: Yurok Phase II	☐ 1 week			
Site: Former Mill Site	☐ 2 days			
P O # NA	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Dioxins/Furans 1613B	Sample Specific Notes:
CB-1-0.0'-1.0'	5/10/11	1132	Grab	Soil	1		X	
CB-2-0.0'-1.75'	5/10/11	1142	Grab	Soil	1		X	
CB-3-0.0'-1.75'	5/10/11	1404	Grab	Soil	1		X	
SW-1	5/10/11	1353	Grab	Water	2		X	
SW-2	5/10/11	1400	Grab	Water	2		X	
SW-3	5/10/11	1407	Grab	Water	2		X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ■

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ■ *Disposal By Lab* ☐ *Archive For* ____ *Months*

Special Instructions/QC Requirements & Comments: Please invoice Freshwater Environmental Services, 78 Sunny Brae Center, Arcata, CA 95521. Please return cooler to same address.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Freshwater Environmental Services	5/14/11 1056	[signature]	TAL-US	5/16/11 - 0940
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

LOT RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT Freshwater Environmental PM DA LOG # 70712

LOT# (QUANTIMS ID) GIE180464 QUOTE# 77411 LOCATION W23B

Checked (✓)

DATE RECEIVED 5/18/11 TIME RECEIVED 0905 ☑

DELIVERED BY ☑ FEDEX ☐ ON TRAC ☐ OTHER

☐ GOLDENSTATE ☐ UPS ☐ EZ PARCEL

☐ TAL COURIER ☐ TAL SF ☐ CLIENT ☑

SHIPPPING CONTAINER(S) ☑ TAL ☐ CLIENT ☐ N/A ☑

CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A ☑

CUSTODY SEAL #(S) 600172

COC #(S) DA ☑

TEMPERATURE BLANK Observed: NA Corrected:

SAMPLE TEMPERATURE - (TEMPERATURES ARE IN °C)

Observed: 5, 3, 2 Average 3 Corrected Average 3

LABORATORY THERMOMETER ID:

IR UNIT: #4 ☑ #5 ☐ ☐ OTHER ☑

CV 5/18/11
Initials Date

---

pH MEASURED ☐ YES ☐ ANOMALY ☑ N/A ☑

LABELED BY ☑

LABELS CHECKED BY ☑

PEER REVIEW ☑ NA

SHORT HOLD TEST NOTIFICATION

SAMPLE RECEIVING ☑

WETCHEM ☑ N/A ☑

VOA-ENCORES ☑ N/A ☑

☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL ☑ N/A ☑

☑ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES ☑ N/A ☑ JEVS 5/18/11

☑ CLOUSEAU ☐ TEMPERATURE EXCEEDED (2 °C – 6 °C)*1 ☑ N/A JEVS 5/18/11

☐ WET ICE ☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☑ PM NOTIFIED

CV 5/18/11
Initials Date

Notes CB-1-0.0'-1.0' w/ collection time of 1325 VS COC's 1132.
CB-2-0.0'-1.75' w/ collection time of 1340 VS COC's 1142
CB-3-0.0'-1.75' w/ collection time of 1344 VS COC's 1404

*1 Acceptable temperature range for State of Wisconsin samples is ≤4°C.

SW-1 w/ collection time of 1132 VS COC's 1353.
SW-2 w/ collection time of 1142 VS COC's 1400.
SW-3 w/ collection time of 1404 VS COC's 1407.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Bottle Lot Inventory

Lot ID: GIE 180464

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VOA*																				
VOAh*																				
AGB				2	2															
AGBs																				
250AGB																				
250AGBs																				
250AGBn																				
500AGB																				
____AGJ																				
500AGJ																				
250AGJ																				
125AGJ																				
____CGJ																				
500CGJ																				
250CGJ	1	1	1																	
125CGJ																				
PJ																				
PJn																				
500PJ																				
500PJn																				
500PJna																				
500PJzn/na																				
250PJ																				
250PJn																				
250PJna																				
250PJzn/na																				
Acetate Tube																				
____"CT																				
Encore																				
Folder/filter																				
PUF																				
Petri/Filter																				
XAD Trap																				
Ziploc																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

h = hydrochloric acid **s** = sulfuric acid **na** = sodium hydroxide **n** = nitric acid **zn** = zinc acetate

Number of VOAs with air bubbles present / total number of VOA's

SOLID, 1613B, Dioxins/Furans, HRGC/HRMS

Freshwater Environmental Services

Sample ID: CB-1-0.0'-1.0'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 001	**Work Order #....:**	MJJX71AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	05/31/11	**% Moisture....:**	15
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.99	**Units.....:**	pg/g
Initial Wgt/Vol :	10.08 g	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT		REPORTING LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND		1.2	1.0	0
Total TCDD	**0.93**		**1.2**		
1,2,3,7,8-PeCDD	**1.0**	**J**	**5.8**	**1.0**	**1.0**
Total PeCDD	**8.2**		**5.8**		
1,2,3,4,7,8-HxCDD	**1.7**	**J**	**5.8**	**0.1**	**0.17**
1,2,3,6,7,8-HxCDD	**4.6**	**J**	**5.8**	**0.1**	**0.46**
1,2,3,7,8,9-HxCDD	**4.2**	**J**	**5.8**	**0.1**	**0.42**
Total HxCDD	**45**		**5.8**		
1,2,3,4,6,7,8-HpCDD	**150**	**B**	**5.8**	**0.01**	**1.5**
Total HpCDD	**280**		**5.8**		
OCDD	**500**	**B**	**12**	**0.0003**	**0.15**
2,3,7,8-TCDF	ND	CON	1.2	0.1	0
Total TCDF	**3.1**		**1.2**		
1,2,3,7,8-PeCDF	ND		5.8	0.03	0
2,3,4,7,8-PeCDF	ND		5.8	0.3	0
Total PeCDF	**6.5**		**5.8**		
1,2,3,4,7,8-HxCDF	**1.5**	**J B**	**5.8**	**0.1**	**0.15**
1,2,3,6,7,8-HxCDF	**0.92**	**J B**	**5.8**	**0.1**	**0.092**
2,3,4,6,7,8-HxCDF	**0.65**	**J**	**5.8**	**0.1**	**0.065**
1,2,3,7,8,9-HxCDF	ND		5.8	0.1	0
Total HxCDF	**13**		**5.8**		
1,2,3,4,6,7,8-HpCDF	**7.1**	**B**	**5.8**	**0.01**	**0.071**
1,2,3,4,7,8,9-HpCDF	**0.76**	**J B**	**5.8**	**0.01**	**0.0076**
Total HpCDF	**24**		**5.8**		
OCDF	**14**	**B**	**12**	**0.0003**	**0.0042**
Total TEQ Concentration					**4.1**

Freshwater Environmental Services

Sample ID: CB-1-0.0'-1.0'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 001	**Work Order #....:**	MJJX71AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	05/31/11	**% Moisture....:**	15
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.99	**Units.....:**	pg/g
Initial Wgt/Vol :	10.08 g	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	60	25 - 164
13C-1,2,3,7,8-PeCDD	58	25 - 181
13C-1,2,3,4,7,8-HxCDD	68	32 - 141
13C-1,2,3,6,7,8-HxCDD	64	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	64	23 - 140
13C-OCDD	60	17 - 157
13C-2,3,7,8-TCDF	58	24 - 169
13C-1,2,3,7,8-PeCDF	62	24 - 185
13C-2,3,4,7,8-PeCDF	62	21 - 178
13C-1,2,3,6,7,8-HxCDF	58	26 - 123
13C-2,3,4,6,7,8-HxCDF	62	28 - 136
13C-1,2,3,7,8,9-HxCDF	64	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	66	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	69	26 - 138
13C-1,2,3,4,7,8-HxCDF	63	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	35 - 197

QUALIFIERS

Results and reporting limits have been adjusted for dry weight.

Notes:

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
CON	Confirmation analysis.
J	Estimated Result.

Freshwater Environmental Services

Sample ID: CB-1-0.0'-1.0'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 001	**Work Order #....:**	MJJX71AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	05/31/11	**% Moisture....:**	15
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.99	**Units.....:**	pg/g
Initial Wgt/Vol :	10.08 g	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT		DETECTION LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND		1.2	1	0.60
Total TCDD	**0.93**		**1.2**		
1,2,3,7,8-PeCDD	**1.0**	**J**	**5.8**	**1**	**1.0**
Total PeCDD	**8.2**		**5.8**		
1,2,3,4,7,8-HxCDD	**1.7**	**J**	**5.8**	**0.1**	**0.17**
1,2,3,6,7,8-HxCDD	**4.6**	**J**	**5.8**	**0.1**	**0.46**
1,2,3,7,8,9-HxCDD	**4.2**	**J**	**5.8**	**0.1**	**0.42**
Total HxCDD	**45**		**5.8**		
1,2,3,4,6,7,8-HpCDD	**150**	**B**	**5.8**	**0.01**	**1.5**
Total HpCDD	**280**		**5.8**		
OCDD	**500**	**B**	**12**	**0.0003**	**0.15**
2,3,7,8-TCDF	ND	CON	1.2	0.1	0.060
Total TCDF	**3.1**		**1.2**		
1,2,3,7,8-PeCDF	ND		5.8	0.03	0.087
2,3,4,7,8-PeCDF	ND		5.8	0.3	0.87
Total PeCDF	**6.5**		**5.8**		
1,2,3,4,7,8-HxCDF	**1.5**	**J B**	**5.8**	**0.1**	**0.15**
1,2,3,6,7,8-HxCDF	**0.92**	**J B**	**5.8**	**0.1**	**0.092**
2,3,4,6,7,8-HxCDF	**0.65**	**J**	**5.8**	**0.1**	**0.065**
1,2,3,7,8,9-HxCDF	ND		5.8	0.1	0.29
Total HxCDF	**13**		**5.8**		
1,2,3,4,6,7,8-HpCDF	**7.1**	**B**	**5.8**	**0.01**	**0.071**
1,2,3,4,7,8,9-HpCDF	**0.76**	**J B**	**5.8**	**0.01**	**0.0076**
Total HpCDF	**24**		**5.8**		
OCDF	**14**	**B**	**12**	**0.0003**	**0.0042**
Total TEQ Concentration					**6.0**

Freshwater Environmental Services

Sample ID: CB-1-0.0'-1.0'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 001	**Work Order #....:**	MJJX71AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	05/31/11	**% Moisture....:**	15
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.99	**Units.....:**	pg/g
Initial Wgt/Vol :	10.08 g	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	60	25 - 164
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13C-1,2,3,6,7,8-HxCDD	64	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	64	23 - 140
13C-OCDD	60	17 - 157
13C-2,3,7,8-TCDF	58	24 - 169
13C-1,2,3,7,8-PeCDF	62	24 - 185
13C-2,3,4,7,8-PeCDF	62	21 - 178
13C-1,2,3,6,7,8-HxCDF	58	26 - 123
13C-2,3,4,6,7,8-HxCDF	62	28 - 136
13C-1,2,3,7,8,9-HxCDF	64	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	66	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	69	26 - 138
13C-1,2,3,4,7,8-HxCDF	63	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	35 - 197

QUALIFIERS

Results and reporting limits have been adjusted for dry weight.

Notes:

ND = 1/2 x RL x TEF

WHO TEFs for human risk assessment based on the conclusions of the World Health Organizatiou meeting in Geneva, Switzerland, June 2005.

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
CON	Confirmation analysis.
J	Estimated Result.

Freshwater Environmental Services

Client Sample ID: CB-1-0.0'-1.0'

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-001 **Work Order #...:** MJJX71AC **Matrix.....:** SOLID
Date Sampled...: 05/10/11 **Date Received..:** 05/18/11
Prep Date.....: 05/23/11 **Analysis Date..:** 05/31/11
Prep Batch #...: 1143162
Dilution Factor: 0.99
% Moisture.....: 15

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.2	pg/g	EPA-5 1613B
Total TCDD	**0.93**	**1.2**	**pg/g**	**EPA-5 1613B**
1,2,3,7,8-PeCDD	**1.0 J**	**5.8**	**pg/g**	**EPA-5 1613B**
Total PeCDD	**8.2**	**5.8**	**pg/g**	**EPA-5 1613B**
1,2,3,4,7,8-HxCDD	**1.7 J**	**5.8**	**pg/g**	**EPA-5 1613B**
1,2,3,6,7,8-HxCDD	**4.6 J**	**5.8**	**pg/g**	**EPA-5 1613B**
1,2,3,7,8,9-HxCDD	**4.2 J**	**5.8**	**pg/g**	**EPA-5 1613B**
Total HxCDD	**45**	**5.8**	**pg/g**	**EPA-5 1613B**
1,2,3,4,6,7,8-HpCDD	**150 B**	**5.8**	**pg/g**	**EPA-5 1613B**
Total HpCDD	**280**	**5.8**	**pg/g**	**EPA-5 1613B**
OCDD	**500 B**	**12**	**pg/g**	**EPA-5 1613B**
2,3,7,8-TCDF	ND CON	1.2	pg/g	EPA-5 1613B
Total TCDF	**3.1**	**1.2**	**pg/g**	**EPA-5 1613B**
1,2,3,7,8-PeCDF	ND	5.8	pg/g	EPA-5 1613B
2,3,4,7,8-PeCDF	ND	5.8	pg/g	EPA-5 1613B
Total PeCDF	**6.5**	**5.8**	**pg/g**	**EPA-5 1613B**
1,2,3,4,7,8-HxCDF	**1.5 J,B**	**5.8**	**pg/g**	**EPA-5 1613B**
1,2,3,6,7,8-HxCDF	**0.92 J,B**	**5.8**	**pg/g**	**EPA-5 1613B**
2,3,4,6,7,8-HxCDF	**0.65 J**	**5.8**	**pg/g**	**EPA-5 1613B**
1,2,3,7,8,9-HxCDF	ND	5.8	pg/g	EPA-5 1613B
Total HxCDF	**13**	**5.8**	**pg/g**	**EPA-5 1613B**
1,2,3,4,6,7,8-HpCDF	**7.1 B**	**5.8**	**pg/g**	**EPA-5 1613B**
1,2,3,4,7,8,9-HpCDF	**0.76 J,B**	**5.8**	**pg/g**	**EPA-5 1613B**
Total HpCDF	**24**	**5.8**	**pg/g**	**EPA-5 1613B**
OCDF	**14 B**	**12**	**pg/g**	**EPA-5 1613B**

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Freshwater Environmental Services

Client Sample ID: CB-1-0.0'-1.0'

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-001 **Work Order #...:** MJJX71AC **Matrix.....:** SOLID

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	60	(25 - 164)
13C-1,2,3,7,8-PeCDD	58	(25 - 181)
13C-1,2,3,4,7,8-HxCDD	68	(32 - 141)
13C-1,2,3,6,7,8-HxCDD	64	(28 - 130)
13C-1,2,3,4,6,7,8-HpCDD	64	(23 - 140)
13C-OCDD	60	(17 - 157)
13C-2,3,7,8-TCDF	58	(24 - 169)
13C-1,2,3,7,8-PeCDF	62	(24 - 185)
13C-2,3,4,7,8-PeCDF	62	(21 - 178)
13C-1,2,3,6,7,8-HxCDF	58	(26 - 123)
13C-2,3,4,6,7,8-HxCDF	62	(28 - 136)
13C-1,2,3,7,8,9-HxCDF	64	(29 - 147)
13C-1,2,3,4,6,7,8-HpCDF	66	(28 - 143)
13C-1,2,3,4,7,8,9-HpCDF	69	(26 - 138)
13C-1,2,3,4,7,8-HxCDF	63	(26 - 152)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(35 - 197)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than the reporting limit.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CON Confirmation analysis.

Freshwater Environmental Services

Sample ID: CB-2-0.0'-1.75'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 002	**Work Order #....:**	MJJ0A1AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	06/01/11	**% Moisture....:**	14
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.99	**Units.....:**	pg/g
Initial Wgt/Vol :	10.1 g	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT		REPORTING LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND		1.2	1.0	0
Total TCDD	**7.8**		**1.2**		
1,2,3,7,8-PeCDD	ND		5.8	1.0	0
Total PeCDD	**8.0**		**5.8**		
1,2,3,4,7,8-HxCDD	**0.61**	**J Q**	**5.8**	**0.1**	**0.061**
1,2,3,6,7,8-HxCDD	**0.91**	**J**	**5.8**	**0.1**	**0.091**
1,2,3,7,8,9-HxCDD	**0.94**	**J Q**	**5.8**	**0.1**	**0.094**
Total HxCDD	**14**		**5.8**		
1,2,3,4,6,7,8-HpCDD	**14**	**B**	**5.8**	**0.01**	**0.14**
Total HpCDD	**30**		**5.8**		
OCDD	**53**	**B**	**12**	**0.0003**	**0.016**
2,3,7,8-TCDF	**1.1**	**J Q CON**	**1.2**	**0.1**	**0.11**
Total TCDF	**39**		**1.2**		
1,2,3,7,8-PeCDF	**1.4**	**J**	**5.8**	**0.03**	**0.042**
2,3,4,7,8-PeCDF	**2.2**	**J**	**5.8**	**0.3**	**0.66**
Total PeCDF	**29**		**5.8**		
1,2,3,4,7,8-HxCDF	**5.2**	**J B**	**5.8**	**0.1**	**0.52**
1,2,3,6,7,8-HxCDF	**2.5**	**J B**	**5.8**	**0.1**	**0.25**
2,3,4,6,7,8-HxCDF	**2.3**	**J**	**5.8**	**0.1**	**0.23**
1,2,3,7,8,9-HxCDF	ND		5.8	0.1	0
Total HxCDF	**22**		**5.8**		
1,2,3,4,6,7,8-HpCDF	**8.5**	**B**	**5.8**	**0.01**	**0.085**
1,2,3,4,7,8,9-HpCDF	**0.68**	**J B**	**5.8**	**0.01**	**0.0068**
Total HpCDF	**13**		**5.8**		
OCDF	**3.2**	**J B**	**12**	**0.0003**	**0.00096**
Total TEQ Concentration					**2.3**

Freshwater Environmental Services

Sample ID: CB-2-0.0'-1.75'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 002	**Work Order #....:**	MJJ0A1AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	06/01/11	**% Moisture....:**	14
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.99	**Units.....:**	pg/g
Initial Wgt/Vol :	10.1 g	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	25 - 164
13C-1,2,3,7,8-PeCDD	58	25 - 181
13C-1,2,3,4,7,8-HxCDD	74	32 - 141
13C-1,2,3,6,7,8-HxCDD	67	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	68	23 - 140
13C-OCDD	62	17 - 157
13C-2,3,7,8-TCDF	61	24 - 169
13C-1,2,3,7,8-PeCDF	63	24 - 185
13C-2,3,4,7,8-PeCDF	64	21 - 178
13C-1,2,3,6,7,8-HxCDF	60	26 - 123
13C-2,3,4,6,7,8-HxCDF	63	28 - 136
13C-1,2,3,7,8,9-HxCDF	68	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	70	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	73	26 - 138
13C-1,2,3,4,7,8-HxCDF	68	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	95	35 - 197

QUALIFIERS

Results and reporting limits have been adjusted for dry weight.

Notes:

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
CON	Confirmation analysis.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

Freshwater Environmental Services

Sample ID: CB-2-0.0'-1.75'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 002	**Work Order #....:**	MJJ0A1AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	06/01/11	**% Moisture....:**	14
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.99	**Units.....:**	pg/g
Initial Wgt/Vol :	10.1 g	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT		DETECTION LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND		1.2	1	0.60
Total TCDD	**7.8**		**1.2**		
1,2,3,7,8-PeCDD	ND		5.8	1	2.9
Total PeCDD	**8.0**		**5.8**		
1,2,3,4,7,8-HxCDD	**0.61**	**J Q**	**5.8**	**0.1**	**0.061**
1,2,3,6,7,8-HxCDD	**0.91**	**J**	**5.8**	**0.1**	**0.091**
1,2,3,7,8,9-HxCDD	**0.94**	**J Q**	**5.8**	**0.1**	**0.094**
Total HxCDD	**14**		**5.8**		
1,2,3,4,6,7,8-HpCDD	**14**	**B**	**5.8**	**0.01**	**0.14**
Total HpCDD	**30**		**5.8**		
OCDD	**53**	**B**	**12**	**0.0003**	**0.016**
2,3,7,8-TCDF	**1.1**	**J Q CON**	**1.2**	**0.1**	**0.11**
Total TCDF	**39**		**1.2**		
1,2,3,7,8-PeCDF	**1.4**	**J**	**5.8**	**0.03**	**0.042**
2,3,4,7,8-PeCDF	**2.2**	**J**	**5.8**	**0.3**	**0.66**
Total PeCDF	**29**		**5.8**		
1,2,3,4,7,8-HxCDF	**5.2**	**J B**	**5.8**	**0.1**	**0.52**
1,2,3,6,7,8-HxCDF	**2.5**	**J B**	**5.8**	**0.1**	**0.25**
2,3,4,6,7,8-HxCDF	**2.3**	**J**	**5.8**	**0.1**	**0.23**
1,2,3,7,8,9-HxCDF	ND		5.8	0.1	0.29
Total HxCDF	**22**		**5.8**		
1,2,3,4,6,7,8-HpCDF	**8.5**	**B**	**5.8**	**0.01**	**0.085**
1,2,3,4,7,8,9-HpCDF	**0.68**	**J B**	**5.8**	**0.01**	**0.0068**
Total HpCDF	**13**		**5.8**		
OCDF	**3.2**	**J B**	**12**	**0.0003**	**0.00096**
Total TEQ Concentration					**6.1**

Freshwater Environmental Services

Sample ID: CB-2-0.0'-1.75'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 002	**Work Order #....:**	MJJ0A1AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	06/01/11	**% Moisture....:**	14
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.99	**Units.....:**	pg/g
Initial Wgt/Vol :	10.1 g	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	25 - 164
13C-1,2,3,7,8-PeCDD	58	25 - 181
13C-1,2,3,4,7,8-HxCDD	74	32 - 141
13C-1,2,3,6,7,8-HxCDD	67	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	68	23 - 140
13C-OCDD	62	17 - 157
13C-2,3,7,8-TCDF	61	24 - 169
13C-1,2,3,7,8-PeCDF	63	24 - 185
13C-2,3,4,7,8-PeCDF	64	21 - 178
13C-1,2,3,6,7,8-HxCDF	60	26 - 123
13C-2,3,4,6,7,8-HxCDF	63	28 - 136
13C-1,2,3,7,8,9-HxCDF	68	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	70	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	73	26 - 138
13C-1,2,3,4,7,8-HxCDF	68	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	95	35 - 197

QUALIFIERS

Results and reporting limits have been adjusted for dry weight.

Notes:

ND = 1/2 x RL x TEF

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
CON	Confirmation analysis.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

Freshwater Environmental Services

Client Sample ID: CB-2-0.0'-1.75'

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-002 **Work Order #...:** MJJ0A1AC **Matrix.....:** SOLID
Date Sampled...: 05/10/11 **Date Received..:** 05/18/11
Prep Date.....: 05/23/11 **Analysis Date..:** 06/01/11
Prep Batch #...: 1143162
Dilution Factor: 0.99
% Moisture.....: 14

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.2	pg/g	EPA-5 1613B
Total TCDD	**7.8**	1.2	**pg/g**	**EPA-5 1613B**
1,2,3,7,8-PeCDD	ND	5.8	pg/g	EPA-5 1613B
Total PeCDD	**8.0**	5.8	**pg/g**	**EPA-5 1613B**
1,2,3,4,7,8-HxCDD	**0.61 J,Q**	5.8	**pg/g**	**EPA-5 1613B**
1,2,3,6,7,8-HxCDD	**0.91 J**	5.8	**pg/g**	**EPA-5 1613B**
1,2,3,7,8,9-HxCDD	**0.94 J,Q**	5.8	**pg/g**	**EPA-5 1613B**
Total HxCDD	**14**	5.8	**pg/g**	**EPA-5 1613B**
1,2,3,4,6,7,8-HpCDD	**14 B**	5.8	**pg/g**	**EPA-5 1613B**
Total HpCDD	**30**	5.8	**pg/g**	**EPA-5 1613B**
OCDD	**53 B**	12	**pg/g**	**EPA-5 1613B**
2,3,7,8-TCDF	**1.1 J,Q,CON**	1.2	**pg/g**	**EPA-5 1613B**
Total TCDF	**39**	1.2	**pg/g**	**EPA-5 1613B**
1,2,3,7,8-PeCDF	**1.4 J**	5.8	**pg/g**	**EPA-5 1613B**
2,3,4,7,8-PeCDF	**2.2 J**	5.8	**pg/g**	**EPA-5 1613B**
Total PeCDF	**29**	5.8	**pg/g**	**EPA-5 1613B**
1,2,3,4,7,8-HxCDF	**5.2 J,B**	5.8	**pg/g**	**EPA-5 1613B**
1,2,3,6,7,8-HxCDF	**2.5 J,B**	5.8	**pg/g**	**EPA-5 1613B**
2,3,4,6,7,8-HxCDF	**2.3 J**	5.8	**pg/g**	**EPA-5 1613B**
1,2,3,7,8,9-HxCDF	ND	5.8	pg/g	EPA-5 1613B
Total HxCDF	**22**	5.8	**pg/g**	**EPA-5 1613B**
1,2,3,4,6,7,8-HpCDF	**8.5 B**	5.8	**pg/g**	**EPA-5 1613B**
1,2,3,4,7,8,9-HpCDF	**0.68 J,B**	5.8	**pg/g**	**EPA-5 1613B**
Total HpCDF	**13**	5.8	**pg/g**	**EPA-5 1613B**
OCDF	**3.2 J,B**	12	**pg/g**	**EPA-5 1613B**

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Freshwater Environmental Services

Client Sample ID: CB-2-0.0'-1.75'

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-002 **Work Order #...:** MJJ0A1AC **Matrix.....:** SOLID

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	(25 - 164)
13C-1,2,3,7,8-PeCDD	58	(25 - 181)
13C-1,2,3,4,7,8-HxCDD	74	(32 - 141)
13C-1,2,3,6,7,8-HxCDD	67	(28 - 130)
13C-1,2,3,4,6,7,8-HpCDD	68	(23 - 140)
13C-OCDD	62	(17 - 157)
13C-2,3,7,8-TCDF	61	(24 - 169)
13C-1,2,3,7,8-PeCDF	63	(24 - 185)
13C-2,3,4,7,8-PeCDF	64	(21 - 178)
13C-1,2,3,6,7,8-HxCDF	60	(26 - 123)
13C-2,3,4,6,7,8-HxCDF	63	(28 - 136)
13C-1,2,3,7,8,9-HxCDF	68	(29 - 147)
13C-1,2,3,4,6,7,8-HpCDF	70	(28 - 143)
13C-1,2,3,4,7,8,9-HpCDF	73	(26 - 138)
13C-1,2,3,4,7,8-HxCDF	68	(26 - 152)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	95	(35 - 197)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than the reporting limit.

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CON Confirmation analysis.

Freshwater Environmental Services

Sample ID: CB-3-0.0'-1.75'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 003	**Work Order #....:**	MJJ0D1AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	06/01/11	**% Moisture....:**	15
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.96	**Units.....:**	pg/g
Initial Wgt/Vol :	10.38 g	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT		REPORTING LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND		1.1	1.0	0
Total TCDD	**7.8**		**1.1**		
1,2,3,7,8-PeCDD	ND		5.7	1.0	0
Total PeCDD	**4.5**		**5.7**		
1,2,3,4,7,8-HxCDD	**0.41**	**J Q**	**5.7**	**0.1**	**0.041**
1,2,3,6,7,8-HxCDD	**0.97**	**J**	**5.7**	**0.1**	**0.097**
1,2,3,7,8,9-HxCDD	**1.0**	**J**	**5.7**	**0.1**	**0.10**
Total HxCDD	**15**		**5.7**		
1,2,3,4,6,7,8-HpCDD	**13**	**B**	**5.7**	**0.01**	**0.13**
Total HpCDD	**28**		**5.7**		
OCDD	**57**	**B**	**11**	**0.0003**	**0.017**
2,3,7,8-TCDF	**1.9**	**CON**	**1.1**	**0.1**	**0.19**
Total TCDF	**37**		**1.1**		
1,2,3,7,8-PeCDF	**1.5**	**J**	**5.7**	**0.03**	**0.045**
2,3,4,7,8-PeCDF	**2.4**	**J**	**5.7**	**0.3**	**0.72**
Total PeCDF	**27**		**5.7**		
1,2,3,4,7,8-HxCDF	**5.3**	**J B**	**5.7**	**0.1**	**0.53**
1,2,3,6,7,8-HxCDF	**2.5**	**J Q B**	**5.7**	**0.1**	**0.25**
2,3,4,6,7,8-HxCDF	**2.3**	**J**	**5.7**	**0.1**	**0.23**
1,2,3,7,8,9-HxCDF	ND		5.7	0.1	0
Total HxCDF	**23**		**5.7**		
1,2,3,4,6,7,8-HpCDF	**9.4**	**B**	**5.7**	**0.01**	**0.094**
1,2,3,4,7,8,9-HpCDF	**0.76**	**J B**	**5.7**	**0.01**	**0.0076**
Total HpCDF	**14**		**5.7**		
OCDF	**4.3**	**J B**	**11**	**0.0003**	**0.0013**
Total TEQ Concentration					**2.5**

Freshwater Environmental Services

Sample ID: CB-3-0.0'-1.75'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 003	**Work Order #....:**	MJJ0D1AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	06/01/11	**% Moisture....:**	15
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.96	**Units.....:**	pg/g
Initial Wgt/Vol :	10.38 g	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	59	25 - 164
13C-1,2,3,7,8-PeCDD	57	25 - 181
13C-1,2,3,4,7,8-HxCDD	78	32 - 141
13C-1,2,3,6,7,8-HxCDD	59	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	63	23 - 140
13C-OCDD	59	17 - 157
13C-2,3,7,8-TCDF	58	24 - 169
13C-1,2,3,7,8-PeCDF	61	24 - 185
13C-2,3,4,7,8-PeCDF	63	21 - 178
13C-1,2,3,6,7,8-HxCDF	56	26 - 123
13C-2,3,4,6,7,8-HxCDF	58	28 - 136
13C-1,2,3,7,8,9-HxCDF	61	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	66	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	69	26 - 138
13C-1,2,3,4,7,8-HxCDF	66	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	95	35 - 197

QUALIFIERS

Results and reporting limits have been adjusted for dry weight.

Notes:

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
CON	Confirmation analysis.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

Freshwater Environmental Services

Sample ID: CB-3-0.0'-1.75'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 003	**Work Order #....:**	MJJ0D1AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	06/01/11	**% Moisture....:**	15
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.96	**Units.....:**	pg/g
Initial Wgt/Vol :	10.38 g	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT		DETECTION LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND		1.1	1	0.55
Total TCDD	**7.8**		**1.1**		
1,2,3,7,8-PeCDD	ND		5.7	1	2.8
Total PeCDD	**4.5**		**5.7**		
1,2,3,4,7,8-HxCDD	**0.41**	**J Q**	**5.7**	**0.1**	**0.041**
1,2,3,6,7,8-HxCDD	**0.97**	**J**	**5.7**	**0.1**	**0.097**
1,2,3,7,8,9-HxCDD	**1.0**	**J**	**5.7**	**0.1**	**0.10**
Total HxCDD	**15**		**5.7**		
1,2,3,4,6,7,8-HpCDD	**13**	**B**	**5.7**	**0.01**	**0.13**
Total HpCDD	**28**		**5.7**		
OCDD	**57**	**B**	**11**	**0.0003**	**0.017**
2,3,7,8-TCDF	**1.9**	**CON**	**1.1**	**0.1**	**0.19**
Total TCDF	**37**		**1.1**		
1,2,3,7,8-PeCDF	**1.5**	**J**	**5.7**	**0.03**	**0.045**
2,3,4,7,8-PeCDF	**2.4**	**J**	**5.7**	**0.3**	**0.72**
Total PeCDF	**27**		**5.7**		
1,2,3,4,7,8-HxCDF	**5.3**	**J B**	**5.7**	**0.1**	**0.53**
1,2,3,6,7,8-HxCDF	**2.5**	**J Q B**	**5.7**	**0.1**	**0.25**
2,3,4,6,7,8-HxCDF	**2.3**	**J**	**5.7**	**0.1**	**0.23**
1,2,3,7,8,9-HxCDF	ND		5.7	0.1	0.29
Total HxCDF	**23**		**5.7**		
1,2,3,4,6,7,8-HpCDF	**9.4**	**B**	**5.7**	**0.01**	**0.094**
1,2,3,4,7,8,9-HpCDF	**0.76**	**J B**	**5.7**	**0.01**	**0.0076**
Total HpCDF	**14**		**5.7**		
OCDF	**4.3**	**J B**	**11**	**0.0003**	**0.0013**
Total TEQ Concentration					**6.1**

Freshwater Environmental Services

Sample ID: CB-3-0.0'-1.75'

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 003	**Work Order #....:**	MJJ0D1AC	**Matrix....:**	SOLID
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/23/11	**Analysis Date....:**	06/01/11	**% Moisture....:**	15
Prep Batch # ....:	1143162	**Dilution Factor....:**	0.96	**Units.....:**	pg/g
Initial Wgt/Vol :	10.38 g	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	59	25 - 164
13C-1,2,3,7,8-PeCDD	57	25 - 181
13C-1,2,3,4,7,8-HxCDD	78	32 - 141
13C-1,2,3,6,7,8-HxCDD	59	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	63	23 - 140
13C-OCDD	59	17 - 157
13C-2,3,7,8-TCDF	58	24 - 169
13C-1,2,3,7,8-PeCDF	61	24 - 185
13C-2,3,4,7,8-PeCDF	63	21 - 178
13C-1,2,3,6,7,8-HxCDF	56	26 - 123
13C-2,3,4,6,7,8-HxCDF	58	28 - 136
13C-1,2,3,7,8,9-HxCDF	61	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	66	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	69	26 - 138
13C-1,2,3,4,7,8-HxCDF	66	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	95	35 - 197

QUALIFIERS

Results and reporting limits have been adjusted for dry weight.

Notes:

ND = 1/2 x RL x TEF

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
CON	Confirmation analysis.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

Freshwater Environmental Services

Client Sample ID: CB-3-0.0'-1.75'

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-003 **Work Order #...:** MJJ0D1AC **Matrix.....:** SOLID
Date Sampled...: 05/10/11 **Date Received..:** 05/18/11
Prep Date.....: 05/23/11 **Analysis Date..:** 06/01/11
Prep Batch #...: 1143162
Dilution Factor: 0.96
% Moisture.....: 15

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.1	pg/g	EPA-5 1613B
Total TCDD	**7.8**	**1.1**	**pg/g**	**EPA-5 1613B**
1,2,3,7,8-PeCDD	ND	5.7	pg/g	EPA-5 1613B
Total PeCDD	**4.5**	**5.7**	**pg/g**	**EPA-5 1613B**
1,2,3,4,7,8-HxCDD	**0.41 J,Q**	**5.7**	**pg/g**	**EPA-5 1613B**
1,2,3,6,7,8-HxCDD	**0.97 J**	**5.7**	**pg/g**	**EPA-5 1613B**
1,2,3,7,8,9-HxCDD	**1.0 J**	**5.7**	**pg/g**	**EPA-5 1613B**
Total HxCDD	**15**	**5.7**	**pg/g**	**EPA-5 1613B**
1,2,3,4,6,7,8-HpCDD	**13 B**	**5.7**	**pg/g**	**EPA-5 1613B**
Total HpCDD	**28**	**5.7**	**pg/g**	**EPA-5 1613B**
OCDD	**57 B**	**11**	**pg/g**	**EPA-5 1613B**
2,3,7,8-TCDF	**1.9 CON**	**1.1**	**pg/g**	**EPA-5 1613B**
Total TCDF	**37**	**1.1**	**pg/g**	**EPA-5 1613B**
1,2,3,7,8-PeCDF	**1.5 J**	**5.7**	**pg/g**	**EPA-5 1613B**
2,3,4,7,8-PeCDF	**2.4 J**	**5.7**	**pg/g**	**EPA-5 1613B**
Total PeCDF	**27**	**5.7**	**pg/g**	**EPA-5 1613B**
1,2,3,4,7,8-HxCDF	**5.3 J,B**	**5.7**	**pg/g**	**EPA-5 1613B**
1,2,3,6,7,8-HxCDF	**2.5 J,Q,B**	**5.7**	**pg/g**	**EPA-5 1613B**
2,3,4,6,7,8-HxCDF	**2.3 J**	**5.7**	**pg/g**	**EPA-5 1613B**
1,2,3,7,8,9-HxCDF	ND	5.7	pg/g	EPA-5 1613B
Total HxCDF	**23**	**5.7**	**pg/g**	**EPA-5 1613B**
1,2,3,4,6,7,8-HpCDF	**9.4 B**	**5.7**	**pg/g**	**EPA-5 1613B**
1,2,3,4,7,8,9-HpCDF	**0.76 J,B**	**5.7**	**pg/g**	**EPA-5 1613B**
Total HpCDF	**14**	**5.7**	**pg/g**	**EPA-5 1613B**
OCDF	**4.3 J,B**	**11**	**pg/g**	**EPA-5 1613B**

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Freshwater Environmental Services

Client Sample ID: CB-3-0.0'-1.75'

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-003 **Work Order #...:** MJJ0D1AC **Matrix.....:** SOLID

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	59	(25 - 164)
13C-1,2,3,7,8-PeCDD	57	(25 - 181)
13C-1,2,3,4,7,8-HxCDD	78	(32 - 141)
13C-1,2,3,6,7,8-HxCDD	59	(28 - 130)
13C-1,2,3,4,6,7,8-HpCDD	63	(23 - 140)
13C-OCDD	59	(17 - 157)
13C-2,3,7,8-TCDF	58	(24 - 169)
13C-1,2,3,7,8-PeCDF	61	(24 - 185)
13C-2,3,4,7,8-PeCDF	63	(21 - 178)
13C-1,2,3,6,7,8-HxCDF	56	(26 - 123)
13C-2,3,4,6,7,8-HxCDF	58	(28 - 136)
13C-1,2,3,7,8,9-HxCDF	61	(29 - 147)
13C-1,2,3,4,6,7,8-HpCDF	66	(28 - 143)
13C-1,2,3,4,7,8,9-HpCDF	69	(26 - 138)
13C-1,2,3,4,7,8-HxCDF	66	(26 - 152)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	95	(35 - 197)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than the reporting limit.

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CON Confirmation analysis.

QC DATA ASSOCIATION SUMMARY

G1E180464

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SOLID	EPA-5 1613B		1143162	
	SOLID	ASTM D 2216-90		1140230	1140142
002	SOLID	EPA-5 1613B		1143162	
	SOLID	ASTM D 2216-90		1140230	1140142
003	SOLID	EPA-5 1613B		1143162	
	SOLID	ASTM D 2216-90		1140230	1140142
004	WATER	EPA-5 1613B		1151059	
005	WATER	EPA-5 1613B		1151059	
006	WATER	EPA-5 1613B		1151059	

METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJNX51AA **Matrix.....:** SOLID
MB Lot-Sample #: G1E230000-162

Prep Date.....: 05/23/11
Analysis Date..: 05/31/11 **Prep Batch #...:** 1143162
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	1.0	pg/g	EPA-5 1613B
Total TCDD	ND	1.0	pg/g	EPA-5 1613B
1,2,3,7,8-PeCDD	ND	5.0	pg/g	EPA-5 1613B
Total PeCDD	ND	5.0	pg/g	EPA-5 1613B
1,2,3,4,7,8-HxCDD	ND	5.0	pg/g	EPA-5 1613B
1,2,3,6,7,8-HxCDD	ND	5.0	pg/g	EPA-5 1613B
1,2,3,7,8,9-HxCDD	ND	5.0	pg/g	EPA-5 1613B
Total HxCDD	ND	5.0	pg/g	EPA-5 1613B
1,2,3,4,6,7,8-HpCDD	**0.28 J,Q**	**5.0**	**pg/g**	**EPA-5 1613B**
Total HpCDD	**0.55**	**5.0**	**pg/g**	**EPA-5 1613B**
OCDD	**1.1 J**	**10**	**pg/g**	**EPA-5 1613B**
2,3,7,8-TCDF	ND	1.0	pg/g	EPA-5 1613B
Total TCDF	ND	1.0	pg/g	EPA-5 1613B
1,2,3,7,8-PeCDF	ND	5.0	pg/g	EPA-5 1613B
2,3,4,7,8-PeCDF	ND	5.0	pg/g	EPA-5 1613B
Total PeCDF	ND	5.0	pg/g	EPA-5 1613B
1,2,3,4,7,8-HxCDF	**1.0 J**	**5.0**	**pg/g**	**EPA-5 1613B**
1,2,3,6,7,8-HxCDF	**0.40 J**	**5.0**	**pg/g**	**EPA-5 1613B**
2,3,4,6,7,8-HxCDF	ND	5.0	pg/g	EPA-5 1613B
1,2,3,7,8,9-HxCDF	ND	5.0	pg/g	EPA-5 1613B
Total HxCDF	**1.9**	**5.0**	**pg/g**	**EPA-5 1613B**
1,2,3,4,6,7,8-HpCDF	**1.6 J**	**5.0**	**pg/g**	**EPA-5 1613B**
1,2,3,4,7,8,9-HpCDF	**0.79 J,Q**	**5.0**	**pg/g**	**EPA-5 1613B**
Total HpCDF	**3.5**	**5.0**	**pg/g**	**EPA-5 1613B**
OCDF	**4.3 J**	**10**	**pg/g**	**EPA-5 1613B**

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METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJNX51AA **Matrix.....:** SOLID

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
	PERCENT	RECOVERY		
INTERNAL STANDARDS	RECOVERY	LIMITS		
13C-2,3,7,8-TCDD	69	(25 - 164)		
13C-1,2,3,7,8-PeCDD	65	(25 - 181)		
13C-1,2,3,4,7,8-HxCDD	74	(32 - 141)		
13C-1,2,3,6,7,8-HxCDD	72	(28 - 130)		
13C-1,2,3,4,6,7,8-HpCDD	76	(23 - 140)		
13C-OCDD	65	(17 - 157)		
13C-2,3,7,8-TCDF	66	(24 - 169)		
13C-1,2,3,7,8-PeCDF	69	(24 - 185)		
13C-2,3,4,7,8-PeCDF	69	(21 - 178)		
13C-1,2,3,6,7,8-HxCDF	70	(26 - 123)		
13C-2,3,4,6,7,8-HxCDF	71	(28 - 136)		
13C-1,2,3,7,8,9-HxCDF	76	(29 - 147)		
13C-1,2,3,4,6,7,8-HpCDF	78	(28 - 143)		
13C-1,2,3,4,7,8,9-HpCDF	80	(26 - 138)		
13C-1,2,3,4,7,8-HxCDF	77	(26 - 152)		
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
37Cl4-2,3,7,8-TCDD	95	(35 - 197)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than the reporting limit.

Q Estimated maximum possible concentration (EMPC).

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJNX51AC **Matrix.....:** SOLID
LCS Lot-Sample#: G1E230000-162
Prep Date.....: 05/23/11 **Analysis Date..:** 05/31/11
Prep Batch #...: 1143162
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	112	(67 - 158)	EPA-5 1613B
1,2,3,7,8-PeCDD	113	(70 - 142)	EPA-5 1613B
1,2,3,4,7,8-HxCDD	106	(70 - 164)	EPA-5 1613B
1,2,3,6,7,8-HxCDD	103	(76 - 134)	EPA-5 1613B
1,2,3,7,8,9-HxCDD	107	(64 - 162)	EPA-5 1613B
1,2,3,4,6,7,8-HpCDD	112	(70 - 140)	EPA-5 1613B
OCDD	107	(78 - 144)	EPA-5 1613B
2,3,7,8-TCDF	93	(75 - 158)	EPA-5 1613B
1,2,3,7,8-PeCDF	96	(80 - 134)	EPA-5 1613B
2,3,4,7,8-PeCDF	95	(68 - 160)	EPA-5 1613B
1,2,3,4,7,8-HxCDF	108	(72 - 134)	EPA-5 1613B
1,2,3,6,7,8-HxCDF	102	(84 - 130)	EPA-5 1613B
2,3,4,6,7,8-HxCDF	105	(70 - 156)	EPA-5 1613B
1,2,3,7,8,9-HxCDF	111	(78 - 130)	EPA-5 1613B
1,2,3,4,6,7,8-HpCDF	98	(82 - 122)	EPA-5 1613B
1,2,3,4,7,8,9-HpCDF	96	(78 - 138)	EPA-5 1613B
OCDF	110	(63 - 170)	EPA-5 1613B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJNX51AC **Matrix.....:** SOLID
LCS Lot-Sample#: G1E230000-162

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	65	(20 - 175)
13C-1,2,3,7,8-PeCDD	60	(21 - 227)
13C-1,2,3,4,7,8-HxCDD	74	(21 - 193)
13C-1,2,3,6,7,8-HxCDD	70	(25 - 163)
13C-1,2,3,4,6,7,8-HpCDD	70	(26 - 166)
13C-OCDD	57	(13 - 199)
13C-2,3,7,8-TCDF	63	(22 - 152)
13C-1,2,3,7,8-PeCDF	65	(21 - 192)
13C-2,3,4,7,8-PeCDF	65	(13 - 328)
13C-1,2,3,6,7,8-HxCDF	72	(21 - 159)
13C-2,3,4,6,7,8-HxCDF	72	(22 - 176)
13C-1,2,3,7,8,9-HxCDF	74	(17 - 205)
13C-1,2,3,4,6,7,8-HpCDF	74	(21 - 158)
13C-1,2,3,4,7,8,9-HpCDF	74	(20 - 186)
13C-1,2,3,4,7,8-HxCDF	72	(19 - 202)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	93	(31 - 191)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJNX51AC **Matrix.....:** SOLID
LCS Lot-Sample#: G1E230000-162
Prep Date.....: 05/23/11 **Analysis Date..:** 05/31/11
Prep Batch #...: 1143162
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	20.0	22.5	pg/g	112	EPA-5 1613B
1,2,3,7,8-PeCDD	100	113	pg/g	113	EPA-5 1613B
1,2,3,4,7,8-HxCDD	100	106	pg/g	106	EPA-5 1613B
1,2,3,6,7,8-HxCDD	100	103	pg/g	103	EPA-5 1613B
1,2,3,7,8,9-HxCDD	100	107	pg/g	107	EPA-5 1613B
1,2,3,4,6,7,8-HpCDD	100	112	pg/g	112	EPA-5 1613B
OCDD	200	213	pg/g	107	EPA-5 1613B
2,3,7,8-TCDF	20.0	18.5	pg/g	93	EPA-5 1613B
1,2,3,7,8-PeCDF	100	96.0	pg/g	96	EPA-5 1613B
2,3,4,7,8-PeCDF	100	94.7	pg/g	95	EPA-5 1613B
1,2,3,4,7,8-HxCDF	100	108	pg/g	108	EPA-5 1613B
1,2,3,6,7,8-HxCDF	100	102	pg/g	102	EPA-5 1613B
2,3,4,6,7,8-HxCDF	100	105	pg/g	105	EPA-5 1613B
1,2,3,7,8,9-HxCDF	100	111	pg/g	111	EPA-5 1613B
1,2,3,4,6,7,8-HpCDF	100	97.7	pg/g	98	EPA-5 1613B
1,2,3,4,7,8,9-HpCDF	100	96.2	pg/g	96	EPA-5 1613B
OCDF	200	220	pg/g	110	EPA-5 1613B

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJNX51AC **Matrix.....:** SOLID
LCS Lot-Sample#: G1E230000-162

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	65	(20 - 175)
13C-1,2,3,7,8-PeCDD	60	(21 - 227)
13C-1,2,3,4,7,8-HxCDD	74	(21 - 193)
13C-1,2,3,6,7,8-HxCDD	70	(25 - 163)
13C-1,2,3,4,6,7,8-HpCDD	70	(26 - 166)
13C-OCDD	57	(13 - 199)
13C-2,3,7,8-TCDF	63	(22 - 152)
13C-1,2,3,7,8-PeCDF	65	(21 - 192)
13C-2,3,4,7,8-PeCDF	65	(13 - 328)
13C-1,2,3,6,7,8-HxCDF	72	(21 - 159)
13C-2,3,4,6,7,8-HxCDF	72	(22 - 176)
13C-1,2,3,7,8,9-HxCDF	74	(17 - 205)
13C-1,2,3,4,6,7,8-HpCDF	74	(21 - 158)
13C-1,2,3,4,7,8,9-HpCDF	74	(20 - 186)
13C-1,2,3,4,7,8-HxCDF	72	(19 - 202)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	93	(31 - 191)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

WATER, 1613B, Dioxins/Furans, HRGC/HRMS

Freshwater Environmental Services

Sample ID: SW-1

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 004	**Work Order #....:**	MJJ0E1AA	**Matrix.....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/01/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.04	**Units.....:**	pg/L
Initial Wgt/Vol :	961.47 mL	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT		REPORTING LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND		10	1.0	0
Total TCDD	ND		10		0
1,2,3,7,8-PeCDD	ND		52	1.0	0
Total PeCDD	ND		52		0
1,2,3,4,7,8-HxCDD	**4.8**	**J**	**52**	**0.1**	**0.48**
1,2,3,6,7,8-HxCDD	**6.2**	**J**	**52**	**0.1**	**0.62**
1,2,3,7,8,9-HxCDD	**4.9**	**J Q**	**52**	**0.1**	**0.49**
Total HxCDD	**16**		**52**		
1,2,3,4,6,7,8-HpCDD	**10**	**J B**	**52**	**0.01**	**0.10**
Total HpCDD	**10**		**52**		
OCDD	**32**	**J B**	**100**	**0.0003**	**0.0096**
2,3,7,8-TCDF	ND		10	0.1	0
Total TCDF	ND		10		0
1,2,3,7,8-PeCDF	ND		52	0.03	0
2,3,4,7,8-PeCDF	ND		52	0.3	0
Total PeCDF	ND		52		0
1,2,3,4,7,8-HxCDF	**6.9**	**J**	**52**	**0.1**	**0.69**
1,2,3,6,7,8-HxCDF	**5.2**	**J**	**52**	**0.1**	**0.52**
2,3,4,6,7,8-HxCDF	**5.4**	**J**	**52**	**0.1**	**0.54**
1,2,3,7,8,9-HxCDF	**5.7**	**J Q**	**52**	**0.1**	**0.57**
Total HxCDF	**23**		**52**		
1,2,3,4,6,7,8-HpCDF	**6.3**	**J Q**	**52**	**0.01**	**0.063**
1,2,3,4,7,8,9-HpCDF	**5.7**	**J**	**52**	**0.01**	**0.057**
Total HpCDF	**12**		**52**		
OCDF	**16**	**J**	**100**	**0.0003**	**0.0048**
Total TEQ Concentration					**4.1**

Freshwater Environmental Services

Sample ID: SW-1

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 004	**Work Order #....:**	MJJ0E1AA	**Matrix.....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/01/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.04	**Units.....:**	pg/L
Initial Wgt/Vol :	961.47 mL	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	40	25 - 164
13C-1,2,3,7,8-PeCDD	34	25 - 181
13C-1,2,3,4,7,8-HxCDD	52	32 - 141
13C-1,2,3,6,7,8-HxCDD	39	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	41	23 - 140
13C-OCDD	35	17 - 157
13C-2,3,7,8-TCDF	41	24 - 169
13C-1,2,3,7,8-PeCDF	39	24 - 185
13C-2,3,4,7,8-PeCDF	41	21 - 178
13C-1,2,3,6,7,8-HxCDF	42	26 - 123
13C-2,3,4,6,7,8-HxCDF	44	28 - 136
13C-1,2,3,7,8,9-HxCDF	45	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	44	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	45	26 - 138
13C-1,2,3,4,7,8-HxCDF	48	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	86	35 - 197

QUALIFIERS

Notes:

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

Freshwater Environmental Services

Sample ID: SW-1

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 004	**Work Order #....:**	MJJ0E1AA	**Matrix.....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/01/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.04	**Units.....:**	pg/L
Initial Wgt/Vol :	961.47 mL	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT		DETECTION LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND		10	1	5.0
Total TCDD	ND		10		
1,2,3,7,8-PeCDD	ND		52	1	26
Total PeCDD	ND		52		
1,2,3,4,7,8-HxCDD	**4.8**	**J**	**52**	**0.1**	**0.48**
1,2,3,6,7,8-HxCDD	**6.2**	**J**	**52**	**0.1**	**0.62**
1,2,3,7,8,9-HxCDD	**4.9**	**J Q**	**52**	**0.1**	**0.49**
Total HxCDD	**16**		**52**		
1,2,3,4,6,7,8-HpCDD	**10**	**J B**	**52**	**0.01**	**0.10**
Total HpCDD	**10**		**52**		
OCDD	**32**	**J B**	**100**	**0.0003**	**0.0096**
2,3,7,8-TCDF	ND		10	0.1	0.50
Total TCDF	ND		10		
1,2,3,7,8-PeCDF	ND		52	0.03	0.78
2,3,4,7,8-PeCDF	ND		52	0.3	7.8
Total PeCDF	ND		52		
1,2,3,4,7,8-HxCDF	**6.9**	**J**	**52**	**0.1**	**0.69**
1,2,3,6,7,8-HxCDF	**5.2**	**J**	**52**	**0.1**	**0.52**
2,3,4,6,7,8-HxCDF	**5.4**	**J**	**52**	**0.1**	**0.54**
1,2,3,7,8,9-HxCDF	**5.7**	**J Q**	**52**	**0.1**	**0.57**
Total HxCDF	**23**		**52**		
1,2,3,4,6,7,8-HpCDF	**6.3**	**J Q**	**52**	**0.01**	**0.063**
1,2,3,4,7,8,9-HpCDF	**5.7**	**J**	**52**	**0.01**	**0.057**
Total HpCDF	**12**		**52**		
OCDF	**16**	**J**	**100**	**0.0003**	**0.0048**
Total TEQ Concentration					**44**

Freshwater Environmental Services

Sample ID: SW-1

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 004	**Work Order #....:**	MJJ0E1AA	**Matrix....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/01/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.04	**Units.....:**	pg/L
Initial Wgt/Vol :	961.47 mL	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	40	25 - 164
13C-1,2,3,7,8-PeCDD	34	25 - 181
13C-1,2,3,4,7,8-HxCDD	52	32 - 141
13C-1,2,3,6,7,8-HxCDD	39	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	41	23 - 140
13C-OCDD	35	17 - 157
13C-2,3,7,8-TCDF	41	24 - 169
13C-1,2,3,7,8-PeCDF	39	24 - 185
13C-2,3,4,7,8-PeCDF	41	21 - 178
13C-1,2,3,6,7,8-HxCDF	42	26 - 123
13C-2,3,4,6,7,8-HxCDF	44	28 - 136
13C-1,2,3,7,8,9-HxCDF	45	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	44	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	45	26 - 138
13C-1,2,3,4,7,8-HxCDF	48	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	86	35 - 197

QUALIFIERS

Notes:

ND = 1/2 x RL x TEF

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

Freshwater Environmental Services

Client Sample ID: SW-1

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-004 **Work Order #...:** MJJ0E1AA **Matrix.....:** WATER
Date Sampled...: 05/10/11 **Date Received..:** 05/18/11
Prep Date.....: 05/31/11 **Analysis Date..:** 06/01/11
Prep Batch #...: 1151059
Dilution Factor: 1.04

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	10	pg/L	EPA-5 1613B
Total TCDD	ND	10	pg/L	EPA-5 1613B
1,2,3,7,8-PeCDD	ND	52	pg/L	EPA-5 1613B
Total PeCDD	ND	52	pg/L	EPA-5 1613B
1,2,3,4,7,8-HxCDD	**4.8 J**	**52**	**pg/L**	**EPA-5 1613B**
1,2,3,6,7,8-HxCDD	**6.2 J**	**52**	**pg/L**	**EPA-5 1613B**
1,2,3,7,8,9-HxCDD	**4.9 J,Q**	**52**	**pg/L**	**EPA-5 1613B**
Total HxCDD	**16**	**52**	**pg/L**	**EPA-5 1613B**
1,2,3,4,6,7,8-HpCDD	**10 J,B**	**52**	**pg/L**	**EPA-5 1613B**
Total HpCDD	**10**	**52**	**pg/L**	**EPA-5 1613B**
OCDD	**32 J,B**	**100**	**pg/L**	**EPA-5 1613B**
2,3,7,8-TCDF	ND	10	pg/L	EPA-5 1613B
Total TCDF	ND	10	pg/L	EPA-5 1613B
1,2,3,7,8-PeCDF	ND	52	pg/L	EPA-5 1613B
2,3,4,7,8-PeCDF	ND	52	pg/L	EPA-5 1613B
Total PeCDF	ND	52	pg/L	EPA-5 1613B
1,2,3,4,7,8-HxCDF	**6.9 J**	**52**	**pg/L**	**EPA-5 1613B**
1,2,3,6,7,8-HxCDF	**5.2 J**	**52**	**pg/L**	**EPA-5 1613B**
2,3,4,6,7,8-HxCDF	**5.4 J**	**52**	**pg/L**	**EPA-5 1613B**
1,2,3,7,8,9-HxCDF	**5.7 J,Q**	**52**	**pg/L**	**EPA-5 1613B**
Total HxCDF	**23**	**52**	**pg/L**	**EPA-5 1613B**
1,2,3,4,6,7,8-HpCDF	**6.3 J,Q**	**52**	**pg/L**	**EPA-5 1613B**
1,2,3,4,7,8,9-HpCDF	**5.7 J**	**52**	**pg/L**	**EPA-5 1613B**
Total HpCDF	**12**	**52**	**pg/L**	**EPA-5 1613B**
OCDF	**16 J**	**100**	**pg/L**	**EPA-5 1613B**

(Continued on next page)

Freshwater Environmental Services

Client Sample ID: SW-1

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-004 **Work Order #...:** MJJ0E1AA **Matrix.....:** WATER

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	40	(25 - 164)
13C-1,2,3,7,8-PeCDD	34	(25 - 181)
13C-1,2,3,4,7,8-HxCDD	52	(32 - 141)
13C-1,2,3,6,7,8-HxCDD	39	(28 - 130)
13C-1,2,3,4,6,7,8-HpCDD	41	(23 - 140)
13C-OCDD	35	(17 - 157)
13C-2,3,7,8-TCDF	41	(24 - 169)
13C-1,2,3,7,8-PeCDF	39	(24 - 185)
13C-2,3,4,7,8-PeCDF	41	(21 - 178)
13C-1,2,3,6,7,8-HxCDF	42	(26 - 123)
13C-2,3,4,6,7,8-HxCDF	44	(28 - 136)
13C-1,2,3,7,8,9-HxCDF	45	(29 - 147)
13C-1,2,3,4,6,7,8-HpCDF	44	(28 - 143)
13C-1,2,3,4,7,8,9-HpCDF	45	(26 - 138)
13C-1,2,3,4,7,8-HxCDF	48	(26 - 152)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	86	(35 - 197)

NOTE(S):

J Estimated result. Result is less than the reporting limit.

Q Estimated maximum possible conceutration (EMPC).

B Method blank contamination. The associated method blank contains the target aualyte at a reportable level.

Freshwater Environmental Services

Sample ID: SW-2

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 005	**Work Order #....:**	MJJ0H1AA	**Matrix....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/01/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.07	**Units.....:**	pg/L
Initial Wgt/Vol :	934.48 mL	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT	REPORTING LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND	11	1.0	0
Total TCDD	ND	11		0
1,2,3,7,8-PeCDD	ND	54	1.0	0
Total PeCDD	ND	54		0
1,2,3,4,7,8-HxCDD	ND	54	0.1	0
1,2,3,6,7,8-HxCDD	ND	54	0.1	0
1,2,3,7,8,9-HxCDD	ND	54	0.1	0
Total HxCDD	ND	54		0
1,2,3,4,6,7,8-HpCDD	ND	54	0.01	0
Total HpCDD	ND	54		0
OCDD	ND	110	0.0003	0
2,3,7,8-TCDF	ND	11	0.1	0
Total TCDF	ND	11		0
1,2,3,7,8-PeCDF	ND	54	0.03	0
2,3,4,7,8-PeCDF	ND	54	0.3	0
Total PeCDF	ND	54		0
1,2,3,4,7,8-HxCDF	ND	54	0.1	0
1,2,3,6,7,8-HxCDF	ND	54	0.1	0
2,3,4,6,7,8-HxCDF	ND	54	0.1	0
1,2,3,7,8,9-HxCDF	ND	54	0.1	0
Total HxCDF	ND	54		0
1,2,3,4,6,7,8-HpCDF	ND	54	0.01	0
1,2,3,4,7,8,9-HpCDF	ND	54	0.01	0
Total HpCDF	ND	54		0
OCDF	ND	110	0.0003	0
Total TEQ Concentration				**0.00**

Freshwater Environmental Services

Sample ID: SW-2

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 005	**Work Order #....:**	MJJ0H1AA	**Matrix.....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/01/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.07	**Units.....:**	pg/L
Initial Wgt/Vol :	934.48 mL	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	38	25 - 164
13C-1,2,3,7,8-PeCDD	33	25 - 181
13C-1,2,3,4,7,8-HxCDD	48	32 - 141
13C-1,2,3,6,7,8-HxCDD	41	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	39	23 - 140
13C-OCDD	35	17 - 157
13C-2,3,7,8-TCDF	37	24 - 169
13C-1,2,3,7,8-PeCDF	37	24 - 185
13C-2,3,4,7,8-PeCDF	37	21 - 178
13C-1,2,3,6,7,8-HxCDF	41	26 - 123
13C-2,3,4,6,7,8-HxCDF	42	28 - 136
13C-1,2,3,7,8,9-HxCDF	42	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	43	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	43	26 - 138
13C-1,2,3,4,7,8-HxCDF	47	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	82	35 - 197

QUALIFIERS

Notes:

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

Freshwater Environmental Services

Sample ID: SW-2

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 005	**Work Order #....:**	MJJ0H1AA	**Matrix....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/01/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.07	**Units.....:**	pg/L
Initial Wgt/Vol :	934.48 mL	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT	DETECTION LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND	11	1	5.5
Total TCDD	ND	11		
1,2,3,7,8-PeCDD	ND	54	1	27
Total PeCDD	ND	54		
1,2,3,4,7,8-HxCDD	ND	54	0.1	2.7
1,2,3,6,7,8-HxCDD	ND	54	0.1	2.7
1,2,3,7,8,9-HxCDD	ND	54	0.1	2.7
Total HxCDD	ND	54		
1,2,3,4,6,7,8-HpCDD	ND	54	0.01	0.27
Total HpCDD	ND	54		
OCDD	ND	110	0.0003	0.016
2,3,7,8-TCDF	ND	11	0.1	0.55
Total TCDF	ND	11		
1,2,3,7,8-PeCDF	ND	54	0.03	0.81
2,3,4,7,8-PeCDF	ND	54	0.3	8.1
Total PeCDF	ND	54		
1,2,3,4,7,8-HxCDF	ND	54	0.1	2.7
1,2,3,6,7,8-HxCDF	ND	54	0.1	2.7
2,3,4,6,7,8-HxCDF	ND	54	0.1	2.7
1,2,3,7,8,9-HxCDF	ND	54	0.1	2.7
Total HxCDF	ND	54		
1,2,3,4,6,7,8-HpCDF	ND	54	0.01	0.27
1,2,3,4,7,8,9-HpCDF	ND	54	0.01	0.27
Total HpCDF	ND	54		
OCDF	ND	110	0.0003	0.016
Total TEQ Concentration				**62**

Freshwater Environmental Services

Sample ID: SW-2

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 005	**Work Order #....:**	MJJ0H1AA	**Matrix....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/01/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.07	**Units.....:**	pg/L
Initial Wgt/Vol :	934.48 mL	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	38	25 - 164
13C-1,2,3,7,8-PeCDD	33	25 - 181
13C-1,2,3,4,7,8-HxCDD	48	32 - 141
13C-1,2,3,6,7,8-HxCDD	41	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	39	23 - 140
13C-OCDD	35	17 - 157
13C-2,3,7,8-TCDF	37	24 - 169
13C-1,2,3,7,8-PeCDF	37	24 - 185
13C-2,3,4,7,8-PeCDF	37	21 - 178
13C-1,2,3,6,7,8-HxCDF	41	26 - 123
13C-2,3,4,6,7,8-HxCDF	42	28 - 136
13C-1,2,3,7,8,9-HxCDF	42	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	43	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	43	26 - 138
13C-1,2,3,4,7,8-HxCDF	47	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	82	35 - 197

QUALIFIERS

Notes:

ND = 1/2 x RL x TEF

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

Freshwater Environmental Services

Client Sample ID: SW-2

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-005 **Work Order #...:** MJJ0H1AA **Matrix.....:** WATER
Date Sampled...: 05/10/11 **Date Received..:** 05/18/11
Prep Date.....: 05/31/11 **Analysis Date..:** 06/01/11
Prep Batch #...: 1151059
Dilution Factor: 1.07

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	11	pg/L	EPA-5 1613B
Total TCDD	ND	11	pg/L	EPA-5 1613B
1,2,3,7,8-PeCDD	ND	54	pg/L	EPA-5 1613B
Total PeCDD	ND	54	pg/L	EPA-5 1613B
1,2,3,4,7,8-HxCDD	ND	54	pg/L	EPA-5 1613B
1,2,3,6,7,8-HxCDD	ND	54	pg/L	EPA-5 1613B
1,2,3,7,8,9-HxCDD	ND	54	pg/L	EPA-5 1613B
Total HxCDD	ND	54	pg/L	EPA-5 1613B
1,2,3,4,6,7,8-HpCDD	ND	54	pg/L	EPA-5 1613B
Total HpCDD	ND	54	pg/L	EPA-5 1613B
OCDD	ND	110	pg/L	EPA-5 1613B
2,3,7,8-TCDF	ND	11	pg/L	EPA-5 1613B
Total TCDF	ND	11	pg/L	EPA-5 1613B
1,2,3,7,8-PeCDF	ND	54	pg/L	EPA-5 1613B
2,3,4,7,8-PeCDF	ND	54	pg/L	EPA-5 1613B
Total PeCDF	ND	54	pg/L	EPA-5 1613B
1,2,3,4,7,8-HxCDF	ND	54	pg/L	EPA-5 1613B
1,2,3,6,7,8-HxCDF	ND	54	pg/L	EPA-5 1613B
2,3,4,6,7,8-HxCDF	ND	54	pg/L	EPA-5 1613B
1,2,3,7,8,9-HxCDF	ND	54	pg/L	EPA-5 1613B
Total HxCDF	ND	54	pg/L	EPA-5 1613B
1,2,3,4,6,7,8-HpCDF	ND	54	pg/L	EPA-5 1613B
1,2,3,4,7,8,9-HpCDF	ND	54	pg/L	EPA-5 1613B
Total HpCDF	ND	54	pg/L	EPA-5 1613B
OCDF	ND	110	pg/L	EPA-5 1613B

(Continued on next page)

Freshwater Environmental Services

Client Sample ID: SW-2

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-005 **Work Order #...:** MJJ0H1AA **Matrix.....:** WATER

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	38	(25 - 164)
13C-1,2,3,7,8-PeCDD	33	(25 - 181)
13C-1,2,3,4,7,8-HxCDD	48	(32 - 141)
13C-1,2,3,6,7,8-HxCDD	41	(28 - 130)
13C-1,2,3,4,6,7,8-HpCDD	39	(23 - 140)
13C-OCDD	35	(17 - 157)
13C-2,3,7,8-TCDF	37	(24 - 169)
13C-1,2,3,7,8-PeCDF	37	(24 - 185)
13C-2,3,4,7,8-PeCDF	37	(21 - 178)
13C-1,2,3,6,7,8-HxCDF	41	(26 - 123)
13C-2,3,4,6,7,8-HxCDF	42	(28 - 136)
13C-1,2,3,7,8,9-HxCDF	42	(29 - 147)
13C-1,2,3,4,6,7,8-HpCDF	43	(28 - 143)
13C-1,2,3,4,7,8,9-HpCDF	43	(26 - 138)
13C-1,2,3,4,7,8-HxCDF	47	(26 - 152)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	82	(35 - 197)

Freshwater Environmental Services

Sample ID: SW-3

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 006	**Work Order #....:**	MJJ0K1AA	**Matrix....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/02/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.12	**Units.....:**	pg/L
Initial Wgt/Vol :	893.5 mL	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT		REPORTING LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND		11	1.0	0
Total TCDD	ND		11		0
1,2,3,7,8-PeCDD	ND		56	1.0	0
Total PeCDD	ND		56		0
1,2,3,4,7,8-HxCDD	ND		56	0.1	0
1,2,3,6,7,8-HxCDD	ND		56	0.1	0
1,2,3,7,8,9-HxCDD	ND		56	0.1	0
Total HxCDD	ND		56		0
1,2,3,4,6,7,8-HpCDD	**7.2**	**J Q B**	**56**	**0.01**	**0.072**
Total HpCDD	**14**		**56**		
OCDD	**72**	**J B**	**110**	**0.0003**	**0.022**
2,3,7,8-TCDF	ND		11	0.1	0
Total TCDF	ND		11		0
1,2,3,7,8-PeCDF	ND		56	0.03	0
2,3,4,7,8-PeCDF	ND		56	0.3	0
Total PeCDF	ND		56		0
1,2,3,4,7,8-HxCDF	ND		56	0.1	0
1,2,3,6,7,8-HxCDF	ND		56	0.1	0
2,3,4,6,7,8-HxCDF	ND		56	0.1	0
1,2,3,7,8,9-HxCDF	ND		56	0.1	0
Total HxCDF	ND		56		0
1,2,3,4,6,7,8-HpCDF	**2.9**	**J**	**56**	**0.01**	**0.029**
1,2,3,4,7,8,9-HpCDF	ND		56	0.01	0
Total HpCDF	**6.9**		**56**		
OCDF	**11**	**J**	**110**	**0.0003**	**0.0033**
Total TEQ Concentration					**0.13**

Freshwater Environmental Services

Sample ID: SW-3

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 006	**Work Order #....:**	MJJ0K1AA	**Matrix....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/02/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.12	**Units.....:**	pg/L
Initial Wgt/Vol :	893.5 mL	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	48	25 - 164
13C-1,2,3,7,8-PeCDD	43	25 - 181
13C-1,2,3,4,7,8-HxCDD	67	32 - 141
13C-1,2,3,6,7,8-HxCDD	61	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	58	23 - 140
13C-OCDD	50	17 - 157
13C-2,3,7,8-TCDF	48	24 - 169
13C-1,2,3,7,8-PeCDF	48	24 - 185
13C-2,3,4,7,8-PeCDF	51	21 - 178
13C-1,2,3,6,7,8-HxCDF	61	26 - 123
13C-2,3,4,6,7,8-HxCDF	63	28 - 136
13C-1,2,3,7,8,9-HxCDF	64	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	63	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	65	26 - 138
13C-1,2,3,4,7,8-HxCDF	66	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	85	35 - 197

QUALIFIERS

Notes:

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

Freshwater Environmental Services

Sample ID: SW-3

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 006	**Work Order #....:**	MJJ0K1AA	**Matrix.....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/02/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.12	**Units.....:**	pg/L
Initial Wgt/Vol :	893.5 mL	**Analyst ID....:**	Sonia Ouni		

PARAMETER	RESULT		DETECTION LIMIT	TEF FACTOR	TEQ CONCENTRATION
2,3,7,8-TCDD	ND		11	1	5.5
Total TCDD	ND		11		
1,2,3,7,8-PeCDD	ND		56	1	28
Total PeCDD	ND		56		
1,2,3,4,7,8-HxCDD	ND		56	0.1	2.8
1,2,3,6,7,8-HxCDD	ND		56	0.1	2.8
1,2,3,7,8,9-HxCDD	ND		56	0.1	2.8
Total HxCDD	ND		56		
1,2,3,4,6,7,8-HpCDD	**7.2**	**J Q B**	**56**	**0.01**	**0.072**
Total HpCDD	**14**		**56**		
OCDD	**72**	**J B**	**110**	**0.0003**	**0.022**
2,3,7,8-TCDF	ND		11	0.1	0.55
Total TCDF	ND		11		
1,2,3,7,8-PeCDF	ND		56	0.03	0.84
2,3,4,7,8-PeCDF	ND		56	0.3	8.4
Total PeCDF	ND		56		
1,2,3,4,7,8-HxCDF	ND		56	0.1	2.8
1,2,3,6,7,8-HxCDF	ND		56	0.1	2.8
2,3,4,6,7,8-HxCDF	ND		56	0.1	2.8
1,2,3,7,8,9-HxCDF	ND		56	0.1	2.8
Total HxCDF	ND		56		
1,2,3,4,6,7,8-HpCDF	**2.9**	**J**	**56**	**0.01**	**0.029**
1,2,3,4,7,8,9-HpCDF	ND		56	0.01	0.28
Total HpCDF	**6.9**		**56**		
OCDF	**11**	**J**	**110**	**0.0003**	**0.0033**
Total TEQ Concentration					**63**

Freshwater Environmental Services

Sample ID: SW-3

Trace Level Organic Compounds

EPA-5 1613B

Lot - Sample #....:	G1E180464 - 006	**Work Order #....:**	MJJ0K1AA	**Matrix....:**	WATER
Date Sampled....:	05/10/11	**Date Received....:**	05/18/11	**Instrument ID....:**	9D5
Prep Date....:	05/31/11	**Analysis Date....:**	06/02/11		
Prep Batch # ....:	1151059	**Dilution Factor....:**	1.12	**Units.....:**	pg/L
Initial Wgt/Vol :	893.5 mL	**Analyst ID....:**	Sonia Ouni		

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	48	25 - 164
13C-1,2,3,7,8-PeCDD	43	25 - 181
13C-1,2,3,4,7,8-HxCDD	67	32 - 141
13C-1,2,3,6,7,8-HxCDD	61	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	58	23 - 140
13C-OCDD	50	17 - 157
13C-2,3,7,8-TCDF	48	24 - 169
13C-1,2,3,7,8-PeCDF	48	24 - 185
13C-2,3,4,7,8-PeCDF	51	21 - 178
13C-1,2,3,6,7,8-HxCDF	61	26 - 123
13C-2,3,4,6,7,8-HxCDF	63	28 - 136
13C-1,2,3,7,8,9-HxCDF	64	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	63	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	65	26 - 138
13C-1,2,3,4,7,8-HxCDF	66	26 - 152

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	85	35 - 197

QUALIFIERS

Notes:

ND = 1/2 x RL x TEF

WHO TEFs for human risk assessment based on the conclusions of the World Health Organization meeting in Geneva, Switzerland, June 2005.

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

Freshwater Environmental Services

Client Sample ID: SW-3

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-006 **Work Order #...:** MJJ0K1AA **Matrix.....:** WATER
Date Sampled...: 05/10/11 **Date Received..:** 05/18/11
Prep Date.....: 05/31/11 **Analysis Date..:** 06/02/11
Prep Batch #...: 1151059
Dilution Factor: 1.12

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	11	pg/L	EPA-5 1613B
Total TCDD	ND	11	pg/L	EPA-5 1613B
1,2,3,7,8-PeCDD	ND	56	pg/L	EPA-5 1613B
Total PeCDD	ND	56	pg/L	EPA-5 1613B
1,2,3,4,7,8-HxCDD	ND	56	pg/L	EPA-5 1613B
1,2,3,6,7,8-HxCDD	ND	56	pg/L	EPA-5 1613B
1,2,3,7,8,9-HxCDD	ND	56	pg/L	EPA-5 1613B
Total HxCDD	ND	56	pg/L	EPA-5 1613B
1,2,3,4,6,7,8-HpCDD	**7.2 J,Q,B**	**56**	**pg/L**	**EPA-5 1613B**
Total HpCDD	**14**	**56**	**pg/L**	**EPA-5 1613B**
OCDD	**72 J,B**	**110**	**pg/L**	**EPA-5 1613B**
2,3,7,8-TCDF	ND	11	pg/L	EPA-5 1613B
Total TCDF	ND	11	pg/L	EPA-5 1613B
1,2,3,7,8-PeCDF	ND	56	pg/L	EPA-5 1613B
2,3,4,7,8-PeCDF	ND	56	pg/L	EPA-5 1613B
Total PeCDF	ND	56	pg/L	EPA-5 1613B
1,2,3,4,7,8-HxCDF	ND	56	pg/L	EPA-5 1613B
1,2,3,6,7,8-HxCDF	ND	56	pg/L	EPA-5 1613B
2,3,4,6,7,8-HxCDF	ND	56	pg/L	EPA-5 1613B
1,2,3,7,8,9-HxCDF	ND	56	pg/L	EPA-5 1613B
Total HxCDF	ND	56	pg/L	EPA-5 1613B
1,2,3,4,6,7,8-HpCDF	**2.9 J**	**56**	**pg/L**	**EPA-5 1613B**
1,2,3,4,7,8,9-HpCDF	ND	56	pg/L	EPA-5 1613B
Total HpCDF	**6.9**	**56**	**pg/L**	**EPA-5 1613B**
OCDF	**11 J**	**110**	**pg/L**	**EPA-5 1613B**

(Continued on next page)

Freshwater Environmental Services

Client Sample ID: SW-3

Trace Level Organic Compounds

Lot-Sample #...: G1E180464-006 **Work Order #...:** MJJ0K1AA **Matrix.....:** WATER

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	48	(25 - 164)
13C-1,2,3,7,8-PeCDD	43	(25 - 181)
13C-1,2,3,4,7,8-HxCDD	67	(32 - 141)
13C-1,2,3,6,7,8-HxCDD	61	(28 - 130)
13C-1,2,3,4,6,7,8-HpCDD	58	(23 - 140)
13C-OCDD	50	(17 - 157)
13C-2,3,7,8-TCDF	48	(24 - 169)
13C-1,2,3,7,8-PeCDF	48	(24 - 185)
13C-2,3,4,7,8-PeCDF	51	(21 - 178)
13C-1,2,3,6,7,8-HxCDF	61	(26 - 123)
13C-2,3,4,6,7,8-HxCDF	63	(28 - 136)
13C-1,2,3,7,8,9-HxCDF	64	(29 - 147)
13C-1,2,3,4,6,7,8-HpCDF	63	(28 - 143)
13C-1,2,3,4,7,8,9-HpCDF	65	(26 - 138)
13C-1,2,3,4,7,8-HxCDF	66	(26 - 152)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	85	(35 - 197)

NOTE(S):

J Estimated result. Result is less than the reporting limit.

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

QC DATA ASSOCIATION SUMMARY

G1E180464

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SOLID	EPA-5 1613B		1143162	
	SOLID	ASTM D 2216-90		1140230	1140142
002	SOLID	EPA-5 1613B		1143162	
	SOLID	ASTM D 2216-90		1140230	1140142
003	SOLID	EPA-5 1613B		1143162	
	SOLID	ASTM D 2216-90		1140230	1140142
004	WATER	EPA-5 1613B		1151059	
005	WATER	EPA-5 1613B		1151059	
006	WATER	EPA-5 1613B		1151059	

METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJV9M1AA **Matrix.....:** WATER
MB Lot-Sample #: G1E310000-059

Prep Date.....: 05/31/11
Analysis Date..: 06/01/11 **Prep Batch #...:** 1151059
Dilution Factor: 1

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	10	pg/L	EPA-5 1613B
Total TCDD	ND	10	pg/L	EPA-5 1613B
1,2,3,7,8-PeCDD	ND	50	pg/L	EPA-5 1613B
Total PeCDD	ND	50	pg/L	EPA-5 1613B
1,2,3,4,7,8-HxCDD	ND	50	pg/L	EPA-5 1613B
1,2,3,6,7,8-HxCDD	ND	50	pg/L	EPA-5 1613B
1,2,3,7,8,9-HxCDD	ND	50	pg/L	EPA-5 1613B
Total HxCDD	ND	50	pg/L	EPA-5 1613B
1,2,3,4,6,7,8-HpCDD	**2.6 J**	**50**	**pg/L**	**EPA-5 1613B**
Total HpCDD	**4.7**	**50**	**pg/L**	**EPA-5 1613B**
OCDD	**7.9 J**	**100**	**pg/L**	**EPA-5 1613B**
2,3,7,8-TCDF	ND	10	pg/L	EPA-5 1613B
Total TCDF	ND	10	pg/L	EPA-5 1613B
1,2,3,7,8-PeCDF	ND	50	pg/L	EPA-5 1613B
2,3,4,7,8-PeCDF	ND	50	pg/L	EPA-5 1613B
Total PeCDF	ND	50	pg/L	EPA-5 1613B
1,2,3,4,7,8-HxCDF	ND	50	pg/L	EPA-5 1613B
1,2,3,6,7,8-HxCDF	ND	50	pg/L	EPA-5 1613B
2,3,4,6,7,8-HxCDF	ND	50	pg/L	EPA-5 1613B
1,2,3,7,8,9-HxCDF	ND	50	pg/L	EPA-5 1613B
Total HxCDF	ND	50	pg/L	EPA-5 1613B
1,2,3,4,6,7,8-HpCDF	ND	50	pg/L	EPA-5 1613B
1,2,3,4,7,8,9-HpCDF	ND	50	pg/L	EPA-5 1613B
Total HpCDF	ND	50	pg/L	EPA-5 1613B
OCDF	ND	100	pg/L	EPA-5 1613B

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METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJV9M1AA **Matrix.....:** WATER

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS		
13C-2,3,7,8-TCDD	29	(25 - 164)		
13C-1,2,3,7,8-PeCDD	28	(25 - 181)		
13C-1,2,3,4,7,8-HxCDD	42	(32 - 141)		
13C-1,2,3,6,7,8-HxCDD	32	(28 - 130)		
13C-1,2,3,4,6,7,8-HpCDD	39	(23 - 140)		
13C-OCDD	38	(17 - 157)		
13C-2,3,7,8-TCDF	30	(24 - 169)		
13C-1,2,3,7,8-PeCDF	28	(24 - 185)		
13C-2,3,4,7,8-PeCDF	32	(21 - 178)		
13C-1,2,3,6,7,8-HxCDF	32	(26 - 123)		
13C-2,3,4,6,7,8-HxCDF	35	(28 - 136)		
13C-1,2,3,7,8,9-HxCDF	36	(29 - 147)		
13C-1,2,3,4,6,7,8-HpCDF	38	(28 - 143)		
13C-1,2,3,4,7,8,9-HpCDF	42	(26 - 138)		
13C-1,2,3,4,7,8-HxCDF	36	(26 - 152)		
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
37Cl4-2,3,7,8-TCDD	88	(35 - 197)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than the reporting limit.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJV9M1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1E310000-059
Prep Date.....: 05/31/11 **Analysis Date..:** 06/01/11
Prep Batch #...: 1151059
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	118	(67 - 158)	EPA-5 1613B
1,2,3,7,8-PeCDD	123	(70 - 142)	EPA-5 1613B
1,2,3,4,7,8-HxCDD	91	(70 - 164)	EPA-5 1613B
1,2,3,6,7,8-HxCDD	118	(76 - 134)	EPA-5 1613B
1,2,3,7,8,9-HxCDD	105	(64 - 162)	EPA-5 1613B
1,2,3,4,6,7,8-HpCDD	123	(70 - 140)	EPA-5 1613B
OCDD	111	(78 - 144)	EPA-5 1613B
2,3,7,8-TCDF	117 H	(75 - 158)	EPA-5 1613B
1,2,3,7,8-PeCDF	105	(80 - 134)	EPA-5 1613B
2,3,4,7,8-PeCDF	103	(68 - 160)	EPA-5 1613B
1,2,3,4,7,8-HxCDF	111	(72 - 134)	EPA-5 1613B
1,2,3,6,7,8-HxCDF	112	(84 - 130)	EPA-5 1613B
2,3,4,6,7,8-HxCDF	112	(70 - 156)	EPA-5 1613B
1,2,3,7,8,9-HxCDF	115	(78 - 130)	EPA-5 1613B
1,2,3,4,6,7,8-HpCDF	102	(82 - 122)	EPA-5 1613B
1,2,3,4,7,8,9-HpCDF	102	(78 - 138)	EPA-5 1613B
OCDF	114	(63 - 170)	EPA-5 1613B

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJV9M1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1E310000-059

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	21	(20 - 175)
13C-1,2,3,7,8-PeCDD	23	(21 - 227)
13C-1,2,3,4,7,8-HxCDD	42	(21 - 193)
13C-1,2,3,6,7,8-HxCDD	30	(25 - 163)
13C-1,2,3,4,6,7,8-HpCDD	34	(26 - 166)
13C-OCDD	32	(13 - 199)
13C-2,3,7,8-TCDF	22	(22 - 152)
13C-1,2,3,7,8-PeCDF	23	(21 - 192)
13C-2,3,4,7,8-PeCDF	27	(13 - 328)
13C-1,2,3,6,7,8-HxCDF	30	(21 - 159)
13C-2,3,4,6,7,8-HxCDF	33	(22 - 176)
13C-1,2,3,7,8,9-HxCDF	35	(17 - 205)
13C-1,2,3,4,6,7,8-HpCDF	37	(21 - 158)
13C-1,2,3,4,7,8,9-HpCDF	38	(20 - 186)
13C-1,2,3,4,7,8-HxCDF	36	(19 - 202)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	86	(31 - 191)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

H: SEE NCM.

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJV9M1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1E310000-059
Prep Date.....: 05/31/11 **Analysis Date..:** 06/01/11
Prep Batch #...: 1151059
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	200	235	pg/L	118	EPA-5 1613B
1,2,3,7,8-PeCDD	1000	1230	pg/L	123	EPA-5 1613B
1,2,3,4,7,8-HxCDD	1000	908	pg/L	91	EPA-5 1613B
1,2,3,6,7,8-HxCDD	1000	1180	pg/L	118	EPA-5 1613B
1,2,3,7,8,9-HxCDD	1000	1050	pg/L	105	EPA-5 1613B
1,2,3,4,6,7,8-HpCDD	1000	1230	pg/L	123	EPA-5 1613B
OCDD	2000	2220	pg/L	111	EPA-5 1613B
2,3,7,8-TCDF	200	234 H	pg/L	117	EPA-5 1613B
1,2,3,7,8-PeCDF	1000	1050	pg/L	105	EPA-5 1613B
2,3,4,7,8-PeCDF	1000	1030	pg/L	103	EPA-5 1613B
1,2,3,4,7,8-HxCDF	1000	1110	pg/L	111	EPA-5 1613B
1,2,3,6,7,8-HxCDF	1000	1120	pg/L	112	EPA-5 1613B
2,3,4,6,7,8-HxCDF	1000	1120	pg/L	112	EPA-5 1613B
1,2,3,7,8,9-HxCDF	1000	1150	pg/L	115	EPA-5 1613B
1,2,3,4,6,7,8-HpCDF	1000	1020	pg/L	102	EPA-5 1613B
1,2,3,4,7,8,9-HpCDF	1000	1020	pg/L	102	EPA-5 1613B
OCDF	2000	2290	pg/L	114	EPA-5 1613B

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LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: G1E180464 **Work Order #...:** MJV9M1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1E310000-059

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	21	(20 - 175)
13C-1,2,3,7,8-PeCDD	23	(21 - 227)
13C-1,2,3,4,7,8-HxCDD	42	(21 - 193)
13C-1,2,3,6,7,8-HxCDD	30	(25 - 163)
13C-1,2,3,4,6,7,8-HpCDD	34	(26 - 166)
13C-OCDD	32	(13 - 199)
13C-2,3,7,8-TCDF	22	(22 - 152)
13C-1,2,3,7,8-PeCDF	23	(21 - 192)
13C-2,3,4,7,8-PeCDF	27	(13 - 328)
13C-1,2,3,6,7,8-HxCDF	30	(21 - 159)
13C-2,3,4,6,7,8-HxCDF	33	(22 - 176)
13C-1,2,3,7,8,9-HxCDF	35	(17 - 205)
13C-1,2,3,4,6,7,8-HpCDF	37	(21 - 158)
13C-1,2,3,4,7,8,9-HpCDF	38	(20 - 186)
13C-1,2,3,4,7,8-HxCDF	36	(19 - 202)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	86	(31 - 191)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

H: SEE NCM.

SOLID, D 2216-90, Moisture, Percent

Freshwater Environmental Services

Client Sample ID: CB-1-0.0'-1.0'

General Chemistry

Lot-Sample #...: G1E180464-001 **Work Order #...:** MJJX7 **Matrix.....:** SOLID
Date Sampled...: 05/10/11 **Date Received..:** 05/18/11
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	**14.7**	**0.10**	**%**	**ASTM D 2216-90**	**05/20-05/23/11**	**1140230**

Dilution Factor: 1

Freshwater Environmental Services

Client Sample ID: CB-2-0.0'-1.75'

General Chemistry

Lot-Sample #...: G1E180464-002 **Work Order #...:** MJJ0A **Matrix.....:** SOLID
Date Sampled...: 05/10/11 **Date Received..:** 05/18/11
% Moisture.....: 14

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	**14.2**	**0.10**	**%**	**ASTM D 2216-90**	**05/20-05/23/11**	**1140230**

Dilution Factor: 1

Freshwater Environmental Services

Client Sample ID: CB-3-0.0'-1.75'

General Chemistry

Lot-Sample #...: G1E180464-003 **Work Order #...:** MJJ0D **Matrix.....:** SOLID
Date Sampled...: 05/10/11 **Date Received..:** 05/18/11
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	**15.1**	**0.10**	**%**	**ASTM D 2216-90**	**05/20-05/23/11**	**1140230**

Dilution Factor: 1

QC DATA ASSOCIATION SUMMARY

G1E180464

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SOLID	EPA-5 1613B		1143162	
	SOLID	ASTM D 2216-90		1140230	1140142
002	SOLID	EPA-5 1613B		1143162	
	SOLID	ASTM D 2216-90		1140230	1140142
003	SOLID	EPA-5 1613B		1143162	
	SOLID	ASTM D 2216-90		1140230	1140142
004	WATER	EPA-5 1613B		1151059	
005	WATER	EPA-5 1613B		1151059	
006	WATER	EPA-5 1613B		1151059	

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: G1E180464 **Work Order #...:** MJAEX-SMP MJAEX-DUP **Matrix.....:** SOLID

Date Sampled...: 05/11/11 **Date Received..:** 05/12/11

% Moisture.....: 3.7

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture						SD Lot-Sample #: G1E120442-001		
	3.7	4.0	%	9.7	(0-20)	ASTM D 2216-90	05/20-05/23/11	1140230

Dilution Factor: 1