Solid Wood Incorporated Site (West Bay Park) Interim Action Report Revision 1

City of OLYMPIA

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Parametrix

Solid Wood Incorporated Site (West Bay Park) Interim Action Report Revision 1.0

Prepared for

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CITATION

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CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned.

Prepared by Lara Linde

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TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

APPENDICES

KEY TERMS

AET	apparent effects threshold
AO	administrative order
bgs	below ground surface
BNSF	Burlington Northern Santa Fe Railway
City	City of Olympia
CSLs	cleanup screening levels
Ecology	Washington State Department of Ecology
gpm	gallons per minute
IA	Interim Action
mg/kg	milligrams per kilogram
ORC	Oxygen Release Compound™
PAHs	polycyclic aromatic hydrocarbons
PCP	pentachlorophenol
PID	photoionization detector
PSEP	Puget Sound Estuary Program Guidelines
RI/FS	Remedial Investigation/Feasibility Study
RLs	Remedial Levels
ROW	right of way
SMS	Sediment Management Standards
SSAPA	Sediment Sampling and Analysis Plan Appendix
TOC	total organic carbon
TPH	total petroleum hydrocarbons

1. INTRODUCTION

This Interim Action (IA) Report describes cleanup activities performed at the Solid Wood Incorporated Site over the summer and fall of 2009. The goal of the IA was to remove contaminated soils associated with historical site uses as well as numerous wooden piling located on the shoreline of the site. The IA was performed under the oversight of the Washington State Department of Ecology (Ecology) in accordance with the site's Agreed Order (No. DE-08-TCPSR-5415) and approved Remedial Investigation/ Feasibility Study (RI/FS) Work Plans (Parametrix 2008, 2009a;b). Cleanup activities were performed by the City of Olympia (City) as a necessary first step in the development of the site into a new City of Olympia park (West Bay Park). Park construction began immediately following the IA and was completed in summer 2010.

The IA addressed eight areas of the site as described below. Refer to Figure 1 (located at the end of this report) for a site plan showing the areas addressed.

- Area A – An upland area partially located within the former Burlington Northern Santa Fe Railway (BNSF) right of way (ROW). The IA consisted of the excavation and removal of soil contaminated with Bunker C fuel oil and polycyclic aromatic hydrocarbons (PAHs).
- Area B – A second upland area also partially located within the former BNSF ROW. The IA also consisted of excavation and removal of shallow soil contaminated with Bunker C fuel oil and PAHs.
- Area C – An upland area located substantially on the former BNSF ROW. The IA consisted of placement of a soil and pavement cap over shallow surface soils contaminated with PAHs.
- Area D – A shoreline area that formerly contained a wood burner. The IA consisted of excavation and removal of soils contaminated with metals and dioxins.
- Area E – A shoreline area containing metal scrap. The IA consisted of excavation of the affected soils, screening to remove the scrap, and off-site scrap disposal. Screened soils were found to be uncontaminated during earlier testing (Parametrix 2009a) and were used on-site as fill.
- Catch Basins – Four catch basins located in upland areas were removed. Soil samples were collected immediately below the basins that confirmed that contamination was not present.
- Wooden Flume – A buried wooden flume was exposed and plugged with concrete. The purpose of the plug was to attempt to eliminate a groundwater seep with a significant discharge flow rate.
- Piling – A total of 437 wooden piling were removed from six intertidal areas. Sediment samples were collected following piling removal to assess sediments for the presence of contaminants.

Figure 1 depicts all cleanup areas described above. Also depicted is the surface area percentage of each cleanup area relative to location within and outside of the former BNSF ROW. This representation was made to aid the City in determining distribution of costs for potential cost recovery. Representative photos of the IA areas are included in Appendix A.

2. INTERIM ACTION ACTIVITIES

The following sections provide detailed descriptions of the interim action activities performed at each site area. IA areas are shown in Figure 1. Analytical Laboratory data for each area are summarized in Tables 1 through 12. Analytical laboratory reports are provided in Appendix B. Appendix B also includes a Quality Assurance/Quality Control (QA/QC) review memorandum for the laboratory data.

2.1 AREA A

Contaminated soils were excavated and removed from the footprint outlined on Figure 1. Excavated material was field-screened using a photoionization detector (PID) supplemented with olfactory and visual observations to make the final determination of the limits of excavation. Confirmation samples were collected on the side walls and bottom of the excavation at the locations shown on Figure 1.

Analytical results for the confirmation samples are compared to Remedial Levels (RLs) established in the RI/FS Work Plan (Parametrix 2008) in Table 1. As shown, none of the confirmation samples exceeded the applicable RLs.

During excavation activities, obviously contaminated soil was stockpiled separately from clean overburden. Wood planking, pilings, and other wooden debris encountered during the excavation were segregated and removed. The estimated quantity of soil excavated from Area A (including both stockpiles) was 3,303 tons, while the average depth of excavation was 10 feet below ground surface (bgs). Dewatering occurred continually during the excavation activities. Removed water was discharged to the City's sanitary sewer system under permit. Compliance with permit discharge criteria was verified by sampling performed by the Contractor.

Soil stockpiles were sampled and evaluated against the RLs for suitability for on-site re-use or off-site disposal. Results of the stockpile sampling are contained in Tables 2 and 3. As shown, RLs were not exceeded in the overburden samples, and this material (1,680 tons) was reused as backfill in Area A.

Oxygen Release Compound™ (ORC) was mixed with clean imported backfill below the depth of 4 feet to provide an oxygen source for naturally-occurring bacteria. At elevations of 4 feet bgs to the surface, clean overburden was applied in compacted lifts to complete the backfill. A total of 1,500 pounds of ORC was applied at an approximate rate of 1.5 pounds per cubic yard. The purpose of the ORC was to promote enhanced bioattenuation of residual groundwater contamination by providing a source of oxygen to stimulate naturally occurring aerobic bacteria.

The contaminated soil stockpile (1,623 tons) was transported and disposed of at the Weyerhaeuser Landfill located in Castle Rock, Washington. A summary sheet of daily tonnages delivered to the landfill is included in Appendix C; disposal certifications are contained within the project files and are available upon request. Wood debris was transported and disposed of at the Roosevelt Regional Landfill.

2.2 AREA B

Soils were excavated and removed from the Area B footprint shown on Figure 1. Excavated material was field-screened similarly to Area A. Confirmation samples were also collected on the sidewalls and bottom of the excavation shown on Figure 1. Results of the samples are

compared to RLs in Table 4. Further excavation was required on the eastern sidewall of Area B based on the results of sample BSW03. Additional confirmation samples were collected on the bottom and sidewalls.

All of the soil from the Area B excavation was stockpiled in one location, without segregation, and sampled. Results of the Area B stockpile samples are presented in Table 5. The average depth of the excavation was between 4 and 5 feet bgs. No groundwater was encountered during the excavation. Wooden pilings and wood debris encountered in the excavation were removed.

A total of 363 tons of soil stockpiled from Area B were transported and disposed of at the Weyerhaeuser Landfill. Wood debris was transported and disposed of at the Roosevelt Regional Landfill.

2.3 AREA C

In Area C, initial activities consisted of the removal of existing rail lines and ties. Steel rails were removed off-site for recycling. Rail ties were disposed of at the Roosevelt Regional Landfill. Surface soils were then excavated along the former rail spur to subgrade (Figure 1). Excavations ranged from 1 to 4 feet deep depending on location and subgrade requirements. All contaminated soil (1,340 tons) from Area C was stockpiled in one location on-site and disposed of at the Weyerhaeuser Landfill. No confirmation samples were collected; however, two stockpile samples were collected for disposal characterization purposes. Results of the stockpile samples are presented in Table 6.

After excavation was completed, geotextile fabric was installed in the bottom of the excavation to provide a visual marker. A cap was constructed over the geotextile that consisted of either a minimum of 12 inches of clean, vegetated soil or asphalt pavement. Figure 2 shows the relative locations of the Area C cap and as-designed park features. No significant departures from the as-designed features were made during park construction.

2.4 AREA D

Area D soils were excavated from within the footprint shown on Figure 1 during low tide and screened visually for staining as an indication of the presence of wood ash and associated metals and dioxins. Obviously contaminated soil was stockpiled separately from clean overburden. Piling and other wooden and metal debris encountered during the excavation were segregated for later removal.

Due to proximity to the waters of Budd Inlet, the Area D excavation could not be left open overnight and was backfilled with imported sand fill at the end of each work shift. Prior to backfilling, confirmation samples were collected along the excavation sidewalls and bottom. Initially, seven sidewall and four bottom confirmation samples were collected; results for these samples are compared to RLs in Table 7. Additional excavation was required in the northeastern and southeastern corners of the footprint (DSW02 and DSW04), and confirmation samples were collected along the sidewalls. Results for these the two additional confirmation samples (DSW08 and DSW09) were below RLs, and the excavation was considered complete.

The estimated quantity of material excavated from Area D in both stockpiles was 2,346 tons; the average excavation depth was 5 feet. Groundwater was encountered in the bottom of some portions of the excavation due to subsurface soil irregularities and proximity to the shoreline.

Both overburden and contaminated soil stockpiles were sampled and evaluated against RLs for suitability of on-site re-use or disposal. All but one of the stockpile samples contained concentrations of dioxins in excess of the RL. Results of the stockpile sampling are contained in Tables 8 and 9. Both stockpiles (2,346 tons) were transported and disposed of at the Weyerhaeuser Landfill.

Following the restoration of Area D and construction of the Rotary Point Area park features, approximately 80 yards of new beach gravel were placed at the foot of the new concrete stairs just to the south of Area D. The gravel was placed to a thickness of approximately 1.25 feet within the footprint shown on Figures 1 and 2.

2.5 AREA E

General grading activities for park construction in Area E resulted in the removal of several hundred cubic yards of soil to establish subgrade. Metal debris larger than 2 inches in diameter was screened from this soil and removed from the site. A visual inspection at completed subgrade showed that no significant metal debris remained. Screened soil was re-used on site as fill. Approximately 20 tons of mixed metal, concrete, and wood debris screened from Area E was disposed of at the Roosevelt Regional Landfill.

2.6 CATCH BASIN REMOVAL

A total of four catch basins were removed from the site as part of general site demolition (Figure 1). One soil sample from the beneath each catch basin was collected to investigate for contamination (Table 10). All sample results were below RLs, and no soil removal was performed.

2.7 WOODEN FLUME DECOMMISSIONING

An apparent wooden flume, situated as shown on Figure 1, was located and plugged with concrete in an attempt to eliminate a groundwater seep at the shoreline. Earlier test results from the seep detected the presence of total copper at concentrations slightly over the RL (Parametrix 2009a). However, dissolved copper in the seep sample was below the RL.

The flume was uncovered at a depth of 4 feet in a test pit dug approximately 20 feet upland of the ordinary high tide line. Rather than a flume, the feature appeared to be discarded wood planking that extended to the shoreline and acted as a drainage conduit for groundwater. Water flow from the flume was estimated at 15 gallons per minute (gpm). Approximately 10 cubic yards of concrete was deposited into the excavation to plug the feature. Flow onto the beach was stopped initially, but resumed at the same apparent rate 4 days later, indicating that the attempt to plug the flume was unsuccessful.

2.8 PILING REMOVAL AND SEDIMENT TESTING

2.8.1 Piling Removal

A total of 437 pilings were removed from six distinct areas depicted on Figure 1. Three methods were used to remove the approximately 30-foot-length piles which included a vibratory extractor, manually cutting off each pile with a hand-held gas powered chainsaw, and removal by an excavator with thumb. Vibratory extraction was the preferred and original method of piling removal and a total of 98 piles were removed using this method. Open holes remaining after removal were backfilled with pea gravel. Based on visual and olfactory

observation by Parametrix and City personnel, it was observed that none of the piling removed had been treated with creosote. The primary evidence for this was the presence of bark on all of the piling. Upon consultation with the Washington State Department of Fish and Wildlife and Ecology, it was determined pilings could be cut with a chainsaw or broken off with an excavator a minimum of 2 feet below the mudline. A total of 205 piles were cut off with a chainsaw, and 134 piles were broken off by an excavator, both 2 feet below the mudline. Work to cut or break off pilings was conducted during low-tide conditions so that pilings were easily accessible. Removed piling and cut-off stubs were disposed of at the Roosevelt Regional Landfill. A total of 315 tons of pilings and wood debris were disposed of for the project including the pilings, cut-off stubs, and wood debris from Areas A through E.

2.8.2 Sediment Testing

2.8.2.1 Sample Collection and Chemical Testing

A total of seven sediment samples were collected from the piling areas following completion of the removal activities (SD25 through SD31; Figure 1). The objective of the post-removal sampling was to assess post-removal sediment conditions relative to Ecology's Sediment Management Standards (SMS). Samples were located at the same stations as a previous set of samples collected prior to removal (Parametrix 2009b). Two reference sediment samples were also collected by Bio-Marine Enterprises (M/V Kittewake) from Ecology-approved reference sediment stations located in Carr Inlet. A map of the reference sediment stations is provided in Appendix D. A physical description of each sediment sample is provided in Table 2-1 below. Field logs for the sediment samples collected at the site are included in Appendix D.

Table 2-1. Sediment Sample Description Summary

Station ID	Description
SD-25	Gray-black, organic silty sand, scattered shells, hydrogen sulfide odor, occasional wood fragments, live mussels, barnacles, and clams in sample vicinity, intertidal zone.
SD-26	Gray-black, slightly silty gravelly sand, shells and wood fragments, slight organic odor, live mussels, barnacles, and clams in sample vicinity, intertidal zone.
SD-27	Gray-black, slightly silty gravelly sand, scattered shells and wood fragments, slight organic odor, live mussels, barnacles, and clams in sample vicinity, intertidal zone.
SD-28	Gray-black, organic silty sand, shells and occasional wood fragments, slight organic odor, live mussels, barnacles, and clams in sample vicinity, intertidal zone.
SD-29	Gray-black, silty gravelly sand, scattered shells and wood fragments, slight organic odor, live mussels, barnacles, and clams in sample vicinity, intertidal zone.
SD-30	Gray-brown, slightly silty sandy gravel, slight to no odor, intertidal zone.
SD-31	Gray, silty sandy gravel, no shells or wood fragments, no odor, live barnacles in sample vicinity, intertidal zone.
RF-01	Gray-brown, slightly silty medium sand, no odor or live organisms (collected by Bio-Marine Enterprises).
RF-02	Gray-brown, silty sand, no odor or live organisms (collected by Bio-Marine Enterprises).

The previous sampling event targeted sediments adjacent to the piling to assess for piling-related contaminants and the potential to spread those contaminants during removal. The results of the testing showed that the only constituents present at concentrations of concern were total petroleum hydrocarbons (TPH) at 95 to 1,400 milligrams per kilogram (mg/kg). The Ecology screening level for TPH is 100 mg/kg. The City made the

determination to move forward with the piling removal and agreed to Ecology's request to collect the post-removal sediments for testing.

All post-removal sediment samples were analyzed for PAHs (SMS constituents), diesel and lube oil range hydrocarbons, pentachlorophenol (PCP), total organic carbon (TOC), total solids, total sulfides, ammonia, grain size, and total volatile solids. The two reference sediment samples obtained were also analyzed for this list of constituents. Chemical results for the sediment sampling results are compared to SMS and apparent effects threshold (AET) values in Tables 11 and 12. The only screening criterion exceeded was for TPH in all seven samples (131 to 490 mg/kg). Exceedance of this criterion triggered follow-on biological testing.

2.8.2.2 Biological Testing

Sufficient sample volume was collected and archived so that follow-on biological testing of sediments could be performed if necessary. Five samples with a range of TPH concentrations and the two reference samples were selected for biological testing. A composite sample consisting of one-third (by volume) sample SD26 and two-thirds (by volume) sample SD27 was included as one of the five samples to provide a sample with a TPH concentration in the mid range of the samples submitted. This sample was also analyzed for TPH as reported in Tables 11 and 12.

Biological testing was performed by Newfields of Port Gamble, Washington; the biological testing report is provided in Appendix E. Biological tests consisted of a 10-day amphipod solid phase survival test using Eohaustorius estuarius, a 20-day polychaete solid phase survival and growth test using Neanthes arenaceodentata, and a sediment larval test using Mytilus galloprovincialis conducted according to Puget Sound Estuary Program Guidelines (PSEP 1995). Test species were selected based on the requirements of Table 6 of Ecology's Sediment Sampling and Analysis Plan Appendix (SSAPA, Ecology 2008) and the results of grain size analyses. Since the sediments potentially contained PAHs, the biological tests were exposed to ultra-violet radiation according to Appendix D of the SSAPA.

The results of the biological testing are summarized in the following excerpt from biological testing report Section 4.4, Summary:

> "Two samples (SD29 and SD30) failed to meet SQS [sediment quality standards] or CSL [cleanup screening levels] performance criteria for one or more of the bioassay tests performed on the West Bay Park sediments (Table 17). The failures for the amphipod and polychaete at station SD29 are consistent with the concentrations of total ammonia produced most likely from the decay of mussels that were observed in these tests (see Section 5). The response at station SD30 was restricted to the larval test organism and is not correlated to total ammonia effects."

The laboratory noted that SD-29 had a strong dead mollusk odor and contained whole mussel shells, some of which contained tissue (see Figure 2 of the biological report). The response of the SD29 test organisms were observed to be consistent with elevated ammonia levels most likely due to the decaying mussel tissue.

2.9 DATA QUALITY ASSURANCE/QUALITY CONTROL

The QA/QC data memorandum in Appendix B provides a discussion of data quality control results including instances where QC criteria were not met. In these instances, associated

analytical data was flagged with an appropriate qualifier to notify the user. A summary of the QA/QC discussion is provided here. It should be noted that all qualified data are considered valid as qualified and acceptable for use.

A total of ten diesel range hydrocarbon results for Area A soil and piling sediment samples experienced interference from lube oil range hydrocarbons. The associated diesel results are considered estimates and have been flagged with a "J" qualifier.

Dioxins were detected in each method blank associated with the dioxins analyses. Sample detections that were less than five times the method blank detection were qualified as estimated due to blank contamination and a flagged with "BJ" qualifier.

Benzo(a)pyrene was recovered at slightly above control limits in the spike blank and spike blank duplicate for samples from Areas A and B. All associated samples were non-detect, with the exception of Area B sample WB-SO-BSP04-0000. This one detection was qualified as estimated and flagged with a "J" qualifier.

3. CONCLUSIONS

3.1 INTERIM ACTION RESULTS

IA activities were successfully completed according to the project work plans and satisfy the requirements of the site's Agreed Order as follows:

- All soil in Areas A, B, C, and D with contamination in excess of the RLs was either removed or capped.
- All metal debris was removed from Area E.
- Groundwater in the vicinity of Area A with residual concentrations of contaminants will be subject to enhanced bioattenuation for approximately one year following application of the ORC. Following that, any remaining contamination will attenuate naturally. Four quarters of groundwater monitoring have been performed to assess groundwater quality downgradient of Area A (Parametrix 2010). The results of this testing indicate that contaminated groundwater has not migrated away from the immediate vicinity of Area A (i.e., no contamination has been detected in the downgradient wells).
- The attempt to plug the wooden flume was not successful. However, no further assessment work will be performed at the associated groundwater seep (Seep 1; Figure 1) since the only metal concentration that exceeded its remediation level in the seep was total copper (Parametrix 2009a). The appropriate state and national toxic substances criteria for surface water (EPA 2010; Ecology 2006) apply to the dissolved copper fraction, thus we conclude that no further monitoring is necessary.

3.2 SEDIMENT TESTING RESULTS

Six of the eight sediment samples collected failed to meet Ecology's screening criteria for TPH. Per the RI/FS Work Plan, follow on biological testing was conducted on five of the samples. Two of the five (SD29 and SD30) failed to meet the SQS or CSL performance criteria for one or more of the bioassay tests. SD29 failed all organism tests when compared to the SQS while SD30 failed only the larval development test. When comparing to CSLs, SD29 and SD30 failed the larval development test and SD29 failed the amphipod test.

Test failures in sample SD29 may be attributable to ammonia produced from the decay of mussel tissue present in the sample. The laboratory noted that SD29 contained many whole mussel shells containing tissue; decay of this tissue during storage is a likely contributing factor to elevated ammonia concentrations measured in the sample. The initial ammonia concentration measured in SD29 was 85 milligrams per liter (mg/l) as compared to a range of 1.27 to 25.0 mg/l measured in the other four site samples. SD29 was also observed to contain a strong dead mollusk odor during sample preparation procedures. Responses seen in SD30 in the larval development test could not be correlated with specific sample matrix or water quality observations.

4. REFERENCES

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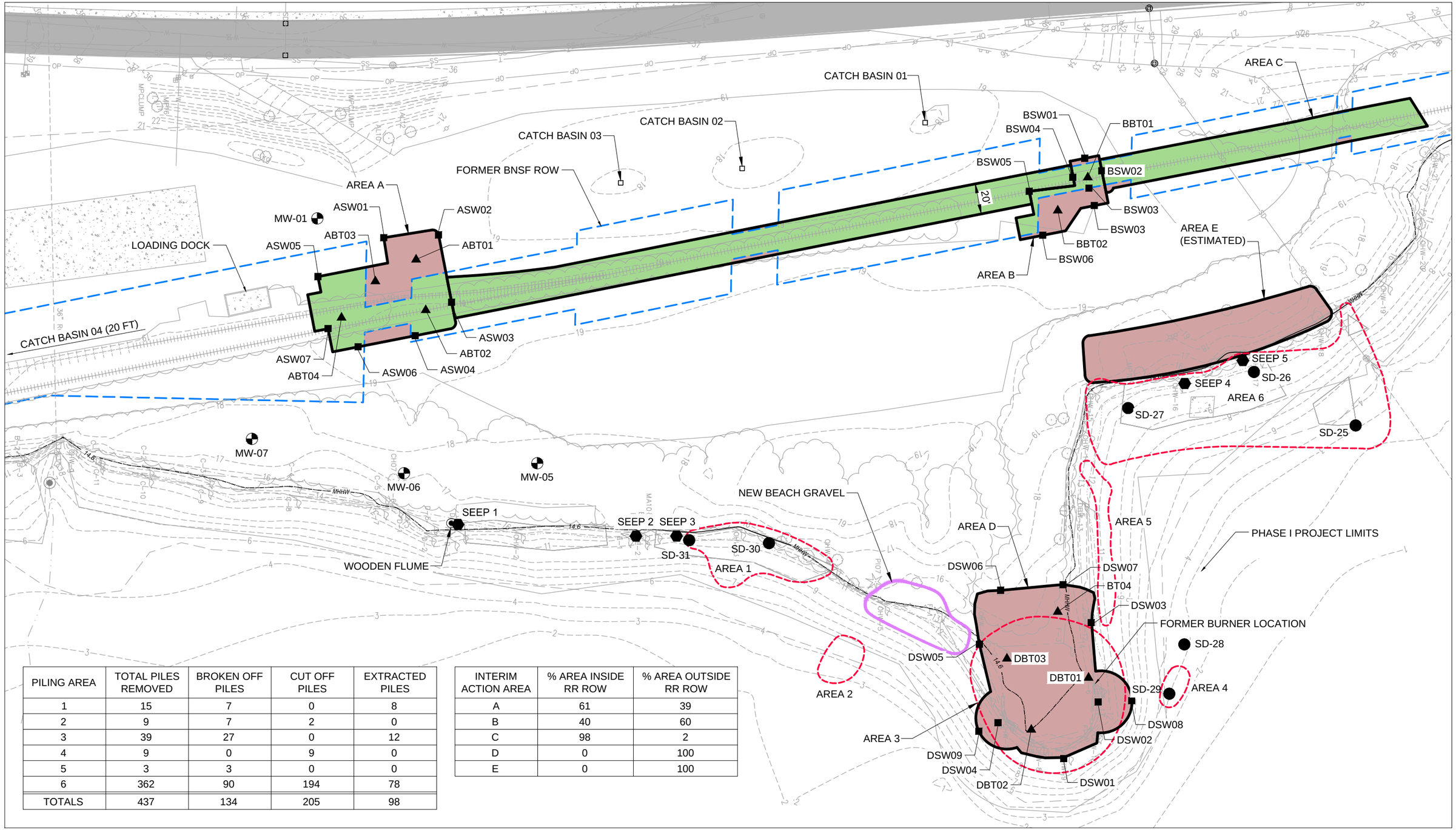
FIGURES



PILING AREA	TOTAL PILES REMOVED	BROKEN OFF PILES	CUT OFF PILES	EXTRACTED PILES
1	15	7	0	8
2	9	7	2	0
3	39	27	0	12
4	9	0	9	0
5	3	3	0	0
6	362	90	194	78
TOTALS	437	134	205	98

INTERIM ACTION AREA	% AREA INSIDE RR ROW	% AREA OUTSIDE RR ROW
A	61	39
B	40	60
C	98	2
D	0	100
E	0	100

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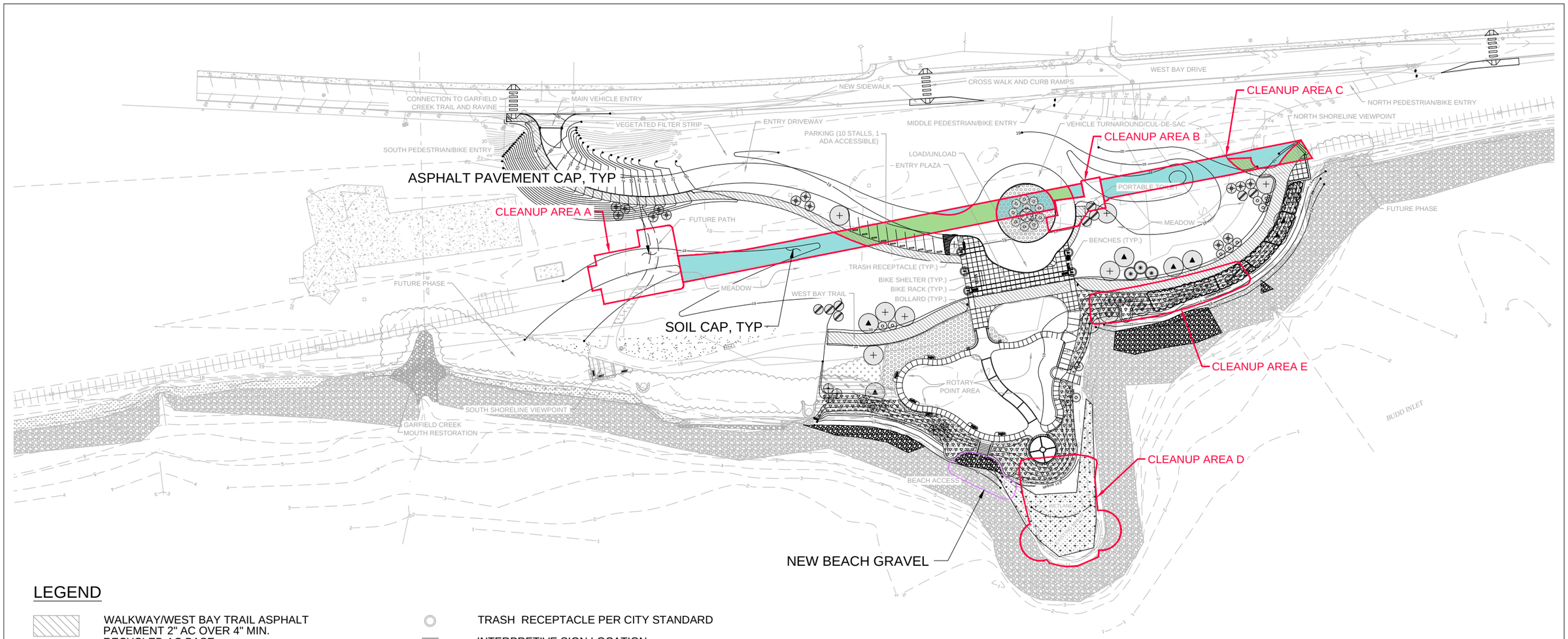
N

SCALE IN FEET
0 30 60

LEGEND

- ACTUAL CLEANUP FOOTPRINT, BASED ON HAND MEASUREMENTS
- ROW
- PILING REMOVAL AREA FOOTPRINT
- MW EXISTING MONITORING WELL
- WOODEN FLUME
- BOTTOM CONFIRMATION SAMPLE LOCATION
- SIDEWALL CONFIRMATION SAMPLE LOCATION
- SEDIMENT CONFIRMATION SAMPLE LOCATION
- SEEP SAMPLE LOCATION
- OUTSIDE FORMER RR ROW
- INSIDE FORMER RR ROW

Figure 1
Solid Wood Incorporated Site
(West Bay Park)
Olympia, Washington
Interim Action Areas & ROW



LEGEND

- WALKWAY/WEST BAY TRAIL ASPHALT PAVEMENT 2" AC OVER 4" MIN. RECYCLED AC BASE
- ROADWAY ASPHALT PAVING 3" AC OVER 6" RECYCLED AC BASE
- STRIPING
- PERMANENT C.I.P. CONCRETE CURB
- SPECIAL CONCRETE PAVING WITH JOINT PATTERN
- BEACH GRAVEL/DEBRIS CLEAN AREAS
- GUARDRAIL (STEEL POSTS WITH WIRE ROPE)
- TRASH RECEPTACLE PER CITY STANDARD
- INTERPRETIVE SIGN LOCATION
- PROPOSED ROCKERY
- 15 — FINAL GRADING
- MEAN HIGH WATER LINE (MHHW)
- SOIL CAP
- ASPHALT CAP

SOURCE: COMPOSITE SITE PLAN CONSTRUCTION DRAWINGS (DRAWINGS CS) - ANCHOR ENVIRONMENTAL JUNE 2009

Parametrix DATE: 03/19/08 09:06am FILE: BR1577024P04T05F-04

N

0 100

SCALE IN FEET

Figure 2
Solid Wood Incorporated Site
(West Bay Park)
Olympia, Washington
Site Features and Cap Areas

TABLES

Table 1. Area A Confirmation Sample Results

PARAMETERS	Units	Area A Sample No. / Sample Depth (ft): / Date Sampled:	RL	ASW01 7 8/26/09	ASW02 7 8/26/09	ASW03 5 8/27/09	ASW04 7 8/27/09	ASW05 6.5 8/27/09	ASW06 6 8/28/09	ASW07 7 8/28/2009	ASW07(dup) 7 8/28/2009	ABT01 10 8/26/09	ABT02 10 8/27/09	ABT03 10 8/27/09	ABT04 10 8/28/09
TOTAL PETROLEUM HYDROCARBONS															
Diesel Range Organics	mg/kg		2000	40 U	33 U	32 U	32 U	30 U	33 U	31 U	32 U	33 U	39 U	35 U	37 U
Lube Oil Range Organics	mg/kg		2000	81 U	66 U	63 U	63 U	60 U	69	76	63 U	65 U	77 U	70 U	75 U
METALS															
Lead	mg/kg		250	8.1 U	6.6 U	6.3 U	6.3 U	6.0 U	6.5 U	6.1 U	6.3 U	6.5 U	7.7 U	7.0 U	7.5 U
AROMATIC VOLATILE ORGANIC COMPOUNDS															
Benzene	mg/kg		0.03	0.021 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.021 U
Toluene	mg/kg		7	0.1 U	0.065 U	0.059 U	0.066 U	0.055 U	0.081 U	0.074 U	0.086 U	0.061 U	0.079 U	0.074 U	0.1 U
Ethylbenzene	mg/kg		6	0.1 U	0.065 U	0.059 U	0.066 U	0.055 U	0.081 U	0.074 U	0.086 U	0.061 U	0.079 U	0.074 U	0.1 U
m,p-Xylene	mg/kg		9	0.1 U	0.065 U	0.059 U	0.066 U	0.055 U	0.081 U	0.074 U	0.086 U	0.061 U	0.079 U	0.074 U	0.1 U
o-Xylene	mg/kg		9	0.1 U	0.065 U	0.059 U	0.066 U	0.055 U	0.081 U	0.074 U	0.086 U	0.061 U	0.079 U	0.074 U	0.1 U
CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS															
Benzo(a)anthracene	mg/kg		-	0.011 U	0.0088 U	0.0084 U	0.0084 U	0.0079 U	0.0087 U	0.0081 U	0.0084 U	0.0087 U	0.01 U	0.0094 U	0.01 U
Chrysene	mg/kg		-	0.011 U	0.0088 U	0.0084 U	0.0084 U	0.0079 U	0.022	0.0081 U	0.0084 U	0.0087 U	0.01 U	0.0094 U	0.01 U
Benzo(b)fluoranthene	mg/kg		-	0.011 U	0.0088 U	0.0084 U	0.0084 U	0.0079 U	0.0087 U	0.0081 U	0.0084 U	0.0087 U	0.01 U	0.0094 U	0.01 U
Benzo(k)fluoranthene	mg/kg		-	0.011 U	0.0088 U	0.0084 U	0.0084 U	0.0079 U	0.0087 U	0.0081 U	0.0084 U	0.0087 U	0.01 U	0.0094 U	0.01 U
Benzo(a)pyrene	mg/kg		0.1	0.011 U	0.0088 U	0.0084 U	0.0084 U	0.0079 U	0.0087 U	0.0081 U	0.0084 U	0.0087 U	0.01 U	0.0094 U	0.01 U
Indeno(1,2,3-cd)pyrene	mg/kg		-	0.011 U	0.0088 U	0.0084 U	0.0084 U	0.0079 U	0.0087 U	0.0081 U	0.0084 U	0.0087 U	0.01 U	0.0094 U	0.01 U
Dibenzo(a,h)anthracene	mg/kg		-	0.011 U	0.0088 U	0.0084 U	0.0084 U	0.0079 U	0.0087 U	0.0081 U	0.0084 U	0.0087 U	0.01 U	0.0094 U	0.01 U
Total cPAHs as Benzo(a)pyrene[1]	mg/kg		0.1	0.0083 U	0.0066 U	0.0063 U	0.0063 U	0.0060 U	0.0067	0.0061 U	0.0063 U	0.0066 U	0.0076 U	0.0071 U	0.0076 U

Notes:

- No comparative value established.

[1] Total of individual cPAHs multipled by benzo(a)pyrene toxcity equivalency factor - half the practical quantitation limit was used for non-detect values.

cPAHs Carginogenic Polycyclic Aromatic Hydrocarbons.

ft Feet.

mg/kg Milligrams per kilogram.

RL Remedial level established in the RI/FS Work Plan.

U Analyte not detected above given practical quantitation limit.

Table 2. Area A Clean Stockpile Sample Results

PARAMETERS	Units	Area A Sample No. Sample Depth (ft): Date Sampled:	RL	ASP01 0.5 8/28/09		ASP02 0.5 8/28/09		ASP03 0.5 8/28/09		ASP04 0.5 8/28/09		ASP05 0.5 8/28/09		ASP06 0.5 8/28/09		ASP14 0.5 8/31/09	
TOTAL PETROLEUM HYDROCARBONS																	
Diesel Range Organics	mg/kg	2000		65	J	140	J	56	U	120	J	65	U	45	J	120	U
Lube Oil Range Organics	mg/kg	2000		540		840		570		980		490		330		710	
METALS																	
Lead	mg/kg	250		11		15		13		5.4	U	14.0		10		11	U
AROMATIC VOLATILE ORGANIC COMPOUNDS																	
Benzene	mg/kg	0.03		0.02	UJH	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Toluene	mg/kg	7		0.07	UJH	0.062	U	0.061	U	0.065	U	0.06	U	0.063	U	0.05	U
Ethylbenzene	mg/kg	6		0.07	UJH	0.062	U	0.061	U	0.065	U	0.06	U	0.063	U	0.05	U
m,p-Xylene	mg/kg	9		0.07	UJH	0.062	U	0.061	U	0.065	U	0.06	U	0.063	U	0.05	U
o-Xylene	mg/kg	9		0.07	UJH	0.062	U	0.061	U	0.065	U	0.06	U	0.063	U	0.05	U
CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS																	
Benzo(a)anthracene	mg/kg	-		0.028		0.0290		0.049		0.02		0.056		0.0074	U	0.037	
Chrysene	mg/kg	-		0.063		0.1100		0.088		0.056		0.11		0.017		0.077	
Benzo(b)fluoranthene	mg/kg	-		0.024		0.0240		0.057		0.021		0.098		0.0074	U	0.041	
Benzo(k)fluoranthene	mg/kg	-		0.015		0.0120		0.038		0.013		0.054		0.0074	U	0.024	
Benzo(a)pyrene	mg/kg	0.1		0.025		0.0330		0.037		0.021		0.063		0.0097		0.033	
Indeno(1,2,3-cd)pyrene	mg/kg	-		0.012		0.0082	U	0.025		0.0095		0.049		0.0074	U	0.016	
Dibenzo(a,h)anthracene	mg/kg	-		0.0077	U	0.0082	U	0.0094		0.0072	U	0.018		0.0074	U	0.0073	
Total cPAHs as Benzo(a)pyrene[1]	mg/kg	0.1		0.0339		0.0414		0.0557		0.0283		0.0916		0.0284		0.0463	

Notes:

- \- No comparative value established.
- [1] Total of individual cPAHs multipled by benzo(a)pyrene toxcity equivalency factor - half the practical quantitation limit was used for non-detect values.

cPAHs Carginogenic Polycyclic Aromatic Hydrocarbons.
ft Feet.
J Analyte was detected; the reported concentration should be considered an estimate.
mg/kg Milligrams per kilogram.
RL Remedial level established in the RI/FS Work Plan.
U Analyte not detected above given practical quantitation limit.

Table 3. Area A Contaminated Stockpile Sample Results

PARAMETERS	Units	Area A Sample No. Sample Depth (ft): Date Sampled:	RL	ASP07 0.5 8/28/09		ASP08 0.5 8/28/09		ASP08(dup) 0.5 8/28/09		ASP09 0.5 8/28/09		ASP10 0.5 8/28/09		ASP11 0.5 8/28/09		ASP12 0.5 8/28/09		ASP13 0.5 8/31/09	
TOTAL PETROLEUM HYDROCARBONS																			
Diesel Range Organics	mg/kg		2000	2300	J	340	J	380		3000		3300		2400		90		740	
Lube Oil Range Organics	mg/kg		2000	6400		1000		910		4400		5500		3800		240		1300	
METALS																			
Lead	mg/kg		250	6.2	U	6.1	U	8.3		6.4		14		6.1	U	5.9	U	150	
AROMATIC VOLATILE ORGANIC COMPOUNDS																			
Benzene	mg/kg		0.03	0.02	U	0.02	U	0.02	U	0.02		0.02	U	0.02	U	0.02	U	0.02	U
Toluene	mg/kg		7	0.074	U	0.078	U	0.081	U	0.07	U	0.061	U	0.07	U	0.073	U	0.047	U
Ethylbenzene	mg/kg		6	0.14		0.078	U	0.081	U	0.07	U	0.061	U	0.07	U	0.073	U	0.047	U
m,p-Xylene	mg/kg		9	0.22		0.078	U	0.081	U	0.07	U	0.061	U	0.07	U	0.073	U	0.047	U
o-Xylene	mg/kg		9	0.074	U	0.078	U	0.081	U	0.12		0.061	U	0.07	U	0.073	U	0.047	U
CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS																			
Benzo(a)anthracene	mg/kg		-	0.085		0.0140		0.031		0.35		0.23		0.23		0.0078	U	0.17	
Chrysene	mg/kg		-	0.44		0.0210		0.098		0.7		0.59		0.62		0.015		0.38	
Benzo(b)fluoranthene	mg/kg		-	0.096		0.1000		0.025		0.13		0.12		0.1		0.0078	U	0.069	
Benzo(k)fluoranthene	mg/kg		-	0.024		0.0810		0.014		0.036		0.078		0.042		0.0078	U	0.04	
Benzo(a)pyrene	mg/kg		0.1	0.072		0.1100		0.029		0.2		0.2		0.22		0.0078	U	0.14	
Indeno(1,2,3-cd)pyrene	mg/kg		-	0.0082	U	0.0470		0.012		0.045		0.04		0.021		0.0078	U	0.024	
Dibenzo(a,h)anthracene	mg/kg		-	0.0092		0.0200		0.0082	U	0.015		0.03		0.018		0.0078	U	0.014	
Total cPAHs as Benzo(a)pyrene[1]	mg/kg		0.1	0.0982		0.1364		0.0386		0.2646		0.2557		0.2673		0.0060		0.1721	

Notes:

- \- No comparative value established.
- [1] Total of individual cPAHs multipled by benzo(a)pyrene toxcity equivalency factor - half the practical quantitation limit was used for non-detect values.
- cPAHs Carginogenic Polycyclic Aromatic Hydrocarbons.
- ft Feet.
- mg/kg Milligrams per kilogram.
- RL Remedial level established in the RI/FS Work Plan.
- U Analyte not detected above given practical quantitation limit.
- Exceeds site specific remedial level.

Table 4. Area B Confirmation Sample Results

PARAMETERS	Units	Area B Sample No. Sample Depth (ft): Date Sampled:	BSW01 2 8/26/09	BSW02 2 8/26/09	BSW03 2 8/26/09	BSW04 2 8/26/09	BSW05 3 9/1/09	BSW06 3 9/1/09	BSW032 2 9/1/09	BBT01 4.5 8/26/09	BBT01(dup) 4.5 8/26/09	BBT02 5 9/1/09
		MTCA A										
TOTAL PETROLEUM HYDROCARBONS												
Diesel Range Organics	mg/kg	2000	27 U	26 U	220 U	27 U	31 U	27 U	28 U	27 U	27 U	28 U
Lube Oil Range Organics	mg/kg	2000	54 U	65	2800	54 U	61 U	54 U	93	55	54 U	100
METALS												
Lead	mg/kg	250	5.4 U	5.3 U	55	5.4 U	6.1 U	5.4 U	12	5.4 U	5.4 U	5.5 U
AROMATIC VOLATILE ORGANIC COMPOUNDS												
Benzene	mg/kg	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Toluene	mg/kg	7	0.082 U	0.04 U	0.05 U	0.037 U	0.064 U	0.067 U	0.059 U	0.046 U	0.047 U	0.061 U
Ethylbenzene	mg/kg	6	0.082 U	0.04 U	0.05 U	0.037 U	0.064 U	0.067 U	0.059 U	0.046 U	0.047 U	0.061 U
m,p-Xylene	mg/kg	9	0.082 U	0.04 U	0.05 U	0.037 U	0.064 U	0.067 U	0.059 U	0.046 U	0.047 U	0.061 U
o-Xylene	mg/kg	9	0.082 U	0.04 U	0.05 U	0.037 U	0.064 U	0.067 U	0.059 U	0.046 U	0.047 U	0.061 U
CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS												
Benzo(a)anthracene	mg/kg	-	0.0072 U	0.0075	0.034	0.0072 U	0.0081 U	0.0072 U	0.0074 U	0.0072 U	0.0072 U	0.0073 U
Chrysene	mg/kg	-	0.0072 U	0.0083	0.088	0.0072 U	0.0081 U	0.0072 U	0.016	0.0072 U	0.0072 U	0.0073 U
Benzo(b)fluoranthene	mg/kg	-	0.0072 U	0.0110	0.07	0.0072 U	0.0081 U	0.0072 U	0.013	0.0072 U	0.0072 U	0.0073 U
Benzo(k)fluoranthene	mg/kg	-	0.0072 U	0.0070 U	0.015	0.0072 U	0.0081 U	0.0072 U	0.0086	0.0072 U	0.0072 U	0.0073 U
Benzo(a)pyrene	mg/kg	0.1	0.0072 U	0.0084	0.036	0.0072 U	0.0081 U	0.0072 U	0.011	0.0072 U	0.0072 U	0.0073 U
Indeno(1,2,3-cd)pyrene	mg/kg	-	0.0072 U	0.0071	0.022	0.0072 U	0.0081 U	0.012	0.011	0.0072 U	0.0072 U	0.0073 U
Dibenzo(a,h)anthracene	mg/kg	-	0.0072 U	0.0070 U	0.01	0.0072 U	0.0081 U	0.0072 U	0.0074 U	0.0072 U	0.0072 U	0.0073 U
Total cPAHs as Benzo(a)pyrene[1]	mg/kg	0.1	0.0054 U	0.0117	0.0520	0.0054 U	0.0061 U	0.0063	0.01516	0.0054 U	0.0054 U	0.0055 U

Notes:

- No comparative value established.

[1] Total of individual cPAHs multipled by benzo(a)pyrene toxcity equivalency factor - half the practical quantitation limit was used for non-detect values.

cPAHs Carcinogenic Polycyclic Aromatic Hydrocarbons.

ft Feet.

mg/kg Milligrams per kilogram.

RL Remedial level established in the RI/FS Work Plan.

U Analyte not detected above given practical quantitation limit.

Exceeds site specific remedial level.

Table 5. Area B Stockpile Sample Results

PARAMETERS	Units	Area B Sample No. Sample Depth (ft): Date Sampled: RL	BSP01 0.5 8/26/09	BSP02 0.5 8/26/09	BSP03 0.5 8/26/09	BSP04 0.5 8/26/09	BSP05 0.5 8/26/09	BSP06 0.5 8/26/09
TOTAL PETROLEUM HYDROCARBONS								
Diesel Range Organics	mg/kg	2000	43 U	34 U	48 U	74 U	33 U	84 U
Lube Oil Range Organics	mg/kg	2000	690	430	670	1200	440	1400
METALS								
Lead	mg/kg	250	18	17	13	20	10	7.7
AROMATIC VOLATILE ORGANIC COMPOUNDS								
Benzene	mg/kg	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Toluene	mg/kg	7	0.048 U	0.063 U	0.052 U	0.044 U	0.042 U	0.049 U
Ethylbenzene	mg/kg	6	0.048 U	0.063 U	0.052 U	0.044 U	0.042 U	0.049 U
m,p-Xylene	mg/kg	9	0.048 U	0.063 U	0.052 U	0.044 U	0.042 U	0.049 U
o-Xylene	mg/kg	9	0.048 U	0.063 U	0.052 U	0.044 U	0.042 U	0.049 U
CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS								
Benzo(a)anthracene	mg/kg	-	0.1	0.0430	0.033	0.037 U	0.048	0.041
Chrysene	mg/kg	-	0.17	0.0840	0.063	0.089	0.066	0.078
Benzo(b)fluoranthene	mg/kg	-	0.16	0.0770	0.06	0.067	0.06	0.12
Benzo(k)fluoranthene	mg/kg	-	0.036	0.0360 U	0.014	0.037 U	0.016	0.027
Benzo(a)pyrene	mg/kg	0.1	0.082	0.0420	0.033	0.037 J	0.031	0.066
Indeno(1,2,3-cd)pyrene	mg/kg	-	0.06	0.0360	0.024	0.037 U	0.022	0.054
Dibenzo(a,h)anthracene	mg/kg	-	0.036 U	0.0360 U	0.0077	0.037 U	0.0072 U	0.017
Total cPAHs as Benzo(a)pyrene[1]	mg/kg	0.1	0.1211	0.0620	0.0475	0.0335	0.0466	0.0927

Notes:

- \- No comparative value established.
- [1] Total of individual cPAHs multipled by benzo(a)pyrene toxcity equivalency factor - half the practical quantitation limit was used for non-detect values.
- cPAHs Carcinogenic Polycyclic Aromatic Hydrocarbons.
- ft Feet.
- J Analyte was detected; the reported concentration should be considered an estimate.
- mg/kg Milligrams per kilogram.
- RL Remedial level established in the RI/FS Work Plan.
- U Analyte not detected above given practical quantitation limit.
- Exceeds site specific remedial level.

Table 6. Area C Stockpile Sample Results

PARAMETERS	Units	Stockpile Sample No. Sample Depth (ft): Date Sampled:	RL	CSP01 0.5 8/28/09	CSP02 0.5 8/28/09
TOTAL PETROLEUM HYDROCARBONS					
Diesel Range Organics	mg/kg		2000	81 U	82 U
Lube Oil Range Organics	mg/kg		2000	1400	680
CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS					
Benzo(a)anthracene	mg/kg		-	0.23	0.12
Chrysene	mg/kg		-	0.43	0.23
Benzo(b)fluoranthene	mg/kg		-	0.37	0.21
Benzo(k)fluoranthene	mg/kg		-	0.25	0.12
Benzo(a)pyrene	mg/kg		0.1	0.25	0.13
Indeno(1,2,3-cd)pyrene	mg/kg		-	0.14	0.11
Dibenzo(a,h)anthracene	mg/kg		-	0.039	0.030
Total cPAHs as Benzo(a)pyrene[1]	mg/kg		0.1	0.3572	0.1913

Notes:

- No comparative value established.
[1] Total of individual cPAHs multipled by benzo(a)pyrene toxcity equivalency factor - half the practical quantitation limit was used for non-detect values.
cPAHs Carcinogenic Polycyclic Aromatic Hydrocarbons.
ft Feet.
mg/kg Milligrams per kilogram.
RL Remedial level established in the RI/FS Work Plan.
U Analyte not detected above given practical quantitation limit.
Exceeds site specific remedial level.

Table 7. Area D Confirmation Sample Results

PARAMETERS	Units	RL	Area Sample No. / Sample Depth (ft): / Sampled:	DSW01 1 9/14/09	DSW02 1 9/14/09	DSW03 0.5 9/14/09	DSW04 0.5 9/15/09	DSW05 0.5 9/15/2009	DSW06 1 9/16/2009	DSW07 0.5 9/16/2009	DSW08 1 10/2/2009	DSW09 0.5 10/2/2009	DBT01 0.5 9/14/2009	DBT01 (dup) 0.5 9/14/2009	DBT02 5 9/15/2009	DBT03 3 9/15/2009	DBT04 4.5 9/16/2009
METALS																	
Antimony	mg/kg	-		5.8 U	9.4 U	5.6 U	6.1 U	9.1 U	5.7 U	5.8 U	NA	NA	9.1 U	9.3 U	8.6 U	6.8 U	17 U
Arsenic	mg/kg	20		12 U	19 U	11 U	12 U	18 U	11 U	12 U	NA	NA	18 U	19 U	17 U	14 U	17 U
Beryllium	mg/kg	-		0.58 U	0.94 U	0.56 U	0.61 U	0.91 U	0.57 U	0.58 U	NA	NA	0.91 U	0.93 U	0.86 U	0.68 U	1.7 U
Cadmium	mg/kg	2		0.58 U	0.95	0.56 U	0.61 U	0.91 U	0.57 U	0.58 U	NA	NA	1.5	1.3	1.6	0.68 U	1.7 U
Chromium	mg/kg	2000		15	31	17	17	14	18	19	NA	NA	30	32	32	18	7.4
Copper	mg/kg	390		20	81	16	31	20	23	23	NA	NA	41	53	32	61	16
Lead	mg/kg	250		5.8 U	32	5.6 U	12	9.1 U	5.7 U	12	NA	NA	9.1 U	14	8.6 U	24	27
Mercury	mg/kg	2		0.29 U	0.47 U	0.28 U	0.3 U	0.45 U	0.29 U	0.29 U	NA	NA	0.45 U	0.46 U	0.43 U	0.34 U	0.83 U
Nickel	mg/kg	38		19	32	19	22	18	21	20	NA	NA	25	25	25	22	8.3 U
Selenium	mg/kg	-		12 U	19 U	11 U	12 U	18 U	11 U	12 U	NA	NA	18 U	19 U	17 U	14 U	33 U
Silver	mg/kg	-		0.58 U	0.94 U	0.56 U	0.61 U	0.91 U	0.57 U	0.58 U	NA	NA	0.91 U	0.93 U	0.86 U	0.68 U	1.7 U
Thallium	mg/kg	-		5.8 U	0.9 U	5.6 U	6.1 U	9.1 U	5.7 U	5.8 U	NA	NA	9.1 U	9.3 U	8.6 U	0.7 U	17 U
Zinc	mg/kg	410		36	280	2.8	100	32	33	40	NA	NA	68	82	49	74	36
DIOXINS AND FURANS																	
Total TCDD-TEQ [1]	ng/kg-dry	11		0.204	205.938	2.617	17.580	3.883	7.804	4.204	5.476 BJ	0.862 BJ	10.586	5.270	0.246	0.761	10.103

Notes:

- No comparative value established.

[1] Total TCDD-TEQ calculated by miltiplying the isomer concentration by the toxicity equivalency factor and summing across all isomers. Half the practical quantitation limit was used for non-detect values.

BJ Analyte was detected; the reported concentration should be considered an estimate due to method blank contamination.

ft Feet.

mg/kg Milligrams per kilogram.

NA Not analyzed.

ng/kg Nanograms per kilogram.

RL Remedial level established in the RI/FS Work Plan.

TCDD 2,3,7,8-Tetracholor-dibenzo-p-dioxin.

TEQ Toxicity Equivalency Concentration.

U Analyte not detected above given practical quantitation limit.

Exceeds site specific remedial level.

Table 8. Area D Clean Stockpile Sample Results

PARAMETERS	Units	Area D Sample No. Sample Depth (ft): Date Sampled: RL	DSP01 0.5 9/16/09	DSP02 0.5 9/16/09	DSP03 0.5 9/16/09	DSP04 0.5 9/16/09	DSP05 0.5 9/16/09
METALS							
Antimony	mg/kg	-	12	7.6	5.8 U	7	6.1
Arsenic	mg/kg	20	12 U	12U	12 U	12 U	12.0 U
Beryllium	mg/kg	-	0.60 U	0.59 U	0.58 U	0.60 U	0.61 U
Cadmium	mg/kg	2	0.60 U	0.59 U	0.58 U	0.60 U	0.61 U
Chromium	mg/kg	2000	26	27	26	27	24.0
Copper	mg/kg	390	83	110	45	73	100
Lead	mg/kg	250	40	40	32	30	46
Mercury	mg/kg	2	0.3	0.3 U	0.29 U	0.3 U	0.31
Nickel	mg/kg	38	28	26	24	25	32
Selenium	mg/kg	-	12 U	12 U	12 U	12 U	12 U
Silver	mg/kg	-	0.6 U	0.59 U	0.58 U	0.6 U	0.61 U
Thallium	mg/kg	-	6 U	5.9 U	5.8 U	6 U	6.1 U
Zinc	mg/kg	410	130	98	62	110	120.0
DIOXINS AND FURANS							
Total TCDD-TEQ [1]	ng/kg-dry	11	9.9969	16.3199	27.2083	42.4618	32.08

Notes:

- No comparative value established.

[1] Total TCDD-TEQ calculated by miltiplying the isomer concentration by the toxicity equivalency factor and summing across all isomers. Half the practical quantitation limit was used for non-detect values.

ft Feet.

mg/kg Milligrams per kilogram.

ng/kg Nanograms per kilogram.

RL Remedial level established in the RI/FS Work Plan.

TCDD 2,3,7,8-Tetracholor-dibenzo-p-dioxin.

TEQ Toxicity Equivalency Concentration.

U Analyte not detected above given practical quantitation limit.

Exceeds site specific remedial level.

Table 9. Area D Contaminated Stockpile Sample Results

PARAMETERS	Units	Area D Sample No. Sample Depth (ft): Date Sampled: RL	DSP06 0.5 9/16/09	DSP07 0.5 9/16/09	DSP08 0.5 9/16/09	DSP09 0.5 9/16/09	DSP10 0.5 9/16/09	DSP11 0.5 9/16/09	DSP12 0.5 9/16/09
METALS									
Antimony	mg/kg	-	11	15	8.7	11	6.8 U	7 U	6.8 U
Arsenic	mg/kg	20	18 U	16 U	17 U	20 U	14 U	14 U	14 U
Beryllium	mg/kg	-	0.92 U	0.82 U	0.83 U	1 U	0.68 U	0.7 U	0.68 U
Cadmium	mg/kg	2	0.92 U	0.82 U	0.83 U	1 U	0.68 U	0.7 U	0.68 U
Chromium	mg/kg	2000	25	28	25	33	22	28	17
Copper	mg/kg	390	130	140	140	99	93	56	66
Lead	mg/kg	250	50	58	68	50	54	31	42
Mercury	mg/kg	2	0.46 U	0.41 U	0.42 U	0.5 U	1	0.35 U	0.34 U
Nickel	mg/kg	38	25	24	34	41	26	27	26
Selenium	mg/kg	-	18 U	16 U	17 U	20 U	14 U	14 U	14 U
Silver	mg/kg	-	0.92 U	5.8	0.83 U	1 U	0.68 U	0.7 U	0.68 U
Thallium	mg/kg	-	9.2 U	8.2 U	8.3 U	1 U	6.8 U	7 U	6.8 U
Zinc	mg/kg	410	190	220	4.2	5	120	88	93
DIOXINS AND FURANS									
Total TCDD-TEQ [1]	ng/kg-dry	11	59.5717	31.0084	39.604	62.6143	66.166	78.761	41.405

Notes:

- No comparative value established.

[1] Total TCDD-TEQ calculated by miltiplying the isomer concentration by the toxicity equivalency factor and summing across all isomers. Half the practical quantitation limit was used for non-detect values.

ft Feet.

mg/kg Milligrams per kilogram.

ng/kg Nanograms per kilogram.

RL Remedial level established in the RI/FS Work Plan.

TCDD 2,3,7,8-Tetracholor-dibenzo-p-dioxin.

TEQ Toxicity Equivalency Concentration.

U Analyte not detected above given practical quantitation limit.

Exceeds site specific remedial level.

Table 10. Catch Basin Sample Results Summary[1]

PARAMETERS	Units	Catch Basin No. Sample Depth (ft)[2]: Date Sampled: RL	CB-01 0.5 8/12/09		CB-02 0.5 8/12/09		CB-03 0.5 8/12/09		CB-04 3 8/12/09	
TOTAL PETROLEUM HYDROCARBONS										
Diesel Range Organics	mg/kg	2000	30	U	65	U	29	U	75	
Lube Oil Range Organics	mg/kg	2000	60	U	880		77		130	
Gasoline Range Organics	mg/kg	100	7.1	U	5.4	U	5.4	U	11.0	U
METALS										
Chromium	mg/kg	2000	14		17		14		16	
Copper	mg/kg	390	10		18		13		17	
Lead	mg/kg	250	6	U	13		5.9	U	5.5	U
Nickel	mg/kg	38	13		24		15		20	
Zinc	mg/kg	410	21		54		24		80	
VOLATILE ORGANIC COMPOUNDS										
Acetone	mg/kg	-	0.047		0.004	U	0.035		0.038	
Carbon Disulfide	mg/kg	-	0.015		0.0008	U	0.0021		0.00084	U
2-Butanone	mg/kg	-	0.0075		0.004	U	0.0048	U	0.0042	U
1,2,4-Trimethylbenzene	mg/kg	-	0.0012	U	0.0008	U	0.00097	U	0.014	
sec-Butylbenzene	mg/kg	-	0.0012	U	0.0008	U	0.00097	U	0.0010	
p-Isopropyltoluene	mg/kg	-	0.0012	U	0.0008	U	0.00097	U	0.0065	
SEMI-VOLATILE ORGANIC COMPOUNDS										
Phenanthrene	mg/kg	-	0.0079	U	0.014		0.0078	U	0.21	
Fluoranthene	mg/kg	-	0.014		0.017		0.0078	U	0.0073	U
Pyrene	mg/kg	-	0.0095		0.016		0.0078	U	0.0073	U
1-Methylnaphthalene	mg/kg	5	0.0079	U	0.0078	U	0.0078	U	0.16	
2-Methylnaphthalene	mg/kg	5	0.0079	U	0.0078	U	0.0078	U	0.11	
Acenaphthylene	mg/kg	-	0.0079	U	0.0078	U	0.0078	U	0.016	
Acenaphthene	mg/kg	-	0.0079	U	0.0078	U	0.0078	U	0.015	
Fluorene	mg/kg	-	0.0079	U	0.0078	U	0.0078	U	0.08	
CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBONS										
Benzo(a)anthracene	mg/kg	-	0.0079	U	0.0078	U	0.0078	U	0.0073	U
Chrysene	mg/kg	-	0.0079	U	0.0130		0.0078	U	0.0073	U
Benzo(b)fluoranthene	mg/kg	-	0.0079	U	0.0091		0.0078	U	0.0073	U
Benzo(k)fluoranthene	mg/kg	-	0.0079	U	0.0078	U	0.0078	U	0.0073	U
Benzo(a)pyrene	mg/kg	0.1	0.0079	U	0.0110		0.0078	U	0.0073	U
Indeno(1,2,3-cd)pyrene	mg/kg	-	0.0079	U	0.0078	U	0.0078	U	0.0073	U
Dibenzo(a,h)anthracene	mg/kg	-	0.0079	U	0.0078	U	0.0078	U	0.0073	U
Total cPAHs as Benzo(a)pyrene[3]	mg/kg	0.1	0.0060	U	0.0136		0.0546	U	0.0055	U

Notes:

- \- No comparative value established.
- [1] Only detected analytes are reported for metals and volatile/semi-volatile organic compounds.
- [2] Sample depth was recorded from surface of soil under the catch basin.
- [3] Total of individual cPAHs multipled by benzo(a)pyrene toxcity equivalency factor - half the practical quantitation limit was used for non-detect values.

cPAHs Carcinogenic Polynuclear Aromatic Hydrocarbons.
ft Feet.
mg/kg Milligrams per kilogram.
RL Remedial level established in the RI/FS Work Plan.
U Analyte not detected above given practical quantitation limit.

Table 11. Piling Sediment Sample Results Compared to SMS

PARAMETERS	Units	CSL	SMS	Sediment Sample No.	SD25	SD26	SD27	SD26/27	SD28	SD29	SD30	SD30 (dup)	SD31	RF01	RF02
				Sample Depth (ft):	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
				Date Sampled:	9/28/09	9/28/09	9/28/09	9/28/2009[3]	9/28/09	9/28/09	9/28/09	9/28/09	9/28/09	9/30/09	9/30/09
TOTAL PETROLEUM HYDROCARBONS															
Diesel Range Organics	mg/kg dw	100[1]	-		68 U	94 J	37 J	63 U	37	87	50 J	77 J	17 U	31 U	32 U
Lube Oil Range Organics	mg/kg dw	100[1]	-		490	37	320	320	99	330	320	370	81	62 U	63 U
POLYNUCLEAR AROMATIC HYDROCARBONS[2]															
Total LPAHs	mg/kg oc	780	370		2.8391	7.9936	3.4709	NA	7.9871	2.6074	3.1496	10.1359	2.6420 U	35.8750 U	19.3667 U
Naphthalene	mg/kg oc	170	99		0.3636 U	1.2838 U	0.4286 U	NA	0.7727	0.4103 U	0.4545 U	0.7143 U	0.4091 U	5.1250 U	2.7667 U
Acenaphthylene	mg/kg oc	66	66		0.0982 U	0.2639 U	0.1852	NA	0.0780 U	0.0690 U	0.1042 U	0.0645 U	0.1875 U	5.1250 U	2.7667 U
Acenaphthene	mg/kg oc	57	16		0.3318 U	1.2838 U	0.4286 U	NA	0.7727	0.4103 U	0.4545 U	0.7143 U	0.4091 U	5.1250 U	2.7667 U
Fluorene	mg/kg oc	79	23		0.3636 U	1.2838 U	0.4286 U	NA	0.9545	0.4103 U	0.4545 U	0.7143 U	0.4091 U	5.1250 U	2.7667 U
Pentachlorophenol	mg/kg oc	-	-		9.0909 U	32.4324 U	11.0714 U	NA	19.0909 U	10.2564 U	11.3636 U	17.8571 U	10.4545 U	131.2500 U	70.0000 U
Phenanthrene	mg/kg oc	480	100		0.9545	1.3108	0.9643	NA	1.1818	0.4872	0.7727	6.3571	0.4091 U	5.1250 U	2.7667 U
Anthracene	mg/kg oc	1200	220		0.3636 U	1.2838 U	0.6071	NA	3.4545	0.4103 U	0.4545 U	0.8571	0.4091 U	5.1250 U	2.7667 U
2-Methylnaphthalene	mg/kg oc	64	38		0.3636 U	1.2838 U	0.4286 U	NA	0.7727	0.4103 U	0.4545 U	0.7143 U	0.4091 U	5.1250 U	2.7667 U
Total HPAHs	mg/kg oc	5300	960		13.2955	16.0135	24.8571	NA	67.4091	8.6410	7.3182	40.4286	4.0909 U	51.2500 U	27.6667 U
Fluoranthrene	mg/kg oc	1200	160		2.5	2.7027	3.2143	NA	15	1.4615	1.2273	12.1429	0.4091 U	5.1250 U	2.7667 U
Pyrene	mg/kg oc	1400	1000		3.1818	2.7027	6.4286	NA	14.0909	1.4615	1.0909	11.4286	0.4091 U	5.1250 U	2.7667 U
Benzo(a)anthracene	mg/kg oc	270	110		1.0227	1.2838 U	2.8571	NA	6.8182	0.6923	0.5	2.3571	0.4091 U	5.1250 U	2.7667 U
Chrysene	mg/kg oc	460	110		1.2955	1.2838 U	3.9286	NA	6.8182	0.9231	0.7273	4.5714	0.4091 U	5.1250 U	2.7667 U
Benzo(b)fluoranthene	mg/kg oc	-	-		1.8864	1.6216	2.7500	NA	5.9091	1.3846	1	3.8571	0.4091 U	5.1250 U	2.7667 U
Benzo(k)fluoranthene	mg/kg oc	-	-		0.4091	1.2838 U	0.75	NA	5	0.4103 U	0.4545 U	1.1429	0.4091 U	5.1250 U	2.7667 U
Total Benzofluoranthenes	mg/kg oc	450	230		2.2955	2.9054	3.5	NA	10.9091	1.7949	1.4545	5	0.8182 U	10.2500 U	5.5333 U
Benzo(a)pyrene	mg/kg oc	210	99		1.1364	1.2838 U	2.4643	NA	5.9091	0.7949	0.6364	1.7857	0.4091 U	5.1250 U	2.7667 U
Indeno(1,2,3-cd)pyrene	mg/kg oc	88	34		0.6364	1.2838 U	0.8929	NA	2.9091	0.4872	0.4545 U	1.0714	0.4091 U	5.1250 U	2.7667 U
Dibenzo(a,h)anthracene	mg/kg oc	33	12		0.3636 U	1.2838 U	0.4286 U	NA	1.1818	0.4103 U	0.4545 U	0.7143 U	0.4091 U	5.1250 U	2.7667 U
Benzo(g,h,i)perylene	mg/kg oc	78	31		0.8636	1.2838 U	1.1429	NA	3.7727	0.6154	0.7727 U	1.3571	0.4091 U	5.1250 U	2.7667 U
CONVENTIONALS															
Total Organic Carbon	%	-	-		4.4	0.74	2.8	NA	2.2	3.9	2.2	1.4	2.2	0.16	0.3
Total Solids	%	-	-		37.7	67.8	54.9	NA	32.9	38.1	69.2	61.5	71.1	79.8	76.6
Total Volatile Solids	%	-	-		16.3	3.6	13.5	NA	21.8	23.2	9.6	15.5	4.8	1.22	1.3
Total Sulfides	mg/kg	-	-		115	2.95 U	3.64 U	NA	32.5	415	2.89 U	5.37	2.81 U	2.5 U	2.5 U
Ammonia	mg/kg	-	-		37	0.7 U	0.9 U	NA	1.5 U	29	13	3.1	0.7 U	4.3	11
Grain Size (fines)	%	-	-		47.8	23.2	18.0	NA	41.9	26.3	17.1	20.6	31.4	61.5	81.0

Notes:

- No comparative value established.
[1] Ecology screening concentration for sediments applicable to the sum of the diesel range organics and lube oil range organics results.
[2] All results normalized to total organic carbon.
[3] Sample consists of a composite of 1/3 SD26 and 2/3 SD27 prepared on 10/27/09 and analyzed on 11/5/09.
CSL Cleanup screening level.
dw Dry weight.
ft Feet.
HPAHs High molecular weight polynuclear aromatic hydrocarbons.
J Analyte was detected; the reported concentration should be considered an estimate.
LPAHs Low molecular weight polynuclear aromatic hydrocarbons.
mg/kg Milligrams per kilogram.
NA Not analyzed.
oc Organic carbon.
RL Remedial level established in the RI/FS Work Plan.
SMS Sediment Management Standards (WAC173-204-320 Table I).
U Analyte not detected above given practical quantitation limit.
Exceeds screening level.

Table 12. Piling Sediment Sample Results Compared to AET Values

PARAMETERS	Units	Dry Weight Analogs of SMS Criteria LAET	Source[1]	2AET	Source[1]	Sediment Sample No.	SD25	SD26	SD27	SD26/27	SD28	SD29	SD30	SD30 (dup)	SD31	RF01	RF02
						Sample Depth (ft):	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
						Date Sampled:	9/28/09	9/28/09	9/28/09	9/28/2009[3]	9/28/09	9/28/09	9/28/09	9/28/09	9/28/09	9/30/09	9/30/09
TOTAL PETROLEUM HYDROCARBONS																	
Diesel Range Organics	mg/kg dw	100[2]	-	-	-		68 U	94 J	37 J	63 U	37	87	50 J	77 J	17 U	31 U	32 U
Lube Oil Range Organics	mg/kg dw	100[2]	-	-	-		490	37	320	320	99	330	320	370	81	62 U	63 U
POLYNUCLEAR AROMATIC HYDROCARBONS																	
Total LPAHs	mg/kg dw	5.20	LAET-O/M	5.20	2LAET-O/M		0.1366	0.0667	0.117	NA	0.191	0.115	0.077	0.151	0.063 U	0.0574 U	0.0581 U
Naphthalene	mg/kg dw	2.10	LAET-O/M	2.10	2LAET-O/M		0.016 U	0.0095 U	0.012 U	NA	0.017	0.016 U	0.01 U	0.01 U	0.009 U	0.0082 U	0.0083 U
Acenaphthylene	mg/kg dw	1.30	LAET-A/B	1.30	2LAET-A/B		0.016 U	0.0095 U	0.025	NA	0.017 U	0.016 U	0.01 U	0.01 U	0.009 U	0.0082 U	0.0083 U
Acenaphthene	mg/kg dw	0.50	LAET-O/M	0.50	2LAET-O/M		0.0146 U	0.0095 U	0.012 U	NA	0.017	0.016 U	0.01 U	0.01 U	0.009 U	0.0082 U	0.0083 U
Fluorene	mg/kg dw	0.54	LAET-O/M	0.54	2LAET-O/M		0.016 U	0.0095 U	0.012 U	NA	0.021	0.016 U	0.01 U	0.01 U	0.009 U	0.0082 U	0.0083 U
Pentachlorophenol	mg/kg dw	0.36	LAET-A	0.69	2LAET-B		*0.40 U*	0.24 U	0.31 U	NA	*0.42 U*	*0.40 U*	0.25 U	0.25 U	0.23 U	0.21 U	0.21 U
Phenanthrene	mg/kg dw	1.50	LAET-O/M	1.50	2LAET-O/M		0.042	0.0097	0.027	NA	0.026	0.019	0.017	0.089	0.009 U	0.0082 U	0.0083 U
Anthracene	mg/kg dw	0.96	LAET-O/M	0.96	2LAET-O/M		0.016 U	0.0095 U	0.017	NA	0.076	0.016 U	0.01 U	0.012	0.009 U	0.0082 U	0.0083 U
2-Methylnaphthalene	mg/kg dw	0.67	LAET-O/M	0.67	2LAET-O/M		0.016 U	0.0095 U	0.012 U	NA	0.017	0.016 U	0.01 U	0.01 U	0.009 U	0.0082 U	0.0083 U
Total HPAHs	mg/kg dw	12.00	LAET-M	17.00	2LAET-O		0.585	0.1185	0.696	NA	1.483	0.337	0.161	0.566	0.09 U	0.082 U	0.083 U
Fluoranthrene	mg/kg dw	1.70	LAET-M	2.50	2LAET-O		0.11	0.02	0.09	NA	0.33	0.057	0.027	0.17	0.009 U	0.0082 U	0.0083 U
Pyrene	mg/kg dw	2.60	LAET-M	3.30	2LAET-O		0.14	0.02	0.18	NA	0.31	0.057	0.024	0.16	0.009 U	0.0082 U	0.0083 U
Benzo(a)anthracene	mg/kg dw	1.30	LAET-M	1.60	2LAET-O		0.045	0.0095 U	0.08	NA	0.15	0.027	0.011	0.033	0.009 U	0.0082 U	0.0083 U
Chrysene	mg/kg dw	1.40	LAET-M	2.80	2LAET-O		0.057	0.0095 U	0.11	NA	0.15	0.036	0.016	0.064	0.009 U	0.0082 U	0.0083 U
Benzo(b)fluoranthene	mg/kg dw	-	-	-	-		0.083	0.0120	0.077	NA	0.13	0.054	0.022	0.054	0.009 U	0.0082 U	0.0083 U
Benzo(k)fluoranthene	mg/kg dw	-	-	-	-		0.018	0.0095 U	0.021	NA	0.11	0.016 U	0.01 U	0.016	0.009 U	0.0082 U	0.0083 U
Total Benzofluoranthenes	mg/kg dw	3.20	LAET-M	3.60	2LAET-O		0.101	0.0215	0.098	NA	0.24	0.07	0.032	0.07	0.018 U	0.0164 U	0.0166 U
Benzo(a)pyrene	mg/kg dw	1.60	LAET-O/M	1.60	2LAET-O/M		0.05	0.0095 U	0.069	NA	0.13	0.031	0.014	0.025	0.009 U	0.0082 U	0.0083 U
Indeno(1,2,3-cd)pyrene	mg/kg dw	0.60	LAET-M	0.69	2LAET-O		0.028	0.0095 U	0.025	NA	0.064	0.019	0.01 U	0.015	0.009 U	0.0082 U	0.0083 U
Dibenzo(a,h)anthracene	mg/kg dw	0.23	LAET-O/M	0.23	2LAET-O/M		0.016 U	0.0095 U	0.012 U	NA	0.026	0.016 U	0.01 U	0.01 U	0.009 U	0.0082 U	0.0083 U
Benzo(g,h,i)perylene	mg/kg dw	0.67	LAET-M	0.72	2LAET-O/M		0.038	0.0095 U	0.032	NA	0.083	0.024	0.017 U	0.019	0.009 U	0.0082 U	0.0083 U
CONVENTIONALS																	
Total Organic Carbon	%	-	-	-	-		4.4	0.74	2.8	NA	2.2	3.9	2.2	1.4	2.2	0.16	0.3
Total Solids	%	-	-	-	-		37.7	67.8	54.9	NA	32.9	38.1	69.2	61.5	71.1	79.8	76.6
Total Volatile Solids	%	-	-	-	-		16.3	3.6	13.5	NA	21.8	23.2	9.6	15.5	4.8	1.22	1.3
Total Sulfides	mg/kg dw	-	-	-	-		115	2.95 U	3.64 U	NA	32.5	415	2.89 U	5.37	2.81 U	2.5 U	2.5 U
Ammonia	mg/kg dw	-	-	-	-		37	0.7 U	0.9 U	NA	1.5 U	29	13	3.1	0.7 U	4.3	11
Grain Size (fines)	%	-	-	-	-		47.8	23.2	18.0	NA	41.9	26.3	17.1	20.6	31.4	61.5	81.0

Notes:

- No comparative value established.
  Source: 1988 Update and Evaluation of Puget Sound AET, prepared for EPA by Barrick, et.al. 1988, unless otherwise noted. The code
[1] represents the type of values (e.g. , LAET) and the type of test organism that set the value.
[2] Ecology screening concentration for sediments applicable to the sum of the diesel range organics and lube oil range organics results.
[3] Sample consists of a composite of 1/3 SD26 and 2/3 SD27 prepared on 10/27/09 and analyzed on 11/5/09.

AET Puget Sound Apparent Effects Threshold.
dw Dry weight.
ft Feet.
HPAHs High molecular weight polynuclear aromatic hydrocarbons.
italics Reporting limit exceeds screening level.
J Analyte was detected; the reported concentration should be considered an estimate.
LPAHs Low molecular weight polynuclear aromatic hydrocarbons.
mg/kg Milligrams per kilogram.
NA Not analyzed.
SMS Sediment Management Standrads.
U Analyte not detected above given practical quantitation limit.
LAET Lowest Apparent Effects Threshold.
2LAET Second Lowest Apparent Effects Threshold.
A Amphipod mortality.
O Oyster larval abnormaility.
B Benthic abundance.
M Microtox luminescence.
Exceeds screening level.

APPENDIX A

Photos

Photo 1. Area A prior to construction during the Phase II Rail Spur Investigation looking northeast.

Photo 2. Area A after clearing and grading just prior to start of remediation looking southwest.

Photo 3. Excavating Area A looking southeast.

Photo 4. Entire excavation open after extra excavation overseen by Ecology has been completed. Covered stockpiles of segregated excavated material from Area A can be seen to the south in the background.

Photo 5. Mixing ORC with clean imported backfill material looking northwest.

Photo 6. Backfilling Area A excavation looking northwest. Suitable re-usable onsite soil on the bottom (darker) and clean imported material on the top (lighter).

Photo 7. Compacting backfill material looking south towards the Capitol Bulding.

Photo 8. Area A looking southwest completely backfilled and restored.

Photo 9. Area B looking south prior to construction.

Photo 10. Excavation at Area B looking east. Large timbers noted throughout excavation.

Photo 11. Excavating additional material at Area B looking east.

Photo 12. Backfilled Area B to the west and additional excavation to the east.

Photo 13. Area C prior to construction looking south along the rail spur.

Photo 14. Area C looking north after rail removal, excavation, and geotextile marker installed.

Photo 15. Former wood burner foundation looking north at Area D prior to construction.

Photo 16. Area D after clearing looking east.

Photo 17. Excavating Area D during low tide looking south.

Photo 18. Additional excavation at Area D looking west.

Photo 19. Compacting Area D after additional excavation, looking northeast.

Photo 20. Remediation completed at Area D looking east.

Photo 21. Pilings along shoreline prior to construction, looking northwest.

Photo 22. Pilings removed with the vibratory extractor, looking west.

Photo 23. Pilings cut two feet below mudline with a chainsaw, looking north.

Photo 24. Shoreline looking northwest after pilings have been removed.

Photo 25. Area E looking northwest after debris screening.

Photo 26. Flume during exploratory excavation showing flow stopped.

Photo 27. Exploratory excavation for flume.

Photo 28. Flume flowing again at same rate four days later after concrete was placed in the pit in Photo 27.

APPENDIX B

Chemical Laboratory Results

Parametrix ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

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TECHNICAL MEMORANDUM

Date:	August 23, 2010
To:	Project File
From:	Annika Deutsch
Subject:	Quality Assurance/Quality Control Review for West Bay Interim Action Soil Data
cc:	David Dinkuhn
Project Number:	235-1577-024 (04/04)
Project Name:	West Bay Interim Action Soil Data Validation Revision No. 1

INTRODUCTION

This technical memorandum summarizes the results of an internal quality assurance/quality control (QA/QC) review of analytical results for soil samples collected between August 12 and November 2, 2009. Eighty-eight soil samples (including five field duplicates) were submitted to OnSite Environmental, Inc., (Redmond, WA) for analysis. Some samples were sent to Pace Analytical Services, Inc., (Minneapolis, MN) for dioxin analysis.

All soil samples were analyzed for percent moisture and one or more of the following: dioxins; benzene, toluene, ethylbenzene, and xylenes (BTEX); diesel- and lube oil-range hydrocarbons; gasoline; volatile organic compounds (VOCs); semivolatile organic compounds (SVOCs); full list or carcinogenic polycyclic aromatic hydrocarbons (PAHs); lead; priority pollutant metals; toxicity characteristic leaching procedure (TCLP) lead; total organic carbon; total solids; total volatile solids; total sulfides; ammonia; and grain size. Fifteen samples were also collected for TCLP metals but were placed on hold and not analyzed. A summary of samples and analyses is provided in Table 1.

Final laboratory data were submitted to Parametrix via a Tier II-type data report (OnSite Laboratory Reference Numbers 0908-098, 0908-204, 0908-205, 0908-211, 0908-217, 0909-004, 0909-025, 0909-122, 0909-148 and 148B, 0909-149, 0909-249, 0910-022, 0910-035; Pace Laboratory Reference Numbers 10114088 and 10112776). All data and analytical QC elements were reviewed against laboratory and method QC criteria, and qualifiers were applied where judged appropriate.

DATA REVIEW SUMMARY

Analytical Methods and Holding Times

All analyses requested on the COC were conducted. All samples collected were prepared and analyzed using standard methods. All method holding times were met.

Blanks

No laboratory method blank contamination was observed, with the exception of those analyzed for dioxins. There were dioxins detected in each method blank associated with the following laboratory reports: 0910-035; 0909-122; 0909-148; 0909-149. Sample detections that were less than five times the method blank detection were

qualified as estimated due to blank contamination "BJ" (as shown in Table 2). No other samples were qualified based on this blank contamination.

Per the Final RI/FS Work Plan, no trip blanks were associated with these soil samples. Additionally, disposable collection equipment was used; therefore, no rinsate blanks were required.

Field Duplicates

A total of five (5) field duplicates were collected for 83 soil samples. The Final RI/FS Work Plan required 1 in 20 field duplicates; therefore, this requirement was met. For these soil samples, a 50% relative percent difference (RPD) was used as an initial check. All field duplicate RPDs were below 50% with the exception of all but one detected PAHs and ammonia in sample WB-SO-SD30-0005 and its duplicate. These high RPDs are likely due to natural heterogeneity in the soil, and no results were qualified as a result.

Additional Analytical QC Results

In reports 0908-211 and -205, benzo(a)pyrene was recovered at slightly above control limits in the Spike Blank (SB) and SB Duplicate (SBD). All samples were non-detect, with the exception of WB-SD-BSP04-0000. This one detection was qualified as estimated "J", and no other samples were qualified.

The laboratory duplicate RPD was slightly high for selenium in 0909-148B and lead in 0909-217 and 0909-004. All other QC results were acceptable; therefore, no selenium or lead data were qualified as a result.

All other analytical QC results were in control, indicating acceptable analytical accuracy and precision.

Laboratory Qualified Data

Some diesel-range hydrocarbons in lab reports 0908-217 and 0909-249 were qualified "N" by the laboratory, indicating that the lube oil-range hydrocarbons were interfering with the diesel-range result. These results have been qualified as estimated "J" as a result and are indicated in Table 2.

Pace Analytical also qualified some dioxin results as estimated "J". These results are not included in the Table 2 but are considered to be estimates.

Table 2 summarizes all data qualified based on this review (i.e., does not include laboratory qualified data).

CONCLUSION

All samples were analyzed within holding times, and appropriate standard methods were used. Some laboratory method blank contamination was observed for dioxin analyses. Analytical accuracy and precision were determined to be generally acceptable based on this review. Field duplicate results were acceptable considering the heterogeneity of soil samples. All data reported should be considered valid as qualified and acceptable for further use.

Table 1. West Bay Interim Action Summary of Samples and Analyses

					Analyses																			
Report #	**Sample #**	**Date**	**Time**	**Matrix**	**% Moisture**	**Dioxins**	**Gx**	**BTEX**	**Dx**	**Lead**	**VOCs**	**SVOCs**	**PAHs**	**cPAHs**	**PCP**	**PP Metals**	**TCLP Metals**	**TCLP Lead**	**TOC**	**TS**	**Total Sulfides**	**Ammonia**	**Grain Size**	**TVS**
0910-035	WB-SO-DSW08-0010	10/2/2009	755	soil	x	x																		
0910-035	WB-SO-DSW09-0005	10/2/2009	825	soil	x	x																		
0908-211	WB-SO-ASW04-0070	8/27/2009	1010	soil	x			x	x	x				x										
0908-211	WB-SO-ABT02-0100	8/27/2009	1040	soil	x			x	x	x				x										
0908-211	WB-SO-ABT03-0100	8/27/2009	1600	soil	x			x	x	x				x										
0908-211	WB-SO-ASW05-0065	8/27/2009	1645	soil	x			x	x	x				x										
0909-025	WB-SO-BSW05-0030	9/1/2009	1330	soil	x			x	x	x				x										
0909-025	WB-SO-BSW06-0030	9/1/2009	1410	soil	x			x	x	x				x										
0909-025	WB-SO-BBT02-0050	9/1/2009	1435	soil	x			x	x	x				x										
0908-098	WB-SO-CB01-0050	8/12/2009	750	soil	x		x		x		x	x				x								
0908-098	WB-SO-CB02-0050	8/12/2009	800	soil	x		x		x		x	x				x								
0908-098	WB-SO-CB03-0050	8/12/2009	810	soil	x		x		x		x	x				x								
0908-098	WB-SO-CB04-0030	8/12/2009	905	soil	x		x		x		x	x				x								
0908-217	WB-SO-ASP01-0005	8/28/2009	900	soil	x			x	x	x				x										
0908-217	WB-SO-ASP02-0005	8/28/2009	910	soil	x			x	x	x				x										
0908-217	WB-SO-ASP03-0005	8/28/2009	920	soil	x			x	x	x				x										
0908-217	WB-SO-ASP04-0005	8/28/2009	930	soil	x			x	x	x				x										
0908-217	WB-SO-ASP05-0005	8/28/2009	940	soil	x			x	x	x				x										
0908-217	WB-SO-ASP06-0005	8/28/2009	950	soil	x			x	x	x				x										
0908-217	WB-SO-ASP07-0005	8/28/2009	1000	soil	x			x	x	x				x										
0908-217	WB-SO-ASP08-0005	8/28/2009	1010	soil	x			x	x	x				x										
0908-217	**WB-SO-ASP08-1005**	8/28/2009	1015	soil	x			x	x	x				x										
0908-217	WB-SO-ASP09-0005	8/28/2009	1020	soil	x			x	x	x				x										
0908-217	WB-SO-ASP10-0005	8/28/2009	1030	soil	x			x	x	x				x										
0908-217	WB-SO-ASP11-0005	8/28/2009	1040	soil	x			x	x	x				x										
0908-217	WB-SO-ASP12-0005	8/28/2009	1050	soil	x			x	x	x				x										
0908-217	WB-SO-CSP01-0005	8/28/2009	1210	soil	x				x					x										
0908-217	WB-SO-CSP02-0005	8/28/2009	1220	soil	x				x					x										
0908-217	WB-SO-ASW06-0060	8/28/2009	820	soil	x			x	x	x				x										
0908-217	WB-SO-ABT04-0100	8/28/2009	1050	soil	x			x	x	x				x										
0908-217	WB-SO-ASW07-0070	8/28/2009	1250	soil	x			x	x	x				x										
0908-217	**WB-SO-ASW07-1070**	8/28/2009	1250	soil	x			x	x	x				x										
0909-122	WB-SO-DSW01-0010	9/14/2009	849	soil	x	x										x								
0909-122	WB-SO-DSW02-0010	9/14/2009	928	soil	x	x										x								
0909-122	WB-SO-DBT01-0050	9/14/2009	955	soil	x	x										x								
0909-122	**WB-SO-DBT01-1050**	9/14/2009	1012	soil	x	x										x								
0909-122	WB-SO-DSW03-0005	9/14/2009	1204	soil	x	x										x								
0909-122	WB-SO-DSW04-0005	9/15/2009	838	soil	x	x										x								
0908-204	WB-SO-ASW01-0070	8/26/2009	1405	soil	x			x	x	x				x										
0908-204	WB-SO-ASW02-0070	8/26/2009	1407	soil	x			x	x	x				x										
0908-204	WB-SO-ABT01-0100	8/26/2009	1410	soil	x			x	x	x				x										
0908-204	WB-SO-BSW01-0020	8/26/2009	1620	soil	x			x	x	x				x										
0908-204	WB-SO-BSW02-0020	8/26/2009	1623	soil	x			x	x	x				x										
0908-204	WB-SO-BSW03-0020	8/26/2009	1626	soil	x			x	x	x				x										
0908-204	WB-SO-BSW04-0020	8/26/2009	1630	soil	x			x	x	x				x										
0908-204	WB-SO-BBT01-0045	8/26/2009	1634	soil	x			x	x	x				x										
0908-204	**WB-SO-BBT01-1045**	8/26/2009	1635	soil	x			x	x	x				x										
0908-204	WB-SO-ASW03-0050	8/27/2009	905	soil	x			x	x	x				x										
0909-148	WB-SO-DBT02-0050	9/15/2009	956	soil	x	x										x-148B								
0909-148	WB-SO-DBT03-0030	9/15/2009	1300	soil	x	x										x-148B								
0909-148	WB-SO-DSW05-0005	9/15/2009	1305	soil	x	x										x-148B								
0909-148	WB-SO-DSW06-0010	9/16/2009	900	soil	x	x										x-148B								

					Analyses																		
Report #	**Sample #**	**Date**	**Time**	**Matrix**	**% Moisture**	**Dioxins**	**Gx**	**BTEX**	**Dx**	**Lead**	**VOCs**	**SVOCs**	**PAHs**	**cPAHs**	**PCP**	**PP Metals**	**TCLP Metals**	**TCLP Lead**	**TOC**	**TS**	**Total Sulfides**	**Ammonia**	**Grain Size**	**TVS**
0909-148	WB-SO-DSW07-0005	9/16/2009	910	soil	x	x										x-148B								
0909-148	WB-SO-DBT04-0045	9/16/2009	920	soil	x	x										x-148B								
0908-205	WB-SO-BSP01-0000	8/26/2009	1530	soil	x			x	x	x				x										
0908-205	WB-SO-BSP02-0000	8/26/2009	1532	soil	x			x	x	x				x										
0908-205	WB-SO-BSP03-0000	8/26/2009	1536	soil	x			x	x	x				x										
0908-205	WB-SO-BSP04-0000	8/26/2009	1539	soil	x			x	x	x				x										
0908-205	WB-SO-BSP05-0000	8/26/2009	1542	soil	x			x	x	x				x										
0908-205	WB-SO-BSP06-0000	8/26/2009	1548	soil	x			x	x	x				x										
0909-004	WB-SO-BSW032-0020	9/1/2009	900	soil	x			x	x	x				x										
0909-149	WB-SO-DSP01-0005	9/16/2009	1040	soil	x	x										x	hold							
0909-149	WB-SO-DSP02-0005	9/16/2009	1045	soil	x	x										x	hold							
0909-149	WB-SO-DSP03-0005	9/16/2009	1050	soil	x	x										x	hold							
0909-149	WB-SO-DSP04-0005	9/16/2009	1055	soil	x	x										x	hold							
0909-149	WB-SO-DSP05-0005	9/16/2009	1100	soil	x	x										x	hold							
0909-149	WB-SO-DSP06-0005	9/16/2009	1110	soil	x	x										x	hold							
0909-149	WB-SO-DSP07-0005	9/16/2009	1115	soil	x	x										x	hold							
0909-149	WB-SO-DSP08-0005	9/16/2009	1120	soil	x	x										x	hold							
0909-149	WB-SO-DSP09-0005	9/16/2009	1125	soil	x	x										x	hold							
0909-149	WB-SO-DSP10-0005	9/16/2009	1130	soil	x	x										x	hold							
0909-149	WB-SO-DSP11-0005	9/16/2009	1145	soil	x	x										x	hold							
0909-149	WB-SO-DSP12-0005	9/16/2009	1150	soil	x	x										x	hold							
0909-149	WB-SO-DSP13-0005	9/16/2009	1155	soil	x	x										x	hold							
0909-149	WB-SO-DSP14-0005	9/16/2009	1200	soil	x	x										x	hold	x						
0909-149	WB-SO-DSP15-0005	9/16/2009	1205	soil	x	x										x	hold							
0909-249	WB-SO-SD25-0005	9/28/2009	815	soil	x				x				x		x				x	x	x	x	x	x
0909-249	WB-SO-SD26-0005	9/28/2009	945	soil	x				x				x		x				x	x	x	x	x	x
0909-249	WB-SO-SD27-0005	9/28/2009	1000	soil	x				x				x		x				x	x	x	x	x	x
0909-249	WB-SO-SD28-0005	9/28/2009	830	soil	x				x				x		x				x	x	x	x	x	x
0909-249	WB-SO-SD29-0005	9/28/2009	845	soil	x				x				x		x				x	x	x	x	x	x
0909-249	WB-SO-SD30-0005	9/28/2009	900	soil	x				x				x		x				x	x	x	x	x	x
0909-249	**WB-SO-SD30-1005**	9/28/2009	915	soil	x				x				x		x				x	x	x	x	x	x
0909-249	WB-SO-SD31-0005	9/28/2009	930	soil	x				x				x		x				x	x	x	x	x	x
0910-022	WB-SD-RF01-0005	9/30/2009	1300	soil	x				x						x				x	x	x	x	x	x
0910-022	WB-SD-RF02-0005	9/30/2009	1400	soil	x				x						x				x	x	x	x	x	x

Bold indicates a field duplicate

Table 2. West Bay Interim Action Qualified Soil Data

Report	Sample ID	Analyte	Qualifier	Reason
0910-035	WB-SO-DSW08-0010	2,3,7,8-TCDF	BJ	Method blank contamination
	WB-SO-DSW09-0005	Total TCDF	BJ	Method blank contamination
		2,3,4,7,8-PeCDF	BJ	Method blank contamination
		Total PeCDF	BJ	Method blank contamination
0908-205	WB-SO-BSP04-0000	Benzo(a)pyrene	J	SB/SBD out of control limits
0909-249	WB-SO-SD26-0005	Diesel	J	Lube oil-interference
	WB-SO-SD27-0005	Diesel	J	Lube oil-interference
	WB-SO-SD30-0005	Diesel	J	Lube oil-interference
	WB-SO-SD30-1005	Diesel	J	Lube oil-interference
0908-211	WB-SO-ASW04-0070	BTEX	UJH	Holding time exceedance
	WB-SO-ABT02-0100	BTEX	UJH	Holding time exceedance
	WB-SO-ABT03-0100	BTEX	UJH	Holding time exceedance
	WB-SO-ASW05-0065	BTEX	UJH	Holding time exceedance
0908-217	WB-SO-ASP01-0005	Diesel	J	Lube oil-interference
	WB-SO-ASP02-0005	Diesel	J	Lube oil-interference
	WB-SO-ASP04-0005	Diesel	J	Lube oil-interference
	WB-SO-ASP06-0005	Diesel	J	Lube oil-interference
	WB-SO-ASP07-0005	Diesel	J	Lube oil-interference
	WB-SO-ASP08-0005	Diesel	J	Lube oil-interference
	WB-SO-ASP01-0005	BTEX	UJH	Holding time exceedance
	WB-SO-ASP02-0005	BTEX	UJH	Holding time exceedance
	WB-SO-ASP03-0005	BTEX	UJH	Holding time exceedance
	WB-SO-ASP04-0005	BTEX	UJH	Holding time exceedance
	WB-SO-ASP05-0005	BTEX	UJH	Holding time exceedance
	WB-SO-ASP06-0005	BTEX	UJH	Holding time exceedance
	WB-SO-ASP07-0005	Benzene	UJH	Holding time exceedance
		Toluene	UJH	Holding time exceedance
		Ethylbenzene	JH	Holding time exceedance
		m,p-Xylene	JH	Holding time exceedance
		o-Xylene	UJH	Holding time exceedance
	WB-SO-ASP08-0005	BTEX	UJH	Holding time exceedance
	WB-SO-ASP08-1005	BTEX	UJH	Holding time exceedance
	WB-SO-ASP09-0005	Benzene	JH	Holding time exceedance
		Toluene	UJH	Holding time exceedance
		Ethylbenzene	UJH	Holding time exceedance
		m,p-Xylene	UJH	Holding time exceedance
		o-Xylene	JH	Holding time exceedance
	WB-SO-ASP10-0005	BTEX	UJH	Holding time exceedance
	WB-SO-ASP11-0005	BTEX	UJH	Holding time exceedance
	WB-SO-ASP12-0005	BTEX	UJH	Holding time exceedance
	WB-SO-ASW06-0060	BTEX	UJH	Holding time exceedance
	WB-SO-ABT04-0100	BTEX	UJH	Holding time exceedance
	WB-SO-ASW07-0070	BTEX	UJH	Holding time exceedance
	WB-SO-ASW07-1070	BTEX	UJH	Holding time exceedance

BJ = Analyte was detected; the reported concentration should be considered an estimate due to method blank contamination

J = Analyte was detected; the reported concentration should be considered an estimate

JH = Analyte was detected; the reported concentration should be considered an estimate due to exceeded method holding time

UJH = Analyte was not detected at the PQL or MRL. Concentration reported should be considered an estimate due to exceeded method holding time

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 18, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0908-098

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on August 13, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

Case Narrative

Samples were collected on August 12, 2009, and received by the laboratory on August 13, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH-Gx and Volatiles EPA 8260B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

NWTPH-Gx

Date Extracted:	8-14-09					
Date Analyzed:	8-14-09					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**WB-SO-CB01-0050**			**WB-SO-CB02-0050**		
Lab ID:	08-098-01			08-098-02		
	Result	Flags	PQL	**Result**	Flags	PQL
TPH-Gas	**ND**		7.1	**ND**		5.4
Surrogate Recovery:						
Fluorobenzene	91%			97%		

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

NWTPH-Gx

Date Extracted: 8-14-09
Date Analyzed: 8-14-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-CB03-0050**			**WB-SO-CB04-0030**		
Lab ID:	08-098-03			08-098-04		
	Result	Flags	PQL	**Result**	Flags	PQL
TPH-Gas	**ND**		5.4	**ND**		11
Surrogate Recovery:						
Fluorobenzene	104%			101%		

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

NWTPH-Gx
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-14-09
Date Analyzed: 8-14-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0814S1

	Result	Flags	PQL
TPH-Gas	**ND**		5.0

Surrogate Recovery:
Fluorobenzene 94%

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

NWTPH-Gx
DUPLICATE QUALITY CONTROL

Date Extracted: 8-14-09
Date Analyzed: 8-14-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-105-01 **Original**	08-105-01 **Duplicate**	**RPD**	**Flags**
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	113%	109%		

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

NWTPH-Dx

Date Extracted: 8-13-09
Date Analyzed: 8-13-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-CB01-0050**	**WB-SO-CB02-0050**	**WB-SO-CB03-0050**
Lab ID:	08-098-01	08-098-02	08-098-03
Diesel Range:	**ND**	**ND**	**ND**
PQL:	30	65	29
Identification:	---	---	---
Lube Oil Range:	**ND**	**880**	**77**
PQL:	60	59	59
Identification:	---	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	108%	108%	82%
Flags:	Y	Y,U1	Y

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

NWTPH-Dx

Date Extracted:	8-13-09
Date Analyzed:	8-13-09
Matrix:	Soil
Units:	mg/kg (ppm)
Client ID:	**WB-SO-CB04-0030**
Lab ID:	08-098-04
Diesel Range:	**75**
PQL:	28
Identification:	Diesel Fuel#2
Lube Oil Range:	**130**
PQL:	55
Identification:	Lube Oil
Surrogate Recovery	
o-Terphenyl:	77%
Flags:	Y

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-13-09
Date Analyzed:	8-13-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0813S2
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	91%
Flags:	Y

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 8-13-09
Date Analyzed: 8-13-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-051-10	08-051-10 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	97%	88%
Flags:	Y	Y

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted: 8-13-09
Date Analyzed: 8-13-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-098-01
Client ID: WB-SO-CB01-0050

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0012
Chloromethane	ND		0.0058
Vinyl Chloride	ND		0.0012
Bromomethane	ND		0.0012
Chloroethane	ND		0.0058
Trichlorofluoromethane	ND		0.0012
1,1-Dichloroethene	ND		0.0012
Acetone	0.047		0.0058
Iodomethane	ND		0.0058
Carbon Disulfide	0.015		0.0012
Methylene Chloride	ND		0.0058
(trans) 1,2-Dichloroethene	ND		0.0012
Methyl t-Butyl Ether	ND		0.0012
1,1-Dichloroethane	ND		0.0012
Vinyl Acetate	ND		0.0058
2,2-Dichloropropane	ND		0.0012
(cis) 1,2-Dichloroethene	ND		0.0012
2-Butanone	0.0075		0.0058
Bromochloromethane	ND		0.0012
Chloroform	ND		0.0012
1,1,1-Trichloroethane	ND		0.0012
Carbon Tetrachloride	ND		0.0012
1,1-Dichloropropene	ND		0.0012
Benzene	ND		0.0012
1,2-Dichloroethane	ND		0.0012
Trichloroethene	ND		0.0012
1,2-Dichloropropane	ND		0.0012
Dibromomethane	ND		0.0012
Bromodichloromethane	ND		0.0012
2-Chloroethyl Vinyl Ether	ND		0.0058
(cis) 1,3-Dichloropropene	ND		0.0012
Methyl Isobutyl Ketone	ND		0.0058
Toluene	ND		0.0058
(trans) 1,3-Dichloropropene	ND		0.0012

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 08-098-01
Client ID: WB-SO-CB01-0050

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0012
Tetrachloroethene	ND		0.0012
1,3-Dichloropropane	ND		0.0012
2-Hexanone	ND		0.0058
Dibromochloromethane	ND		0.0012
1,2-Dibromoethane	ND		0.0012
Chlorobenzene	ND		0.0012
1,1,1,2-Tetrachloroethane	ND		0.0012
Ethylbenzene	ND		0.0012
m,p-Xylene	ND		0.0023
o-Xylene	ND		0.0012
Styrene	ND		0.0012
Bromoform	ND		0.0012
Isopropylbenzene	ND		0.0012
Bromobenzene	ND		0.0012
1,1,2,2-Tetrachloroethane	ND		0.0012
1,2,3-Trichloropropane	ND		0.0012
n-Propylbenzene	ND		0.0012
2-Chlorotoluene	ND		0.0012
4-Chlorotoluene	ND		0.0012
1,3,5-Trimethylbenzene	ND		0.0012
tert-Butylbenzene	ND		0.0012
1,2,4-Trimethylbenzene	ND		0.0012
sec-Butylbenzene	ND		0.0012
1,3-Dichlorobenzene	ND		0.0012
p-Isopropyltoluene	ND		0.0012
1,4-Dichlorobenzene	ND		0.0012
1,2-Dichlorobenzene	ND		0.0012
n-Butylbenzene	ND		0.0012
1,2-Dibromo-3-chloropropane	ND		0.0058
1,2,4-Trichlorobenzene	ND		0.0012
Hexachlorobutadiene	ND		0.0058
Naphthalene	ND		0.0012
1,2,3-Trichlorobenzene	ND		0.0012

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	102	55-125
Toluene-d8	110	56-127
4-Bromofluorobenzene	98	54-130

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted: 8-13-09
Date Analyzed: 8-13-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-098-02
Client ID: WB-SO-CB02-0050

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.00080
Chloromethane	ND		0.0040
Vinyl Chloride	ND		0.00080
Bromomethane	ND		0.00080
Chloroethane	ND		0.0040
Trichlorofluoromethane	ND		0.00080
1,1-Dichloroethene	ND		0.00080
Acetone	ND		0.0040
Iodomethane	ND		0.0040
Carbon Disulfide	ND		0.00080
Methylene Chloride	ND		0.0040
(trans) 1,2-Dichloroethene	ND		0.00080
Methyl t-Butyl Ether	ND		0.00080
1,1-Dichloroethane	ND		0.00080
Vinyl Acetate	ND		0.0040
2,2-Dichloropropane	ND		0.00080
(cis) 1,2-Dichloroethene	ND		0.00080
2-Butanone	ND		0.0040
Bromochloromethane	ND		0.00080
Chloroform	ND		0.00080
1,1,1-Trichloroethane	ND		0.00080
Carbon Tetrachloride	ND		0.00080
1,1-Dichloropropene	ND		0.00080
Benzene	ND		0.00080
1,2-Dichloroethane	ND		0.00080
Trichloroethene	ND		0.00080
1,2-Dichloropropane	ND		0.00080
Dibromomethane	ND		0.00080
Bromodichloromethane	ND		0.00080
2-Chloroethyl Vinyl Ether	ND		0.0040
(cis) 1,3-Dichloropropene	ND		0.00080
Methyl Isobutyl Ketone	ND		0.0040
Toluene	ND		0.0040
(trans) 1,3-Dichloropropene	ND		0.00080

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 08-098-02
Client ID: WB-SO-CB02-0050

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.00080
Tetrachloroethene	ND		0.00080
1,3-Dichloropropane	ND		0.00080
2-Hexanone	ND		0.0040
Dibromochloromethane	ND		0.00080
1,2-Dibromoethane	ND		0.00080
Chlorobenzene	ND		0.00080
1,1,1,2-Tetrachloroethane	ND		0.00080
Ethylbenzene	ND		0.00080
m,p-Xylene	ND		0.0016
o-Xylene	ND		0.00080
Styrene	ND		0.00080
Bromoform	ND		0.00080
Isopropylbenzene	ND		0.00080
Bromobenzene	ND		0.00080
1,1,2,2-Tetrachloroethane	ND		0.00080
1,2,3-Trichloropropane	ND		0.00080
n-Propylbenzene	ND		0.00080
2-Chlorotoluene	ND		0.00080
4-Chlorotoluene	ND		0.00080
1,3,5-Trimethylbenzene	ND		0.00080
tert-Butylbenzene	ND		0.00080
1,2,4-Trimethylbenzene	ND		0.00080
sec-Butylbenzene	ND		0.00080
1,3-Dichlorobenzene	ND		0.00080
p-Isopropyltoluene	ND		0.00080
1,4-Dichlorobenzene	ND		0.00080
1,2-Dichlorobenzene	ND		0.00080
n-Butylbenzene	ND		0.00080
1,2-Dibromo-3-chloropropane	ND		0.0040
1,2,4-Trichlorobenzene	ND		0.00080
Hexachlorobutadiene	ND		0.0040
Naphthalene	ND		0.00080
1,2,3-Trichlorobenzene	ND		0.00080

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	102	55-125
Toluene-d8	106	56-127
4-Bromofluorobenzene	92	54-130

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted: 8-13-09
Date Analyzed: 8-13-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-098-03
Client ID: WB-SO-CB03-0050

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.00097
Chloromethane	ND		0.0048
Vinyl Chloride	ND		0.00097
Bromomethane	ND		0.00097
Chloroethane	ND		0.0048
Trichlorofluoromethane	ND		0.00097
1,1-Dichloroethene	ND		0.00097
Acetone	0.035		0.0048
Iodomethane	ND		0.0048
Carbon Disulfide	0.0021		0.00097
Methylene Chloride	ND		0.0048
(trans) 1,2-Dichloroethene	ND		0.00097
Methyl t-Butyl Ether	ND		0.00097
1,1-Dichloroethane	ND		0.00097
Vinyl Acetate	ND		0.0048
2,2-Dichloropropane	ND		0.00097
(cis) 1,2-Dichloroethene	ND		0.00097
2-Butanone	ND		0.0048
Bromochloromethane	ND		0.00097
Chloroform	ND		0.00097
1,1,1-Trichloroethane	ND		0.00097
Carbon Tetrachloride	ND		0.00097
1,1-Dichloropropene	ND		0.00097
Benzene	ND		0.00097
1,2-Dichloroethane	ND		0.00097
Trichloroethene	ND		0.00097
1,2-Dichloropropane	ND		0.00097
Dibromomethane	ND		0.00097
Bromodichloromethane	ND		0.00097
2-Chloroethyl Vinyl Ether	ND		0.0048
(cis) 1,3-Dichloropropene	ND		0.00097
Methyl Isobutyl Ketone	ND		0.0048
Toluene	ND		0.0048
(trans) 1,3-Dichloropropene	ND		0.00097

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 08-098-03
Client ID: WB-SO-CB03-0050

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.00097
Tetrachloroethene	ND		0.00097
1,3-Dichloropropane	ND		0.00097
2-Hexanone	ND		0.0048
Dibromochloromethane	ND		0.00097
1,2-Dibromoethane	ND		0.00097
Chlorobenzene	ND		0.00097
1,1,1,2-Tetrachloroethane	ND		0.00097
Ethylbenzene	ND		0.00097
m,p-Xylene	ND		0.0019
o-Xylene	ND		0.00097
Styrene	ND		0.00097
Bromoform	ND		0.00097
Isopropylbenzene	ND		0.00097
Bromobenzene	ND		0.00097
1,1,2,2-Tetrachloroethane	ND		0.00097
1,2,3-Trichloropropane	ND		0.00097
n-Propylbenzene	ND		0.00097
2-Chlorotoluene	ND		0.00097
4-Chlorotoluene	ND		0.00097
1,3,5-Trimethylbenzene	ND		0.00097
tert-Butylbenzene	ND		0.00097
1,2,4-Trimethylbenzene	ND		0.00097
sec-Butylbenzene	ND		0.00097
1,3-Dichlorobenzene	ND		0.00097
p-Isopropyltoluene	ND		0.00097
1,4-Dichlorobenzene	ND		0.00097
1,2-Dichlorobenzene	ND		0.00097
n-Butylbenzene	ND		0.00097
1,2-Dibromo-3-chloropropane	ND		0.0048
1,2,4-Trichlorobenzene	ND		0.00097
Hexachlorobutadiene	ND		0.0048
Naphthalene	ND		0.00097
1,2,3-Trichlorobenzene	ND		0.00097

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	105	55-125
Toluene-d8	110	56-127
4-Bromofluorobenzene	100	54-130

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted: 8-13-09
Date Analyzed: 8-13-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-098-04
Client ID: WB-SO-CB04-0030

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.00084
Chloromethane	ND		0.0042
Vinyl Chloride	ND		0.00084
Bromomethane	ND		0.00084
Chloroethane	ND		0.0042
Trichlorofluoromethane	ND		0.00084
1,1-Dichloroethene	ND		0.00084
Acetone	0.038		0.0042
Iodomethane	ND		0.0042
Carbon Disulfide	ND		0.00084
Methylene Chloride	ND		0.0042
(trans) 1,2-Dichloroethene	ND		0.00084
Methyl t-Butyl Ether	ND		0.00084
1,1-Dichloroethane	ND		0.00084
Vinyl Acetate	ND		0.0042
2,2-Dichloropropane	ND		0.00084
(cis) 1,2-Dichloroethene	ND		0.00084
2-Butanone	ND		0.0042
Bromochloromethane	ND		0.00084
Chloroform	ND		0.00084
1,1,1-Trichloroethane	ND		0.00084
Carbon Tetrachloride	ND		0.00084
1,1-Dichloropropene	ND		0.00084
Benzene	ND		0.00084
1,2-Dichloroethane	ND		0.00084
Trichloroethene	ND		0.00084
1,2-Dichloropropane	ND		0.00084
Dibromomethane	ND		0.00084
Bromodichloromethane	ND		0.00084
2-Chloroethyl Vinyl Ether	ND		0.0042
(cis) 1,3-Dichloropropene	ND		0.00084
Methyl Isobutyl Ketone	ND		0.0042
Toluene	ND		0.0042
(trans) 1,3-Dichloropropene	ND		0.00084

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 08-098-04
Client ID: WB-SO-CB04-0030

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.00084
Tetrachloroethene	ND		0.00084
1,3-Dichloropropane	ND		0.00084
2-Hexanone	ND		0.0042
Dibromochloromethane	ND		0.00084
1,2-Dibromoethane	ND		0.00084
Chlorobenzene	ND		0.00084
1,1,1,2-Tetrachloroethane	ND		0.00084
Ethylbenzene	ND		0.00084
m,p-Xylene	ND		0.0017
o-Xylene	ND		0.00084
Styrene	ND		0.00084
Bromoform	ND		0.00084
Isopropylbenzene	ND		0.00084
Bromobenzene	ND		0.00084
1,1,2,2-Tetrachloroethane	ND		0.00084
1,2,3-Trichloropropane	ND		0.00084
n-Propylbenzene	ND		0.00084
2-Chlorotoluene	ND		0.00084
4-Chlorotoluene	ND		0.00084
1,3,5-Trimethylbenzene	ND		0.00084
tert-Butylbenzene	ND		0.00084
1,2,4-Trimethylbenzene	0.014		0.00084
sec-Butylbenzene	0.0010		0.00084
1,3-Dichlorobenzene	ND		0.00084
p-Isopropyltoluene	0.0065		0.00084
1,4-Dichlorobenzene	ND		0.00084
1,2-Dichlorobenzene	ND		0.00084
n-Butylbenzene	ND		0.00084
1,2-Dibromo-3-chloropropane	ND		0.0042
1,2,4-Trichlorobenzene	ND		0.00084
Hexachlorobutadiene	ND		0.0042
Naphthalene	ND		0.00084
1,2,3-Trichlorobenzene	ND		0.00084

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	106	55-125
Toluene-d8	100	56-127
4-Bromofluorobenzene	97	54-130

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted: 8-13-09
Date Analyzed: 8-13-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0813S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0010
Chloromethane	ND		0.0050
Vinyl Chloride	ND		0.0010
Bromomethane	ND		0.0010
Chloroethane	ND		0.0050
Trichlorofluoromethane	ND		0.0010
1,1-Dichloroethene	ND		0.0010
Acetone	ND		0.0050
Iodomethane	ND		0.0050
Carbon Disulfide	ND		0.0010
Methylene Chloride	ND		0.0050
(trans) 1,2-Dichloroethene	ND		0.0010
Methyl t-Butyl Ether	ND		0.0010
1,1-Dichloroethane	ND		0.0010
Vinyl Acetate	ND		0.0050
2,2-Dichloropropane	ND		0.0010
(cis) 1,2-Dichloroethene	ND		0.0010
2-Butanone	ND		0.0050
Bromochloromethane	ND		0.0010
Chloroform	ND		0.0010
1,1,1-Trichloroethane	ND		0.0010
Carbon Tetrachloride	ND		0.0010
1,1-Dichloropropene	ND		0.0010
Benzene	ND		0.0010
1,2-Dichloroethane	ND		0.0010
Trichloroethene	ND		0.0010
1,2-Dichloropropane	ND		0.0010
Dibromomethane	ND		0.0010
Bromodichloromethane	ND		0.0010
2-Chloroethyl Vinyl Ether	ND		0.0050
(cis) 1,3-Dichloropropene	ND		0.0010
Methyl Isobutyl Ketone	ND		0.0050
Toluene	ND		0.0050
(trans) 1,3-Dichloropropene	ND		0.0010

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB0813S1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0010
Tetrachloroethene	ND		0.0010
1,3-Dichloropropane	ND		0.0010
2-Hexanone	ND		0.0050
Dibromochloromethane	ND		0.0010
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
Ethylbenzene	ND		0.0010
m,p-Xylene	ND		0.0020
o-Xylene	ND		0.0010
Styrene	ND		0.0010
Bromoform	ND		0.0010
Isopropylbenzene	ND		0.0010
Bromobenzene	ND		0.0010
1,1,2,2-Tetrachloroethane	ND		0.0010
1,2,3-Trichloropropane	ND		0.0010
n-Propylbenzene	ND		0.0010
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND		0.0010
1,3,5-Trimethylbenzene	ND		0.0010
tert-Butylbenzene	ND		0.0010
1,2,4-Trimethylbenzene	ND		0.0010
sec-Butylbenzene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
p-Isopropyltoluene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
n-Butylbenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND		0.0050
1,2,4-Trichlorobenzene	ND		0.0010
Hexachlorobutadiene	ND		0.0050
Naphthalene	ND		0.0010
1,2,3-Trichlorobenzene	ND		0.0010

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	104	55-125
Toluene-d8	111	56-127
4-Bromofluorobenzene	101	54-130

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 8-13-09
Date Analyzed: 8-13-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: SB0813S1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	0.0500	0.0438	88	0.0426	85	70-130	
Benzene	0.0500	0.0425	85	0.0429	86	70-128	
Trichloroethene	0.0500	0.0446	89	0.0443	89	70-124	
Toluene	0.0500	0.0446	89	0.0448	90	73-123	
Chlorobenzene	0.0500	0.0461	92	0.0454	91	73-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	3	16	
Benzene	1	15	
Trichloroethene	1	14	
Toluene	0	14	
Chlorobenzene	1	13	

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
page 1 of 2

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CB01-0050**					
Laboratory ID:	08-098-01					
N-Nitrosodimethylamine	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Pyridine	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Phenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Aniline	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroethyl)ether	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2-Chlorophenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
1,3-Dichlorobenzene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
1,4-Dichlorobenzene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Benzyl alcohol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
1,2-Dichlorobenzene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2-Methylphenol (o-Cresol)	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroisopropyl)ether	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
(3+4)-Methylphenol (m,p-Cresol)	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
N-Nitroso-di-n-propylamine	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Hexachloroethane	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Nitrobenzene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Isophorone	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2-Nitrophenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2,4-Dimethylphenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroethoxy)methane	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2,4-Dichlorophenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
1,2,4-Trichlorobenzene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Naphthalene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
4-Chloroaniline	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Hexachlorobutadiene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
4-Chloro-3-methylphenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2-Methylnaphthalene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
1-Methylnaphthalene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Hexachlorocyclopentadiene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2,4,6-Trichlorophenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2,3-Dichloroaniline	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2,4,5-Trichlorophenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2-Chloronaphthalene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2-Nitroaniline	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
1,4-Dinitrobenzene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Dimethylphthalate	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
1,3-Dinitrobenzene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2,6-Dinitrotoluene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
1,2-Dinitrobenzene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Acenaphthylene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CB01-0050**					
Laboratory ID:	08-098-01					
2,4-Dinitrophenol	**ND**	0.20	EPA 8270	8-14-09	8-14-09	
Acenaphthene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
4-Nitrophenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2,4-Dinitrotoluene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Dibenzofuran	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2,3,5,6-Tetrachlorophenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
2,3,4,6-Tetrachlorophenol	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Diethylphthalate	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
4-Chlorophenyl-phenylether	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
4-Nitroaniline	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Fluorene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
4,6-Dinitro-2-methylphenol	**ND**	0.20	EPA 8270	8-14-09	8-14-09	
N-Nitrosodiphenylamine	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
1,2-Diphenylhydrazine	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
4-Bromophenyl-phenylether	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Hexachlorobenzene	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Pentachlorophenol	**ND**	0.20	EPA 8270	8-14-09	8-14-09	
Phenanthrene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Anthracene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Carbazole	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Di-n-butylphthalate	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Fluoranthene	**0.014**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Benzidine	**ND**	0.40	EPA 8270	8-14-09	8-14-09	
Pyrene	**0.0095**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Butylbenzylphthalate	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
bis-2-Ethylhexyladipate	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
3,3'-Dichlorobenzidine	**ND**	0.40	EPA 8270	8-14-09	8-14-09	
Benzo[a]anthracene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Chrysene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
bis(2-Ethylhexyl)phthalate	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Di-n-octylphthalate	**ND**	0.040	EPA 8270	8-14-09	8-14-09	
Benzo[b]fluoranthene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[k]fluoranthene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[a]pyrene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Dibenz[a,h]anthracene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[g,h,i]perylene	**ND**	0.0079	EPA 8270/SIM	8-14-09	8-14-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*57*	*19 - 97*				
Phenol-d6	*67*	*22 - 108*				
Nitrobenzene-d5	*64*	*21 - 106*				
2-Fluorobiphenyl	*65*	*29 - 107*				
2,4,6-Tribromophenol	*73*	*44 - 121*				
Terphenyl-d14	*82*	*37 - 120*				

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
page 1 of 2

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CB02-0050**					
Laboratory ID:	08-098-02					
N-Nitrosodimethylamine	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Pyridine	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Phenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Aniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroethyl)ether	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Chlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,3-Dichlorobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,4-Dichlorobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Benzyl alcohol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,2-Dichlorobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Methylphenol (o-Cresol)	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroisopropyl)ether	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
(3+4)-Methylphenol (m,p-Cresol)	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
N-Nitroso-di-n-propylamine	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Hexachloroethane	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Nitrobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Isophorone	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Nitrophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,4-Dimethylphenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroethoxy)methane	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,4-Dichlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,2,4-Trichlorobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Naphthalene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
4-Chloroaniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Hexachlorobutadiene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
4-Chloro-3-methylphenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Methylnaphthalene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
1-Methylnaphthalene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Hexachlorocyclopentadiene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,4,6-Trichlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,3-Dichloroaniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,4,5-Trichlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Chloronaphthalene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Nitroaniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,4-Dinitrobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Dimethylphthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,3-Dinitrobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,6-Dinitrotoluene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,2-Dinitrobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Acenaphthylene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
3-Nitroaniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CB02-0050**					
Laboratory ID:	08-098-02					
2,4-Dinitrophenol	**ND**	0.20	EPA 8270	8-14-09	8-14-09	
Acenaphthene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
4-Nitrophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,4-Dinitrotoluene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Dibenzofuran	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,3,5,6-Tetrachlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,3,4,6-Tetrachlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Diethylphthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
4-Chlorophenyl-phenylether	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
4-Nitroaniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Fluorene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
4,6-Dinitro-2-methylphenol	**ND**	0.20	EPA 8270	8-14-09	8-14-09	
N-Nitrosodiphenylamine	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,2-Diphenylhydrazine	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
4-Bromophenyl-phenylether	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Hexachlorobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Pentachlorophenol	**ND**	0.20	EPA 8270	8-14-09	8-14-09	
Phenanthrene	**0.014**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Anthracene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Carbazole	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Di-n-butylphthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Fluoranthene	**0.017**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Benzidine	**ND**	0.39	EPA 8270	8-14-09	8-14-09	
Pyrene	**0.016**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Butylbenzylphthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
bis-2-Ethylhexyladipate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
3,3'-Dichlorobenzidine	**ND**	0.39	EPA 8270	8-14-09	8-14-09	
Benzo[a]anthracene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Chrysene	**0.013**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
bis(2-Ethylhexyl)phthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Di-n-octylphthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Benzo[b]fluoranthene	**0.0091**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[k]fluoranthene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[a]pyrene	**0.011**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Dibenz[a,h]anthracene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[g,h,i]perylene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*72*	*19 - 97*				
Phenol-d6	*86*	*22 - 108*				
Nitrobenzene-d5	*85*	*21 - 106*				
2-Fluorobiphenyl	*68*	*29 - 107*				
2,4,6-Tribromophenol	*69*	*44 - 121*				
Terphenyl-d14	*83*	*37 - 120*				

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
page 1 of 2

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CB03-0050**					
Laboratory ID:	08-098-03					
N-Nitrosodimethylamine	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Pyridine	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Phenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Aniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroethyl)ether	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Chlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,3-Dichlorobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,4-Dichlorobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Benzyl alcohol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,2-Dichlorobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Methylphenol (o-Cresol)	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroisopropyl)ether	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
(3+4)-Methylphenol (m,p-Cresol)	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
N-Nitroso-di-n-propylamine	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Hexachloroethane	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Nitrobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Isophorone	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Nitrophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,4-Dimethylphenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroethoxy)methane	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,4-Dichlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,2,4-Trichlorobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Naphthalene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
4-Chloroaniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Hexachlorobutadiene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
4-Chloro-3-methylphenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Methylnaphthalene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
1-Methylnaphthalene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Hexachlorocyclopentadiene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,4,6-Trichlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,3-Dichloroaniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,4,5-Trichlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Chloronaphthalene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2-Nitroaniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,4-Dinitrobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Dimethylphthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,3-Dinitrobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,6-Dinitrotoluene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,2-Dinitrobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Acenaphthylene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
3-Nitroaniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CB03-0050**					
Laboratory ID:	08-098-03					
2,4-Dinitrophenol	**ND**	0.20	EPA 8270	8-14-09	8-14-09	
Acenaphthene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
4-Nitrophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,4-Dinitrotoluene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Dibenzofuran	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,3,5,6-Tetrachlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
2,3,4,6-Tetrachlorophenol	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Diethylphthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
4-Chlorophenyl-phenylether	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
4-Nitroaniline	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Fluorene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
4,6-Dinitro-2-methylphenol	**ND**	0.20	EPA 8270	8-14-09	8-14-09	
N-Nitrosodiphenylamine	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
1,2-Diphenylhydrazine	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
4-Bromophenyl-phenylether	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Hexachlorobenzene	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Pentachlorophenol	**ND**	0.20	EPA 8270	8-14-09	8-14-09	
Phenanthrene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Anthracene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Carbazole	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Di-n-butylphthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Fluoranthene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Benzidine	**ND**	0.39	EPA 8270	8-14-09	8-14-09	
Pyrene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Butylbenzylphthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
bis-2-Ethylhexyladipate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
3,3'-Dichlorobenzidine	**ND**	0.39	EPA 8270	8-14-09	8-14-09	
Benzo[a]anthracene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Chrysene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
bis(2-Ethylhexyl)phthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Di-n-octylphthalate	**ND**	0.039	EPA 8270	8-14-09	8-14-09	
Benzo[b]fluoranthene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[k]fluoranthene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[a]pyrene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Dibenz[a,h]anthracene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[g,h,i]perylene	**ND**	0.0078	EPA 8270/SIM	8-14-09	8-14-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*62*	*19 - 97*				
Phenol-d6	*76*	*22 - 108*				
Nitrobenzene-d5	*71*	*21 - 106*				
2-Fluorobiphenyl	*69*	*29 - 107*				
2,4,6-Tribromophenol	*66*	*44 - 121*				
Terphenyl-d14	*87*	*37 - 120*				

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
page 1 of 2

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CB04-0030**					
Laboratory ID:	08-098-04					
N-Nitrosodimethylamine	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Pyridine	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Phenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Aniline	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroethyl)ether	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2-Chlorophenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
1,3-Dichlorobenzene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
1,4-Dichlorobenzene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Benzyl alcohol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
1,2-Dichlorobenzene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2-Methylphenol (o-Cresol)	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroisopropyl)ether	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
(3+4)-Methylphenol (m,p-Cresol)	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
N-Nitroso-di-n-propylamine	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Hexachloroethane	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Nitrobenzene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Isophorone	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2-Nitrophenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2,4-Dimethylphenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroethoxy)methane	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2,4-Dichlorophenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
1,2,4-Trichlorobenzene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Naphthalene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
4-Chloroaniline	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Hexachlorobutadiene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
4-Chloro-3-methylphenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2-Methylnaphthalene	**0.16**	0.037	EPA 8270	8-14-09	8-14-09	
1-Methylnaphthalene	**0.11**	0.037	EPA 8270	8-14-09	8-14-09	
Hexachlorocyclopentadiene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2,4,6-Trichlorophenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2,3-Dichloroaniline	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2,4,5-Trichlorophenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2-Chloronaphthalene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2-Nitroaniline	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
1,4-Dinitrobenzene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Dimethylphthalate	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
1,3-Dinitrobenzene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2,6-Dinitrotoluene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
1,2-Dinitrobenzene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Acenaphthylene	**0.016**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
3-Nitroaniline	**ND**	0.037	EPA 8270	8-14-09	8-14-09	

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CB04-0030**					
Laboratory ID:	08-098-04					
2,4-Dinitrophenol	**ND**	0.18	EPA 8270	8-14-09	8-14-09	
Acenaphthene	**0.015**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
4-Nitrophenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2,4-Dinitrotoluene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Dibenzofuran	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2,3,5,6-Tetrachlorophenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
2,3,4,6-Tetrachlorophenol	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Diethylphthalate	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
4-Chlorophenyl-phenylether	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
4-Nitroaniline	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Fluorene	**0.080**	0.037	EPA 8270	8-14-09	8-14-09	
4,6-Dinitro-2-methylphenol	**ND**	0.18	EPA 8270	8-14-09	8-14-09	
N-Nitrosodiphenylamine	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
1,2-Diphenylhydrazine	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
4-Bromophenyl-phenylether	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Hexachlorobenzene	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Pentachlorophenol	**ND**	0.18	EPA 8270	8-14-09	8-14-09	
Phenanthrene	**0.21**	0.037	EPA 8270	8-14-09	8-14-09	
Anthracene	**0.16**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
Carbazole	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Di-n-butylphthalate	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Fluoranthene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
Benzidine	**ND**	0.37	EPA 8270	8-14-09	8-14-09	
Pyrene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
Butylbenzylphthalate	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
bis-2-Ethylhexyladipate	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
3,3'-Dichlorobenzidine	**ND**	0.37	EPA 8270	8-14-09	8-14-09	
Benzo[a]anthracene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
Chrysene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
bis(2-Ethylhexyl)phthalate	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Di-n-octylphthalate	**ND**	0.037	EPA 8270	8-14-09	8-14-09	
Benzo[b]fluoranthene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[k]fluoranthene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[a]pyrene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
Dibenz[a,h]anthracene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[g,h,i]perylene	**ND**	0.0073	EPA 8270/SIM	8-14-09	8-14-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*66*	*19 - 97*				
Phenol-d6	*74*	*22 - 108*				
Nitrobenzene-d5	*77*	*21 - 106*				
2-Fluorobiphenyl	*75*	*29 - 107*				
2,4,6-Tribromophenol	*80*	*44 - 121*				
Terphenyl-d14	*101*	*37 - 120*				

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0814S1					
N-Nitrosodimethylamine	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Pyridine	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Phenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Aniline	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroethyl)ether	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2-Chlorophenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
1,3-Dichlorobenzene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
1,4-Dichlorobenzene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Benzyl alcohol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
1,2-Dichlorobenzene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2-Methylphenol (o-Cresol)	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroisopropyl)ether	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
(3+4)-Methylphenol (m,p-Cresol)	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
N-Nitroso-di-n-propylamine	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Hexachloroethane	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Nitrobenzene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Isophorone	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2-Nitrophenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2,4-Dimethylphenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
bis(2-Chloroethoxy)methane	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2,4-Dichlorophenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
1,2,4-Trichlorobenzene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Naphthalene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
4-Chloroaniline	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Hexachlorobutadiene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
4-Chloro-3-methylphenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Hexachlorocyclopentadiene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2,4,6-Trichlorophenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2,3-Dichloroaniline	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2,4,5-Trichlorophenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2-Chloronaphthalene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2-Nitroaniline	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
1,4-Dinitrobenzene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Dimethylphthalate	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
1,3-Dinitrobenzene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2,6-Dinitrotoluene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
1,2-Dinitrobenzene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Acenaphthylene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
3-Nitroaniline	**ND**	0.033	EPA 8270	8-14-09	8-14-09	

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0814S1					
2,4-Dinitrophenol	**ND**	0.17	EPA 8270	8-14-09	8-14-09	
Acenaphthene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
4-Nitrophenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2,4-Dinitrotoluene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Dibenzofuran	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2,3,5,6-Tetrachlorophenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
2,3,4,6-Tetrachlorophenol	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Diethylphthalate	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
4-Chlorophenyl-phenylether	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
4-Nitroaniline	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Fluorene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
4,6-Dinitro-2-methylphenol	**ND**	0.17	EPA 8270	8-14-09	8-14-09	
N-Nitrosodiphenylamine	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
1,2-Diphenylhydrazine	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
4-Bromophenyl-phenylether	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Hexachlorobenzene	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Pentachlorophenol	**ND**	0.17	EPA 8270	8-14-09	8-14-09	
Phenanthrene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Anthracene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Carbazole	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Di-n-butylphthalate	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Benzidine	**ND**	0.33	EPA 8270	8-14-09	8-14-09	
Pyrene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Butylbenzylphthalate	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
bis-2-Ethylhexyladipate	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
3,3'-Dichlorobenzidine	**ND**	0.33	EPA 8270	8-14-09	8-14-09	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
bis(2-Ethylhexyl)phthalate	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Di-n-octylphthalate	**ND**	0.033	EPA 8270	8-14-09	8-14-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270/SIM	8-14-09	8-14-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*64*	*19 - 97*				
Phenol-d6	*74*	*22 - 108*				
Nitrobenzene-d5	*74*	*21 - 106*				
2-Fluorobiphenyl	*66*	*29 - 107*				
2,4,6-Tribromophenol	*68*	*44 - 121*				
Terphenyl-d14	*83*	*37 - 120*				

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

SEMIVOLATILES by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0814S1									
	SB	SBD	SB	SBD	SB	SBD				
Phenol	**1.10**	**1.06**	1.33	1.33	83	80	27 - 100	4	37	
2-Chlorophenol	**0.933**	**0.886**	1.33	1.33	70	67	23 - 104	5	43	
1,4-Dichlorobenzene	**0.404**	**0.386**	0.667	0.667	61	58	23 - 86	5	40	
N-Nitroso-di-n-propylamine	**0.524**	**0.534**	0.667	0.667	79	80	28 - 96	2	37	
1,2,4-Trichlorobenzene	**0.396**	**0.372**	0.667	0.667	59	56	25 - 90	6	40	
4-Chloro-3-methylphenol	**1.12**	**1.13**	1.33	1.33	84	85	44 - 106	1	31	
Acenaphthene	**0.502**	**0.504**	0.667	0.667	75	76	39 - 93	0	28	
4-Nitrophenol	**1.25**	**1.22**	1.33	1.33	94	92	30 - 124	2	31	
2,4-Dinitrotoluene	**0.587**	**0.593**	0.667	0.667	88	89	53 - 109	1	34	
Pentachlorophenol	**1.02**	**1.01**	1.33	1.33	77	76	47 - 122	1	33	
Pyrene	**0.581**	**0.575**	0.667	0.667	87	86	55 - 108	1	29	
Surrogate:										
2-Fluorophenol					*67*	*65*	*19 - 97*			
Phenol-d6					*75*	*72*	*22 - 108*			
Nitrobenzene-d5					*76*	*72*	*21 - 106*			
2-Fluorobiphenyl					*69*	*69*	*29 - 107*			
2,4,6-Tribromophenol					*71*	*71*	*44 - 121*			
Terphenyl-d14					*83*	*82*	*37 - 120*			

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 8-14&17-09
Date Analyzed: 8-14,17&18-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-098-01
Client ID: **WB-SO-CB01-0050**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	6.0
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.60
Cadmium	6010B	**ND**	0.60
Chromium	6010B	**14**	0.60
Copper	6010B	**10**	1.2
Lead	6010B	**ND**	6.0
Mercury	7471A	**ND**	0.30
Nickel	6010B	**13**	3.0
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.60
Thallium	6020	**ND**	6.0
Zinc	6010B	**21**	3.0

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 8-14&17-09
Date Analyzed: 8-14,17&18-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-098-02
Client ID: **WB-SO-CB02-0050**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.9
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.59
Cadmium	6010B	**ND**	0.59
Chromium	6010B	**17**	0.59
Copper	6010B	**18**	1.2
Lead	6010B	**13**	5.9
Mercury	7471A	**ND**	0.29
Nickel	6010B	**24**	2.9
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.59
Thallium	6020	**ND**	5.9
Zinc	6010B	**54**	2.9

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 8-14&17-09
Date Analyzed: 8-14,17&18-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-098-03
Client ID: **WB-SO-CB03-0050**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.9
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.59
Cadmium	6010B	**ND**	0.59
Chromium	6010B	**14**	0.59
Copper	6010B	**13**	1.2
Lead	6010B	**ND**	5.9
Mercury	7471A	**ND**	0.29
Nickel	6010B	**15**	2.9
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.59
Thallium	6020	**ND**	5.9
Zinc	6010B	**24**	2.9

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 8-14&17-09
Date Analyzed: 8-14,17&18-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-098-04
Client ID: **WB-SO-CB04-0030**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.5
Arsenic	6010B	**ND**	11
Beryllium	6010B	**ND**	0.55
Cadmium	6010B	**ND**	0.55
Chromium	6010B	**16**	0.55
Copper	6010B	**17**	1.1
Lead	6010B	**ND**	5.5
Mercury	7471A	**ND**	0.27
Nickel	6010B	**20**	2.7
Selenium	6010B	**ND**	11
Silver	6010B	**ND**	0.55
Thallium	6020	**ND**	5.5
Zinc	6010B	**80**	2.7

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-14-09
Date Analyzed: 8-14&18-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0814S2&MB0814S3

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	10
Beryllium	6010B	**ND**	0.50
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Copper	6010B	**ND**	1.0
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.25
Nickel	6010B	**ND**	2.5
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50
Thallium	6020	**ND**	5.0
Zinc	6010B	**ND**	2.5

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

TOTAL METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-17-09
Date Analyzed:	8-17-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0817S1

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.0

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 8-14-09
Date Analyzed: 8-14&18-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-068-41

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Beryllium	**ND**	**ND**	NA	0.50	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**10.4**	**11.2**	8	0.50	
Copper	**16.8**	**16.5**	1	1.0	
Lead	**8.42**	**8.11**	4	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Nickel	**13.5**	**13.6**	1	2.5	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	
Thallium	**ND**	**ND**	NA	5.0	
Zinc	**51.6**	**54.2**	5	2.5	

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

TOTAL METALS
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-17-09
Date Analyzed: 8-17-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-061-07

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Antimony	**ND**	**ND**	NA	5.0	

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 8-14-09
Date Analyzed: 8-14&18-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-068-41

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**92.1**	92	**90.7**	91	2	
Beryllium	50	**45.5**	91	**45.5**	91	0	
Cadmium	50	**46.6**	93	**46.2**	92	1	
Chromium	100	**105**	95	**105**	95	0	
Copper	50	**64.5**	95	**64.9**	96	1	
Lead	250	**235**	91	**234**	90	1	
Mercury	0.50	**0.516**	103	**0.491**	98	5	
Nickel	100	**104**	90	**105**	91	1	
Selenium	100	**89.4**	89	**88.9**	89	1	
Silver	25	**22.0**	88	**22.0**	88	0	
Thallium	50	**38.6**	77	**40.6**	81	5	
Zinc	100	**143**	92	**145**	94	1	

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Laboratory Reference: 0908-098
Project: 235-1577-024

TOTAL METALS
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 8-17-09
Date Analyzed: 8-17-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-061-07

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Antimony	100	**80.1**	80	**82.3**	82	3	

Date of Report: August 18, 2009
Samples Submitted: August 13, 2009
Lab Traveler: 0908-098
Project: 235-1577-024

% MOISTURE

Date Analyzed: 8-13-09

Client ID	Lab ID	% Moisture
WB-SO-CB01-0050	08-098-01	16
WB-SO-CB02-0050	08-098-02	15
WB-SO-CB03-0050	08-098-03	15
WB-SO-CB04-0030	08-098-04	9

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix

Project Number: 235-1577-024

Project Name: West Bay

Project Manager: D. Dinkuhn

Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-098

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	PP Metals						% Moisture
1	WB-SO-CB01-0050	8/12/09	0750	Soil	6		X	X	X		X								X						X
2	WB-SO-CB02-0050	↓	0800	↓	↓		↓	↓	↓		↓								↓						↓
3	WB-SO-CB03-0050		0810																						
4	WB-SO-CB04-0030	↓	0905	↓	↓		↓	↓	↓		↓								↓						

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by	Lara Linde	Parametrix	8/12/09	1420	EIM EDDs
Received by		CORE	8/13/09	1000	
Relinquished by					
Received by					
Relinquished by					
Received by					
Reviewed by/Date		Reviewed by/Date			Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 31, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0908-204

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on August 27, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

Case Narrative

Samples were collected on August 26 and 27, 2009, and received by the laboratory on August 27, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

BTEX EPA 8021B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-204
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted:	8-28-09					
Date Analyzed:	8-28-09					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**WB-SO-ASW01-0070**			**WB-SO-ASW02-0070**		
Lab ID:	08-204-01			08-204-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.021	**ND**		0.020
Toluene	**ND**		0.10	**ND**		0.065
Ethyl Benzene	**ND**		0.10	**ND**		0.065
m,p-Xylene	**ND**		0.10	**ND**		0.065
o-Xylene	**ND**		0.10	**ND**		0.065
Surrogate Recovery:						
Fluorobenzene	101%			104%		

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-204
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted:	8-28-09					
Date Analyzed:	8-28-09					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**WB-SO-ABT01-0100**			**WB-SO-BSW01-0020**		
Lab ID:	08-204-03			08-204-04		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.061	**ND**		0.082
Ethyl Benzene	**ND**		0.061	**ND**		0.082
m,p-Xylene	**ND**		0.061	**ND**		0.082
o-Xylene	**ND**		0.061	**ND**		0.082
Surrogate Recovery:						
Fluorobenzene	104%			96%		

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-204
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted:	8-28-09	
Date Analyzed:	8-28-09	
Matrix: Soil		
Units: mg/kg (ppm)		
Client ID:	**WB-SO-BSW02-0020**	**WB-SO-BSW03-0020**
Lab ID:	08-204-05	08-204-06

	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.040	**ND**		0.050
Ethyl Benzene	**ND**		0.040	**ND**		0.050
m,p-Xylene	**ND**		0.040	**ND**		0.050
o-Xylene	**ND**		0.040	**ND**		0.050
Surrogate Recovery:						
Fluorobenzene	100%			107%		

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-204
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted:	8-28-09					
Date Analyzed:	8-28-09					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**WB-SO-BSW04-0020**			**WB-SO-BBT01-0045**		
Lab ID:	08-204-07			08-204-08		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.037	**ND**		0.046
Ethyl Benzene	**ND**		0.037	**ND**		0.046
m,p-Xylene	**ND**		0.037	**ND**		0.046
o-Xylene	**ND**		0.037	**ND**		0.046
Surrogate Recovery:						
Fluorobenzene	109%			101%		

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-204
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted:	8-28-09	
Date Analyzed:	8-28-09	
Matrix: Soil		
Units: mg/kg (ppm)		
Client ID:	**WB-SO-BBT01-1045**	**WB-SO-ASW03-0050**
Lab ID:	08-204-09	08-204-10

	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.047	**ND**		0.059
Ethyl Benzene	**ND**		0.047	**ND**		0.059
m,p-Xylene	**ND**		0.047	**ND**		0.059
o-Xylene	**ND**		0.047	**ND**		0.059
Surrogate Recovery:						
Fluorobenzene	101%			108%		

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-204
Project: 235-1577-024

BTEX
EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-28-09
Date Analyzed: 8-28-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0828S1

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050

Surrogate Recovery:
Fluorobenzene 102%

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-204
Project: 235-1577-024

BTEX
EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-28-09
Date Analyzed: 8-28-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-204-07 **Original**	08-204-07 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	109%	106%		

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-204
Project: 235-1577-024

BTEX
EPA 8021B
SB/SBD QUALITY CONTROL

Date Extracted: 8-28-09
Date Analyzed: 8-28-09

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0828S1 **SB**	Percent Recovery	SBD0828S1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.959**	**96**	**0.973**	**97**	2	
Toluene	**0.916**	**92**	**0.953**	**95**	4	
Ethyl Benzene	**0.914**	**91**	**0.962**	**96**	5	
m,p-Xylene	**0.912**	**91**	**0.962**	**96**	5	
o-Xylene	**0.933**	**93**	**0.976**	**98**	5	

Surrogate Recovery:

Fluorobenzene	99%	99%

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

NWTPH-Dx

Date Extracted: 8-27-09
Date Analyzed: 8-27-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASW01-0070**	**WB-SO-ASW02-0070**	**WB-SO-ABT01-0100**
Lab ID:	08-204-01	08-204-02	08-204-03
Diesel Range:	**ND**	**ND**	**ND**
PQL:	40	33	33
Identification:	---	---	---
Lube Oil Range:	**ND**	**ND**	**ND**
PQL:	81	66	65
Identification:	---	---	---
Surrogate Recovery			
o-Terphenyl:	72%	78%	71%
Flags:	Y	Y	Y

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

NWTPH-Dx

Date Extracted: 8-27-09
Date Analyzed: 8-27-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-BSW01-0020**	**WB-SO-BSW02-0020**	**WB-SO-BSW03-0020**
Lab ID:	08-204-04	08-204-05	08-204-06
Diesel Range:	**ND**	**ND**	**ND**
PQL:	27	26	220
Identification:	---	---	---
Lube Oil Range:	**ND**	**65**	**2800**
PQL:	54	53	280
Identification:	---	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	80%	85%	88%
Flags:	Y	Y	Y,U1

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

NWTPH-Dx

Date Extracted: 8-27-09
Date Analyzed: 8-27-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-BSW04-0020**	**WB-SO-BBT01-0045**	**WB-SO-BBT01-1045**
Lab ID:	08-204-07	08-204-08	08-204-09
Diesel Range:	**ND**	**ND**	**ND**
PQL:	27	27	27
Identification:	---	---	---
Lube Oil Range:	**ND**	**55**	**ND**
PQL:	54	54	54
Identification:	---	Lube Oil	---
Surrogate Recovery			
o-Terphenyl:	75%	77%	80%
Flags:	Y	Y	Y

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

NWTPH-Dx

Date Extracted:	8-27-09
Date Analyzed:	8-27-09
Matrix:	Soil
Units:	mg/kg (ppm)
Client ID:	**WB-SO-ASW03-0050**
Lab ID:	08-204-10
Diesel Range:	**ND**
PQL:	32
Identification:	---
Lube Oil Range:	**ND**
PQL:	63
Identification:	---
Surrogate Recovery	
o-Terphenyl:	85%
Flags:	Y

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-27-09
Date Analyzed:	8-27-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0827S2
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	90%
Flags:	Y

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	8-27-09
Date Analyzed:	8-27-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	08-204-04	08-204-04 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	80%	74%
Flags:	Y	Y

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW01-0070**					
Laboratory ID:	08-204-01					
Benzo[a]anthracene	**ND**	0.011	EPA 8270/SIM	8-27-09	8-31-09	
Chrysene	**ND**	0.011	EPA 8270/SIM	8-27-09	8-31-09	
Benzo[b]fluoranthene	**ND**	0.011	EPA 8270/SIM	8-27-09	8-31-09	
Benzo[k]fluoranthene	**ND**	0.011	EPA 8270/SIM	8-27-09	8-31-09	
Benzo[a]pyrene	**ND**	0.011	EPA 8270/SIM	8-27-09	8-31-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.011	EPA 8270/SIM	8-27-09	8-31-09	
Dibenz[a,h]anthracene	**ND**	0.011	EPA 8270/SIM	8-27-09	8-31-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*60*	*39 - 103*				
Pyrene-d10	*75*	*39 - 115*				
Terphenyl-d14	*73*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW02-0070**					
Laboratory ID:	08-204-02					
Benzo[a]anthracene	**ND**	0.0088	EPA 8270/SIM	8-27-09	8-28-09	
Chrysene	**ND**	0.0088	EPA 8270/SIM	8-27-09	8-28-09	
Benzo[b]fluoranthene	**ND**	0.0088	EPA 8270/SIM	8-27-09	8-28-09	
Benzo[k]fluoranthene	**ND**	0.0088	EPA 8270/SIM	8-27-09	8-28-09	
Benzo[a]pyrene	**ND**	0.0088	EPA 8270/SIM	8-27-09	8-28-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0088	EPA 8270/SIM	8-27-09	8-28-09	
Dibenz[a,h]anthracene	**ND**	0.0088	EPA 8270/SIM	8-27-09	8-28-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*59*	*39 - 103*				
Pyrene-d10	*89*	*39 - 115*				
Terphenyl-d14	*63*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ABT01-0100**					
Laboratory ID:	08-204-03					
Benzo[a]anthracene	**ND**	0.0087	EPA 8270/SIM	8-27-09	8-28-09	
Chrysene	**ND**	0.0087	EPA 8270/SIM	8-27-09	8-28-09	
Benzo[b]fluoranthene	**ND**	0.0087	EPA 8270/SIM	8-27-09	8-28-09	
Benzo[k]fluoranthene	**ND**	0.0087	EPA 8270/SIM	8-27-09	8-28-09	
Benzo[a]pyrene	**ND**	0.0087	EPA 8270/SIM	8-27-09	8-28-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0087	EPA 8270/SIM	8-27-09	8-28-09	
Dibenz[a,h]anthracene	**ND**	0.0087	EPA 8270/SIM	8-27-09	8-28-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*39 - 103*				
Pyrene-d10	*101*	*39 - 115*				
Terphenyl-d14	*70*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSW01-0020**					
Laboratory ID:	08-204-04					
Benzo[a]anthracene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-29-09	
Chrysene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-29-09	
Benzo[b]fluoranthene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-29-09	
Benzo[k]fluoranthene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-29-09	
Benzo[a]pyrene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-29-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-29-09	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-29-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*39 - 103*				
Pyrene-d10	*97*	*39 - 115*				
Terphenyl-d14	*64*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSW02-0020**					
Laboratory ID:	08-204-05					
Benzo[a]anthracene	**0.0075**	0.0070	EPA 8270/SIM	8-27-09	8-29-09	
Chrysene	**0.0083**	0.0070	EPA 8270/SIM	8-27-09	8-29-09	
Benzo[b]fluoranthene	**0.011**	0.0070	EPA 8270/SIM	8-27-09	8-29-09	
Benzo[k]fluoranthene	**ND**	0.0070	EPA 8270/SIM	8-27-09	8-29-09	
Benzo[a]pyrene	**0.0084**	0.0070	EPA 8270/SIM	8-27-09	8-29-09	
Indeno(1,2,3-c,d)pyrene	**0.0071**	0.0070	EPA 8270/SIM	8-27-09	8-29-09	
Dibenz[a,h]anthracene	**ND**	0.0070	EPA 8270/SIM	8-27-09	8-29-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*39 - 103*				
Pyrene-d10	*91*	*39 - 115*				
Terphenyl-d14	*64*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSW03-0020**					
Laboratory ID:	08-204-06					
Benzo[a]anthracene	**0.034**	0.0075	EPA 8270/SIM	8-27-09	8-31-09	
Chrysene	**0.088**	0.0075	EPA 8270/SIM	8-27-09	8-31-09	
Benzo[b]fluoranthene	**0.070**	0.0075	EPA 8270/SIM	8-27-09	8-31-09	
Benzo[k]fluoranthene	**0.015**	0.0075	EPA 8270/SIM	8-27-09	8-31-09	
Benzo[a]pyrene	**0.036**	0.0075	EPA 8270/SIM	8-27-09	8-31-09	
Indeno(1,2,3-c,d)pyrene	**0.022**	0.0075	EPA 8270/SIM	8-27-09	8-31-09	
Dibenz[a,h]anthracene	**0.010**	0.0075	EPA 8270/SIM	8-27-09	8-31-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*88*	*39 - 103*				
Pyrene-d10	*87*	*39 - 115*				
Terphenyl-d14	*88*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSW04-0020**					
Laboratory ID:	08-204-07					
Benzo[a]anthracene	**ND**	0.0072	EPA 8270/SIM	8-26-09	8-29-09	
Chrysene	**ND**	0.0072	EPA 8270/SIM	8-26-09	8-29-09	
Benzo[b]fluoranthene	**ND**	0.0072	EPA 8270/SIM	8-26-09	8-29-09	
Benzo[k]fluoranthene	**ND**	0.0072	EPA 8270/SIM	8-26-09	8-29-09	
Benzo[a]pyrene	**ND**	0.0072	EPA 8270/SIM	8-26-09	8-29-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0072	EPA 8270/SIM	8-26-09	8-29-09	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270/SIM	8-26-09	8-29-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*83*	*39 - 103*				
Pyrene-d10	*102*	*39 - 115*				
Terphenyl-d14	*70*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BBT01-0045**					
Laboratory ID:	08-204-08					
Benzo[a]anthracene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Chrysene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Benzo[b]fluoranthene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Benzo[k]fluoranthene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Benzo[a]pyrene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*39 - 103*				
Pyrene-d10	*91*	*39 - 115*				
Terphenyl-d14	*93*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BBT01-1045**					
Laboratory ID:	08-204-09					
Benzo[a]anthracene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Chrysene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Benzo[b]fluoranthene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Benzo[k]fluoranthene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Benzo[a]pyrene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270/SIM	8-27-09	8-30-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*81*	*39 - 103*				
Pyrene-d10	*91*	*39 - 115*				
Terphenyl-d14	*94*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW03-0050**					
Laboratory ID:	08-204-10					
Benzo[a]anthracene	**ND**	0.0084	EPA 8270/SIM	8-27-09	8-30-09	
Chrysene	**ND**	0.0084	EPA 8270/SIM	8-27-09	8-30-09	
Benzo[b]fluoranthene	**ND**	0.0084	EPA 8270/SIM	8-27-09	8-30-09	
Benzo[k]fluoranthene	**ND**	0.0084	EPA 8270/SIM	8-27-09	8-30-09	
Benzo[a]pyrene	**ND**	0.0084	EPA 8270/SIM	8-27-09	8-30-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0084	EPA 8270/SIM	8-27-09	8-30-09	
Dibenz[a,h]anthracene	**ND**	0.0084	EPA 8270/SIM	8-27-09	8-30-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*65*	*39 - 103*				
Pyrene-d10	*90*	*39 - 115*				
Terphenyl-d14	*94*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0827S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	8-27-09	8-28-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	8-27-09	8-28-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-27-09	8-28-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-27-09	8-28-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	8-27-09	8-28-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	8-27-09	8-28-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	8-27-09	8-28-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*83*	*39 - 103*				
Pyrene-d10	*105*	*39 - 115*				
Terphenyl-d14	*112*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

cPAHs by EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	08-159-05										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0528**	**0.0542**	0.0833	0.0833	ND	63	65	29 - 104	3	27	
Acenaphthylene	**0.0660**	**0.0689**	0.0833	0.0833	ND	79	83	44 - 111	4	20	
Acenaphthene	**0.0683**	**0.0719**	0.0833	0.0833	ND	82	86	45 - 108	5	19	
Fluorene	**0.0703**	**0.0753**	0.0833	0.0833	ND	84	90	49 - 113	7	16	
Phenanthrene	**0.0701**	**0.0754**	0.0833	0.0833	ND	84	91	43 - 124	7	36	
Anthracene	**0.0906**	**0.0961**	0.0833	0.0833	ND	109	115	51 - 115	6	17	
Fluoranthene	**0.0854**	**0.0920**	0.0833	0.0833	ND	103	110	42 - 140	7	27	
Pyrene	**0.0816**	**0.0880**	0.0833	0.0833	ND	98	106	40 - 140	8	30	
Benzo[a]anthracene	**0.0761**	**0.0844**	0.0833	0.0833	ND	91	101	33 - 134	10	21	
Chrysene	**0.0719**	**0.0776**	0.0833	0.0833	ND	86	93	32 - 141	8	21	
Benzo[b]fluoranthene	**0.0784**	**0.0850**	0.0833	0.0833	ND	94	102	35 - 139	8	32	
Benzo[k]fluoranthene	**0.0719**	**0.0783**	0.0833	0.0833	ND	86	94	44 - 124	9	23	
Benzo[a]pyrene	**0.0935**	**0.104**	0.0833	0.0833	ND	112	125	34 - 130	11	28	
Indeno(1,2,3-c,d)pyrene	**0.0791**	**0.0874**	0.0833	0.0833	ND	95	105	50 - 127	10	20	
Dibenz[a,h]anthracene	**0.0704**	**0.0760**	0.0833	0.0833	ND	85	91	58 - 122	8	15	
Benzo[g,h,i]perylene	**0.0732**	**0.0802**	0.0833	0.0833	ND	88	96	47 - 126	9	21	
Surrogate:											
2-Fluorobiphenyl						*77*	*81*	*39 - 103*			
Pyrene-d10						*103*	*112*	*39 - 115*			
Terphenyl-d14						*94*	*104*	*50 - 118*			

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

TOTAL LEAD
EPA 6010B

Date Extracted:	8-31-09
Date Analyzed:	8-31-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-ASW01-0070	08-204-01	**ND**	8.1
WB-SO-ASW02-0070	08-204-02	**ND**	6.6
WB-SO-ABT01-0100	08-204-03	**ND**	6.5
WB-SO-BSW01-0020	08-204-04	**ND**	5.4
WB-SO-BSW02-0020	08-204-05	**ND**	5.3
WB-SO-BSW03-0020	08-204-06	**55**	5.6
WB-SO-BSW04-0020	08-204-07	**ND**	5.4
WB-SO-BBT01-0045	08-204-08	**ND**	5.4
WB-SO-BBT01-1045	08-204-09	**ND**	5.4
WB-SO-ASW03-0050	08-204-10	**ND**	6.3

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-31-09
Date Analyzed:	8-31-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0831S1

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-204-06

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**49.2**	**51.8**	5		5.0

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-204-06

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**289**	96	**286**	95	1	

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-204
Project: 235-1577-024

% MOISTURE

Date Analyzed: 8-27-09

Client ID	Lab ID	% Moisture
WB-SO-ASW01-0070	08-204-01	38
WB-SO-LL-ASW02-0070	08-204-02	24
WB-SO-ABT01-0100	08-204-03	23
WB-SO-BSW01-0020	08-204-04	7
WB-SO-BSW02-0020	08-204-05	5
WB-SO-BSW03-0020	08-204-06	11
WB-SO-BSW04-0020	08-204-07	7
WB-SO-BBT01-0045	08-204-08	8
WB-SO-BBT01-1045	08-204-09	7
WB-SO-ASW03-0050	08-204-10	21

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix
Project Number: 235-1577-024
Project Name: West Bay IA
Project Manager: D. Dinkuhn
Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-204

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	Lead	% Moisture
1	WB-SO-ASW01-0070	8/26/09	1405	Soil	4		X	X				X							X	X
2	WB-SO ~~BS~~ ASW02-0070		1407																	
3	WB-SO-ABT01-0100		1410																	
4	WB-SO-BSW01-0020		1620																	
5	WB-SO-BSW02-0020		1623																	
6	WB-SO-BSW03-0020		1626																	
7	WB-SO-BSW04-0020		1630																	
8	WB-SO-BBT01-0045		1634																	
9	WB-SO-BBT01-1045		1635																	
10	WB-SO-ASW03-0050	8/27/09	0905																	

	Signature	Company	Date	Time
Relinquished by	Lisa Linde	Parametrix	8/27/09	0945
Received by	Van	Speedy	8/27/09	0945
Relinquished by	Van	Speedy	8/27/09	1150
Received by			8/27/09	1150
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions: EIM EDDs

Chromatograms with final report ☐

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OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 31, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0908-205

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on August 27, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

Case Narrative

Samples were collected on August 26, 2009, and received by the laboratory on August 27, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

BTEX by EPA 8021B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

PAHs EPA 8270D/SIM Analysis

The Spike Blank/Spike Blank Duplicate had one recovery slightly above control limits, due to a small upward bias in the instruments' calibration. No further action was taken.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-205
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted: 8-28-09
Date Analyzed: 8-28-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-BSP01-0000**			**WB-SO-BSP02-0000**		
Lab ID:	08-205-01			08-205-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.048	**ND**		0.063
Ethyl Benzene	**ND**		0.048	**ND**		0.063
m,p-Xylene	**ND**		0.048	**ND**		0.063
o-Xylene	**ND**		0.048	**ND**		0.063
Surrogate Recovery:						
Fluorobenzene	101%			106%		

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-205
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted: 8-28-09
Date Analyzed: 8-28-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-BSP03-0000**			**WB-SO-BSP04-0000**		
Lab ID:	08-205-03			08-205-04		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.052	**ND**		0.044
Ethyl Benzene	**ND**		0.052	**ND**		0.044
m,p-Xylene	**ND**		0.052	**ND**		0.044
o-Xylene	**ND**		0.052	**ND**		0.044
Surrogate Recovery:						
Fluorobenzene	108%			105%		

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-205
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted: 8-28-09
Date Analyzed: 8-28-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-BSP05-0000**			**WB-SO-BSP06-0000**		
Lab ID:	08-205-05			08-205-06		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.042	**ND**		0.049
Ethyl Benzene	**ND**		0.042	**ND**		0.049
m,p-Xylene	**ND**		0.042	**ND**		0.049
o-Xylene	**ND**		0.042	**ND**		0.049
Surrogate Recovery:						
Fluorobenzene	109%			100%		

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-205
Project: 235-1577-024

BTEX
EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-28-09
Date Analyzed: 8-28-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0828S2

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050

Surrogate Recovery:
Fluorobenzene 101%

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-205
Project: 235-1577-024

BTEX
EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-28-09
Date Analyzed: 8-28-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-205-01 **Original**	08-205-01 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	101%	100%		

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Lab Traveler: 0908-205
Project: 235-1577-024

BTEX
EPA 8021B
SB/SBD QUALITY CONTROL

Date Extracted: 8-28-09
Date Analyzed: 8-28-09

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0828S1 **SB**	Percent Recovery	SBD0828S1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.959**	**96**	**0.973**	**97**	2	
Toluene	**0.916**	**92**	**0.953**	**95**	4	
Ethyl Benzene	**0.914**	**91**	**0.962**	**96**	5	
m,p-Xylene	**0.912**	**91**	**0.962**	**96**	5	
o-Xylene	**0.933**	**93**	**0.976**	**98**	5	

Surrogate Recovery:			
Fluorobenzene	99%		99%

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

NWTPH-Dx

Date Extracted: 8-27-09
Date Analyzed: 8-27-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-BSP01-0000**	**WB-SO-BSP02-0000**	**WB-SO-BSP03-0000**
Lab ID:	08-205-01	08-205-02	08-205-03
Diesel Range:	**ND**	**ND**	**ND**
PQL:	43	34	48
Identification:	---	---	---
Lube Oil Range:	**690**	**430**	**670**
PQL:	54	54	56
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	86%	83%	91%
Flags:	Y,U1	Y,U1	Y,U1

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

NWTPH-Dx

Date Extracted: 8-27-09
Date Analyzed: 8-27-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-BSP04-0000**	**WB-SO-BSP05-0000**	**WB-SO-BSP06-0000**
Lab ID:	08-205-04	08-205-05	08-205-06
Diesel Range:	**ND**	**ND**	**ND**
PQL:	74	33	84
Identification:	---	---	---
Lube Oil Range:	**1200**	**440**	**1400**
PQL:	55	54	53
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	73%	86%	95%
Flags:	Y,U1	Y,U1	Y,U1

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-27-09
Date Analyzed:	8-27-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0827S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	87%
Flags:	Y

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-27-09
Date Analyzed:	8-27-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0827S2
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	90%
Flags:	Y

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	8-27-09
Date Analyzed:	8-27-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	08-150-07	08-150-07 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	88%	88%
Flags:	Y	Y

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	8-27-09
Date Analyzed:	8-27-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	08-159-02	08-159-02 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	87%	83%
Flags:	Y	Y

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSP01-0000**					
Laboratory ID:	08-205-01					
Benzo[a]anthracene	**0.10**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Chrysene	**0.17**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[b]fluoranthene	**0.16**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[k]fluoranthene	**0.036**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[a]pyrene	**0.082**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Indeno(1,2,3-c,d)pyrene	**0.060**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Dibenz[a,h]anthracene	**ND**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*79*	*39 - 103*				
Pyrene-d10	*86*	*39 - 115*				
Terphenyl-d14	*89*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSP02-0000**					
Laboratory ID:	08-205-02					
Benzo[a]anthracene	**0.043**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Chrysene	**0.084**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[b]fluoranthene	**0.077**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[k]fluoranthene	**ND**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[a]pyrene	**0.042**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Indeno(1,2,3-c,d)pyrene	**0.036**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Dibenz[a,h]anthracene	**ND**	0.036	EPA 8270/SIM	8-28-09	8-30-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*78*	*39 - 103*				
Pyrene-d10	*85*	*39 - 115*				
Terphenyl-d14	*87*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSP03-0000**					
Laboratory ID:	08-205-03					
Benzo[a]anthracene	**0.033**	0.0074	EPA 8270/SIM	8-28-09	8-30-09	
Chrysene	**0.063**	0.0074	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[b]fluoranthene	**0.060**	0.0074	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[k]fluoranthene	**0.014**	0.0074	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[a]pyrene	**0.033**	0.0074	EPA 8270/SIM	8-28-09	8-30-09	
Indeno(1,2,3-c,d)pyrene	**0.024**	0.0074	EPA 8270/SIM	8-28-09	8-30-09	
Dibenz[a,h]anthracene	**0.0077**	0.0074	EPA 8270/SIM	8-28-09	8-30-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*82*	*39 - 103*				
Pyrene-d10	*86*	*39 - 115*				
Terphenyl-d14	*85*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSP04-0000**					
Laboratory ID:	08-205-04					
Benzo[a]anthracene	**ND**	0.037	EPA 8270/SIM	8-28-09	8-30-09	
Chrysene	**0.089**	0.037	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[b]fluoranthene	**0.067**	0.037	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[k]fluoranthene	**ND**	0.037	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[a]pyrene	**ND**	0.037	EPA 8270/SIM	8-28-09	8-30-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.037	EPA 8270/SIM	8-28-09	8-30-09	
Dibenz[a,h]anthracene	**ND**	0.037	EPA 8270/SIM	8-28-09	8-30-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*80*	*39 - 103*				
Pyrene-d10	*84*	*39 - 115*				
Terphenyl-d14	*86*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSP05-0000**					
Laboratory ID:	08-205-05					
Benzo[a]anthracene	**0.048**	0.0072	EPA 8270/SIM	8-28-09	8-30-09	
Chrysene	**0.066**	0.0072	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[b]fluoranthene	**0.060**	0.0072	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[k]fluoranthene	**0.016**	0.0072	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[a]pyrene	**0.031**	0.0072	EPA 8270/SIM	8-28-09	8-30-09	
Indeno(1,2,3-c,d)pyrene	**0.022**	0.0072	EPA 8270/SIM	8-28-09	8-30-09	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270/SIM	8-28-09	8-30-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*86*	*39 - 103*				
Pyrene-d10	*95*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-SBP06-0000**					
Laboratory ID:	08-205-06					
Benzo[a]anthracene	**0.041**	0.0070	EPA 8270/SIM	8-28-09	8-30-09	
Chrysene	**0.078**	0.0070	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[b]fluoranthene	**0.12**	0.0070	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[k]fluoranthene	**0.027**	0.0070	EPA 8270/SIM	8-28-09	8-30-09	
Benzo[a]pyrene	**0.066**	0.0070	EPA 8270/SIM	8-28-09	8-30-09	
Indeno(1,2,3-c,d)pyrene	**0.054**	0.0070	EPA 8270/SIM	8-28-09	8-30-09	
Dibenz[a,h]anthracene	**0.017**	0.0070	EPA 8270/SIM	8-28-09	8-30-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*81*	*39 - 103*				
Pyrene-d10	*89*	*39 - 115*				
Terphenyl-d14	*90*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0828S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*39 - 103*				
Pyrene-d10	*100*	*39 - 115*				
Terphenyl-d14	*68*	*50 - 118*				

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

PAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0828S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0566**	**0.0622**	0.0833	0.0833	68	75	31 - 102	9	30	
Acenaphthylene	**0.0701**	**0.0740**	0.0833	0.0833	84	89	48 - 104	5	26	
Acenaphthene	**0.0619**	**0.0668**	0.0833	0.0833	74	80	46 - 105	8	26	
Fluorene	**0.0688**	**0.0715**	0.0833	0.0833	83	86	52 - 107	4	25	
Phenanthrene	**0.0681**	**0.0694**	0.0833	0.0833	82	83	58 - 104	2	21	
Anthracene	**0.0775**	**0.0787**	0.0833	0.0833	93	94	56 - 103	2	21	
Fluoranthene	**0.0784**	**0.0786**	0.0833	0.0833	94	94	65 - 111	0	20	
Pyrene	**0.0753**	**0.0752**	0.0833	0.0833	90	90	65 - 115	0	20	
Benzo[a]anthracene	**0.0768**	**0.0764**	0.0833	0.0833	92	92	55 - 111	1	19	
Chrysene	**0.0679**	**0.0690**	0.0833	0.0833	82	83	58 - 121	2	19	
Benzo[b]fluoranthene	**0.0786**	**0.0797**	0.0833	0.0833	94	96	57 - 120	1	20	
Benzo[k]fluoranthene	**0.0842**	**0.0849**	0.0833	0.0833	101	102	52 - 123	1	21	
Benzo[a]pyrene	**0.0925**	**0.0934**	0.0833	0.0833	111	112	49 - 106	1	22	II
Indeno(1,2,3-c,d)pyrene	**0.0820**	**0.0809**	0.0833	0.0833	98	97	56 - 125	1	22	
Dibenz[a,h]anthracene	**0.0852**	**0.0848**	0.0833	0.0833	102	102	55 - 129	0	24	
Benzo[g,h,i]perylene	**0.0837**	**0.0825**	0.0833	0.0833	100	99	55 - 122	1	23	
Surrogate:										
2-Fluorobiphenyl					*71*	*77*	*39 - 103*			
Pyrene-d10					*100*	*100*	*39 - 115*			
Terphenyl-d14					*68*	*69*	*50 - 118*			

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

TOTAL LEAD
EPA 6010B

Date Extracted:	8-27-09
Date Analyzed:	8-27-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-BSP01-0000	08-205-01	**18**	5.4
WB-SO-BSP02-0000	08-205-02	**17**	5.4
WB-SO-BSP03-0000	08-205-03	**13**	5.6
WB-SO-BSP04-0000	08-205-04	**20**	5.5
WB-SO-BSP05-0000	08-205-05	**10**	5.4
WB-SO-BSP06-0000	08-205-06	**7.7**	5.3

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-27-09
Date Analyzed:	8-27-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0827S2

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-27-09
Date Analyzed: 8-27-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-157-21

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**8.45**	**8.90**	5	5.0	

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 8-27-09
Date Analyzed: 8-27-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-157-21

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**223**	86	**239**	92	7	

Date of Report: August 31, 2009
Samples Submitted: August 27, 2009
Laboratory Reference: 0908-205
Project: 235-1577-024

% MOISTURE

Date Analyzed: 8-27-09

Client ID	Lab ID	% Moisture
WB-SO-BSP01-0000	08-205-01	8
WB-SO-BSP02-0000	08-205-02	8
WB-SO-BSP03-0000	08-205-03	10
WB-SO-BSP04-0000	08-205-04	9
WB-SO-BSP05-0000	08-205-05	8
WB-SO-BSP06-0000	08-205-06	5

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix

Project Number: 235-1577-024

Project Name: West Bay IA

Project Manager: D. Dinkuhn

Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-2050 ~~08-204~~

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx (BTEX Only)	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM cPAHs	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	Lead						% Moisture
1	WB-SO-BSP01-0000	8/26/09	1520	Soil	4		X	X				X							X						X
2	WB-SO-BSP02-0000		1532																						
3	WB-SO-BSP03-0000		1536																						
4	WB-SO-BSP04-0000		1539																						
5	WB-SO-BSP05-0000		1542																						
6	WB-SO-BSP06-0000		1548																						

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by	Lara Linde	Parametrix	8/27/09	0945	
Received by	Van	Speedy	8/27/09	0945	
Relinquished by	Van	Speedy	8/27/09	1150	
Received by			8/27/08	1150	
Relinquished by					
Received by					
Reviewed by/Date		Reviewed by/Date			Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 1, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0908-211

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on August 28, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

Case Narrative

Samples were collected on August 27, 2009, and received by the laboratory on August 28, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

BTEX by EPA 8021B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

PAHs EPA 8270D/SIM Analysis

The Spike Blank/Spike Blank Duplicate had one recovery slightly above control limits, due to a small upward bias in the instruments' calibration. No further action was taken.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-211
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted: 8-30-09
Date Analyzed: 8-30-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASW04-0070**			**WB-SO-ABT02-0100**		
Lab ID:	08-211-01			08-211-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.066	**ND**		0.079
Ethyl Benzene	**ND**		0.066	**ND**		0.079
m,p-Xylene	**ND**		0.066	**ND**		0.079
o-Xylene	**ND**		0.066	**ND**		0.079
Surrogate Recovery:						
Fluorobenzene	100%			117%		

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-211
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted: 8-30-09
Date Analyzed: 8-30-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ABT03-0100**			**WB-SO-ASW05-0065**		
Lab ID:	08-211-03			08-211-04		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.074	**ND**		0.055
Ethyl Benzene	**ND**		0.074	**ND**		0.055
m,p-Xylene	**ND**		0.074	**ND**		0.055
o-Xylene	**ND**		0.074	**ND**		0.055
Surrogate Recovery:						
Fluorobenzene	96%			100%		

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-211
Project: 235-1577-024

BTEX
EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-30-09
Date Analyzed: 8-30-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0830S1

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050

Surrogate Recovery:
Fluorobenzene 92%

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-211
Project: 235-1577-024

BTEX
EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-30-09
Date Analyzed: 8-30-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-212-03 **Original**	08-212-03 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	95%	96%		

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-211
Project: 235-1577-024

BTEX
EPA 8021B
SB/SBD QUALITY CONTROL

Date Extracted: 8-30-09
Date Analyzed: 8-30-09

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0830S1 **SB**	Percent Recovery	SBD0830S1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.899**	**90**	**0.916**	**92**	2	
Toluene	**0.983**	**98**	**0.976**	**98**	1	
Ethyl Benzene	**1.01**	**101**	**1.02**	**102**	1	
m,p-Xylene	**1.05**	**105**	**1.04**	**104**	1	
o-Xylene	**1.04**	**104**	**1.04**	**104**	0	

Surrogate Recovery:

Fluorobenzene	94%		93%

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

NWTPH-Dx

Date Extracted: 8-28-09
Date Analyzed: 8-28-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASW04-0070**	**WB-SO-ABT02-0100**	**WB-SO-ABT03-0100**
Lab ID:	08-211-01	08-211-02	08-211-03
Diesel Range:	**ND**	**ND**	**ND**
PQL:	32	39	35
Identification:	---	---	---
Lube Oil Range:	**ND**	**ND**	**ND**
PQL:	63	77	70
Identification:	---	---	---
Surrogate Recovery			
o-Terphenyl:	76%	77%	68%
Flags:	Y	Y	Y

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

NWTPH-Dx

Date Extracted:	8-28-09
Date Analyzed:	8-28-09
Matrix:	Soil
Units:	mg/kg (ppm)
Client ID:	**WB-SO-ASW05-0065**
Lab ID:	08-211-04
Diesel Range:	**ND**
PQL:	30
Identification:	---
Lube Oil Range:	**ND**
PQL:	60
Identification:	---
Surrogate Recovery	
o-Terphenyl:	75%
Flags:	Y

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-28-09
Date Analyzed:	8-28-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0828S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	94%
Flags:	Y

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	8-28-09
Date Analyzed:	8-28-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	08-211-04	08-211-04 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	75%	69%
Flags:	Y	Y

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW04-0070**					
Laboratory ID:	08-211-01					
Benzo[a]anthracene	**ND**	0.0084	EPA 8270/SIM	8-28-09	8-31-09	
Chrysene	**ND**	0.0084	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[b]fluoranthene	**ND**	0.0084	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[k]fluoranthene	**ND**	0.0084	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[a]pyrene	**ND**	0.0084	EPA 8270/SIM	8-28-09	8-31-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0084	EPA 8270/SIM	8-28-09	8-31-09	
Dibenz[a,h]anthracene	**ND**	0.0084	EPA 8270/SIM	8-28-09	8-31-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*67*	*39 - 103*				
Pyrene-d10	*82*	*39 - 115*				
Terphenyl-d14	*80*	*50 - 118*				

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ABT02-0100**					
Laboratory ID:	08-211-02					
Benzo[a]anthracene	**ND**	0.010	EPA 8270/SIM	8-28-09	8-31-09	
Chrysene	**ND**	0.010	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[k]fluoranthene	**ND**	0.010	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[a]pyrene	**ND**	0.010	EPA 8270/SIM	8-28-09	8-31-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270/SIM	8-28-09	8-31-09	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270/SIM	8-28-09	8-31-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*59*	*39 - 103*				
Pyrene-d10	*71*	*39 - 115*				
Terphenyl-d14	*71*	*50 - 118*				

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ABT03-0100**					
Laboratory ID:	08-211-03					
Benzo[a]anthracene	**ND**	0.0094	EPA 8270/SIM	8-28-09	8-31-09	
Chrysene	**ND**	0.0094	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[b]fluoranthene	**ND**	0.0094	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[k]fluoranthene	**ND**	0.0094	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[a]pyrene	**ND**	0.0094	EPA 8270/SIM	8-28-09	8-31-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0094	EPA 8270/SIM	8-28-09	8-31-09	
Dibenz[a,h]anthracene	**ND**	0.0094	EPA 8270/SIM	8-28-09	8-31-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*76*	*39 - 103*				
Pyrene-d10	*87*	*39 - 115*				
Terphenyl-d14	*86*	*50 - 118*				

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW05-0065**					
Laboratory ID:	08-211-04					
Benzo[a]anthracene	**ND**	0.0079	EPA 8270/SIM	8-28-09	8-31-09	
Chrysene	**ND**	0.0079	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[b]fluoranthene	**ND**	0.0079	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[k]fluoranthene	**ND**	0.0079	EPA 8270/SIM	8-28-09	8-31-09	
Benzo[a]pyrene	**ND**	0.0079	EPA 8270/SIM	8-28-09	8-31-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0079	EPA 8270/SIM	8-28-09	8-31-09	
Dibenz[a,h]anthracene	**ND**	0.0079	EPA 8270/SIM	8-28-09	8-31-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*66*	*39 - 103*				
Pyrene-d10	*81*	*39 - 115*				
Terphenyl-d14	*79*	*50 - 118*				

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0828S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	8-28-09	8-29-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*39 - 103*				
Pyrene-d10	*100*	*39 - 115*				
Terphenyl-d14	*68*	*50 - 118*				

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

PAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0828S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0566**	**0.0622**	0.0833	0.0833	68	75	31 - 102	9	30	
Acenaphthylene	**0.0701**	**0.0740**	0.0833	0.0833	84	89	48 - 104	5	26	
Acenaphthene	**0.0619**	**0.0668**	0.0833	0.0833	74	80	46 - 105	8	26	
Fluorene	**0.0688**	**0.0715**	0.0833	0.0833	83	86	52 - 107	4	25	
Phenanthrene	**0.0681**	**0.0694**	0.0833	0.0833	82	83	58 - 104	2	21	
Anthracene	**0.0775**	**0.0787**	0.0833	0.0833	93	94	56 - 103	2	21	
Fluoranthene	**0.0784**	**0.0786**	0.0833	0.0833	94	94	65 - 111	0	20	
Pyrene	**0.0753**	**0.0752**	0.0833	0.0833	90	90	65 - 115	0	20	
Benzo[a]anthracene	**0.0768**	**0.0764**	0.0833	0.0833	92	92	55 - 111	1	19	
Chrysene	**0.0679**	**0.0690**	0.0833	0.0833	82	83	58 - 121	2	19	
Benzo[b]fluoranthene	**0.0786**	**0.0797**	0.0833	0.0833	94	96	57 - 120	1	20	
Benzo[k]fluoranthene	**0.0842**	**0.0849**	0.0833	0.0833	101	102	52 - 123	1	21	
Benzo[a]pyrene	**0.0925**	**0.0934**	0.0833	0.0833	111	112	49 - 106	1	22	I
Indeno(1,2,3-c,d)pyrene	**0.0820**	**0.0809**	0.0833	0.0833	98	97	56 - 125	1	22	
Dibenz[a,h]anthracene	**0.0852**	**0.0848**	0.0833	0.0833	102	102	55 - 129	0	24	
Benzo[g,h,i]perylene	**0.0837**	**0.0825**	0.0833	0.0833	100	99	55 - 122	1	23	
Surrogate:										
2-Fluorobiphenyl					*71*	*77*	*39 - 103*			
Pyrene-d10					*100*	*100*	*39 - 115*			
Terphenyl-d14					*68*	*69*	*50 - 118*			

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

TOTAL LEAD
EPA 6010B

Date Extracted:	8-31-09
Date Analyzed:	8-31-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-ASW04-0070	08-211-01	**ND**	6.3
WB-SO-ABT02-0100	08-211-02	**ND**	7.7
WB-SO-ABT03-0100	08-211-03	**ND**	7.0
WB-SO-ASW05-0065	08-211-04	**ND**	6.0

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-31-09
Date Analyzed:	8-31-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0831S1

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-204-06

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**49.2**	**51.8**	5		5.0

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-204-06

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**289**	96	**286**	95	1	

Date of Report: September 1, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-211
Project: 235-1577-024

% MOISTURE

Date Analyzed: 8-28-09

Client ID	Lab ID	% Moisture
WB-SO-ASW04-0070	08-211-01	21
WB-SO-ABT02-0100	08-211-02	35
WB-SO-ABT03-0100	08-211-03	29
WB-SO-ASW05-0065	08-211-04	16

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix
Project Number: 235-1577-024
Project Name: West Bay
Project Manager: D. Dinkuhn
Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-211

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM (cPAHs)	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	Lead					% Moisture
1	WB-SO-ASW02-0070	8/27/09	1010	Soil	4		X	X				X							X					X
2	WB-SO-ABT02-0100	8/27/09	1040	Soil	4		X	X				X							X					↓
	~~WB-SO-ASW05-hl~~																							
	~~WB-SO-A hl~~																							
3	WB-SO-ABT03-0100	8/27/09	1600	Soil	4		X	X				X							X					X
4	WB-SO-ASW05-0065	8/27/09	1645	Soil	4		X	X				X							X					↓

	Signature	Company	Date	Time
Relinquished by	Lara Linde	Parametrix	8/27/09	~~1815~~ 1715
Received by	Bing	Parametrix	8/28/09	0700
Relinquished by	Bing	Parametrix	8/28/09	0920
Received by	Van	Speedy	8/28/09	0920
Relinquished by	Van	Speedy	8/28/09	13:05
Received by		OSE	8/28/09	1305
Reviewed by/Date		Reviewed by/Date		

Special Instructions/Comments: EIM EDDs

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 3, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024 04/05
Laboratory Reference No. 0908-217

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on August 28, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

Case Narrative

Samples were collected on August 28, 2009, and received by the laboratory on August 28, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

BTEX by EPA 8021B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP01-0005**	**WB-SO-ASP02-0005**	**WB-SO-ASP03-0005**
Lab ID:	08-217-01	08-217-02	08-217-03
Diesel Range:	**65**	**140**	**ND**
PQL:	29	31	56
Identification:	Diesel Range Organics	Diesel Range Organics	---
Lube Oil Range:	**540**	**840**	**570**
PQL:	57	62	58
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	121%	125%	123%
Flags:	Y,N	Y,N	Y,U1

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP04-0005**	**WB-SO-ASP05-0005**	**WB-SO-ASP06-0005**
Lab ID:	08-217-04	08-217-05	08-217-06
Diesel Range:	**120**	**ND**	**45**
PQL:	27	65	28
Identification:	Diesel Range Organics	---	Diesel Range Organics
Lube Oil Range:	**980**	**490**	**330**
PQL:	54	54	56
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	98%	90%	125%
Flags:	Y,N	Y,U1	Y,N

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 8-31&9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP07-0005**	**WB-SO-ASP08-0005**	**WB-SO-ASP08-1005**
Lab ID:	08-217-07	08-217-08	08-217-09
Diesel Range:	**2300**	**340**	**380**
PQL:	150	31	31
Identification:	Diesel Range Organics	Diesel Range Organics	Diesel Range Organics
Lube Oil Range:	**6400**	**1000**	**910**
PQL:	310	61	62
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	87%	127%	81%
Flags:	Y,N	Y,N	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP09-0005**	**WB-SO-ASP10-0005**	**WB-SO-ASP11-0005**
Lab ID:	08-217-10	08-217-11	08-217-12
Diesel Range:	**3000**	**3300**	**2400**
PQL:	150	150	150
Identification:	Diesel Range Organics	Diesel Range Organics	Diesel Range Organics
Lube Oil Range:	**4400**	**5500**	**3800**
PQL:	300	290	300
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	91%	90%	90%
Flags:	Y	Y	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP12-0005**	**WB-SO-ASW06-0060**	**WB-SO-ABT04-0100**
Lab ID:	08-217-13	08-217-16	08-217-17
Diesel Range:	**90**	**ND**	**ND**
PQL:	29	33	37
Identification:	Diesel Range Organics	---	---
Lube Oil Range:	**240**	**69**	**ND**
PQL:	59	65	75
Identification:	Lube Oil	Lube Oil	---
Surrogate Recovery			
o-Terphenyl:	85%	86%	85%
Flags:	Y	Y	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASW07-0070**	**WB-SO-ASW07-1070**
Lab ID:	08-217-18	08-217-19
Diesel Range:	**ND**	**ND**
PQL:	31	32
Identification:	---	---
Lube Oil Range:	**76**	**ND**
PQL:	61	63
Identification:	Lube Oil	---
Surrogate Recovery		
o-Terphenyl:	77%	124%
Flags:	Y	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-31-09
Date Analyzed:	8-31-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0831S2
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	130%
Flags:	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-217-06	08-217-06 DUP
Diesel Range:	**40.5**	**41.3**
PQL:	25	25
RPD:	2	
Surrogate Recovery		
o-Terphenyl:	125%	108%
Flags:	Y,N	Y,N

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-221-01	08-221-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	98%	95%
Flags:	Y	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-CSP01-0005**	**WB-SO-CSP02-0005**
Lab ID:	08-217-14	08-217-15
Diesel Range:	**ND**	**ND**
PQL:	81	82
Identification:	---	---
Lube Oil Range:	**1400**	**680**
PQL:	57	54
Identification:	Lube Oil	Lube Oil
Surrogate Recovery		
o-Terphenyl:	80%	86%
Flags:	Y,U1	Y,U1

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0901S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	65%
Flags:	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-224-02	08-224-02 DUP
Diesel Range:	**ND**	**ND**
PQL:	107	91
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	76%	77%
Flags:	Y,U1	Y,U1

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP01-0005**					
Laboratory ID:	08-217-01					
Benzo[a]anthracene	**0.028**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.063**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.024**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.015**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.025**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.012**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*39 - 103*				
Pyrene-d10	*73*	*39 - 115*				
Terphenyl-d14	*91*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP02-0005**					
Laboratory ID:	08-217-02					
Benzo[a]anthracene	**0.029**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.11**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.024**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.012**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.033**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*39 - 103*				
Pyrene-d10	*78*	*39 - 115*				
Terphenyl-d14	*106*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP03-0005**					
Laboratory ID:	08-217-03					
Benzo[a]anthracene	**0.049**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.088**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.057**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.038**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.037**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.025**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.0094**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*39 - 103*				
Pyrene-d10	*73*	*39 - 115*				
Terphenyl-d14	*109*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP04-0005**					
Laboratory ID:	08-217-04					
Benzo[a]anthracene	**0.020**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.056**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.021**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.013**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.021**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.0095**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*79*	*39 - 103*				
Pyrene-d10	*78*	*39 - 115*				
Terphenyl-d14	*115*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP05-0005**					
Laboratory ID:	08-217-05					
Benzo[a]anthracene	**0.056**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.11**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.098**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.054**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.063**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.049**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.018**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*80*	*39 - 103*				
Pyrene-d10	*75*	*39 - 115*				
Terphenyl-d14	*112*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP06-0005**					
Laboratory ID:	08-217-06					
Benzo[a]anthracene	**ND**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.017**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**ND**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**ND**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.0097**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*39 - 103*				
Pyrene-d10	*79*	*39 - 115*				
Terphenyl-d14	*107*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP07-0005**					
Laboratory ID:	08-217-07					
Benzo[a]anthracene	**0.085**	0.082	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.44**	0.082	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**0.096**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.024**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.072**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.0092**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*76*	*39 - 103*				
Pyrene-d10	*71*	*39 - 115*				
Terphenyl-d14	*91*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP08-0005**					
Laboratory ID:	08-217-08					
Benzo[a]anthracene	**0.14**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.21**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.10**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.081**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.11**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.047**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.020**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*39 - 103*				
Pyrene-d10	*78*	*39 - 115*				
Terphenyl-d14	*91*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP08-1005**					
Laboratory ID:	08-217-09					
Benzo[a]anthracene	**0.031**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.098**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.025**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.014**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.029**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.012**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*74*	*39 - 103*				
Pyrene-d10	*76*	*39 - 115*				
Terphenyl-d14	*100*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP09-0005**					
Laboratory ID:	08-217-10					
Benzo[a]anthracene	**0.35**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.70**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.13**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.036**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.20**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.045**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.015**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*89*	*39 - 103*				
Pyrene-d10	*102*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP10-0005**					
Laboratory ID:	08-217-11					
Benzo[a]anthracene	**0.23**	0.078	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.59**	0.078	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**0.12**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.078**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.20**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.040**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.030**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*89*	*39 - 103*				
Pyrene-d10	*99*	*39 - 115*				
Terphenyl-d14	*97*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP11-0005**					
Laboratory ID:	08-217-12					
Benzo[a]anthracene	**0.23**	0.16	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.62**	0.16	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**0.10**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.042**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.22**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.021**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.018**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*87*	*39 - 103*				
Pyrene-d10	*88*	*39 - 115*				
Terphenyl-d14	*89*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP12-0005**					
Laboratory ID:	08-217-13					
Benzo[a]anthracene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.015**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*72*	*39 - 103*				
Pyrene-d10	*84*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CSP01-0005**					
Laboratory ID:	08-217-14					
Benzo[a]anthracene	**0.23**	0.036	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.43**	0.036	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**0.37**	0.0076	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.25**	0.0076	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.25**	0.0076	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.14**	0.0076	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.039**	0.0076	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*39 - 103*				
Pyrene-d10	*81*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CSP02-0005**					
Laboratory ID:	08-217-15					
Benzo[a]anthracene	**0.12**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.23**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.21**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.12**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.13**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.11**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.030**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*39 - 103*				
Pyrene-d10	*79*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW06-0060**					
Laboratory ID:	08-217-16					
Benzo[a]anthracene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.022**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*39 - 103*				
Pyrene-d10	*79*	*39 - 115*				
Terphenyl-d14	*92*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ABT04-0100**					
Laboratory ID:	08-217-17					
Benzo[a]anthracene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*39 - 103*				
Pyrene-d10	*71*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW07-0070**					
Laboratory ID:	08-217-18					
Benzo[a]anthracene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*75*	*39 - 103*				
Pyrene-d10	*69*	*39 - 115*				
Terphenyl-d14	*101*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW07-1070**					
Laboratory ID:	08-217-19					
Benzo[a]anthracene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*78*	*39 - 103*				
Pyrene-d10	*71*	*39 - 115*				
Terphenyl-d14	*105*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0901S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*39 - 103*				
Pyrene-d10	*98*	*39 - 115*				
Terphenyl-d14	*95*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0901S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0662**	**0.0653**	0.0833	0.0833	79	78	31 - 102	1	30	
Acenaphthylene	**0.0678**	**0.0658**	0.0833	0.0833	81	79	48 - 104	3	26	
Acenaphthene	**0.0708**	**0.0688**	0.0833	0.0833	85	83	46 - 105	3	26	
Fluorene	**0.0721**	**0.0712**	0.0833	0.0833	87	85	52 - 107	1	25	
Phenanthrene	**0.0717**	**0.0709**	0.0833	0.0833	86	85	58 - 104	1	21	
Anthracene	**0.0699**	**0.0691**	0.0833	0.0833	84	83	56 - 103	1	21	
Fluoranthene	**0.0764**	**0.0757**	0.0833	0.0833	92	91	65 - 111	1	20	
Pyrene	**0.0794**	**0.0788**	0.0833	0.0833	95	95	65 - 115	1	20	
Benzo[a]anthracene	**0.0697**	**0.0694**	0.0833	0.0833	84	83	55 - 111	0	19	
Chrysene	**0.0792**	**0.0791**	0.0833	0.0833	95	95	58 - 121	0	19	
Benzo[b]fluoranthene	**0.0788**	**0.0775**	0.0833	0.0833	95	93	57 - 120	2	20	
Benzo[k]fluoranthene	**0.0784**	**0.0825**	0.0833	0.0833	94	99	52 - 123	5	21	
Benzo[a]pyrene	**0.0695**	**0.0716**	0.0833	0.0833	83	86	49 - 106	3	22	
Indeno(1,2,3-c,d)pyrene	**0.0772**	**0.0781**	0.0833	0.0833	93	94	56 - 125	1	22	
Dibenz[a,h]anthracene	**0.0789**	**0.0800**	0.0833	0.0833	95	96	55 - 129	1	24	
Benzo[g,h,i]perylene	**0.0782**	**0.0788**	0.0833	0.0833	94	95	55 - 122	1	23	
Surrogate:										
2-Fluorobiphenyl					*81*	*77*	*39 - 103*			
Pyrene-d10					*91*	*92*	*39 - 115*			
Terphenyl-d14					*91*	*90*	*50 - 118*			

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted:	8-31-09					
Date Analyzed:	8-31-09					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**WB-SO-ASP01-0005**			**WB-SO-ASP02-0005**		
Lab ID:	08-217-01			08-217-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.070	**ND**		0.062
Ethyl Benzene	**ND**		0.070	**ND**		0.062
m,p-Xylene	**ND**		0.070	**ND**		0.062
o-Xylene	**ND**		0.070	**ND**		0.062
Surrogate Recovery:						
Fluorobenzene	92%			84%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-S0-ASP03-0005**			**WB-SO-ASP04-0005**		
Lab ID:	08-217-03			08-217-04		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.061	**ND**		0.065
Ethyl Benzene	**ND**		0.061	**ND**		0.065
m,p-Xylene	**ND**		0.061	**ND**		0.065
o-Xylene	**ND**		0.061	**ND**		0.065
Surrogate Recovery:						
Fluorobenzene	95%			95%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31&9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP05-0005**			**WB-SO-ASP06-0005**		
Lab ID:	08-217-05			08-217-06		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.060	**ND**		0.063
Ethyl Benzene	**ND**		0.060	**ND**		0.063
m,p-Xylene	**ND**		0.060	**ND**		0.063
o-Xylene	**ND**		0.060	**ND**		0.063
Surrogate Recovery:						
Fluorobenzene	90%			86%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP07-0005**			**WB-SO-ASP08-0005**		
Lab ID:	08-217-07			08-217-08		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.074	**ND**		0.078
Ethyl Benzene	**0.14**		0.074	**ND**		0.078
m,p-Xylene	**0.22**		0.074	**ND**		0.078
o-Xylene	**ND**		0.074	**ND**		0.078
Surrogate Recovery:						
Fluorobenzene	87%			86%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31&9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP08-1005**			**WB-SO-ASP09-0005**		
Lab ID:	08-217-09			08-217-10		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**0.021**		0.020
Toluene	**ND**		0.081	**ND**		0.070
Ethyl Benzene	**ND**		0.081	**ND**		0.070
m,p-Xylene	**ND**		0.081	**ND**		0.070
o-Xylene	**ND**		0.081	**0.12**		0.070
Surrogate Recovery: Fluorobenzene	94%			90%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted:	8-31-09					
Date Analyzed:	8-31&9-1-09					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**WB-SO-ASP10-0005**			**WB-SO-ASP11-0005**		
Lab ID:	08-217-11			08-217-12		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.061	**ND**		0.070
Ethyl Benzene	**ND**		0.061	**ND**		0.070
m,p-Xylene	**ND**		0.061	**ND**		0.070
o-Xylene	**ND**		0.061	**ND**		0.070
Surrogate Recovery:						
Fluorobenzene	94%			93%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31&9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP12-0005**			**WB-SO-ASW06-0060**		
Lab ID:	08-217-13			08-217-16		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.073	**ND**		0.081
Ethyl Benzene	**ND**		0.073	**ND**		0.081
m,p-Xylene	**ND**		0.073	**ND**		0.081
o-Xylene	**ND**		0.073	**ND**		0.081
Surrogate Recovery:						
Fluorobenzene	91%			98%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ABT04-0100**			**WB-SO-ASW07-0070**		
Lab ID:	08-217-17			08-217-18		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.021	**ND**		0.020
Toluene	**ND**		0.10	**ND**		0.074
Ethyl Benzene	**ND**		0.10	**ND**		0.074
m,p-Xylene	**ND**		0.10	**ND**		0.074
o-Xylene	**ND**		0.10	**ND**		0.074
Surrogate Recovery:						
Fluorobenzene	107%			95%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID: **WB-SO-ASW07-1070**
Lab ID: 08-217-19

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.086
Ethyl Benzene	**ND**		0.086
m,p-Xylene	**ND**		0.086
o-Xylene	**ND**		0.086

Surrogate Recovery:
Fluorobenzene 95%

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0831S1

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050

Surrogate Recovery:
Fluorobenzene 93%

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0831S2

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050

Surrogate Recovery:
Fluorobenzene 92%

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-217-05 **Original**	08-217-05 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	90%	89%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31&9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-217-19 **Original**	08-217-19 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	95%	90%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B
SB/SBD QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0831S1 **SB**	Percent Recovery	SB0831S1 DUP **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.947**	**95**	**0.979**	**98**	3	
Toluene	**1.01**	**101**	**1.02**	**102**	2	
Ethyl Benzene	**0.994**	**99**	**1.02**	**102**	3	
m,p-Xylene	**1.05**	**105**	**1.06**	**106**	1	
o-Xylene	**1.02**	**102**	**1.04**	**104**	2	

Surrogate Recovery:
Fluorobenzene 89% 93%

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

TOTAL LEAD
EPA 6010B

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-ASP01-0005	08-217-01	**11**	5.7
WB-SO-ASP02-0005	08-217-02	**15**	6.2
WB-SO-ASP03-0005	08-217-03	**13**	5.8
WB-SO-ASP04-0005	08-217-04	**ND**	5.4
WB-SO-ASP05-0005	08-217-05	**14**	5.4
WB-SO-ASP06-0005	08-217-06	**10**	5.6
WB-SO-ASP07-0005	08-217-07	**ND**	6.2
WB-SO-ASP08-0005	08-217-08	**ND**	6.1
WB-SO-ASP08-1005	08-217-09	**8.3**	6.2
WB-SO-ASP09-0005	08-217-10	**6.4**	6.0
WB-SO-ASP10-0005	08-217-11	**14**	5.8
WB-SO-ASP11-0005	08-217-12	**ND**	6.1
WB-SO-ASP12-0005	08-217-13	**ND**	5.9
WB-SO-ASW06-0060	08-217-16	**ND**	6.5

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

TOTAL LEAD
EPA 6010B

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-ABT04-0100	08-217-17	**ND**	7.5
WB-SO-ASW07-0070	08-217-18	**ND**	6.1
WB-SO-ASW07-1070	08-217-19	**ND**	6.3

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0901S2

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-217-01

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**9.67**	**5.46**	56	C	5.0

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-217-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**222**	85	**217**	83	2	

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

% MOISTURE

Date Analyzed: 8-31-09

Client ID	Lab ID	% Moisture
WB-SO-ASP01-0005	08-217-01	13
WB-SO-ASP02-0005	08-217-02	19
WB-SO-ASP03-0005	08-217-03	14
WB-SO-ASP04-0005	08-217-04	8
WB-SO-ASP05-0005	08-217-05	8
WB-SO-ASP06-0005	08-217-06	10
WB-SO-ASP07-0005	08-217-07	19
WB-SO-ASP08-0005	08-217-08	18
WB-SO-ASP08-1005	08-217-09	19
WB-SO-ASP09-0005	08-217-10	17
WB-SO-ASP10-0005	08-217-11	14
WB-SO-ASP11-0005	08-217-12	18
WB-SO-ASP12-0005	08-217-13	15
WB-SO-CSP01-0005	08-217-14	110
WB-SO-CSP02-0005	08-217-15	110
WB-SO-ASW06-0060	08-217-16	23
WB-SO-ABT04-0100	08-217-17	33
WB-SO-ASW07-0070	08-217-18	18
WB-SO-ASW07-1070	08-217-19	21

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: PARAMETRIX
Project Number: 235-1577.024.04/05
Project Name: WESTBAY PARK
Project Manager: D. DINKUHN
Sampled by: B. HARDY

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☑ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-217

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM (cPAHs)	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	BTEX	LEAD				% Moisture
1	WB-SO-ASP01-0005	8/28/09	0900	So	4			X				X							X	X				X
2	WB-SO-ASP02-0005		0910					X				X							X	X				
3	WB-SO-ASP03-0005		0920					X				X							X	X				
4	WB-SO-ASP04-0005		0930					X				X							X	X				
5	WB-SO-ASP05-0005		0940					X				X							X	X				
6	WB-SO-ASP06-0005		0950					X				X							X	X				
7	WB-SO-ASP07-0005		10:00					X				X							X	X				
8	WB-SO-ASP08-0005		10:10					X				X							X	X				
9	WB-SO-ASP08-1005		10:15					X				X							X	X				
10	WB-SO-ASP09-0005		10:20					X				X							X	X				

	Signature	Company	Date	Time
Relinquished by		Parametrix	8/28/09	1620
Received by		Speedy	8/28/09	1620
Relinquished by		"	8/28/09	540
Received by		OSE	8/28/09	1745
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
Added 9/1/09 - DB (2 day TAT)

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: PARAMETRIX
Project Number: 235-1577-024 04/05
Project Name: WEST BAY PARK
Project Manager: D. DINKUHN
Sampled by: B. HARDY

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☑ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-217

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM COALS	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	LEAD	BTEX				% Moisture
11	WB-SO-ASP10-0005	8/28/09	1030	Sg.	4			X				X							X	X				X
12	WB-SO-ASP11-0005		1040		↓			X				X							X	X				↓
13	WB-SO-ASP12-0005		1050		↓			X				X							X	X				
14	WB-SO-CSP01-0005		1210		1			⊗				X												
15	WB-SO-CSP02-0005		1220		1			⊗				X												
16	WB-SO-ASW06-0060		0820		4			X				X							X	X				
17	WB-SO-ABT04-0100		1050		4			X				X							X	X				
18	WB-SO-ASW07-0070		1250		↓			X				X							X	X				
19	WB-SO-ASW07-1070		1250	↓	↓			X				X							X	X				↓

	Signature	Company	Date	Time
Relinquished by		Parametrix	8/28/09	1620
Received by		Speedy	8/28/09	1620
Relinquished by		"	"	540
Received by		OSE	8/28/09	1745
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
⊗ Added 9/1/09. DB (2 day TAT)

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 3, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024 04/05
Laboratory Reference No. 0908-217

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on August 28, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

Case Narrative

Samples were collected on August 28, 2009, and received by the laboratory on August 28, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

BTEX by EPA 8021B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP01-0005**	**WB-SO-ASP02-0005**	**WB-SO-ASP03-0005**
Lab ID:	08-217-01	08-217-02	08-217-03
Diesel Range:	**65**	**140**	**ND**
PQL:	29	31	56
Identification:	Diesel Range Organics	Diesel Range Organics	---
Lube Oil Range:	**540**	**840**	**570**
PQL:	57	62	58
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	121%	125%	123%
Flags:	Y,N	Y,N	Y,U1

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP04-0005**	**WB-SO-ASP05-0005**	**WB-SO-ASP06-0005**
Lab ID:	08-217-04	08-217-05	08-217-06
Diesel Range:	**120**	**ND**	**45**
PQL:	27	65	28
Identification:	Diesel Range Organics	---	Diesel Range Organics
Lube Oil Range:	**980**	**490**	**330**
PQL:	54	54	56
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	98%	90%	125%
Flags:	Y,N	Y,U1	Y,N

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 8-31&9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP07-0005**	**WB-SO-ASP08-0005**	**WB-SO-ASP08-1005**
Lab ID:	08-217-07	08-217-08	08-217-09
Diesel Range:	**2300**	**340**	**380**
PQL:	150	31	31
Identification:	Diesel Range Organics	Diesel Range Organics	Diesel Range Organics
Lube Oil Range:	**6400**	**1000**	**910**
PQL:	310	61	62
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	87%	127%	81%
Flags:	Y,N	Y,N	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP09-0005**	**WB-SO-ASP10-0005**	**WB-SO-ASP11-0005**
Lab ID:	08-217-10	08-217-11	08-217-12
Diesel Range:	**3000**	**3300**	**2400**
PQL:	150	150	150
Identification:	Diesel Range Organics	Diesel Range Organics	Diesel Range Organics
Lube Oil Range:	**4400**	**5500**	**3800**
PQL:	300	290	300
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	91%	90%	90%
Flags:	Y	Y	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP12-0005**	**WB-SO-ASW06-0060**	**WB-SO-ABT04-0100**
Lab ID:	08-217-13	08-217-16	08-217-17
Diesel Range:	**90**	**ND**	**ND**
PQL:	29	33	37
Identification:	Diesel Range Organics	---	---
Lube Oil Range:	**240**	**69**	**ND**
PQL:	59	65	75
Identification:	Lube Oil	Lube Oil	---
Surrogate Recovery			
o-Terphenyl:	85%	86%	85%
Flags:	Y	Y	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASW07-0070**	**WB-SO-ASW07-1070**
Lab ID:	08-217-18	08-217-19
Diesel Range:	**ND**	**ND**
PQL:	31	32
Identification:	---	---
Lube Oil Range:	**76**	**ND**
PQL:	61	63
Identification:	Lube Oil	---
Surrogate Recovery		
o-Terphenyl:	77%	124%
Flags:	Y	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-31-09
Date Analyzed:	8-31-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0831S2
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	130%
Flags:	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-217-06	08-217-06 DUP
Diesel Range:	**40.5**	**41.3**
PQL:	25	25
RPD:	2	
Surrogate Recovery		
o-Terphenyl:	125%	108%
Flags:	Y,N	Y,N

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-221-01	08-221-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	98%	95%
Flags:	Y	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-CSP01-0005**	**WB-SO-CSP02-0005**
Lab ID:	08-217-14	08-217-15
Diesel Range:	**ND**	**ND**
PQL:	81	82
Identification:	---	---
Lube Oil Range:	**1400**	**680**
PQL:	57	54
Identification:	Lube Oil	Lube Oil
Surrogate Recovery		
o-Terphenyl:	80%	86%
Flags:	Y,U1	Y,U1

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0901S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	65%
Flags:	Y

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-224-02	08-224-02 DUP
Diesel Range:	**ND**	**ND**
PQL:	107	91
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	76%	77%
Flags:	Y,U1	Y,U1

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP01-0005**					
Laboratory ID:	08-217-01					
Benzo[a]anthracene	**0.028**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.063**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.024**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.015**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.025**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.012**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0077	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*39 - 103*				
Pyrene-d10	*73*	*39 - 115*				
Terphenyl-d14	*91*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP02-0005**					
Laboratory ID:	08-217-02					
Benzo[a]anthracene	**0.029**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.11**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.024**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.012**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.033**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*39 - 103*				
Pyrene-d10	*78*	*39 - 115*				
Terphenyl-d14	*106*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP03-0005**					
Laboratory ID:	08-217-03					
Benzo[a]anthracene	**0.049**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.088**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.057**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.038**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.037**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.025**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.0094**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*39 - 103*				
Pyrene-d10	*73*	*39 - 115*				
Terphenyl-d14	*109*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP04-0005**					
Laboratory ID:	08-217-04					
Benzo[a]anthracene	**0.020**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.056**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.021**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.013**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.021**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.0095**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*79*	*39 - 103*				
Pyrene-d10	*78*	*39 - 115*				
Terphenyl-d14	*115*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP05-0005**					
Laboratory ID:	08-217-05					
Benzo[a]anthracene	**0.056**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.11**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.098**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.054**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.063**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.049**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.018**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*80*	*39 - 103*				
Pyrene-d10	*75*	*39 - 115*				
Terphenyl-d14	*112*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP06-0005**					
Laboratory ID:	08-217-06					
Benzo[a]anthracene	**ND**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.017**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**ND**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**ND**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.0097**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0074	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*39 - 103*				
Pyrene-d10	*79*	*39 - 115*				
Terphenyl-d14	*107*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP07-0005**					
Laboratory ID:	08-217-07					
Benzo[a]anthracene	**0.085**	0.082	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.44**	0.082	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**0.096**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.024**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.072**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.0092**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*76*	*39 - 103*				
Pyrene-d10	*71*	*39 - 115*				
Terphenyl-d14	*91*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP08-0005**					
Laboratory ID:	08-217-08					
Benzo[a]anthracene	**0.14**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.21**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.10**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.081**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.11**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.047**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.020**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*39 - 103*				
Pyrene-d10	*78*	*39 - 115*				
Terphenyl-d14	*91*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP08-1005**					
Laboratory ID:	08-217-09					
Benzo[a]anthracene	**0.031**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.098**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.025**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.014**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.029**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.012**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0082	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*74*	*39 - 103*				
Pyrene-d10	*76*	*39 - 115*				
Terphenyl-d14	*100*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP09-0005**					
Laboratory ID:	08-217-10					
Benzo[a]anthracene	**0.35**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.70**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.13**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.036**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.20**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.045**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.015**	0.0080	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*89*	*39 - 103*				
Pyrene-d10	*102*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP10-0005**					
Laboratory ID:	08-217-11					
Benzo[a]anthracene	**0.23**	0.078	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.59**	0.078	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**0.12**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.078**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.20**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.040**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.030**	0.0078	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*89*	*39 - 103*				
Pyrene-d10	*99*	*39 - 115*				
Terphenyl-d14	*97*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP11-0005**					
Laboratory ID:	08-217-12					
Benzo[a]anthracene	**0.23**	0.16	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.62**	0.16	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**0.10**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.042**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.22**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.021**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.018**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*87*	*39 - 103*				
Pyrene-d10	*88*	*39 - 115*				
Terphenyl-d14	*89*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP12-0005**					
Laboratory ID:	08-217-13					
Benzo[a]anthracene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.015**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0078	EPA 8270/SIM	9-1-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*72*	*39 - 103*				
Pyrene-d10	*84*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CSP01-0005**					
Laboratory ID:	08-217-14					
Benzo[a]anthracene	**0.23**	0.036	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.43**	0.036	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**0.37**	0.0076	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.25**	0.0076	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.25**	0.0076	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.14**	0.0076	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.039**	0.0076	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*39 - 103*				
Pyrene-d10	*81*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-CSP02-0005**					
Laboratory ID:	08-217-15					
Benzo[a]anthracene	**0.12**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**0.23**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**0.21**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**0.12**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**0.13**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**0.11**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**0.030**	0.0072	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*39 - 103*				
Pyrene-d10	*79*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW06-0060**					
Laboratory ID:	08-217-16					
Benzo[a]anthracene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**0.022**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0087	EPA 8270/SIM	9-1-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*39 - 103*				
Pyrene-d10	*79*	*39 - 115*				
Terphenyl-d14	*92*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ABT04-0100**					
Laboratory ID:	08-217-17					
Benzo[a]anthracene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*39 - 103*				
Pyrene-d10	*71*	*39 - 115*				
Terphenyl-d14	*96*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW07-0070**					
Laboratory ID:	08-217-18					
Benzo[a]anthracene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*75*	*39 - 103*				
Pyrene-d10	*69*	*39 - 115*				
Terphenyl-d14	*101*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASW07-1070**					
Laboratory ID:	08-217-19					
Benzo[a]anthracene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Chrysene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0084	EPA 8270/SIM	9-1-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*78*	*39 - 103*				
Pyrene-d10	*71*	*39 - 115*				
Terphenyl-d14	*105*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0901S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	9-1-09	9-2-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*39 - 103*				
Pyrene-d10	*98*	*39 - 115*				
Terphenyl-d14	*95*	*50 - 118*				

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

cPAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0901S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0662**	**0.0653**	0.0833	0.0833	79	78	31 - 102	1	30	
Acenaphthylene	**0.0678**	**0.0658**	0.0833	0.0833	81	79	48 - 104	3	26	
Acenaphthene	**0.0708**	**0.0688**	0.0833	0.0833	85	83	46 - 105	3	26	
Fluorene	**0.0721**	**0.0712**	0.0833	0.0833	87	85	52 - 107	1	25	
Phenanthrene	**0.0717**	**0.0709**	0.0833	0.0833	86	85	58 - 104	1	21	
Anthracene	**0.0699**	**0.0691**	0.0833	0.0833	84	83	56 - 103	1	21	
Fluoranthene	**0.0764**	**0.0757**	0.0833	0.0833	92	91	65 - 111	1	20	
Pyrene	**0.0794**	**0.0788**	0.0833	0.0833	95	95	65 - 115	1	20	
Benzo[a]anthracene	**0.0697**	**0.0694**	0.0833	0.0833	84	83	55 - 111	0	19	
Chrysene	**0.0792**	**0.0791**	0.0833	0.0833	95	95	58 - 121	0	19	
Benzo[b]fluoranthene	**0.0788**	**0.0775**	0.0833	0.0833	95	93	57 - 120	2	20	
Benzo[k]fluoranthene	**0.0784**	**0.0825**	0.0833	0.0833	94	99	52 - 123	5	21	
Benzo[a]pyrene	**0.0695**	**0.0716**	0.0833	0.0833	83	86	49 - 106	3	22	
Indeno(1,2,3-c,d)pyrene	**0.0772**	**0.0781**	0.0833	0.0833	93	94	56 - 125	1	22	
Dibenz[a,h]anthracene	**0.0789**	**0.0800**	0.0833	0.0833	95	96	55 - 129	1	24	
Benzo[g,h,i]perylene	**0.0782**	**0.0788**	0.0833	0.0833	94	95	55 - 122	1	23	
Surrogate:										
2-Fluorobiphenyl					*81*	*77*	*39 - 103*			
Pyrene-d10					*91*	*92*	*39 - 115*			
Terphenyl-d14					*91*	*90*	*50 - 118*			

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted:	8-31-09					
Date Analyzed:	8-31-09					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**WB-SO-ASP01-0005**			**WB-SO-ASP02-0005**		
Lab ID:	08-217-01			08-217-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.070	**ND**		0.062
Ethyl Benzene	**ND**		0.070	**ND**		0.062
m,p-Xylene	**ND**		0.070	**ND**		0.062
o-Xylene	**ND**		0.070	**ND**		0.062
Surrogate Recovery:						
Fluorobenzene	92%			84%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-S0-ASP03-0005**			**WB-SO-ASP04-0005**		
Lab ID:	08-217-03			08-217-04		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.061	**ND**		0.065
Ethyl Benzene	**ND**		0.061	**ND**		0.065
m,p-Xylene	**ND**		0.061	**ND**		0.065
o-Xylene	**ND**		0.061	**ND**		0.065
Surrogate Recovery:						
Fluorobenzene	95%			95%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31&9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP05-0005**			**WB-SO-ASP06-0005**		
Lab ID:	08-217-05			08-217-06		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.060	**ND**		0.063
Ethyl Benzene	**ND**		0.060	**ND**		0.063
m,p-Xylene	**ND**		0.060	**ND**		0.063
o-Xylene	**ND**		0.060	**ND**		0.063
Surrogate Recovery:						
Fluorobenzene	90%			86%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP07-0005**			**WB-SO-ASP08-0005**		
Lab ID:	08-217-07			08-217-08		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.074	**ND**		0.078
Ethyl Benzene	**0.14**		0.074	**ND**		0.078
m,p-Xylene	**0.22**		0.074	**ND**		0.078
o-Xylene	**ND**		0.074	**ND**		0.078
Surrogate Recovery:						
Fluorobenzene	87%			86%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31&9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP08-1005**			**WB-SO-ASP09-0005**		
Lab ID:	08-217-09			08-217-10		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**0.021**		0.020
Toluene	**ND**		0.081	**ND**		0.070
Ethyl Benzene	**ND**		0.081	**ND**		0.070
m,p-Xylene	**ND**		0.081	**ND**		0.070
o-Xylene	**ND**		0.081	**0.12**		0.070
Surrogate Recovery: Fluorobenzene	94%			90%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted:	8-31-09					
Date Analyzed:	8-31&9-1-09					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**WB-SO-ASP10-0005**			**WB-SO-ASP11-0005**		
Lab ID:	08-217-11			08-217-12		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.061	**ND**		0.070
Ethyl Benzene	**ND**		0.061	**ND**		0.070
m,p-Xylene	**ND**		0.061	**ND**		0.070
o-Xylene	**ND**		0.061	**ND**		0.070
Surrogate Recovery:						
Fluorobenzene	94%			93%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31&9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP12-0005**			**WB-SO-ASW06-0060**		
Lab ID:	08-217-13			08-217-16		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.073	**ND**		0.081
Ethyl Benzene	**ND**		0.073	**ND**		0.081
m,p-Xylene	**ND**		0.073	**ND**		0.081
o-Xylene	**ND**		0.073	**ND**		0.081
Surrogate Recovery:						
Fluorobenzene	91%			98%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ABT04-0100**			**WB-SO-ASW07-0070**		
Lab ID:	08-217-17			08-217-18		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.021	**ND**		0.020
Toluene	**ND**		0.10	**ND**		0.074
Ethyl Benzene	**ND**		0.10	**ND**		0.074
m,p-Xylene	**ND**		0.10	**ND**		0.074
o-Xylene	**ND**		0.10	**ND**		0.074
Surrogate Recovery:						
Fluorobenzene	107%			95%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID: **WB-SO-ASW07-1070**
Lab ID: 08-217-19

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.086
Ethyl Benzene	**ND**		0.086
m,p-Xylene	**ND**		0.086
o-Xylene	**ND**		0.086

Surrogate Recovery:
Fluorobenzene 95%

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0831S1

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050

Surrogate Recovery:
Fluorobenzene 93%

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0831S2

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050

Surrogate Recovery:
Fluorobenzene 92%

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-217-05 **Original**	08-217-05 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	90%	89%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31&9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-217-19 **Original**	08-217-19 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	95%	90%		

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Lab Traveler: 0908-217
Project: 235-1577-024 04/05

BTEX
EPA 8021B
SB/SBD QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0831S1 **SB**	Percent Recovery	SB0831S1 DUP **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.947**	**95**	**0.979**	**98**	3	
Toluene	**1.01**	**101**	**1.02**	**102**	2	
Ethyl Benzene	**0.994**	**99**	**1.02**	**102**	3	
m,p-Xylene	**1.05**	**105**	**1.06**	**106**	1	
o-Xylene	**1.02**	**102**	**1.04**	**104**	2	

Surrogate Recovery:
Fluorobenzene 89% 93%

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

TOTAL LEAD
EPA 6010B

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-ASP01-0005	08-217-01	**11**	5.7
WB-SO-ASP02-0005	08-217-02	**15**	6.2
WB-SO-ASP03-0005	08-217-03	**13**	5.8
WB-SO-ASP04-0005	08-217-04	**ND**	5.4
WB-SO-ASP05-0005	08-217-05	**14**	5.4
WB-SO-ASP06-0005	08-217-06	**10**	5.6
WB-SO-ASP07-0005	08-217-07	**ND**	6.2
WB-SO-ASP08-0005	08-217-08	**ND**	6.1
WB-SO-ASP08-1005	08-217-09	**8.3**	6.2
WB-SO-ASP09-0005	08-217-10	**6.4**	6.0
WB-SO-ASP10-0005	08-217-11	**14**	5.8
WB-SO-ASP11-0005	08-217-12	**ND**	6.1
WB-SO-ASP12-0005	08-217-13	**ND**	5.9
WB-SO-ASW06-0060	08-217-16	**ND**	6.5

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

TOTAL LEAD
EPA 6010B

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-ABT04-0100	08-217-17	**ND**	7.5
WB-SO-ASW07-0070	08-217-18	**ND**	6.1
WB-SO-ASW07-1070	08-217-19	**ND**	6.3

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0901S2

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-217-01

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**9.67**	**5.46**	56	C	5.0

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-217-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**222**	85	**217**	83	2	

Date of Report: September 3, 2009
Samples Submitted: August 28, 2009
Laboratory Reference: 0908-217
Project: 235-1577-024 04/05

% MOISTURE

Date Analyzed: 8-31-09

Client ID	Lab ID	% Moisture
WB-SO-ASP01-0005	08-217-01	13
WB-SO-ASP02-0005	08-217-02	19
WB-SO-ASP03-0005	08-217-03	14
WB-SO-ASP04-0005	08-217-04	8
WB-SO-ASP05-0005	08-217-05	8
WB-SO-ASP06-0005	08-217-06	10
WB-SO-ASP07-0005	08-217-07	19
WB-SO-ASP08-0005	08-217-08	18
WB-SO-ASP08-1005	08-217-09	19
WB-SO-ASP09-0005	08-217-10	17
WB-SO-ASP10-0005	08-217-11	14
WB-SO-ASP11-0005	08-217-12	18
WB-SO-ASP12-0005	08-217-13	15
WB-SO-CSP01-0005	08-217-14	110
WB-SO-CSP02-0005	08-217-15	110
WB-SO-ASW06-0060	08-217-16	23
WB-SO-ABT04-0100	08-217-17	33
WB-SO-ASW07-0070	08-217-18	18
WB-SO-ASW07-1070	08-217-19	21

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: PARAMETRIX
Project Number: 235-1577.024.04/05
Project Name: WESTBAY PARK
Project Manager: D. DINKUHN
Sampled by: B. HARDY

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☑ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-217

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM (cPAHs)	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	BTEX	LEAD				% Moisture
1	WB-SO-ASP01-0005	8/28/09	0900	So	4			X				X							X	X				X
2	WB-SO-ASP02-0005		0910					X				X							X	X				
3	WB-SO-ASP03-0005		0920					X				X							X	X				
4	WB-SO-ASP04-0005		0930					X				X							X	X				
5	WB-SO-ASP05-0005		0940					X				X							X	X				
6	WB-SO-ASP06-0005		0950					X				X							X	X				
7	WB-SO-ASP07-0005		10:00					X				X							X	X				
8	WB-SO-ASP08-0005		10:10					X				X							X	X				
9	WB-SO-ASP08-1005		10:15					X				X							X	X				
10	WB-SO-ASP09-0005		10:20					X				X							X	X				

	Signature	Company	Date	Time
Relinquished by		Parametrix	8/28/09	1620
Received by		Speedy	8/28/09	1620
Relinquished by		"	8/28/09	540
Received by		OSE	8/28/09	1745
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
Added 9/1/09 - DB (2 day TAT)

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: PARAMETRIX
Project Number: 235-1577-024 04/05
Project Name: WEST BAY PARK
Project Manager: D. DINKUHN
Sampled by: B. HARDY

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☑ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-217

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM COALS	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	LEAD	BTEX				% Moisture
11	WB-SO-ASP10-0005	8/28/09	1030	Sg.	4			X				X							X	X				X
12	WB-SO-ASP11-0005		1040		↓			X				X							X	X				↓
13	WB-SO-ASP12-0005		1050		↓			X				X							X	X				
14	WB-SO-CSP01-0005		1210		1			⊗				X												
15	WB-SO-CSP02-0005		1220		1			⊗				X												
16	WB-SO-ASW06-0060		0820		4			X				X							X	X				
17	WB-SO-ABT04-0100		1050		4			X				X							X	X				
18	WB-SO-ASW07-0070		1250		↓			X				X							X	X				
19	WB-SO-ASW07-1070		1250	↓	↓			X				X							X	X				↓

	Signature	Company	Date	Time
Relinquished by		Parametrix	8/28/09	1620
Received by		Speedy	8/28/09	1620
Relinquished by		"	"	540
Received by		OSE	8/28/09	1745
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
⊗ Added 9/1/09. DB (2 day TAT)

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 4, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0908-224

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on August 31, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

Case Narrative

Samples were collected on August 31, 2009, and received by the laboratory on August 31, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

BTEX by EPA 8021B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Lab Traveler: 0908-224
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-ASP13-0005**			**WB-SO-ASP14-0005**		
Lab ID:	08-224-01			08-224-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.047	**ND**		0.050
Ethyl Benzene	**ND**		0.047	**ND**		0.050
m,p-Xylene	**ND**		0.047	**ND**		0.050
o-Xylene	**ND**		0.047	**ND**		0.050
Surrogate Recovery:						
Fluorobenzene	100%			96%		

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Lab Traveler: 0908-224
Project: 235-1577-024

BTEX
EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0901S1

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050

Surrogate Recovery:
Fluorobenzene 94%

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Lab Traveler: 0908-224
Project: 235-1577-024

BTEX
EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1&2-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-226-01 **Original**	08-226-01 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	105%	96%		

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Lab Traveler: 0908-224
Project: 235-1577-024

BTEX
EPA 8021B
SB/SBD QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0901S1 **SB**	Percent Recovery	SBD0901S1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.917**	**92**	**0.965**	**97**	5	
Toluene	**0.930**	**93**	**0.972**	**97**	4	
Ethyl Benzene	**0.953**	**95**	**0.993**	**99**	4	
m,p-Xylene	**0.966**	**97**	**1.00**	**100**	4	
o-Xylene	**0.975**	**98**	**1.00**	**100**	3	

Surrogate Recovery:

Fluorobenzene	90%		95%

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

NWTPH-Dx

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID:	**WB-SO-ASP13-0005**	**WB-SO-ASP14-0005**
Lab ID:	08-224-01	08-224-02
Diesel Range:	**740**	**ND**
PQL:	29	120
Identification:	Diesel Range Organics	---
Lube Oil Range:	**1300**	**710**
PQL:	57	54
Identification:	Lube Oil	Lube Oil
Surrogate Recovery		
o-Terphenyl:	71%	76%
Flags:	Y	Y,U1

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0901S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	65%
Flags:	Y

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	08-224-02	08-224-02 DUP
Diesel Range:	**ND**	**ND**
PQL:	107	91
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	76%	77%
Flags:	Y,U1	Y,U1

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP13-0005**					
Laboratory ID:	08-224-01					
Benzo[a]anthracene	**0.17**	0.0077	EPA 8270/SIM	9-2-09	9-3-09	
Chrysene	**0.38**	0.0077	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[b]fluoranthene	**0.069**	0.0077	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[k]fluoranthene	**0.040**	0.0077	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[a]pyrene	**0.14**	0.0077	EPA 8270/SIM	9-2-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**0.024**	0.0077	EPA 8270/SIM	9-2-09	9-3-09	
Dibenz[a,h]anthracene	**0.014**	0.0077	EPA 8270/SIM	9-2-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*80*	*39 - 103*				
Pyrene-d10	*79*	*39 - 115*				
Terphenyl-d14	*83*	*50 - 118*				

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-ASP14-0005**					
Laboratory ID:	08-224-02					
Benzo[a]anthracene	**0.037**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Chrysene	**0.077**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[b]fluoranthene	**0.041**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[k]fluoranthene	**0.024**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[a]pyrene	**0.033**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**0.016**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Dibenz[a,h]anthracene	**0.0073**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*39 - 103*				
Pyrene-d10	*65*	*39 - 115*				
Terphenyl-d14	*85*	*50 - 118*				

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

cPAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0902S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*39 - 103*				
Pyrene-d10	*77*	*39 - 115*				
Terphenyl-d14	*112*	*50 - 118*				

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

cPAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0902S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0594**	**0.0612**	0.0833	0.0833	71	73	31 - 102	3	30	
Acenaphthylene	**0.0738**	**0.0773**	0.0833	0.0833	89	93	48 - 104	5	26	
Acenaphthene	**0.0650**	**0.0683**	0.0833	0.0833	78	82	46 - 105	5	26	
Fluorene	**0.0665**	**0.0704**	0.0833	0.0833	80	85	52 - 107	6	25	
Phenanthrene	**0.0667**	**0.0712**	0.0833	0.0833	80	85	58 - 104	7	21	
Anthracene	**0.0702**	**0.0763**	0.0833	0.0833	84	92	56 - 103	8	21	
Fluoranthene	**0.0729**	**0.0779**	0.0833	0.0833	88	94	65 - 111	7	20	
Pyrene	**0.0656**	**0.0783**	0.0833	0.0833	79	94	65 - 115	18	20	
Benzo[a]anthracene	**0.0695**	**0.0732**	0.0833	0.0833	83	88	55 - 111	5	19	
Chrysene	**0.0701**	**0.0744**	0.0833	0.0833	84	89	58 - 121	6	19	
Benzo[b]fluoranthene	**0.0699**	**0.0744**	0.0833	0.0833	84	89	57 - 120	6	20	
Benzo[k]fluoranthene	**0.0745**	**0.0786**	0.0833	0.0833	89	94	52 - 123	5	21	
Benzo[a]pyrene	**0.0664**	**0.0724**	0.0833	0.0833	80	87	49 - 106	9	22	
Indeno(1,2,3-c,d)pyrene	**0.0622**	**0.0658**	0.0833	0.0833	75	79	56 - 125	6	22	
Dibenz[a,h]anthracene	**0.0656**	**0.0693**	0.0833	0.0833	79	83	55 - 129	5	24	
Benzo[g,h,i]perylene	**0.0537**	**0.0590**	0.0833	0.0833	64	71	55 - 122	9	23	
Surrogate:										
2-Fluorobiphenyl					*72*	*76*	*39 - 103*			
Pyrene-d10					*75*	*93*	*39 - 115*			
Terphenyl-d14					*105*	*118*	*50 - 118*			

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

TOTAL LEAD
EPA 6010B

Date Extracted:	8-31-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-ASP13-0005	08-224-01	**150**	5.7
WB-SO-ASP14-0005	08-224-02	**11**	5.4

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-31-09
Date Analyzed:	8-31-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0831S2

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-221-01

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**ND**	**ND**	NA		5.0

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 8-31-09
Date Analyzed: 8-31-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-221-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**230**	92	**232**	93	1	

Date of Report: September 4, 2009
Samples Submitted: August 31, 2009
Laboratory Reference: 0908-224
Project: 235-1577-024

% MOISTURE

Date Analyzed: 9-1-09

Client ID	Lab ID	% Moisture
WB-SO-ASP13-0005	08-224-01	13
WB-SO-ASP14-0005	08-224-02	8

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix
Project Number: 235-1577-024
Project Name: West Bay
Project Manager: D. Dinkuhn
Sampled by: L. Linde

Turnaround Request (In working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-224

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX (on hold)	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM cPAHs	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals Pb 8/31/09	HEM by 1664	Lead					% Moisture
1	WB-SD-ASP13-0005	8/31/09	0920	Soil	4		X	X				X							X					X
2	WB-SD-ASP14-0005	↓	0930	↓	↓		X	X				X							X					↓

	Signature	Company	Date	Time
Relinquished by	Lara Linde	Parametrix	8/31/09	0945
Received by	Van	Speedy	8/31/09	0945
Relinquished by	Van	Speedy	8/31/09	1220
Received by			8/31/09	1220
Relinquished by				
Received by				

Comments/Special Instructions:

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 4, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0909-004

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on September 1, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

Case Narrative

Samples were collected on September 1, 2009, and received by the laboratory on September 1, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

BTEX by EPA 8021B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Lab Traveler: 0909-004
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix: Soil	
Units: mg/kg (ppm)	
Client ID:	**WB-SO-BSW032-0020**
Lab ID:	09-004-01

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.059
Ethyl Benzene	**ND**		0.059
m,p-Xylene	**ND**		0.059
o-Xylene	**ND**		0.059

Surrogate Recovery:	
Fluorobenzene	92%

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Lab Traveler: 0909-004
Project: 235-1577-024

BTEX
EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0901S1

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050

Surrogate Recovery:
Fluorobenzene 94%

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Lab Traveler: 0909-004
Project: 235-1577-024

BTEX
EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1&2-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-226-01 **Original**	08-226-01 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	105%	96%		

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Lab Traveler: 0909-004
Project: 235-1577-024

BTEX
EPA 8021B
SB/SBD QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0901S1 **SB**	Percent Recovery	SBD0901S1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.917**	**92**	**0.965**	**97**	5	
Toluene	**0.930**	**93**	**0.972**	**97**	4	
Ethyl Benzene	**0.953**	**95**	**0.993**	**99**	4	
m,p-Xylene	**0.966**	**97**	**1.00**	**100**	4	
o-Xylene	**0.975**	**98**	**1.00**	**100**	3	

Surrogate Recovery:

Fluorobenzene	90%		95%

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

NWTPH-Dx

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)
Client ID:	**WB-SO-BSW032-0020**
Lab ID:	09-004-01
Diesel Range:	**ND**
PQL:	28
Identification:	---
Lube Oil Range:	**93**
PQL:	56
Identification:	Lube Oil
Surrogate Recovery	
o-Terphenyl:	66%
Flags:	Y

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0901S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	65%
Flags:	Y

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	08-224-02	08-224-02 DUP
Diesel Range:	**ND**	**ND**
PQL:	107	91
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	76%	77%
Flags:	Y,U1	Y,U1

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSW032-0020**					
Laboratory ID:	09-004-01					
Benzo[a]anthracene	**ND**	0.0074	EPA 8270/SIM	9-2-09	9-3-09	
Chrysene	**0.016**	0.0074	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[b]fluoranthene	**0.013**	0.0074	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[k]fluoranthene	**0.0086**	0.0074	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[a]pyrene	**0.011**	0.0074	EPA 8270/SIM	9-2-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**0.011**	0.0074	EPA 8270/SIM	9-2-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0074	EPA 8270/SIM	9-2-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*39 - 103*				
Pyrene-d10	*63*	*39 - 115*				
Terphenyl-d14	*87*	*50 - 118*				

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

cPAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0902S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*39 - 103*				
Pyrene-d10	*77*	*39 - 115*				
Terphenyl-d14	*112*	*50 - 118*				

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

cPAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0902S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0594**	**0.0612**	0.0833	0.0833	71	73	31 - 102	3	30	
Acenaphthylene	**0.0738**	**0.0773**	0.0833	0.0833	89	93	48 - 104	5	26	
Acenaphthene	**0.0650**	**0.0683**	0.0833	0.0833	78	82	46 - 105	5	26	
Fluorene	**0.0665**	**0.0704**	0.0833	0.0833	80	85	52 - 107	6	25	
Phenanthrene	**0.0667**	**0.0712**	0.0833	0.0833	80	85	58 - 104	7	21	
Anthracene	**0.0702**	**0.0763**	0.0833	0.0833	84	92	56 - 103	8	21	
Fluoranthene	**0.0729**	**0.0779**	0.0833	0.0833	88	94	65 - 111	7	20	
Pyrene	**0.0656**	**0.0783**	0.0833	0.0833	79	94	65 - 115	18	20	
Benzo[a]anthracene	**0.0695**	**0.0732**	0.0833	0.0833	83	88	55 - 111	5	19	
Chrysene	**0.0701**	**0.0744**	0.0833	0.0833	84	89	58 - 121	6	19	
Benzo[b]fluoranthene	**0.0699**	**0.0744**	0.0833	0.0833	84	89	57 - 120	6	20	
Benzo[k]fluoranthene	**0.0745**	**0.0786**	0.0833	0.0833	89	94	52 - 123	5	21	
Benzo[a]pyrene	**0.0664**	**0.0724**	0.0833	0.0833	80	87	49 - 106	9	22	
Indeno(1,2,3-c,d)pyrene	**0.0622**	**0.0658**	0.0833	0.0833	75	79	56 - 125	6	22	
Dibenz[a,h]anthracene	**0.0656**	**0.0693**	0.0833	0.0833	79	83	55 - 129	5	24	
Benzo[g,h,i]perylene	**0.0537**	**0.0590**	0.0833	0.0833	64	71	55 - 122	9	23	
Surrogate:										
2-Fluorobiphenyl					*72*	*76*	*39 - 103*			
Pyrene-d10					*75*	*93*	*39 - 115*			
Terphenyl-d14					*105*	*118*	*50 - 118*			

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

TOTAL LEAD
EPA 6010B

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-BSW032-0020	09-004-01	**12**	5.6

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-1-09
Date Analyzed:	9-1-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0901S2

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-217-01

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**9.67**	**5.46**	56	C	5.0

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 9-1-09
Date Analyzed: 9-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-217-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**222**	85	**217**	83	2	

Date of Report: September 4, 2009
Samples Submitted: September 1, 2009
Laboratory Reference: 0909-004
Project: 235-1577-024

% MOISTURE

Date Analyzed: 9-1-09

Client ID	Lab ID	% Moisture
WB-SO-BSW032-0020	09-004-01	10

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix

Project Number: 235-1577-024

Project Name: West Bay

Project Manager: D. Dinkuhn

Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 09-004

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx (BTEX only)	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM (cPAHs)	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	Lead						% Moisture
1	WB-SD-BSW032-0020	9/1/09	0900	Soil	4		X	X				X							X						X

	Signature	Company	Date	Time	Comments/Special Instructions:
Relinquished by	Lisa Linde	Parametrix	9/1/09	1104	EIM EDDs
Received by	[signature]	Speedy Msngr	9/1/09	1101	
Relinquished by	[signature]	"	"	1324	
Received by	[signature]	[signature]	9/1/09	1324	
Relinquished by					
Received by					
Reviewed by/Date		Reviewed by/Date			Chromatograms with final report ☐

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OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 4, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0909-025

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on September 2, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

Case Narrative

Samples were collected on September 1, 2009, and received by the laboratory on September 2, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

BTEX by EPA 8021B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Lab Traveler: 0909-025
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted: 9-2-09
Date Analyzed: 9-3-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-S0-BSW05-0030**			**WB-S0-BSW06-0030**		
Lab ID:	09-025-01			09-025-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.064	**ND**		0.067
Ethyl Benzene	**ND**		0.064	**ND**		0.067
m,p-Xylene	**ND**		0.064	**ND**		0.067
o-Xylene	**ND**		0.064	**ND**		0.067
Surrogate Recovery:						
Fluorobenzene	99%			76%		

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Lab Traveler: 0909-025
Project: 235-1577-024

BTEX
EPA 8021B

Date Extracted:	9-2-09
Date Analyzed:	9-3-09
Matrix: Soil	
Units: mg/kg (ppm)	
Client ID:	**WB-S0-BBT02-0050**
Lab ID:	09-025-03

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.061
Ethyl Benzene	**ND**		0.061
m,p-Xylene	**ND**		0.061
o-Xylene	**ND**		0.061

Surrogate Recovery:	
Fluorobenzene	86%

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Lab Traveler: 0909-025
Project: 235-1577-024

BTEX
EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-2-09
Date Analyzed: 9-2-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0902S2

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050

Surrogate Recovery:
Fluorobenzene 95%

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Lab Traveler: 0909-025
Project: 235-1577-024

BTEX
EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-2-09
Date Analyzed: 9-2-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-216-11 **Original**	08-216-11 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	97%	94%		

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Lab Traveler: 0909-025
Project: 235-1577-024

BTEX
EPA 8021B
SB/SBD QUALITY CONTROL

Date Extracted: 8-2-09
Date Analyzed: 8-2-09

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0902S1 **SB**	Percent Recovery	SBD0902S1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.869**	**87**	**0.898**	**90**	3	
Toluene	**0.889**	**89**	**0.917**	**92**	3	
Ethyl Benzene	**0.918**	**92**	**0.943**	**94**	3	
m,p-Xylene	**0.940**	**94**	**0.963**	**96**	3	
o-Xylene	**0.963**	**96**	**0.968**	**97**	0	

Surrogate Recovery:

Fluorobenzene	87%	90%

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

NWTPH-Dx

Date Extracted: 9-2-09
Date Analyzed: 9-3-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SO-BSW05-0030**	**WB-SO-BSW06-0030**	**WB-SO-BBT02-0050**
Lab ID:	09-025-01	09-025-02	09-025-03
Diesel Range:	**ND**	**ND**	**ND**
PQL:	31	27	28
Identification:	---	---	---
Lube Oil Range:	**ND**	**ND**	**100**
PQL:	61	54	55
Identification:	---	---	Lube Oil
Surrogate Recovery			
o-Terphenyl:	106%	101%	112%
Flags:	Y	Y	Y

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-2-09
Date Analyzed:	9-3-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0902S2
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	104%
Flags:	Y

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	9-2-09
Date Analyzed:	9-3-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	09-007-05	09-007-05 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	106%	100%
Flags:	Y	Y

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSW05-0030**					
Laboratory ID:	09-025-01					
Benzo[a]anthracene	**ND**	0.0081	EPA 8270/SIM	9-2-09	9-3-09	
Chrysene	**ND**	0.0081	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0081	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0081	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270/SIM	9-2-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270/SIM	9-2-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270/SIM	9-2-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*39 - 103*				
Pyrene-d10	*66*	*39 - 115*				
Terphenyl-d14	*86*	*50 - 118*				

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BSW06-0030**					
Laboratory ID:	09-025-02					
Benzo[a]anthracene	**ND**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Chrysene	**ND**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**0.012**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270/SIM	9-2-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*72*	*39 - 103*				
Pyrene-d10	*80*	*39 - 115*				
Terphenyl-d14	*101*	*50 - 118*				

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

cPAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-BBT02-0050**					
Laboratory ID:	09-025-03					
Benzo[a]anthracene	**ND**	0.0073	EPA 8270/SIM	9-2-09	9-3-09	
Chrysene	**ND**	0.0073	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0073	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0073	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0073	EPA 8270/SIM	9-2-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0073	EPA 8270/SIM	9-2-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0073	EPA 8270/SIM	9-2-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*39 - 103*				
Pyrene-d10	*77*	*39 - 115*				
Terphenyl-d14	*97*	*50 - 118*				

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

cPAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0902S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	9-2-09	9-3-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*39 - 103*				
Pyrene-d10	*77*	*39 - 115*				
Terphenyl-d14	*112*	*50 - 118*				

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

cPAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0902S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0594**	**0.0612**	0.0833	0.0833	71	73	31 - 102	3	30	
Acenaphthylene	**0.0738**	**0.0773**	0.0833	0.0833	89	93	48 - 104	5	26	
Acenaphthene	**0.0650**	**0.0683**	0.0833	0.0833	78	82	46 - 105	5	26	
Fluorene	**0.0665**	**0.0704**	0.0833	0.0833	80	85	52 - 107	6	25	
Phenanthrene	**0.0667**	**0.0712**	0.0833	0.0833	80	85	58 - 104	7	21	
Anthracene	**0.0702**	**0.0763**	0.0833	0.0833	84	92	56 - 103	8	21	
Fluoranthene	**0.0729**	**0.0779**	0.0833	0.0833	88	94	65 - 111	7	20	
Pyrene	**0.0656**	**0.0783**	0.0833	0.0833	79	94	65 - 115	18	20	
Benzo[a]anthracene	**0.0695**	**0.0732**	0.0833	0.0833	83	88	55 - 111	5	19	
Chrysene	**0.0701**	**0.0744**	0.0833	0.0833	84	89	58 - 121	6	19	
Benzo[b]fluoranthene	**0.0699**	**0.0744**	0.0833	0.0833	84	89	57 - 120	6	20	
Benzo[k]fluoranthene	**0.0745**	**0.0786**	0.0833	0.0833	89	94	52 - 123	5	21	
Benzo[a]pyrene	**0.0664**	**0.0724**	0.0833	0.0833	80	87	49 - 106	9	22	
Indeno(1,2,3-c,d)pyrene	**0.0622**	**0.0658**	0.0833	0.0833	75	79	56 - 125	6	22	
Dibenz[a,h]anthracene	**0.0656**	**0.0693**	0.0833	0.0833	79	83	55 - 129	5	24	
Benzo[g,h,i]perylene	**0.0537**	**0.0590**	0.0833	0.0833	64	71	55 - 122	9	23	
Surrogate:										
2-Fluorobiphenyl					*72*	*76*	*39 - 103*			
Pyrene-d10					*75*	*93*	*39 - 115*			
Terphenyl-d14					*105*	*118*	*50 - 118*			

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

TOTAL LEAD
EPA 6010B

Date Extracted:	9-2-09
Date Analyzed:	9-3-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-BSW05-0030	09-025-01	**ND**	6.1
WB-SO-BSW06-0030	09-025-02	**ND**	5.4
WB-SO-BBT02-0050	09-025-03	**ND**	5.5

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-2-09
Date Analyzed:	9-2-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0902S2

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-2-09
Date Analyzed: 9-2-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-216-12

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**ND**	**ND**	NA		5.0

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 9-2-09
Date Analyzed: 9-2-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-216-12

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**219**	87	**226**	90	3	

Date of Report: September 4, 2009
Samples Submitted: September 2, 2009
Laboratory Reference: 0909-025
Project: 235-1577-024

% MOISTURE

Date Analyzed: 9-2-09

Client ID	Lab ID	% Moisture
WB-SO-BSW05-0030	09-025-01	18
WB-SO-BSW06-0030	09-025-02	8
WB-SO-BBT02-0050	09-025-03	9

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix

Project Number: 235-1577-024

Project Name: West Bay

Project Manager: D. Dinkuhn

Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Day
- ☐ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 09-025

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX only	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM cPAHs	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	Lead					% Moisture
1	WB-SO-BSW05-0030	9/1/09	1330	Soil	4		X	X				X							X					X
2	WB-SO-BSW06-0030	↓	1410	↓	↓		X	X				X							X					X
3	WB-SO-BBT02-0050	↓	1435	↓	↓		X	X				X							X					X

	Signature	Company	Date	Time	Comments/Special Instructions:
Relinquished by	Lara Linde	Parametrix	9/2/09	12:00 pm	EIM EDDs
Received by	Lara Linde	SPEEDY MESSENGER	9/2/09	12:00	
Relinquished by	Lara Linde	"	9/2/09	2:00	
Received by	[signature]	OSE	9/2/09	1400	
Relinquished by					
Received by					
Reviewed by/Date		Reviewed by/Date			Chromatograms with final report ☐

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OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 29, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0909-122

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on September 15, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

Case Narrative

Samples were collected on September 14 and 15, 2009, and received by the laboratory on September 15, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-122-01
Client ID: **WB-SO-DSW01-0010**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.8
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.58
Cadmium	6010B	**ND**	0.58
Chromium	6010B	**15**	0.58
Copper	6010B	**20**	1.2
Lead	6010B	**ND**	5.8
Mercury	7471A	**ND**	0.29
Nickel	6010B	**19**	2.9
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.58
Thallium	6020	**ND**	5.8
Zinc	6010B	**36**	2.9

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-122-02
Client ID: **WB-SO-DSW02-0010**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	9.4
Arsenic	6010B	**ND**	19
Beryllium	6010B	**ND**	0.94
Cadmium	6010B	**0.95**	0.94
Chromium	6010B	**31**	0.94
Copper	6010B	**81**	1.9
Lead	6010B	**32**	9.4
Mercury	7471A	**ND**	0.47
Nickel	6010B	**32**	4.7
Selenium	6010B	**ND**	19
Silver	6010B	**ND**	0.94
Thallium	6020	**ND**	0.9
Zinc	6010B	**280**	4.7

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-122-03
Client ID: **WB-SO-DBT01-0050**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	9.1
Arsenic	6010B	**ND**	18
Beryllium	6010B	**ND**	0.91
Cadmium	6010B	**1.5**	0.91
Chromium	6010B	**30**	0.91
Copper	6010B	**41**	1.8
Lead	6010B	**ND**	9.1
Mercury	7471A	**ND**	0.45
Nickel	6010B	**25**	4.5
Selenium	6010B	**ND**	18
Silver	6010B	**ND**	0.91
Thallium	6020	**ND**	9.1
Zinc	6010B	**68**	4.5

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-122-04
Client ID: **WB-SO-DBT01-1050**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	9.3
Arsenic	6010B	**ND**	19
Beryllium	6010B	**ND**	0.93
Cadmium	6010B	**1.3**	0.93
Chromium	6010B	**32**	0.93
Copper	6010B	**53**	1.9
Lead	6010B	**14**	9.3
Mercury	7471A	**ND**	0.46
Nickel	6010B	**25**	4.6
Selenium	6010B	**ND**	19
Silver	6010B	**ND**	0.93
Thallium	6020	**ND**	9.3
Zinc	6010B	**82**	4.6

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-122-05
Client ID: **WB-SO-DSW03-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.6
Arsenic	6010B	**ND**	11
Beryllium	6010B	**ND**	0.56
Cadmium	6010B	**ND**	0.56
Chromium	6010B	**17**	0.56
Copper	6010B	**16**	1.1
Lead	6010B	**ND**	5.6
Mercury	7471A	**ND**	0.28
Nickel	6010B	**19**	2.8
Selenium	6010B	**ND**	11
Silver	6010B	**ND**	0.56
Thallium	6020	**ND**	5.6
Zinc	6010B	**27**	2.8

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-122-06
Client ID: **WB-SO-DSW04-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	6.1
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.61
Cadmium	6010B	**ND**	0.61
Chromium	6010B	**17**	0.61
Copper	6010B	**31**	1.2
Lead	6010B	**12**	6.1
Mercury	7471A	**ND**	0.30
Nickel	6010B	**22**	3.0
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.61
Thallium	6020	**ND**	6.1
Zinc	6010B	**100**	3.0

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0921S3,MB0923S1&MB0923S4

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.0
Arsenic	6010B	**ND**	5.0
Beryllium	6010B	**ND**	0.50
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Copper	6010B	**ND**	1.0
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.25
Nickel	6010B	**ND**	2.5
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50
Thallium	6020	**ND**	5.0
Zinc	6010B	**ND**	2.5

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Antimony	**ND**	**ND**	NA	5.0	
Arsenic	**ND**	**ND**	NA	10	
Beryllium	**ND**	**ND**	NA	0.50	
Cadmium	**0.935**	**0.821**	13	0.50	
Chromium	**18.6**	**17.7**	5	0.50	
Copper	**18.5**	**19.2**	4	1.0	
Lead	**ND**	**ND**	NA	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Nickel	**14.6**	**14.1**	4	2.5	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	
Thallium	**ND**	**ND**	NA	5.0	
Zinc	**28.6**	**27.8**	3	2.5	

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Antimony	100	**106**	106	**107**	107	1	
Arsenic	100	**93.6**	94	**95.0**	95	2	
Beryllium	100	**99.2**	99	**101**	101	2	
Cadmium	50	**48.2**	94	**48.6**	95	1	
Chromium	100	**114**	95	**114**	96	0	
Copper	50	**68.0**	99	**69.4**	102	2	
Lead	250	**223**	89	**225**	90	1	
Mercury	0.50	**0.480**	96	**0.495**	99	3	
Nickel	100	**105**	90	**105**	91	1	
Selenium	100	**93.9**	94	**94.2**	94	0	
Silver	25	**24.5**	98	**24.3**	97	1	
Thallium	100	**93.8**	94	**93.6**	94	0	
Zinc	100	**122**	94	**123**	94	0	

Date of Report: September 29, 2009
Samples Submitted: September 15, 2009
Laboratory Reference: 0909-122
Project: 235-1577-024

% MOISTURE

Date Analyzed: 9-21-09

Client ID	Lab ID	% Moisture
WB-SO-DSW01-0010	09-122-01	14
WB-SO-DSW02-0010	09-122-02	47
WB-SO-DBT01-0050	09-122-03	45
WB-SO-DBT01-1050	09-122-04	46
WB-SO-DSW03-0005	09-122-05	11
WB-SO-DSW04-0005	09-122-06	18

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Pace Analytical™

www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Report Prepared for:

David Baumeister
Onsite Environmental, Inc.
14648 NE 95th Street
Redmond WA 98052

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

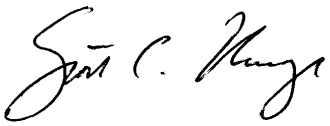
Pace Project #: 10112590
Sample Receipt Date: 09/16/2009
Client Project #: 235-1577-024
Client Sub PO #: N/A
State Cert #: C218

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed and prepared by:



Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

ACCREDITED IN ACCORDANCE WITH nelac

Report of Laboratory Analysis

Report Prepared Date:
September 29, 2009

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on six samples submitted by a representative of OnSite Environmental, Inc. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. Reporting limits were based on signal-to-noise calculations.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 64-121%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Since the quantification of the native 2,3,7,8-substituted isomers was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, interfering substances impacted the determinations of PCDD or PCDF congeners. The affected values were flagged "I" where incorrect isotope ratios were obtained, or "E" where polychlorinated diphenyl ethers were present.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected congeners. These were below the calibration range of the method. Sample levels similar to the corresponding blank levels were flagged "B" on the results tables and may be, at least partially, attributed to the background. It should be noted that levels less than ten times the background are not generally considered to be statistically different from the background.

A laboratory spike sample was also prepared with the sample batch using clean sand that had been fortified with native standards. The results show that the spiked native compounds were recovered at 91-119%. These results indicate a high degree of accuracy for these determinations. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

Appendix A

Sample Management

Report No....10112590_8290

1122

10112590

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 09-122

Subcontract Laboratory: Pace Analytical Service, Inc.

Contact Person: Scott Unze / Dioxin Manger

Address: 1700 Elm St. Ste. 200 Minneapolis, MN 55414

Phone Number: (612) 607-6383

Date/Time: _____

Turnaround Request:

1 Day 2 Day 3 Day

(Standard)

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 235-1577-024

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis	
	WB-SO-DSW01-0010	9/14/09	0849	S	1	DIOXINS	001
	WB-SO-DSW02-0010		0928				002
	WB-SO-DBT01-0050		0955				003
	WB-SO-DBT01-1050		1042				004
	WB-SO-DSW03-0005		1204				005
	WB-SO-DSW04-0005	9/15/09	0838				006

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by:		OSE	9/15/09	1530	T= 20 EIM
Received by:	Shuntek/Pace	Pace	9/16/09	855	
Relinquished by:					
Received by:					
Relinquished by:					Please return coolers blue ice
Received by:					

Sample Condition Upon Receipt

Pace Analytical

Client Name: Dunstan Env. Project # 10112590

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 1Z684E1WD1906205 11

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____ Temp Blank: Yes ____ No ✓

Thermometer Used 80344042 or 179425 Type of Ice: Wet (Blue) None ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.0 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and initials of person examining contents: 9/16/09 SL

Comments:

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☐Yes ☑No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12. MB-50-DIST DI-1050 on the COC 1005 on the bottle
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes ☐No ☑N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	Samp #
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 09/17/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR.

Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSW01-0010		
Lab Sample ID	10112590001		
Filename	F90928A_18		
Injected By	SMT		
Total Amount Extracted	10.8 g	Matrix	Solid
% Moisture	7.2	Dilution	NA
Dry Weight Extracted	10.0 g	Collected	09/14/2009 08:49
ICAL ID	F90817	Received	09/16/2009 08:55
CCal Filename(s)	F90928A_09 & F90929A_02	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/28/2009 23:26

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.13	-----	0.086	J	2,3,7,8-TCDF-13C	2.00	85
Total TCDF	0.71	-----	0.086	J	2,3,7,8-TCDD-13C	2.00	85
					1,2,3,7,8-PeCDF-13C	2.00	97
2,3,7,8-TCDD	ND	-----	0.100		2,3,4,7,8-PeCDF-13C	2.00	99
Total TCDD	0.75	-----	0.100	J	1,2,3,7,8-PeCDD-13C	2.00	113
					1,2,3,4,7,8-HxCDF-13C	2.00	79
1,2,3,7,8-PeCDF	ND	-----	0.130		1,2,3,6,7,8-HxCDF-13C	2.00	70
2,3,4,7,8-PeCDF	ND	-----	0.110		2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	ND	-----	0.120		1,2,3,7,8,9-HxCDF-13C	2.00	84
					1,2,3,4,7,8-HxCDD-13C	2.00	88
1,2,3,7,8-PeCDD	ND	-----	0.150		1,2,3,6,7,8-HxCDD-13C	2.00	79
Total PeCDD	0.48	-----	0.150	J	1,2,3,4,6,7,8-HpCDF-13C	2.00	72
					1,2,3,4,7,8,9-HpCDF-13C	2.00	81
1,2,3,4,7,8-HxCDF	ND	-----	0.073		1,2,3,4,6,7,8-HpCDD-13C	2.00	84
1,2,3,6,7,8-HxCDF	ND	-----	0.072		OCDD-13C	4.00	84
2,3,4,6,7,8-HxCDF	ND	-----	0.063				
1,2,3,7,8,9-HxCDF	ND	-----	0.085		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.10	-----	0.073	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.120		2,3,7,8-TCDD-37Cl4	0.20	91
1,2,3,6,7,8-HxCDD	ND	-----	0.120				
1,2,3,7,8,9-HxCDD	ND	-----	0.110				
Total HxCDD	ND	-----	0.120				
1,2,3,4,6,7,8-HpCDF	0.22	-----	0.079	BJ	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.086		Equivalence: 0.21 ng/Kg		
Total HpCDF	0.63	-----	0.082	BJ	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	0.99	-----	0.150	J			
Total HpCDD	0.99	-----	0.150	J			
OCDF	0.60	-----	0.140	BJ			
OCDD	9.60	-----	0.160	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
B = Less than 10x higher than method blank level

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSW02-0010		
Lab Sample ID	10112590002		
Filename	F90928A_19		
Injected By	SMT		
Total Amount Extracted	18.4 g	Matrix	Solid
% Moisture	44.8	Dilution	NA
Dry Weight Extracted	10.1 g	Collected	09/14/2009 09:28
ICAL ID	F90817	Received	09/16/2009 08:55
CCal Filename(s)	F90928A_09 & F90929A_02	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 00:12

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	75	0.35	E	2,3,7,8-TCDF-13C	2.00	89
Total TCDF	1700.0	-----	0.35		2,3,7,8-TCDD-13C	2.00	88
					1,2,3,7,8-PeCDF-13C	2.00	101
2,3,7,8-TCDD	29.0	-----	0.41		2,3,4,7,8-PeCDF-13C	2.00	102
Total TCDD	5000.0	-----	0.41		1,2,3,7,8-PeCDD-13C	2.00	116
					1,2,3,4,7,8-HxCDF-13C	2.00	89
1,2,3,7,8-PeCDF	-----	48	0.22	E	1,2,3,6,7,8-HxCDF-13C	2.00	64
2,3,4,7,8-PeCDF	51.0	-----	1.10		2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	730.0	-----	0.64		1,2,3,7,8,9-HxCDF-13C	2.00	82
					1,2,3,4,7,8-HxCDD-13C	2.00	98
1,2,3,7,8-PeCDD	100.0	-----	0.51		1,2,3,6,7,8-HxCDD-13C	2.00	70
Total PeCDD	3500.0	-----	0.51		1,2,3,4,6,7,8-HpCDF-13C	2.00	65
					1,2,3,4,7,8,9-HpCDF-13C	2.00	74
1,2,3,4,7,8-HxCDF	-----	47	0.29	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	79
1,2,3,6,7,8-HxCDF	40.0	-----	0.39		OCDD-13C	4.00	80
2,3,4,6,7,8-HxCDF	33.0	-----	0.36				
1,2,3,7,8,9-HxCDF	6.2	-----	0.28		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	320.0	-----	0.33		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	54.0	-----	0.65		2,3,7,8-TCDD-37Cl4	0.20	98
1,2,3,6,7,8-HxCDD	110.0	-----	0.51				
1,2,3,7,8,9-HxCDD	99.0	-----	0.43				
Total HxCDD	3300.0	-----	0.53				
1,2,3,4,6,7,8-HpCDF	160.0	-----	0.18		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	7.6	-----	0.20		Equivalence: 200 ng/Kg		
Total HpCDF	190.0	-----	0.19		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	1100.0	-----	0.85				
Total HpCDD	2200.0	-----	0.85				
OCDF	72.0	-----	0.23				
OCDD	3600.0	-----	0.14				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
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ND = Not Detected
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NC = Not Calculated

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E = PCDE Interference

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DBT01-0050		
Lab Sample ID	10112590003		
Filename	F90928A_20		
Injected By	SMT		
Total Amount Extracted	16.8 g	Matrix	Solid
% Moisture	42.6	Dilution	NA
Dry Weight Extracted	9.64 g	Collected	09/14/2009 09:55
ICAL ID	F90817	Received	09/16/2009 08:55
CCal Filename(s)	F90928A_09 & F90929A_02	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 00:59

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	6.0	0.16	E	2,3,7,8-TCDF-13C	2.00	91
Total TCDF	90.00	-----	0.16		2,3,7,8-TCDD-13C	2.00	89
					1,2,3,7,8-PeCDF-13C	2.00	103
2,3,7,8-TCDD	1.60	-----	0.26		2,3,4,7,8-PeCDF-13C	2.00	104
Total TCDD	680.00	-----	0.26		1,2,3,7,8-PeCDD-13C	2.00	120
					1,2,3,4,7,8-HxCDF-13C	2.00	82
1,2,3,7,8-PeCDF	-----	2.6	0.23	E	1,2,3,6,7,8-HxCDF-13C	2.00	70
2,3,4,7,8-PeCDF	2.70	-----	0.14	J	2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	33.00	-----	0.18		1,2,3,7,8,9-HxCDF-13C	2.00	83
					1,2,3,4,7,8-HxCDD-13C	2.00	96
1,2,3,7,8-PeCDD	4.70	-----	0.38	J	1,2,3,6,7,8-HxCDD-13C	2.00	75
Total PeCDD	380.00	-----	0.38		1,2,3,4,6,7,8-HpCDF-13C	2.00	68
					1,2,3,4,7,8,9-HpCDF-13C	2.00	78
1,2,3,4,7,8-HxCDF	-----	1.9	0.11	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	78
1,2,3,6,7,8-HxCDF	1.10	-----	0.14	J	OCDD-13C	4.00	73
2,3,4,6,7,8-HxCDF	1.10	-----	0.12	J			
1,2,3,7,8,9-HxCDF	0.25	-----	0.12	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	9.10	-----	0.12		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	3.30	-----	0.45	J	2,3,7,8-TCDD-37Cl4	0.20	96
1,2,3,6,7,8-HxCDD	7.40	-----	0.21				
1,2,3,7,8,9-HxCDD	6.30	-----	0.16				
Total HxCDD	420.00	-----	0.27				
1,2,3,4,6,7,8-HpCDF	3.40	-----	0.14	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.26	-----	0.16	J	Equivalence: 9.7 ng/Kg		
Total HpCDF	7.10	-----	0.15		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	58.00	-----	0.25				
Total HpCDD	120.00	-----	0.25				
OCDF	3.20	-----	0.18	J			
OCDD	150.00	-----	0.29				

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E = PCDE Interference

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
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Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DBT01-1050		
Lab Sample ID	10112590004		
Filename	F90928A_21		
Injected By	SMT		
Total Amount Extracted	16.9 g	Matrix	Solid
% Moisture	42.2	Dilution	NA
Dry Weight Extracted	9.77 g	Collected	09/14/2009 10:12
ICAL ID	F90817	Received	09/16/2009 08:55
CCal Filename(s)	F90928A_09 & F90929A_02	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 01:45

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	3.00	0.22	E	2,3,7,8-TCDF-13C	2.00	90
Total TCDF	54.00	-----	0.22		2,3,7,8-TCDD-13C	2.00	86
					1,2,3,7,8-PeCDF-13C	2.00	99
2,3,7,8-TCDD	1.00	-----	0.22		2,3,4,7,8-PeCDF-13C	2.00	101
Total TCDD	440.00	-----	0.22		1,2,3,7,8-PeCDD-13C	2.00	114
					1,2,3,4,7,8-HxCDF-13C	2.00	81
1,2,3,7,8-PeCDF	-----	1.10	0.34	E	1,2,3,6,7,8-HxCDF-13C	2.00	67
2,3,4,7,8-PeCDF	1.40	-----	0.16	J	2,3,4,6,7,8-HxCDF-13C	2.00	72
Total PeCDF	13.00	-----	0.25		1,2,3,7,8,9-HxCDF-13C	2.00	81
					1,2,3,4,7,8-HxCDD-13C	2.00	88
1,2,3,7,8-PeCDD	2.10	-----	0.52	J	1,2,3,6,7,8-HxCDD-13C	2.00	74
Total PeCDD	230.00	-----	0.52		1,2,3,4,6,7,8-HpCDF-13C	2.00	66
					1,2,3,4,7,8,9-HpCDF-13C	2.00	77
1,2,3,4,7,8-HxCDF	-----	0.91	0.16	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	78
1,2,3,6,7,8-HxCDF	0.60	-----	0.14	J	OCDD-13C	4.00	71
2,3,4,6,7,8-HxCDF	0.59	-----	0.14	J			
1,2,3,7,8,9-HxCDF	-----	0.16	0.14	I	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	4.50	-----	0.15	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.60	-----	0.54	J	2,3,7,8-TCDD-37Cl4	0.20	96
1,2,3,6,7,8-HxCDD	3.70	-----	0.33	J			
1,2,3,7,8,9-HxCDD	3.10	-----	0.16	J			
Total HxCDD	220.00	-----	0.34				
1,2,3,4,6,7,8-HpCDF	2.20	-----	0.14	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.20	-----	0.16	J	Equivalence: 4.9 ng/Kg		
Total HpCDF	4.50	-----	0.15	J	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	30.00	-----	0.15				
Total HpCDD	58.00	-----	0.15				
OCDF	2.20	-----	0.21	J			
OCDD	88.00	-----	0.31				

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I = Interference present

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSW03-0005		
Lab Sample ID	10112590005		
Filename	F90928A_22		
Injected By	SMT		
Total Amount Extracted	12.7 g	Matrix	Solid
% Moisture	8.5	Dilution	NA
Dry Weight Extracted	11.6 g	Collected	09/14/2009 12:04
ICAL ID	F90817	Received	09/16/2009 08:55
CCal Filename(s)	F90928A_09 & F90929A_02	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 02:31

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.28	-----	0.180	J	2,3,7,8-TCDF-13C	2.00	71
Total TCDF	2.90	-----	0.180		2,3,7,8-TCDD-13C	2.00	73
					1,2,3,7,8-PeCDF-13C	2.00	88
2,3,7,8-TCDD	ND	-----	0.130		2,3,4,7,8-PeCDF-13C	2.00	91
Total TCDD	14.00	-----	0.130		1,2,3,7,8-PeCDD-13C	2.00	104
					1,2,3,4,7,8-HxCDF-13C	2.00	74
1,2,3,7,8-PeCDF	ND	-----	0.150		1,2,3,6,7,8-HxCDF-13C	2.00	67
2,3,4,7,8-PeCDF	0.37	-----	0.230	J	2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	6.50	-----	0.190		1,2,3,7,8,9-HxCDF-13C	2.00	78
					1,2,3,4,7,8-HxCDD-13C	2.00	85
1,2,3,7,8-PeCDD	0.45	-----	0.300	J	1,2,3,6,7,8-HxCDD-13C	2.00	74
Total PeCDD	12.00	-----	0.300		1,2,3,4,6,7,8-HpCDF-13C	2.00	67
					1,2,3,4,7,8,9-HpCDF-13C	2.00	78
1,2,3,4,7,8-HxCDF	-----	3.1	0.110	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	77
1,2,3,6,7,8-HxCDF	1.00	-----	0.150	J	OCDD-13C	4.00	76
2,3,4,6,7,8-HxCDF	0.49	-----	0.069	J			
1,2,3,7,8,9-HxCDF	0.19	-----	0.160	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	13.00	-----	0.120		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.84	-----	0.150	J	2,3,7,8-TCDD-37Cl4	0.20	80
1,2,3,6,7,8-HxCDD	2.50	-----	0.180	J			
1,2,3,7,8,9-HxCDD	1.30	-----	0.150	J			
Total HxCDD	24.00	-----	0.160				
1,2,3,4,6,7,8-HpCDF	27.00	-----	0.120		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.90	-----	0.120	J	Equivalence: 2.3 ng/Kg		
Total HpCDF	76.00	-----	0.120		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	54.00	-----	0.120				
Total HpCDD	94.00	-----	0.120				
OCDF	51.00	-----	0.170				
OCDD	580.00	-----	0.260				

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

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Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSW04-0005		
Lab Sample ID	10112590006		
Filename	F90928A_23		
Injected By	SMT		
Total Amount Extracted	14.0 g	Matrix	Solid
% Moisture	14.1	Dilution	NA
Dry Weight Extracted	12.1 g	Collected	09/15/2009 08:38
ICAL ID	F90817	Received	09/16/2009 08:55
CCal Filename(s)	F90928A_09 & F90929A_02	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 03:17

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	5.20	-----	0.110		2,3,7,8-TCDF-13C	2.00	91
Total TCDF	85.00	-----	0.110		2,3,7,8-TCDD-13C	2.00	89
					1,2,3,7,8-PeCDF-13C	2.00	102
2,3,7,8-TCDD	1.60	-----	0.110		2,3,4,7,8-PeCDF-13C	2.00	106
Total TCDD	170.00	-----	0.110		1,2,3,7,8-PeCDD-13C	2.00	121
					1,2,3,4,7,8-HxCDF-13C	2.00	82
1,2,3,7,8-PeCDF	-----	3.6	0.330	E	1,2,3,6,7,8-HxCDF-13C	2.00	69
2,3,4,7,8-PeCDF	3.60	-----	0.180	J	2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	43.00	-----	0.250		1,2,3,7,8,9-HxCDF-13C	2.00	83
					1,2,3,4,7,8-HxCDD-13C	2.00	91
1,2,3,7,8-PeCDD	6.80	-----	0.210		1,2,3,6,7,8-HxCDD-13C	2.00	77
Total PeCDD	140.00	-----	0.210		1,2,3,4,6,7,8-HpCDF-13C	2.00	69
					1,2,3,4,7,8,9-HpCDF-13C	2.00	82
1,2,3,4,7,8-HxCDF	-----	4.6	0.089	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	85
1,2,3,6,7,8-HxCDF	3.00	-----	0.086	J	OCDD-13C	4.00	85
2,3,4,6,7,8-HxCDF	1.80	-----	0.054	J			
1,2,3,7,8,9-HxCDF	0.69	-----	0.080	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	22.00	-----	0.077		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	5.80	-----	0.130		2,3,7,8-TCDD-37Cl4	0.20	99
1,2,3,6,7,8-HxCDD	13.00	-----	0.150				
1,2,3,7,8,9-HxCDD	11.00	-----	0.150				
Total HxCDD	220.00	-----	0.140				
1,2,3,4,6,7,8-HpCDF	17.00	-----	0.060		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.60	-----	0.073	J	Equivalence: 17 ng/Kg		
Total HpCDF	42.00	-----	0.067		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	290.00	-----	0.310				
Total HpCDD	560.00	-----	0.310				
OCDF	22.00	-----	0.100				
OCDD	1300.00	-----	0.350				

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-21533	Matrix	Solid
Filename	F90928A_17	Dilution	NA
Total Amount Extracted	20.1 g	Extracted	09/24/2009 19:00
ICAL ID	F90817	Analyzed	09/28/2009 22:40
CCal Filename(s)	F90928A_09 & F90929A_02	Injected By	SMT

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.029		2,3,7,8-TCDF-13C	2.00	79
Total TCDF	ND	-----	0.029		2,3,7,8-TCDD-13C	2.00	80
					1,2,3,7,8-PeCDF-13C	2.00	90
2,3,7,8-TCDD	ND	-----	0.035		2,3,4,7,8-PeCDF-13C	2.00	92
Total TCDD	ND	-----	0.035		1,2,3,7,8-PeCDD-13C	2.00	105
					1,2,3,4,7,8-HxCDF-13C	2.00	74
1,2,3,7,8-PeCDF	ND	-----	0.070		1,2,3,6,7,8-HxCDF-13C	2.00	65
2,3,4,7,8-PeCDF	ND	-----	0.044		2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	ND	-----	0.057		1,2,3,7,8,9-HxCDF-13C	2.00	78
					1,2,3,4,7,8-HxCDD-13C	2.00	84
1,2,3,7,8-PeCDD	ND	-----	0.500		1,2,3,6,7,8-HxCDD-13C	2.00	73
Total PeCDD	ND	-----	0.500		1,2,3,4,6,7,8-HpCDF-13C	2.00	65
					1,2,3,4,7,8,9-HpCDF-13C	2.00	75
1,2,3,4,7,8-HxCDF	ND	-----	0.029		1,2,3,4,6,7,8-HpCDD-13C	2.00	77
1,2,3,6,7,8-HxCDF	ND	-----	0.034		OCDD-13C	4.00	76
2,3,4,6,7,8-HxCDF	ND	-----	0.028				
1,2,3,7,8,9-HxCDF	ND	-----	0.039		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.032		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.045		2,3,7,8-TCDD-37Cl4	0.20	88
1,2,3,6,7,8-HxCDD	ND	-----	0.047				
1,2,3,7,8,9-HxCDD	ND	-----	0.050				
Total HxCDD	ND	-----	0.047				
1,2,3,4,6,7,8-HpCDF	0.042	-----	0.033	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.048		Equivalence: 0.29 ng/Kg		
Total HpCDF	0.094	-----	0.041	J	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	-----	0.063	0.026	I			
Total HpCDD	ND	-----	0.026				
OCDF	0.120	-----	0.026	J			
OCDD	0.920	-----	0.073	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
I = Interference present

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-21534		
Filename	F90928A_13	Matrix	Solid
Total Amount Extracted	20.3 g	Dilution	NA
ICAL ID	F90817	Extracted	09/24/2009 19:00
CCal Filename(s)	F90928A_09 & F90929A_02	Analyzed	09/28/2009 19:35
Method Blank ID	BLANK-21533	Injected By	SMT

Native Isomers	**Qs** (ng)	**Qm** (ng)	% Rec.	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	0.20	0.20	98	2,3,7,8-TCDF-13C	2.00	78
Total TCDF				2,3,7,8-TCDD-13C	2.00	77
				1,2,3,7,8-PeCDF-13C	2.00	88
2,3,7,8-TCDD	0.20	0.21	105	2,3,4,7,8-PeCDF-13C	2.00	91
Total TCDD				1,2,3,7,8-PeCDD-13C	2.00	103
				1,2,3,4,7,8-HxCDF-13C	2.00	73
1,2,3,7,8-PeCDF	1.00	0.99	99	1,2,3,6,7,8-HxCDF-13C	2.00	64
2,3,4,7,8-PeCDF	1.00	0.94	94	2,3,4,6,7,8-HxCDF-13C	2.00	67
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.00	76
				1,2,3,4,7,8-HxCDD-13C	2.00	81
1,2,3,7,8-PeCDD	1.00	0.91	91	1,2,3,6,7,8-HxCDD-13C	2.00	71
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.00	65
				1,2,3,4,7,8,9-HpCDF-13C	2.00	72
1,2,3,4,7,8-HxCDF	1.00	0.93	93	1,2,3,4,6,7,8-HpCDD-13C	2.00	75
1,2,3,6,7,8-HxCDF	1.00	1.01	101	OCDD-13C	4.00	75
2,3,4,6,7,8-HxCDF	1.00	0.99	99			
1,2,3,7,8,9-HxCDF	1.00	0.98	98	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	0.96	96	2,3,7,8-TCDD-37Cl4	0.20	87
1,2,3,6,7,8-HxCDD	1.00	0.94	94			
1,2,3,7,8,9-HxCDD	1.00	0.98	98			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.00	1.09	109			
1,2,3,4,7,8,9-HpCDF	1.00	1.07	107			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.00	0.97	97			
Total HpCDD						
OCDF	2.00	2.07	103			
OCDD	2.00	2.37	119			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
P = Recovery outside of target range
X = Background subtracted value
Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix
Project Number: 235-1577-024
Project Name: West Bay
Project Manager: D. Dinkuhn
Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 09-122

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	PP Metals	Dioxins (8290)					% Moisture
1	WB-SO-DSW01-0010	9/14/09	0849	Soil	2														X	X					X
2	WB-SO-DSW02-0010	↓	0928	↓	↓														↓	↓					↓
3	WB-SO-DBT01-0050		0955																						
4	WB-SO-DBT01-1050		1012																						
5	WB-SO-DSW03-0005		1204																						
6	WB-SO-DSW04-0005	9/15/09	0838																						

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by	Lara Linde	Parametrix	9/15/09	9:42	ELM EDDs
Received by	Van Hackett	Speedy	9/15/09	9:42	
Relinquished by	Van Hackett	Speedy	9/15/09	11:50	
Received by		CORE	9/15/09	1150	
Relinquished by					
Received by					
Reviewed by/Date		Reviewed by/Date			Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 30, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0909-148

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on September 16, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

Case Narrative

Samples were collected on September 15 and 16, 2009, and received by the laboratory on September 16, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-01
Client ID: **WB-SO-DBT02-0050**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	8.6
Arsenic	6010B	**ND**	17
Beryllium	6010B	**ND**	0.86
Cadmium	6010B	**1.6**	0.86
Chromium	6010B	**32**	0.86
Copper	6010B	**32**	1.7
Lead	6010B	**ND**	8.6
Mercury	7471A	**ND**	0.43
Nickel	6010B	**25**	4.3
Selenium	6010B	**ND**	17
Silver	6010B	**ND**	0.86
Thallium	6020	**ND**	8.6
Zinc	6010B	**49**	4.3

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-02
Client ID: **WB-SO-DBT03-0030**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	6.8
Arsenic	6010B	**ND**	14
Beryllium	6010B	**ND**	0.68
Cadmium	6010B	**ND**	0.68
Chromium	6010B	**18**	0.68
Copper	6010B	**61**	1.4
Lead	6010B	**24**	6.8
Mercury	7471A	**ND**	0.34
Nickel	6010B	**22**	3.4
Selenium	6010B	**ND**	14
Silver	6010B	**ND**	0.68
Thallium	6020	**ND**	0.7
Zinc	6010B	**74**	3.4

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-03
Client ID: **WB-SO-DSW05-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	9.1
Arsenic	6010B	**ND**	18
Beryllium	6010B	**ND**	0.91
Cadmium	6010B	**ND**	0.91
Chromium	6010B	**14**	0.91
Copper	6010B	**20**	1.8
Lead	6010B	**ND**	9.1
Mercury	7471A	**ND**	0.45
Nickel	6010B	**18**	4.5
Selenium	6010B	**ND**	18
Silver	6010B	**ND**	0.91
Thallium	6020	**ND**	9.1
Zinc	6010B	**32**	4.5

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-04
Client ID: **WB-SO-DSW06-0010**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.7
Arsenic	6010B	**ND**	11
Beryllium	6010B	**ND**	0.57
Cadmium	6010B	**ND**	0.57
Chromium	6010B	**18**	0.57
Copper	6010B	**23**	1.1
Lead	6010B	**ND**	5.7
Mercury	7471A	**ND**	0.29
Nickel	6010B	**21**	2.9
Selenium	6010B	**ND**	11
Silver	6010B	**ND**	0.57
Thallium	6020	**ND**	5.7
Zinc	6010B	**33**	2.9

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-05
Client ID: **WB-SO-DSW07-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.8
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.58
Cadmium	6010B	**ND**	0.58
Chromium	6010B	**19**	0.58
Copper	6010B	**23**	1.2
Lead	6010B	**12**	5.8
Mercury	7471A	**ND**	0.29
Nickel	6010B	**20**	2.9
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.58
Thallium	6020	**ND**	5.8
Zinc	6010B	**40**	2.9

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-06
Client ID: **WB-SO-DBT04-0045**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	17
Arsenic	6010B	**ND**	17
Beryllium	6010B	**ND**	1.7
Cadmium	6010B	**ND**	1.7
Chromium	6010B	**7.4**	1.7
Copper	6010B	**16**	3.3
Lead	6010B	**27**	17
Mercury	7471A	**ND**	0.83
Nickel	6010B	**ND**	8.3
Selenium	6010B	**ND**	33
Silver	6010B	**ND**	1.7
Thallium	6020	**ND**	17
Zinc	6010B	**36**	8.3

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0921S3,MB0923S1&MB0923S4

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.0
Arsenic	6010B	**ND**	5.0
Beryllium	6010B	**ND**	0.50
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Copper	6010B	**ND**	1.0
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.25
Nickel	6010B	**ND**	2.5
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50
Thallium	6020	**ND**	5.0
Zinc	6010B	**ND**	2.5

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Antimony	**ND**	**ND**	NA	5.0	
Arsenic	**ND**	**ND**	NA	10	
Beryllium	**ND**	**ND**	NA	0.50	
Cadmium	**0.935**	**0.821**	13	0.50	
Chromium	**18.6**	**17.7**	5	0.50	
Copper	**18.5**	**19.2**	4	1.0	
Lead	**ND**	**ND**	NA	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Nickel	**14.6**	**14.1**	4	2.5	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	
Thallium	**ND**	**ND**	NA	5.0	
Zinc	**28.6**	**27.8**	3	2.5	

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-21&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Antimony	100	**106**	106	**107**	107	1	
Arsenic	100	**93.6**	94	**95.0**	95	2	
Beryllium	100	**99.2**	99	**101**	101	2	
Cadmium	50	**48.2**	94	**48.6**	95	1	
Chromium	100	**114**	95	**114**	96	0	
Copper	50	**68.0**	99	**69.4**	102	2	
Lead	250	**223**	89	**225**	90	1	
Mercury	0.50	**0.480**	96	**0.495**	99	3	
Nickel	100	**105**	90	**105**	91	1	
Selenium	100	**93.9**	94	**94.2**	94	0	
Silver	25	**24.5**	98	**24.3**	97	1	
Thallium	100	**93.8**	94	**93.6**	94	0	
Zinc	100	**122**	94	**123**	94	0	

Date of Report: September 30, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148
Project: 235-1577-024

% MOISTURE

Date Analyzed: 9-21-09

Client ID	Lab ID	% Moisture
WB-SO-DBT02-0050	09-148-01	42
WB-SO-DBT03-0030	09-148-02	27
WB-SO-DSW05-0005	09-148-03	45
WB-SO-DSW06-0010	09-148-04	13
WB-SO-DSW07-0005	09-148-05	14
WB-SO-DBT04-0045	09-148-06	70

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

David Baumeister
Onsite Environmental, Inc.
14648 NE 95th Street
Redmond WA 98052

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

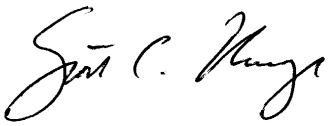
Pace Project #: 10112775
Sample Receipt Date: 09/18/2009
Client Project #: 235-1577-024
Client Sub PO #: N/A
State Cert #: C218

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed and prepared by:



Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

Report Prepared Date:
September 30, 2009

Report of Laboratory Analysis

The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on six samples submitted by a representative of OnSite Environmental, Inc. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. Reporting limits were based on signal-to-noise calculations.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 54-120%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Since the quantification of the native 2,3,7,8-substituted isomers was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, interfering substances impacted the determinations of PCDD or PCDF congeners. The affected values were flagged "I" where incorrect isotope ratios were obtained, or "E" where polychlorinated diphenyl ethers were present.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected congeners. These were below the calibration range of the method. Sample levels similar to the corresponding blank levels were flagged "B" on the results tables and may be, at least partially, attributed to the background. It should be noted that levels less than ten times the background are not generally considered to be statistically different from the background.

A laboratory spike sample was also prepared with the sample batch using clean sand that had been fortified with native standards. The results show that the spiked native compounds were recovered at 91-119%. These results indicate a high degree of accuracy for these determinations. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

Appendix A

Sample Management

1154 10112775

Page 1 of 1

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 09-148

Subcontract Laboratory: Pace Analytical Service, Inc.

Turnaround Request: 1 Day 2 Day 3 Day (Standard)

Project Manager: David Baumeister

Contact Person: Scott Unze / Dioxin Manger

email: dbaumeister@onsite-env.com

Address: 1700 Elm St. Ste. 200 Minneapolis, MN 55414

Project Number: 235-1577-024

Phone Number: (612) 607-6383

Other: _____

Project Name: _____

Date/Time: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis	
	WB-SO-DBT02-0050	9/15/08	0956	S	1	DIOXINS	001
	WB-SO-DBT03-0030	↓	1300	↓	↓	↓	002
	WB-SO-DSW05-0005	↓	1305				003
	WB-SO-DSW06-0010	9/16/08	0900				004
	WB-SO-DSW07-0005	↓	0910				005
	WB-SO-DBT04-0045	↓	0920				006

	Signature	Company	Date	Time
Relinquished by:		OSE	9/17/08	1530
Received by:		GPS		
Relinquished by:		S		
Received by:	Shunta	Pace	9/18/08	913
Relinquished by:				
Received by:				

Comments/Special Instructions

EIM

Please return cooler blue

T=2.2

Report No.....10112775_8290

Page 4 of 14

Sample Condition Upon Receipt

Pace Analytical

Client Name: OnSite Env **Project #** 10112775

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other _____
Tracking #: 1Z684E1W1397015266

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no **Seals Intact:** ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____ **Temp Blank:** Yes ____ No ✓

Thermometer Used 80344042 of 179425 **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.2 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C **Comments:**

Date and initials of person examining contents: 9/17/09 SL

Chain of Custody Present:	☑Yes	☐No	☐N/A
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A
Sampler Name & Signature on COC:	☐Yes	☑No	☐N/A
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A
Sufficient Volume:	☑Yes	☐No	☐N/A
Correct Containers Used:	☑Yes	☐No	☐N/A
-Pace Containers Used:	☐Yes	☑No	☐N/A
Containers Intact:	☑Yes	☐No	☐N/A
Filtered volume received for Dissolved tests	☐Yes	☑No	☐N/A
Sample Labels match COC:	☑Yes	☐No	☐N/A
-Includes date/time/ID/Analysis Matrix: SL			
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes	☐No	☑N/A
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water	☐Yes	☐No	
Samples checked for dechlorination:	☐Yes	☐No	☑N/A
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A
Trip Blank Present:	☐Yes	☐No	☑N/A
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A
Pace Trip Blank Lot # (if purchased):			

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl
Samp #

Initial when completed	Lot # of added preservative

14.
15.
16.

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] **Date:** 09/18/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR.

Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DBT02-0050		
Lab Sample ID	10112775001		
Filename	F90929A_12		
Injected By	SMT		
Total Amount Extracted	15.8 g	Matrix	Solid
% Moisture	39.5	Dilution	NA
Dry Weight Extracted	9.58 g	Collected	09/15/2009 09:56
ICAL ID	F90817	Received	09/18/2009 09:13
CCal Filename(s)	F90929A_02 & F90929A_18	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 12:33

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	0.10	0.100	I	2,3,7,8-TCDF-13C	2.00	90
Total TCDF	0.26	-----	0.100	J	2,3,7,8-TCDD-13C	2.00	84
					1,2,3,7,8-PeCDF-13C	2.00	101
2,3,7,8-TCDD	ND	-----	0.130		2,3,4,7,8-PeCDF-13C	2.00	101
Total TCDD	ND	-----	0.130		1,2,3,7,8-PeCDD-13C	2.00	106
					1,2,3,4,7,8-HxCDF-13C	2.00	85
1,2,3,7,8-PeCDF	ND	-----	0.140		1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	ND	-----	0.190		2,3,4,6,7,8-HxCDF-13C	2.00	78
Total PeCDF	ND	-----	0.160		1,2,3,7,8,9-HxCDF-13C	2.00	85
					1,2,3,4,7,8-HxCDD-13C	2.00	91
1,2,3,7,8-PeCDD	ND	-----	0.150		1,2,3,6,7,8-HxCDD-13C	2.00	74
Total PeCDD	ND	-----	0.150		1,2,3,4,6,7,8-HpCDF-13C	2.00	63
					1,2,3,4,7,8,9-HpCDF-13C	2.00	67
1,2,3,4,7,8-HxCDF	ND	-----	0.110		1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	ND	-----	0.100		OCDD-13C	4.00	62
2,3,4,6,7,8-HxCDF	ND	-----	0.097				
1,2,3,7,8,9-HxCDF	ND	-----	0.100		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.100		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.120		2,3,7,8-TCDD-37Cl4	0.20	95
1,2,3,6,7,8-HxCDD	ND	-----	0.120				
1,2,3,7,8,9-HxCDD	ND	-----	0.110				
Total HxCDD	0.12	-----	0.120	J			
1,2,3,4,6,7,8-HpCDF	0.24	-----	0.160	BJ	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.160		Equivalence: 0.24 ng/Kg		
Total HpCDF	0.93	-----	0.160	BJ	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	1.50	-----	0.120	J			
Total HpCDD	3.00	-----	0.120	J			
OCDF	2.20	-----	0.230	J			
OCDD	30.00	-----	0.180				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
B = Less than 10x higher than method blank level
I = Interference present

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DBT03-0030		
Lab Sample ID	10112775002		
Filename	F90929A_13		
Injected By	SMT		
Total Amount Extracted	14.0 g	Matrix	Solid
% Moisture	12.0	Dilution	NA
Dry Weight Extracted	12.3 g	Collected	09/15/2009 13:00
ICAL ID	F90817	Received	09/18/2009 09:13
CCal Filename(s)	F90929A_02 & F90929A_18	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 13:20

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	0.40	0.071	E	2,3,7,8-TCDF-13C	2.00	96
Total TCDF	7.20	-----	0.071		2,3,7,8-TCDD-13C	2.00	87
					1,2,3,7,8-PeCDF-13C	2.00	110
2,3,7,8-TCDD	0.20	-----	0.110	J	2,3,4,7,8-PeCDF-13C	2.00	111
Total TCDD	13.00	-----	0.110		1,2,3,7,8-PeCDD-13C	2.00	120
					1,2,3,4,7,8-HxCDF-13C	2.00	85
1,2,3,7,8-PeCDF	ND	-----	0.100		1,2,3,6,7,8-HxCDF-13C	2.00	71
2,3,4,7,8-PeCDF	0.17	-----	0.100	J	2,3,4,6,7,8-HxCDF-13C	2.00	76
Total PeCDF	1.40	-----	0.100	J	1,2,3,7,8,9-HxCDF-13C	2.00	85
					1,2,3,4,7,8-HxCDD-13C	2.00	90
1,2,3,7,8-PeCDD	0.38	-----	0.190	J	1,2,3,6,7,8-HxCDD-13C	2.00	73
Total PeCDD	8.00	-----	0.190		1,2,3,4,6,7,8-HpCDF-13C	2.00	64
					1,2,3,4,7,8,9-HpCDF-13C	2.00	72
1,2,3,4,7,8-HxCDF	-----	0.16	0.097	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	ND	-----	0.100		OCDD-13C	4.00	66
2,3,4,6,7,8-HxCDF	ND	-----	0.076				
1,2,3,7,8,9-HxCDF	ND	-----	0.110		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.51	-----	0.095	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.17	-----	0.088	J	2,3,7,8-TCDD-37Cl4	0.20	99
1,2,3,6,7,8-HxCDD	0.54	-----	0.087	J			
1,2,3,7,8,9-HxCDD	0.34	-----	0.120	J			
Total HxCDD	6.80	-----	0.097				
1,2,3,4,6,7,8-HpCDF	0.81	-----	0.085	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.110		Equivalence: 0.86 ng/Kg		
Total HpCDF	2.50	-----	0.098	J	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	7.70	-----	0.092				
Total HpCDD	15.00	-----	0.092				
OCDF	1.90	-----	0.094	J			
OCDD	40.00	-----	0.160				

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NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
E = PCDE Interference

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSW05-0005		
Lab Sample ID	10112775003		
Filename	F90929A_14		
Injected By	SMT		
Total Amount Extracted	11.0 g	Matrix	Solid
% Moisture	27.9	Dilution	NA
Dry Weight Extracted	7.92 g	Collected	09/15/2009 13:05
ICAL ID	F90817	Received	09/18/2009 09:13
CCal Filename(s)	F90929A_02 & F90929A_18	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 14:06

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.45	-----	0.22	J	2,3,7,8-TCDF-13C	2.00	89
Total TCDF	6.90	-----	0.22		2,3,7,8-TCDD-13C	2.00	83
					1,2,3,7,8-PeCDF-13C	2.00	100
2,3,7,8-TCDD	0.40	-----	0.17	J	2,3,4,7,8-PeCDF-13C	2.00	102
Total TCDD	17.00	-----	0.17		1,2,3,7,8-PeCDD-13C	2.00	111
					1,2,3,4,7,8-HxCDF-13C	2.00	85
1,2,3,7,8-PeCDF	0.41	-----	0.37	J	1,2,3,6,7,8-HxCDF-13C	2.00	73
2,3,4,7,8-PeCDF	0.44	-----	0.25	J	2,3,4,6,7,8-HxCDF-13C	2.00	78
Total PeCDF	5.20	-----	0.31	J	1,2,3,7,8,9-HxCDF-13C	2.00	87
					1,2,3,4,7,8-HxCDD-13C	2.00	88
1,2,3,7,8-PeCDD	-----	1.50	0.35	I	1,2,3,6,7,8-HxCDD-13C	2.00	76
Total PeCDD	26.00	-----	0.35		1,2,3,4,6,7,8-HpCDF-13C	2.00	66
					1,2,3,4,7,8,9-HpCDF-13C	2.00	75
1,2,3,4,7,8-HxCDF	-----	1.60	0.19	I	1,2,3,4,6,7,8-HpCDD-13C	2.00	71
1,2,3,6,7,8-HxCDF	-----	0.61	0.18	I	OCDD-13C	4.00	69
2,3,4,6,7,8-HxCDF	-----	0.41	0.12	I			
1,2,3,7,8,9-HxCDF	ND	-----	0.16		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	6.00	-----	0.16	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	2.60	-----	0.51	J	2,3,7,8-TCDD-37Cl4	0.20	95
1,2,3,6,7,8-HxCDD	2.80	-----	0.35	J			
1,2,3,7,8,9-HxCDD	2.20	-----	0.27	J			
Total HxCDD	51.00	-----	0.37				
1,2,3,4,6,7,8-HpCDF	14.00	-----	0.17		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.90	-----	0.18	J	Equivalence: 2.3 ng/Kg		
Total HpCDF	36.00	-----	0.18		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	49.00	-----	0.24				
Total HpCDD	110.00	-----	0.24				
OCDF	34.00	-----	0.20				
OCDD	380.00	-----	0.69				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
I = Interference present

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSW06-0010		
Lab Sample ID	10112775004		
Filename	F90929A_15		
Injected By	SMT		
Total Amount Extracted	10.6 g	Matrix	Solid
% Moisture	10.0	Dilution	NA
Dry Weight Extracted	9.53 g	Collected	09/16/2009 09:00
ICAL ID	F90817	Received	09/18/2009 09:13
CCal Filename(s)	F90929A_02 & F90929A_18	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 14:53

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.75	-----	0.140	J	2,3,7,8-TCDF-13C	2.00	91
Total TCDF	17.00	-----	0.140		2,3,7,8-TCDD-13C	2.00	83
					1,2,3,7,8-PeCDF-13C	2.00	98
2,3,7,8-TCDD	1.20	-----	0.140		2,3,4,7,8-PeCDF-13C	2.00	99
Total TCDD	88.00	-----	0.140		1,2,3,7,8-PeCDD-13C	2.00	104
					1,2,3,4,7,8-HxCDF-13C	2.00	85
1,2,3,7,8-PeCDF	-----	0.58	0.150	E	1,2,3,6,7,8-HxCDF-13C	2.00	73
2,3,4,7,8-PeCDF	0.60	-----	0.120	J	2,3,4,6,7,8-HxCDF-13C	2.00	78
Total PeCDF	10.00	-----	0.140		1,2,3,7,8,9-HxCDF-13C	2.00	85
					1,2,3,4,7,8-HxCDD-13C	2.00	88
1,2,3,7,8-PeCDD	3.00	-----	0.350	J	1,2,3,6,7,8-HxCDD-13C	2.00	76
Total PeCDD	75.00	-----	0.350		1,2,3,4,6,7,8-HpCDF-13C	2.00	64
					1,2,3,4,7,8,9-HpCDF-13C	2.00	69
1,2,3,4,7,8-HxCDF	-----	2.60	0.120	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	67
1,2,3,6,7,8-HxCDF	0.95	-----	0.120	J	OCDD-13C	4.00	64
2,3,4,6,7,8-HxCDF	0.49	-----	0.084	J			
1,2,3,7,8,9-HxCDF	-----	0.27	0.140	I	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	11.00	-----	0.120		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	5.50	-----	0.140		2,3,7,8-TCDD-37Cl4	0.20	94
1,2,3,6,7,8-HxCDD	5.00	-----	0.110	J			
1,2,3,7,8,9-HxCDD	4.10	-----	0.110	J			
Total HxCDD	110.00	-----	0.120				
1,2,3,4,6,7,8-HpCDF	25.00	-----	0.180		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.70	-----	0.230	J	Equivalence: 7.6 ng/Kg		
Total HpCDF	75.00	-----	0.200		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	94.00	-----	0.330				
Total HpCDD	200.00	-----	0.330				
OCDF	67.00	-----	0.270				
OCDD	710.00	-----	0.150				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
E = PCDE Interference
I = Interference present

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSW07-0005		
Lab Sample ID	10112775005		
Filename	F90929A_16		
Injected By	SMT		
Total Amount Extracted	11.2 g	Matrix	Solid
% Moisture	13.8	Dilution	NA
Dry Weight Extracted	9.65 g	Collected	09/16/2009 09:10
ICAL ID	F90817	Received	09/18/2009 09:13
CCal Filename(s)	F90929A_02 & F90929A_18	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 15:39

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.54	-----	0.140	J	2,3,7,8-TCDF-13C	2.00	93
Total TCDF	8.10	-----	0.140		2,3,7,8-TCDD-13C	2.00	87
					1,2,3,7,8-PeCDF-13C	2.00	101
2,3,7,8-TCDD	0.28	-----	0.150	J	2,3,4,7,8-PeCDF-13C	2.00	99
Total TCDD	13.00	-----	0.150		1,2,3,7,8-PeCDD-13C	2.00	105
					1,2,3,4,7,8-HxCDF-13C	2.00	85
1,2,3,7,8-PeCDF	0.31	-----	0.190	J	1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	-----	0.38	0.240	I	2,3,4,6,7,8-HxCDF-13C	2.00	78
Total PeCDF	7.20	-----	0.210		1,2,3,7,8,9-HxCDF-13C	2.00	84
					1,2,3,4,7,8-HxCDD-13C	2.00	91
1,2,3,7,8-PeCDD	1.50	-----	0.300	J	1,2,3,6,7,8-HxCDD-13C	2.00	75
Total PeCDD	22.00	-----	0.300		1,2,3,4,6,7,8-HpCDF-13C	2.00	61
					1,2,3,4,7,8,9-HpCDF-13C	2.00	66
1,2,3,4,7,8-HxCDF	-----	2.50	0.083	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	59
1,2,3,6,7,8-HxCDF	0.96	-----	0.110	J	OCDD-13C	4.00	61
2,3,4,6,7,8-HxCDF	0.47	-----	0.110	J			
1,2,3,7,8,9-HxCDF	-----	0.16	0.120	I	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	12.00	-----	0.110		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	2.20	-----	0.230	J	2,3,7,8-TCDD-37Cl4	0.20	97
1,2,3,6,7,8-HxCDD	3.40	-----	0.230	J			
1,2,3,7,8,9-HxCDD	2.10	-----	0.110	J			
Total HxCDD	45.00	-----	0.190				
1,2,3,4,6,7,8-HpCDF	25.00	-----	0.200		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.50	-----	0.170	J	Equivalence: 3.9 ng/Kg		
Total HpCDF	63.00	-----	0.180		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	64.00	-----	0.440				
Total HpCDD	140.00	-----	0.440				
OCDF	51.00	-----	0.270				
OCDD	490.00	-----	0.210				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
E = PCDE Interference
I = Interference present

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DBT04-0045		
Lab Sample ID	10112775006		
Filename	F90929A_17		
Injected By	SMT		
Total Amount Extracted	16.6 g	Matrix	Solid
% Moisture	76.0	Dilution	NA
Dry Weight Extracted	3.99 g	Collected	09/16/2009 09:20
ICAL ID	F90817	Received	09/18/2009 09:13
CCal Filename(s)	F90929A_02 & F90929A_18	Extracted	09/24/2009 19:00
Method Blank ID	BLANK-21533	Analyzed	09/29/2009 16:25

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	1.90	-----	0.85	J	2,3,7,8-TCDF-13C	2.00	98
Total TCDF	24.00	-----	0.85		2,3,7,8-TCDD-13C	2.00	90
					1,2,3,7,8-PeCDF-13C	2.00	108
2,3,7,8-TCDD	0.66	-----	0.58	J	2,3,4,7,8-PeCDF-13C	2.00	104
Total TCDD	12.00	-----	0.58		1,2,3,7,8-PeCDD-13C	2.00	110
					1,2,3,4,7,8-HxCDF-13C	2.00	94
1,2,3,7,8-PeCDF	ND	-----	1.20		1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	2.60	-----	1.30	J	2,3,4,6,7,8-HxCDF-13C	2.00	79
Total PeCDF	23.00	-----	1.20		1,2,3,7,8,9-HxCDF-13C	2.00	83
					1,2,3,4,7,8-HxCDD-13C	2.00	98
1,2,3,7,8-PeCDD	3.80	-----	0.77	J	1,2,3,6,7,8-HxCDD-13C	2.00	71
Total PeCDD	39.00	-----	0.77		1,2,3,4,6,7,8-HpCDF-13C	2.00	56
					1,2,3,4,7,8,9-HpCDF-13C	2.00	60
1,2,3,4,7,8-HxCDF	12.00	-----	0.72	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	60
1,2,3,6,7,8-HxCDF	5.20	-----	1.10	J	OCDD-13C	4.00	54
2,3,4,6,7,8-HxCDF	-----	1.3	0.70	I			
1,2,3,7,8,9-HxCDF	2.90	-----	0.63	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	61.00	-----	0.80		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	2.30	-----	0.62	J	2,3,7,8-TCDD-37Cl4	0.20	99
1,2,3,6,7,8-HxCDD	6.20	-----	1.10	J			
1,2,3,7,8,9-HxCDD	3.20	-----	1.10	J			
Total HxCDD	67.00	-----	0.93				
1,2,3,4,6,7,8-HpCDF	39.00	-----	1.50		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	5.60	-----	1.30	J	Equivalence: 10 ng/Kg		
Total HpCDF	110.00	-----	1.40		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	71.00	-----	0.91				
Total HpCDD	140.00	-----	0.91				
OCDF	79.00	-----	1.70				
OCDD	550.00	-----	1.80				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
I = Interference present

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-21533	Matrix	Solid
Filename	F90928A_17	Dilution	NA
Total Amount Extracted	20.1 g	Extracted	09/24/2009 19:00
ICAL ID	F90817	Analyzed	09/28/2009 22:40
CCal Filename(s)	F90928A_09 & F90929A_02	Injected By	SMT

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.029		2,3,7,8-TCDF-13C	2.00	79
Total TCDF	ND	-----	0.029		2,3,7,8-TCDD-13C	2.00	80
					1,2,3,7,8-PeCDF-13C	2.00	90
2,3,7,8-TCDD	ND	-----	0.035		2,3,4,7,8-PeCDF-13C	2.00	92
Total TCDD	ND	-----	0.035		1,2,3,7,8-PeCDD-13C	2.00	105
					1,2,3,4,7,8-HxCDF-13C	2.00	74
1,2,3,7,8-PeCDF	ND	-----	0.070		1,2,3,6,7,8-HxCDF-13C	2.00	65
2,3,4,7,8-PeCDF	ND	-----	0.044		2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	ND	-----	0.057		1,2,3,7,8,9-HxCDF-13C	2.00	78
					1,2,3,4,7,8-HxCDD-13C	2.00	84
1,2,3,7,8-PeCDD	ND	-----	0.500		1,2,3,6,7,8-HxCDD-13C	2.00	73
Total PeCDD	ND	-----	0.500		1,2,3,4,6,7,8-HpCDF-13C	2.00	65
					1,2,3,4,7,8,9-HpCDF-13C	2.00	75
1,2,3,4,7,8-HxCDF	ND	-----	0.029		1,2,3,4,6,7,8-HpCDD-13C	2.00	77
1,2,3,6,7,8-HxCDF	ND	-----	0.034		OCDD-13C	4.00	76
2,3,4,6,7,8-HxCDF	ND	-----	0.028				
1,2,3,7,8,9-HxCDF	ND	-----	0.039		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.032		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.045		2,3,7,8-TCDD-37Cl4	0.20	88
1,2,3,6,7,8-HxCDD	ND	-----	0.047				
1,2,3,7,8,9-HxCDD	ND	-----	0.050				
Total HxCDD	ND	-----	0.047				
1,2,3,4,6,7,8-HpCDF	0.042	-----	0.033	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.048		Equivalence: 0.29 ng/Kg		
Total HpCDF	0.094	-----	0.041	J	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	-----	0.063	0.026	I			
Total HpCDD	ND	-----	0.026				
OCDF	0.120	-----	0.026	J			
OCDD	0.920	-----	0.073	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
I = Interference present

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-21534		
Filename	F90928A_13	Matrix	Solid
Total Amount Extracted	20.3 g	Dilution	NA
ICAL ID	F90817	Extracted	09/24/2009 19:00
CCal Filename(s)	F90928A_09 & F90929A_02	Analyzed	09/28/2009 19:35
Method Blank ID	BLANK-21533	Injected By	SMT

Native Isomers	**Qs** (ng)	**Qm** (ng)	% Rec.	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	0.20	0.20	98	2,3,7,8-TCDF-13C	2.00	78
Total TCDF				2,3,7,8-TCDD-13C	2.00	77
				1,2,3,7,8-PeCDF-13C	2.00	88
2,3,7,8-TCDD	0.20	0.21	105	2,3,4,7,8-PeCDF-13C	2.00	91
Total TCDD				1,2,3,7,8-PeCDD-13C	2.00	103
				1,2,3,4,7,8-HxCDF-13C	2.00	73
1,2,3,7,8-PeCDF	1.00	0.99	99	1,2,3,6,7,8-HxCDF-13C	2.00	64
2,3,4,7,8-PeCDF	1.00	0.94	94	2,3,4,6,7,8-HxCDF-13C	2.00	67
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.00	76
				1,2,3,4,7,8-HxCDD-13C	2.00	81
1,2,3,7,8-PeCDD	1.00	0.91	91	1,2,3,6,7,8-HxCDD-13C	2.00	71
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.00	65
				1,2,3,4,7,8,9-HpCDF-13C	2.00	72
1,2,3,4,7,8-HxCDF	1.00	0.93	93	1,2,3,4,6,7,8-HpCDD-13C	2.00	75
1,2,3,6,7,8-HxCDF	1.00	1.01	101	OCDD-13C	4.00	75
2,3,4,6,7,8-HxCDF	1.00	0.99	99			
1,2,3,7,8,9-HxCDF	1.00	0.98	98	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	0.96	96	2,3,7,8-TCDD-37Cl4	0.20	87
1,2,3,6,7,8-HxCDD	1.00	0.94	94			
1,2,3,7,8,9-HxCDD	1.00	0.98	98			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.00	1.09	109			
1,2,3,4,7,8,9-HpCDF	1.00	1.07	107			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.00	0.97	97			
Total HpCDD						
OCDF	2.00	2.07	103			
OCDD	2.00	2.37	119			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
P = Recovery outside of target range
X = Background subtracted value
Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Laboratory Number: 09-148

Company: Parametrix
Project Number: 235-1577-024
Project Name: West Bay
Project Manager: D. Dinkuhn
Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	RP metals	Dioxins					% Moisture
1	WB-SO-DBT02-0050	9/15/09	0956	Soil	2														X	X					X
2	WB-SO-DBT03-0030	↓	1300	↓	↓														↓	↓					↓
3	WB-SO-DSW05-0005	↓	1305	↓	↓														↓	↓					↓
4	WB-SO-DSW06-0010	9/16/09	0910	↓	↓														↓	↓					↓
5	WB-SO-DSW07-0005	↓	0916	↓	↓														↓	↓					↓
6	WB-SO-DBT04-0045	↓	0920	↓	↓														↓	↓					↓

	Signature	Company	Date	Time
Relinquished by	Lara Linde	Parametrix	9/16/09	1444
Received by	Tyler Wilhelm	Speedy	9/16/09	1444
Relinquished by	Tyler Wilhelm	Speedy	9/16/09	1640
Received by			9/16/09	1640
Relinquished by				
Received by				

Comments/Special Instructions: EIM EDDs

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

October 13, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0909-148B

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on September 16, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: October 13, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148B
Project: 235-1577-024

Case Narrative

Samples were collected on September 15 and 16, 2009, and received by the laboratory on September 16, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Total Metals EPA 6010B/7471A Analysis

The duplicate RPD for Selenium is outside control limits due to the inherently high percentage variability of samples that are within five times the detection limit.

The practical quantitation limit for Selenium in sample WB-SO-DBT04-0045 is elevated due to interferences present in the sample.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: October 13, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148B
Project: 235-1577-024

TOTAL METALS
EPA 6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23,10-8&9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-04
Client ID: **WB-SO-DSW06-0010**

Analyte	Method	Result	PQL
Antimony	6020	**ND**	1.7
Arsenic	6020	**ND**	3.4
Mercury	7471A	**0.040**	0.034
Selenium	6020	**0.45**	0.29
Thallium	6020	**ND**	0.34

Date of Report: October 13, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148B
Project: 235-1577-024

TOTAL METALS
EPA 6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23,10-8&9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-05
Client ID: **WB-SO-DSW07-0005**

Analyte	Method	Result	PQL
Antimony	6020	**ND**	1.7
Arsenic	6020	**ND**	3.5
Mercury	7471A	**ND**	0.035
Selenium	6020	**0.50**	0.29
Thallium	6020	**ND**	0.35

Date of Report: October 13, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148B
Project: 235-1577-024

TOTAL METALS
EPA 6020/7471A

Date Extracted: 9-21&23-09
Date Analyzed: 9-23,10-8&9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-06
Client ID: **WB-SO-DBT04-0045**

Analyte	Method	Result	PQL
Antimony	6020	**ND**	5.0
Arsenic	6020	**ND**	10
Mercury	7471A	**0.13**	0.10
Selenium	6020	**ND**	2.0
Thallium	6020	**ND**	1.0

Date of Report: October 13, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148B
Project: 235-1577-024

TOTAL METALS
EPA 6020/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-21&23-09
Date Analyzed: 9-23,10-8&9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0921S3&MB0923S1

Analyte	Method	Result	PQL
Antimony	6020	**ND**	1.5
Arsenic	6020	**ND**	5.0
Mercury	7471A	**ND**	0.030
Selenium	6020	**ND**	0.25
Thallium	6020	**ND**	0.30

Date of Report: October 13, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148B
Project: 235-1577-024

TOTAL METALS
EPA 6020/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-21&23-09
Date Analyzed: 9-23,10-8&9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Antimony	**ND**	**ND**	NA	1.5	
Arsenic	**3.93**	**4.04**	3	3.0	
Mercury	**ND**	**ND**	NA	0.030	
Selenium	**1.20**	**0.920**	26	0.25	C
Thallium	**ND**	**ND**	NA	0.3	

Date of Report: October 13, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-148B
Project: 235-1577-024

TOTAL METALS
EPA 6020/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-21&23-09
Date Analyzed: 9-23,10-8&9-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-148-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Antimony	100	**114**	114	**124**	124	9	
Arsenic	100	**105**	101	**103.0**	99	2	
Mercury	0.50	**0.480**	96	**0.495**	99	3	
Selenium	100	**108**	107	**104**	102	5	
Thallium	50	**48.5**	97	**48.7**	97	0	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix
Project Number: 235-1577-024
Project Name: West Bay
Project Manager: D. Dinkuhn
Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 09-148

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	RP metals	Dioxins	METALS* PLEASE SEE COMMENTS			% Moisture
1	WB-SO-DBT02-0050	9/15/09	0956	Soil	2														X	X	⊗	NO		X
2	WB-SO-DBT03-0030	↓	1300	↓	↓														↓	↓	⊗	NO		↓
3	WB-SO-DSW05-0005	↓	1305	↓	↓														↓	↓	⊗	NO	DB	↓
4	WB-SO-DSW06-0010	9/16/09	0910	↓	↓														↓	↓	⊗	↓	↓	↓
5	WB-SO-DSW07-0005	↓	0910	↓	↓														↓	↓	⊗	↓	↓	↓
6	WB-SO-DBT04-0045	↓	0920	↓	↓														↓	↓	⊗	↓	↓	↓

	Signature	Company	Date	Time
Relinquished by	Lara Linde	Parametrix	9/16/09	1444
Received by	Tyler Wilhelm	Speedy	9/16/09	1444
Relinquished by	Tyler Wilhelm	Speedy	9/16/09	1640
Received by		OSE	9/16/09	1640
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

EIM EDDs

⊗ Added 10/2/09. DB STA

* Sb - 5 mg/kg
As - 10
Hg - 0.10
Se - 0.30
Tl - 1.0

Chromatograms with final report ☐

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OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 29, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0909-149

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on September 16, 2009.

Please note that the subcontracted data will follow in the final report.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

Case Narrative

Samples were collected on September 16, 2009, and received by the laboratory on September 16, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-01
Client ID: **WB-SO-DSP01-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**12**	6.0
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.60
Cadmium	6010B	**ND**	0.60
Chromium	6010B	**26**	0.60
Copper	6010B	**83**	1.2
Lead	6010B	**40**	6.0
Mercury	7471A	**ND**	0.30
Nickel	6010B	**28**	3.0
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.60
Thallium	6020	**ND**	6.0
Zinc	6010B	**130**	3.0

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-02
Client ID: **WB-SO-DSP02-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**7.6**	5.9
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.59
Cadmium	6010B	**ND**	0.59
Chromium	6010B	**27**	0.59
Copper	6010B	**110**	1.2
Lead	6010B	**40**	5.9
Mercury	7471A	**ND**	0.30
Nickel	6010B	**26**	3.0
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.59
Thallium	6020	**ND**	5.9
Zinc	6010B	**98**	3.0

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-03
Client ID: **WB-SO-DSP03-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.8
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.58
Cadmium	6010B	**ND**	0.58
Chromium	6010B	**26**	0.58
Copper	6010B	**45**	1.2
Lead	6010B	**32**	5.8
Mercury	7471A	**ND**	0.29
Nickel	6010B	**24**	2.9
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.58
Thallium	6020	**ND**	5.8
Zinc	6010B	**62**	2.9

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-04
Client ID: **WB-SO-DSP04-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**7.0**	6.0
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.60
Cadmium	6010B	**ND**	0.60
Chromium	6010B	**27**	0.60
Copper	6010B	**73**	1.2
Lead	6010B	**30**	6.0
Mercury	7471A	**ND**	0.30
Nickel	6010B	**25**	3.0
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.60
Thallium	6020	**ND**	6.0
Zinc	6010B	**110**	3.0

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-05
Client ID: **WB-SO-DSP05-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**6.1**	6.1
Arsenic	6010B	**ND**	12
Beryllium	6010B	**ND**	0.61
Cadmium	6010B	**ND**	0.61
Chromium	6010B	**24**	0.61
Copper	6010B	**100**	1.2
Lead	6010B	**46**	6.1
Mercury	7471A	**ND**	0.31
Nickel	6010B	**32**	3.1
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.61
Thallium	6020	**ND**	6.1
Zinc	6010B	**120**	3.1

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-06
Client ID: **WB-SO-DSP06-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**11**	9.2
Arsenic	6010B	**ND**	18
Beryllium	6010B	**ND**	0.92
Cadmium	6010B	**ND**	0.92
Chromium	6010B	**25**	0.92
Copper	6010B	**130**	1.8
Lead	6010B	**50**	9.2
Mercury	7471A	**ND**	0.46
Nickel	6010B	**25**	4.6
Selenium	6010B	**ND**	18
Silver	6010B	**ND**	0.92
Thallium	6020	**ND**	9.2
Zinc	6010B	**190**	4.6

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-07
Client ID: **WB-SO-DSP07-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**15**	8.2
Arsenic	6010B	**ND**	16
Beryllium	6010B	**ND**	0.82
Cadmium	6010B	**ND**	0.82
Chromium	6010B	**28**	0.82
Copper	6010B	**140**	1.6
Lead	6010B	**58**	8.2
Mercury	7471A	**ND**	0.41
Nickel	6010B	**24**	4.1
Selenium	6010B	**ND**	16
Silver	6010B	**5.8**	0.82
Thallium	6020	**ND**	8.2
Zinc	6010B	**220**	4.1

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-08
Client ID: **WB-SO-DSP08-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**8.7**	8.3
Arsenic	6010B	**ND**	17
Beryllium	6010B	**ND**	0.83
Cadmium	6010B	**ND**	0.83
Chromium	6010B	**25**	0.83
Copper	6010B	**140**	1.7
Lead	6010B	**68**	8.3
Mercury	7471A	**ND**	0.42
Nickel	6010B	**34**	4.2
Selenium	6010B	**ND**	17
Silver	6010B	**ND**	0.83
Thallium	6020	**ND**	8.3
Zinc	6010B	**190**	4.2

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-09
Client ID: **WB-SO-DSP09-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**11**	10
Arsenic	6010B	**ND**	20
Beryllium	6010B	**ND**	1.0
Cadmium	6010B	**ND**	1.0
Chromium	6010B	**33**	1.0
Copper	6010B	**99**	2.0
Lead	6010B	**50**	10
Mercury	7471A	**ND**	0.50
Nickel	6010B	**41**	5.0
Selenium	6010B	**ND**	20
Silver	6010B	**ND**	1.0
Thallium	6020	**ND**	10
Zinc	6010B	**190**	5.0

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-10
Client ID: **WB-SO-DSP10-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	6.8
Arsenic	6010B	**ND**	14
Beryllium	6010B	**ND**	0.68
Cadmium	6010B	**ND**	0.68
Chromium	6010B	**22**	0.68
Copper	6010B	**93**	1.4
Lead	6010B	**54**	6.8
Mercury	7471A	**1.0**	0.34
Nickel	6010B	**26**	3.4
Selenium	6010B	**ND**	14
Silver	6010B	**ND**	0.68
Thallium	6020	**ND**	6.8
Zinc	6010B	**120**	3.4

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-11
Client ID: **WB-SO-DSP11-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	7.0
Arsenic	6010B	**ND**	14
Beryllium	6010B	**ND**	0.70
Cadmium	6010B	**ND**	0.70
Chromium	6010B	**28**	0.70
Copper	6010B	**56**	1.4
Lead	6010B	**31**	7.0
Mercury	7471A	**ND**	0.35
Nickel	6010B	**27**	3.5
Selenium	6010B	**ND**	14
Silver	6010B	**ND**	0.70
Thallium	6020	**ND**	7.0
Zinc	6010B	**88**	3.5

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-12
Client ID: **WB-SO-DSP12-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	6.8
Arsenic	6010B	**ND**	14
Beryllium	6010B	**ND**	0.68
Cadmium	6010B	**ND**	0.68
Chromium	6010B	**17**	0.68
Copper	6010B	**66**	1.4
Lead	6010B	**42**	6.8
Mercury	7471A	**ND**	0.34
Nickel	6010B	**26**	3.4
Selenium	6010B	**ND**	14
Silver	6010B	**ND**	0.68
Thallium	6020	**ND**	6.8
Zinc	6010B	**93**	3.4

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-13
Client ID: **WB-SO-DSP13-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**7.2**	6.6
Arsenic	6010B	**ND**	13
Beryllium	6010B	**ND**	0.66
Cadmium	6010B	**ND**	0.66
Chromium	6010B	**21**	0.66
Copper	6010B	**96**	1.3
Lead	6010B	**67**	6.6
Mercury	7471A	**ND**	0.33
Nickel	6010B	**26**	3.3
Selenium	6010B	**ND**	13
Silver	6010B	**ND**	0.66
Thallium	6020	**ND**	6.6
Zinc	6010B	**120**	3.3

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-14
Client ID: **WB-SO-DSP14-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**12**	7.8
Arsenic	6010B	**ND**	16
Beryllium	6010B	**ND**	0.78
Cadmium	6010B	**ND**	0.78
Chromium	6010B	**22**	0.78
Copper	6010B	**220**	1.6
Lead	6010B	**110**	7.8
Mercury	7471A	**ND**	0.39
Nickel	6010B	**34**	3.9
Selenium	6010B	**ND**	16
Silver	6010B	**ND**	0.78
Thallium	6020	**ND**	7.8
Zinc	6010B	**290**	3.9

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-15
Client ID: **WB-SO-DSP15-0005**

Analyte	Method	Result	PQL
Antimony	6010B	**22**	8.0
Arsenic	6010B	**ND**	16
Beryllium	6010B	**ND**	0.80
Cadmium	6010B	**ND**	0.80
Chromium	6010B	**35**	0.80
Copper	6010B	**140**	1.6
Lead	6010B	**89**	8.0
Mercury	7471A	**ND**	0.40
Nickel	6010B	**28**	4.0
Selenium	6010B	**ND**	16
Silver	6010B	**ND**	0.80
Thallium	6020	**ND**	8.0
Zinc	6010B	**240**	4.0

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0922S3,MB0923S2&MB0923S3

Analyte	Method	Result	PQL
Antimony	6010B	**ND**	5.0
Arsenic	6010B	**ND**	10
Beryllium	6010B	**ND**	0.50
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Copper	6010B	**ND**	1.0
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.25
Nickel	6010B	**ND**	2.5
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50
Thallium	6020	**ND**	5.0
Zinc	6010B	**ND**	2.5

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Antimony	**9.69**	**9.16**	6	5.0	
Arsenic	**ND**	**ND**	NA	10	
Beryllium	**ND**	**ND**	NA	0.50	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**21.3**	**24.1**	12	0.50	
Copper	**69.4**	**67.7**	3	1.0	
Lead	**33.6**	**28.1**	18	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Nickel	**23.3**	**21.9**	6	2.5	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	
Thallium	**ND**	**ND**	NA	5.0	
Zinc	**106**	**95.2**	10	2.5	

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TOTAL METALS
EPA 6010B/6020/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 9-22&23-09
Date Analyzed: 9-23&24-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-149-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Antimony	100	**110**	100	**107**	97	2	
Arsenic	100	**97.3**	97	**99.6**	100	2	
Beryllium	50	**51.9**	104	**51.3**	103	1	
Cadmium	50	**48.8**	98	**48.5**	97	1	
Chromium	100	**112**	91	**115**	94	3	
Copper	50	**112**	86	**112**	85	0	
Lead	250	**259**	90	**257**	89	1	
Mercury	0.50	**0.504**	101	**0.498**	100	1	
Nickel	100	**116**	93	**115**	92	1	
Selenium	100	**94.0**	94	**97.0**	97	3	
Silver	25	**24.7**	99	**23.6**	94	5	
Thallium	50	**49.9**	100	**51.2**	102	3	
Zinc	100	**192**	86	**206**	100	7	

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TCLP LEAD
by EPA 1311/6010B

Date Prepared:	9-28-09
Date Extracted:	9-29-09
Date Analyzed:	9-29-09
Matrix:	TCLP Extract
Units:	mg/L (ppm)

Client ID	Lab ID	Result	PQL
WB-SO-DSP14-0005	09-149-14	**ND**	0.20

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TCLP LEAD
by EPA 1311/6010B
METHOD BLANK QUALITY CONTROL

Date Prepared:	9-28-09
Date Extracted:	9-29-09
Date Analyzed:	9-29-09
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	MB0929T1

Analyte	Method	Result	PQL
Lead	6010B	**ND**	0.20

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TCLP LEAD
by EPA 1311/6010B
DUPLICATE QUALITY CONTROL

Date Prepared: 9-28-09
Date Extracted: 9-29-09
Date Analyzed: 9-29-09

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 09-149-14

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	0.20	

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

TCLP LEAD
by EPA 1311/6010B
MS/MSD QUALITY CONTROL

Date Prepared: 9-28-09
Date Extracted: 9-29-09
Date Analyzed: 9-29-09

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 09-149-14

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	10	**9.35**	94	**9.01**	90	4	

Date of Report: September 29, 2009
Samples Submitted: September 16, 2009
Laboratory Reference: 0909-149
Project: 235-1577-024

% MOISTURE

Date Analyzed: 9-22-09

Client ID	Lab ID	% Moisture
WB-SO-DSP01-0005	09-149-01	17
WB-SO-DSP02-0005	09-149-02	15
WB-SO-DSP03-0005	09-149-03	14
WB-SO-DSP04-0005	09-149-04	16
WB-SO-DSP05-0005	09-149-05	18
WB-SO-DSP06-0005	09-149-06	46
WB-SO-DSP07-0005	09-149-07	39
WB-SO-DSP08-0005	09-149-08	40
WB-SO-DSP09-0005	09-149-09	50
WB-SO-DSP10-0005	09-149-10	27
WB-SO-DSP11-0005	09-149-11	28
WB-SO-DSP12-0005	09-149-12	27
WB-SO-DSP13-0005	09-149-13	25
WB-SO-DSP14-0005	09-149-14	36
WB-SO-DSP15-0005	09-149-15	37

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix
Project Number: 235-1577-024
Project Name: West Bay
Project Manager: D. Pinkham
Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Day ☐ 3 Day
- ☒ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 09-149

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals (HOLD)	HEM by 1664	Pb Metals	Dioxins					% Moisture
1	WB-SD-DSP01-0005	9/16/09	1040	Soil	2												X		X	X					X
2	WB-SD-DSP02-0005		1045																						
3	WB-SD-DSP03-0005		1050																						
4	WB-SD-DSP04-0005		1055																						
5	WB-SD-DSP05-0005		1100																						
6	WB-SD-DSP06-0005		1110																						
7	WB-SD-DSP07-0005		1115																						
8	WB-SD-DSP08-0005		1120																						
9	WB-SD-DSP09-0005		1125																						
10	WB-SD-DSP10-0005		1130																						

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by	Lara Linde	Parametrix	9/16/09	1444	Archive remaining volume for future analyses
Received by		Speedy	9/16/09	1444	
Relinquished by		Speedy	9/16/09	1640	
Received by			9/16/09	1640	② Added 9/25/09. DB (2 day TAT)
Relinquished by					
Received by					
Reviewed by/Date		Reviewed by/Date			Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix
Project Number: 235-1577-024
Project Name: West Bay
Project Manager: D. Dinkuhn
Sampled by: L. Linde

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days)
  (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 09-149

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals (HOLD)	HEM by 1664	PP Metals	Dioxins		TCLP LEAD			% Moisture
11	WB-SD-DSP11-0005	9/16/09	1145	Soil	2												X		X	X					X
12	WB-SD-DSP12-0005	↓	1150	↓	↓												↓		↓	↓					↓
13	WB-SD-DSP13-0005		1155																						
14	WB-SD-DSP14-0005		1200																			⊗			
15	WB-SD-DSP15-0005		1205																						

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by	Lara Linde	Parametrix	9/16/09	1444	Archive remaining volume for future analysis
Received by	Lynn Webster	Speedy	9/16/09	1444	
Relinquished by	Lynn Webster	Speedy	9/16/09	1640	
Received by		ONE	9/16/09	1640	⊗ Added 9/25/09. DB (2 day TAT)
Relinquished by					
Received by					
Reviewed by/Date		Reviewed by/Date			Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

Pace Analytical™

www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Report Prepared for:

David Baumeister
Onsite Environmental, Inc.
14648 NE 95th Street
Redmond WA 98052

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

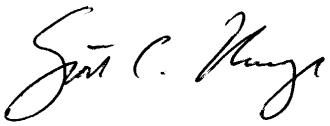
Pace Project #: 10112776
Sample Receipt Date: 09/18/2009
Client Project #: 235-1577-024
Client Sub PO #: N/A
State Cert #: C218

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed and prepared by:



Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

ACCREDITED IN ACCORDANCE WITH nelac

Report of Laboratory Analysis

Report Prepared Date:
October 2, 2009

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on fifteen samples submitted by a representative of OnSite Environmental, Inc. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. Reporting limits were based on signal-to-noise measurements.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 46-117%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, interfering substances impacted the determinations of PCDD or PCDF congeners. The affected values were flagged "I" where incorrect isotope ratios were obtained, or "E" where polychlorinated diphenyl ethers were present.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected congeners. These were below the calibration range of the method. The levels reported for the affected congeners in the field samples were higher than the corresponding blank levels by one or more orders of magnitude. These results indicate that the sample processing steps did not contribute significantly to the levels reported for the field samples.

Laboratory and matrix spike samples were also prepared with the sample batch using clean sand or sample matrix that had been fortified with native standards. The results show that the spiked native compounds in the laboratory spike sample were recovered at 87-105%. These results indicate a high degree of accuracy for these determinations. Somewhat variable results were obtained for selected congeners in the matrix spike samples, due to the levels of these compounds or interferences in the sample material.

Appendix A

Sample Management

1154 10112776

Page 1 of 2

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 09-149

Subcontract Laboratory: Pace Analytical Service, Inc.

Turnaround Request: 1 Day 2 Day 3 Day (Standard)

Project Manager: David Baumeister

Contact Person: Scott Unze / Dioxin Manger

email: dbaumeister@onsite-env.com

Address: 1700 Elm St. Ste. 200 Minneapolis, MN 55414

Project Number: 235-1577-024

Phone Number: (612) 607-6383

Other:

Project Name:

Date/Time:

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis	
	WB-SO-DSP01-0005	9/16/09	1040	S	1	DIOXINS	001
	WB-SO-DSP02-0005		1045				002
	WB-SO-DSP03-0005		1050				003
	WB-SO-DSP04-0005		1055				004
	WB-SO-DSP05-0005		1100				005
	WB-SO-DSP06-0005		1110				006
	WB-SO-DSP07-0005		1115				007
	WB-SO-DSP08-0005		1120				008
	WB-SO-DSP09-0005		1125				009
	WB-SO-DSP10-0005		1130				010

Signature	Company	Date	Time
Relinquished by:	OSE	9/17/09	1530
Received by:	UPS		
Relinquished by:			
Received by: Shunter	PACE	9/18/09	915
Relinquished by:			
Received by:			

Comments/Special Instructions

EIM

Please return cooler & blue ice

T=2.2

OnSite Environmental Inc.

10112776

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 09-149

Subcontract Laboratory: Pace Analytical Service, Inc.

Contact Person: Scott Unze / Dioxin Manger

Address: 1700 Elm St. Ste. 200 Minneapolis, MN 55414

Phone Number: (612) 607-6383

Date/Time:

Turnaround Request:

1 Day 2 Day 3 Day

Standard

Other:

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 235-1577-024

Project Name:

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis
	WB-SO-DSP11-0005	9/16/09	1145	S	1	DIOXINS 011
	WB-SO-DSP12-0005		1150			012
	WB-SO-DSP13-0005		1155			013
	WB-SO-DSP14-0005		1200			014
	WB-SO-DSP15-0005		1205			015

	Signature	Company	Date	Time
Relinquished by:		OSE	9/17/09	1530
Received by:		UPS		
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Comments/Special Instructions

EIM

Please return cooler & blue ice

Sample Condition Upon Receipt

Pace Analytical

Client Name: OnSite Env Project # 10112776

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 1Z684E1W1397015266

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____ Temp Blank: Yes ____ No ✓

Thermometer Used 80344042 of 179425 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.2 Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: 9/17/09 SL

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☐Yes ☑No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☑No ☐N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes ☐No ☑N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	Samp #
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes ☐No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] **Date:** 09/18/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR.

Pace Analytical Services, Inc.
1700 Elm Street SE, Suite 200, Minneapolis, MN 55414

Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP01-0005		
Lab Sample ID	10112776001		
Filename	F90930A_05		
Injected By	SMT		
Total Amount Extracted	11.3 g	Matrix	Solid
% Moisture	14.4	Dilution	NA
Dry Weight Extracted	9.70 g	Collected	09/16/2009 10:40
ICAL ID	F90817	Received	09/18/2009 09:13
CCal Filename(s)	F90930A_02 & F90930A_11	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	09/30/2009 11:38

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	8.10	0.130	E	2,3,7,8-TCDF-13C	2.00	70
Total TCDF	180.00	-----	0.130		2,3,7,8-TCDD-13C	2.00	66
					1,2,3,7,8-PeCDF-13C	2.00	74
2,3,7,8-TCDD	1.80	-----	0.220	Y	2,3,4,7,8-PeCDF-13C	2.00	75
Total TCDD	320.00	-----	0.220	Y	1,2,3,7,8-PeCDD-13C	2.00	80
					1,2,3,4,7,8-HxCDF-13C	2.00	72
1,2,3,7,8-PeCDF	-----	2.10	0.170	E	1,2,3,6,7,8-HxCDF-13C	2.00	66
2,3,4,7,8-PeCDF	2.60	-----	0.200	J	2,3,4,6,7,8-HxCDF-13C	2.00	69
Total PeCDF	43.00	-----	0.190		1,2,3,7,8,9-HxCDF-13C	2.00	70
					1,2,3,4,7,8-HxCDD-13C	2.00	74
1,2,3,7,8-PeCDD	4.50	-----	0.390	J	1,2,3,6,7,8-HxCDD-13C	2.00	70
Total PeCDD	150.00	-----	0.390		1,2,3,4,6,7,8-HpCDF-13C	2.00	58
					1,2,3,4,7,8,9-HpCDF-13C	2.00	60
1,2,3,4,7,8-HxCDF	-----	1.60	0.080	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	57
1,2,3,6,7,8-HxCDF	1.10	-----	0.100	J	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	1.30	-----	0.100	J			
1,2,3,7,8,9-HxCDF	-----	0.22	0.110	I	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	9.00	-----	0.098		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.80	-----	0.330	J	2,3,7,8-TCDD-37Cl4	0.20	74
1,2,3,6,7,8-HxCDD	3.80	-----	0.200	J			
1,2,3,7,8,9-HxCDD	3.30	-----	0.180	J			
Total HxCDD	110.00	-----	0.240				
1,2,3,4,6,7,8-HpCDF	8.40	-----	0.110		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.55	-----	0.190	J	Equivalence: 8.9 ng/Kg		
Total HpCDF	19.00	-----	0.150		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	55.00	-----	0.400				
Total HpCDD	110.00	-----	0.400				
OCDF	18.00	-----	0.120				
OCDD	290.00	-----	0.350				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
E = PCDE Interference
I = Interference present
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP02-0005		
Lab Sample ID	10112776002		
Filename	F90930A_06		
Injected By	SMT		
Total Amount Extracted	10.4 g	Matrix	Solid
% Moisture	15.2	Dilution	NA
Dry Weight Extracted	8.84 g	Collected	09/16/2009 10:45
ICAL ID	F90817	Received	09/18/2009 09:13
CCal Filename(s)	F90930A_02 & F90930A_11	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	09/30/2009 12:24

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	5.4	0.13	E	2,3,7,8-TCDF-13C	2.00	78
Total TCDF	110.00	-----	0.13		2,3,7,8-TCDD-13C	2.00	69
					1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	2.20	-----	0.19	Y	2,3,4,7,8-PeCDF-13C	2.00	79
Total TCDD	530.00	-----	0.19	Y	1,2,3,7,8-PeCDD-13C	2.00	84
					1,2,3,4,7,8-HxCDF-13C	2.00	75
1,2,3,7,8-PeCDF	-----	2.7	0.27	E	1,2,3,6,7,8-HxCDF-13C	2.00	66
2,3,4,7,8-PeCDF	3.00	-----	0.37	J	2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	45.00	-----	0.32		1,2,3,7,8,9-HxCDF-13C	2.00	73
					1,2,3,4,7,8-HxCDD-13C	2.00	80
1,2,3,7,8-PeCDD	6.70	-----	0.48		1,2,3,6,7,8-HxCDD-13C	2.00	69
Total PeCDD	350.00	-----	0.48		1,2,3,4,6,7,8-HpCDF-13C	2.00	55
					1,2,3,4,7,8,9-HpCDF-13C	2.00	57
1,2,3,4,7,8-HxCDF	-----	4.8	0.14	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	54
1,2,3,6,7,8-HxCDF	2.70	-----	0.15	J	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	2.70	-----	0.21	J			
1,2,3,7,8,9-HxCDF	0.68	-----	0.14	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	21.00	-----	0.16		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	5.60	-----	0.19	J	2,3,7,8-TCDD-37Cl4	0.20	79
1,2,3,6,7,8-HxCDD	10.00	-----	0.25				
1,2,3,7,8,9-HxCDD	8.60	-----	0.21				
Total HxCDD	350.00	-----	0.22				
1,2,3,4,6,7,8-HpCDF	29.00	-----	0.15		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.80	-----	0.28	J	Equivalence: 15 ng/Kg		
Total HpCDF	68.00	-----	0.21		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	180.00	-----	0.62				
Total HpCDD	350.00	-----	0.62				
OCDF	53.00	-----	0.28				
OCDD	890.00	-----	0.73				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
E = PCDE Interference
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP03-0005		
Lab Sample ID	10112776003		
Filename	U90929A_09		
Injected By	SMT		
Total Amount Extracted	10.9 g	Matrix	Solid
% Moisture	15.1	Dilution	NA
Dry Weight Extracted	9.22 g	Collected	09/16/2009 10:50
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U90929A_02 & U90929A_16	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	09/29/2009 19:19

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	9.8	-----	0.49		2,3,7,8-TCDF-13C	2.00	63
Total TCDF	190.0	-----	0.49		2,3,7,8-TCDD-13C	2.00	72
					1,2,3,7,8-PeCDF-13C	2.00	73
2,3,7,8-TCDD	3.6	-----	0.67		2,3,4,7,8-PeCDF-13C	2.00	74
Total TCDD	440.0	-----	0.67		1,2,3,7,8-PeCDD-13C	2.00	85
					1,2,3,4,7,8-HxCDF-13C	2.00	85
1,2,3,7,8-PeCDF	4.1	-----	0.55	J	1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	5.7	-----	0.41		2,3,4,6,7,8-HxCDF-13C	2.00	79
Total PeCDF	71.0	-----	0.48		1,2,3,7,8,9-HxCDF-13C	2.00	76
					1,2,3,4,7,8-HxCDD-13C	2.00	93
1,2,3,7,8-PeCDD	9.1	-----	0.80		1,2,3,6,7,8-HxCDD-13C	2.00	82
Total PeCDD	340.0	-----	0.80		1,2,3,4,6,7,8-HpCDF-13C	2.00	73
					1,2,3,4,7,8,9-HpCDF-13C	2.00	70
1,2,3,4,7,8-HxCDF	6.5	-----	0.55		1,2,3,4,6,7,8-HpCDD-13C	2.00	69
1,2,3,6,7,8-HxCDF	3.5	-----	0.70	J	OCDD-13C	4.00	54
2,3,4,6,7,8-HxCDF	4.8	-----	0.69	J			
1,2,3,7,8,9-HxCDF	-----	0.90	0.54	I	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	59.0	-----	0.62		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	11.0	-----	1.40		2,3,7,8-TCDD-37Cl4	0.20	74
1,2,3,6,7,8-HxCDD	21.0	-----	0.95				
1,2,3,7,8,9-HxCDD	18.0	-----	1.60				
Total HxCDD	460.0	-----	1.30				
1,2,3,4,6,7,8-HpCDF	41.0	-----	0.54		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	2.7	-----	0.77	J	Equivalence: 27 ng/Kg		
Total HpCDF	110.0	-----	0.65		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	410.0	-----	2.20				
Total HpCDD	780.0	-----	2.20				
OCDF	61.0	-----	1.60				
OCDD	1900.0	-----	0.78				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
I = Interference present

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP04-0005		
Lab Sample ID	10112776004		
Filename	U90929A_10		
Injected By	SMT		
Total Amount Extracted	12.0 g	Matrix	Solid
% Moisture	15.7	Dilution	NA
Dry Weight Extracted	10.1 g	Collected	09/16/2009 10:55
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U90929A_02 & U90929A_16	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	09/29/2009 20:08

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	16.0	-----	0.48		2,3,7,8-TCDF-13C	2.00	66
Total TCDF	520.0	-----	0.48		2,3,7,8-TCDD-13C	2.00	74
					1,2,3,7,8-PeCDF-13C	2.00	74
2,3,7,8-TCDD	5.8	-----	0.84		2,3,4,7,8-PeCDF-13C	2.00	75
Total TCDD	1000.0	-----	0.84		1,2,3,7,8-PeCDD-13C	2.00	87
					1,2,3,4,7,8-HxCDF-13C	2.00	84
1,2,3,7,8-PeCDF	7.4	-----	0.57		1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	12.0	-----	0.40		2,3,4,6,7,8-HxCDF-13C	2.00	78
Total PeCDF	140.0	-----	0.48		1,2,3,7,8,9-HxCDF-13C	2.00	74
					1,2,3,4,7,8-HxCDD-13C	2.00	89
1,2,3,7,8-PeCDD	16.0	-----	0.94		1,2,3,6,7,8-HxCDD-13C	2.00	81
Total PeCDD	710.0	-----	0.94		1,2,3,4,6,7,8-HpCDF-13C	2.00	70
					1,2,3,4,7,8,9-HpCDF-13C	2.00	65
1,2,3,4,7,8-HxCDF	9.6	-----	0.32		1,2,3,4,6,7,8-HpCDD-13C	2.00	65
1,2,3,6,7,8-HxCDF	6.3	-----	0.48		OCDD-13C	4.00	46
2,3,4,6,7,8-HxCDF	7.9	-----	0.42				
1,2,3,7,8,9-HxCDF	1.8	-----	0.59	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	88.0	-----	0.45		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	14.0	-----	0.94		2,3,7,8-TCDD-37Cl4	0.20	77
1,2,3,6,7,8-HxCDD	28.0	-----	1.50				
1,2,3,7,8,9-HxCDD	25.0	-----	0.73				
Total HxCDD	810.0	-----	1.10				
1,2,3,4,6,7,8-HpCDF	47.0	-----	0.62		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	3.3	-----	1.00	J	Equivalence: 42 ng/Kg		
Total HpCDF	110.0	-----	0.83		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	480.0	-----	1.50				
Total HpCDD	950.0	-----	1.50				
OCDF	56.0	-----	0.59				
OCDD	2200.0	-----	0.72				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
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ND = Not Detected
NA = Not Applicable
NC = Not Calculated

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J = Value below calibration range

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
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Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP05-0005		
Lab Sample ID	10112776005		
Filename	U90929A_11		
Injected By	SMT		
Total Amount Extracted	11.6 g	Matrix	Solid
% Moisture	17.9	Dilution	NA
Dry Weight Extracted	9.49 g	Collected	09/16/2009 11:00
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U90929A_02 & U90929A_16	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	09/29/2009 20:57

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	12.0	-----	0.56		2,3,7,8-TCDF-13C	2.00	57
Total TCDF	290.0	-----	0.56		2,3,7,8-TCDD-13C	2.00	65
					1,2,3,7,8-PeCDF-13C	2.00	70
2,3,7,8-TCDD	6.1	-----	0.98		2,3,4,7,8-PeCDF-13C	2.00	71
Total TCDD	620.0	-----	0.98		1,2,3,7,8-PeCDD-13C	2.00	83
					1,2,3,4,7,8-HxCDF-13C	2.00	81
1,2,3,7,8-PeCDF	3.1	-----	0.70	J	1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	6.1	-----	0.58		2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	91.0	-----	0.64		1,2,3,7,8,9-HxCDF-13C	2.00	75
					1,2,3,4,7,8-HxCDD-13C	2.00	87
1,2,3,7,8-PeCDD	13.0	-----	1.20		1,2,3,6,7,8-HxCDD-13C	2.00	79
Total PeCDD	370.0	-----	1.20		1,2,3,4,6,7,8-HpCDF-13C	2.00	73
					1,2,3,4,7,8,9-HpCDF-13C	2.00	68
1,2,3,4,7,8-HxCDF	4.4	-----	0.31	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	2.7	-----	0.51	J	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	4.1	-----	0.53	J			
1,2,3,7,8,9-HxCDF	-----	0.74	0.43	I	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	41.0	-----	0.45		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	9.9	-----	0.93		2,3,7,8-TCDD-37Cl4	0.20	68
1,2,3,6,7,8-HxCDD	20.0	-----	0.96				
1,2,3,7,8,9-HxCDD	18.0	-----	0.70				
Total HxCDD	410.0	-----	0.86				
1,2,3,4,6,7,8-HpCDF	23.0	-----	0.52		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	-----	1.40	0.59	I	Equivalence: 32 ng/Kg		
Total HpCDF	57.0	-----	0.55		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	320.0	-----	1.60				
Total HpCDD	610.0	-----	1.60				
OCDF	30.0	-----	1.40				
OCDD	1400.0	-----	0.55				

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP06-0005		
Lab Sample ID	10112776006		
Filename	F90930A_07		
Injected By	SMT		
Total Amount Extracted	16.2 g	Matrix	Solid
% Moisture	50.3	Dilution	NA
Dry Weight Extracted	8.06 g	Collected	09/16/2009 11:10
ICAL ID	F90817	Received	09/18/2009 09:13
CCal Filename(s)	F90930A_02 & F90930A_11	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	09/30/2009 13:11

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	38	0.40	E	2,3,7,8-TCDF-13C	2.00	97
Total TCDF	530.0	-----	0.40		2,3,7,8-TCDD-13C	2.00	86
					1,2,3,7,8-PeCDF-13C	2.00	112
2,3,7,8-TCDD	7.6	-----	0.29	Y	2,3,4,7,8-PeCDF-13C	2.00	110
Total TCDD	1300.0	-----	0.29	Y	1,2,3,7,8-PeCDD-13C	2.00	117
					1,2,3,4,7,8-HxCDF-13C	2.00	95
1,2,3,7,8-PeCDF	-----	16	0.57	E	1,2,3,6,7,8-HxCDF-13C	2.00	82
2,3,4,7,8-PeCDF	-----	16	0.56	E	2,3,4,6,7,8-HxCDF-13C	2.00	81
Total PeCDF	200.0	-----	0.57		1,2,3,7,8,9-HxCDF-13C	2.00	79
					1,2,3,4,7,8-HxCDD-13C	2.00	83
1,2,3,7,8-PeCDD	21.0	-----	0.58		1,2,3,6,7,8-HxCDD-13C	2.00	78
Total PeCDD	840.0	-----	0.58		1,2,3,4,6,7,8-HpCDF-13C	2.00	54
					1,2,3,4,7,8,9-HpCDF-13C	2.00	55
1,2,3,4,7,8-HxCDF	-----	19	0.33	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	57
1,2,3,6,7,8-HxCDF	10.0	-----	0.27		OCDD-13C	4.00	55
2,3,4,6,7,8-HxCDF	11.0	-----	0.38				
1,2,3,7,8,9-HxCDF	3.1	-----	0.42	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	83.0	-----	0.35		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	15.0	-----	1.10		2,3,7,8-TCDD-37Cl4	0.20	94
1,2,3,6,7,8-HxCDD	40.0	-----	0.63				
1,2,3,7,8,9-HxCDD	29.0	-----	0.51				
Total HxCDD	1100.0	-----	0.74				
1,2,3,4,6,7,8-HpCDF	54.0	-----	0.58		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	4.8	-----	0.44	J	Equivalence: 49 ng/Kg		
Total HpCDF	62.0	-----	0.51		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	740.0	-----	1.50				
Total HpCDD	1300.0	-----	1.50				
OCDF	79.0	-----	0.66				
OCDD	3900.0	-----	1.30				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
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NC = Not Calculated

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J = Value below calibration range
E = PCDE Interference
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Minneapolis, MN 55414

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Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP07-0005		
Lab Sample ID	10112776007		
Filename	U91001B_07		
Injected By	BAL		
Total Amount Extracted	14.2 g	Matrix	Solid
% Moisture	42.0	Dilution	NA
Dry Weight Extracted	8.23 g	Collected	09/16/2009 11:15
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U91001B_02 & U91001B_18	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	10/01/2009 22:51

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	-----	34.0	0.64	E	2,3,7,8-TCDF-13C	2.00	60	
Total TCDF	870.00	-----	0.64		2,3,7,8-TCDD-13C	2.00	70	
					1,2,3,7,8-PeCDF-13C	2.00	70	
2,3,7,8-TCDD	5.80	-----	0.88		2,3,4,7,8-PeCDF-13C	2.00	72	
Total TCDD	1600.00	-----	0.88		1,2,3,7,8-PeCDD-13C	2.00	85	
					1,2,3,4,7,8-HxCDF-13C	2.00	81	
1,2,3,7,8-PeCDF	8.70	-----	0.61		1,2,3,6,7,8-HxCDF-13C	2.00	71	
2,3,4,7,8-PeCDF	14.00	-----	0.50		2,3,4,6,7,8-HxCDF-13C	2.00	74	
Total PeCDF	220.00	-----	0.55		1,2,3,7,8,9-HxCDF-13C	2.00	81	
					1,2,3,4,7,8-HxCDD-13C	2.00	90	
1,2,3,7,8-PeCDD	11.00	-----	1.10		1,2,3,6,7,8-HxCDD-13C	2.00	76	
Total PeCDD	700.00	-----	1.10		1,2,3,4,6,7,8-HpCDF-13C	2.00	82	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	90	
1,2,3,4,7,8-HxCDF	7.10	-----	0.82		1,2,3,4,6,7,8-HpCDD-13C	2.00	83	
1,2,3,6,7,8-HxCDF	6.10	-----	0.83		OCDD-13C	4.00	68	Y
2,3,4,6,7,8-HxCDF	6.80	-----	0.97					
1,2,3,7,8,9-HxCDF	-----	1.6	0.57	E	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	55.00	-----	0.80		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	7.30	-----	0.76		2,3,7,8-TCDD-37Cl4	0.20	72	
1,2,3,6,7,8-HxCDD	13.00	-----	0.56					
1,2,3,7,8,9-HxCDD	10.00	-----	0.46					
Total HxCDD	500.00	-----	0.59					
1,2,3,4,6,7,8-HpCDF	16.00	-----	0.42		Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	0.94	-----	0.48	J	Equivalence: 27 ng/Kg			
Total HpCDF	26.00	-----	0.45		(Using 2005 WHO Factors - Using PRL/2 where ND)			
1,2,3,4,6,7,8-HpCDD	91.00	-----	0.62					
Total HpCDD	180.00	-----	0.62					
OCDF	10.00	-----	0.46	J				
OCDD	250.00	-----	1.40					

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP08-0005		
Lab Sample ID	10112776008		
Filename	U91001B_08		
Injected By	BAL		
Total Amount Extracted	10.7 g	Matrix	Solid
% Moisture	40.0	Dilution	NA
Dry Weight Extracted	6.40 g	Collected	09/16/2009 11:20
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U91001B_02 & U91001B_18	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	10/01/2009 23:39

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	32.0	0.71	E	2,3,7,8-TCDF-13C	2.00	69
Total TCDF	630.0	-----	0.71		2,3,7,8-TCDD-13C	2.00	79
					1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	7.1	-----	0.60		2,3,4,7,8-PeCDF-13C	2.00	80
Total TCDD	1700.0	-----	0.60		1,2,3,7,8-PeCDD-13C	2.00	94
					1,2,3,4,7,8-HxCDF-13C	2.00	87
1,2,3,7,8-PeCDF	13.0	-----	0.40		1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	14.0	-----	0.67		2,3,4,6,7,8-HxCDF-13C	2.00	79
Total PeCDF	180.0	-----	0.54		1,2,3,7,8,9-HxCDF-13C	2.00	87
					1,2,3,4,7,8-HxCDD-13C	2.00	97
1,2,3,7,8-PeCDD	13.0	-----	0.66		1,2,3,6,7,8-HxCDD-13C	2.00	82
Total PeCDD	950.0	-----	0.66		1,2,3,4,6,7,8-HpCDF-13C	2.00	88
					1,2,3,4,7,8,9-HpCDF-13C	2.00	99
1,2,3,4,7,8-HxCDF	10.0	-----	0.98		1,2,3,4,6,7,8-HpCDD-13C	2.00	88
1,2,3,6,7,8-HxCDF	6.6	-----	0.91	J	OCDD-13C	4.00	72 Y
2,3,4,6,7,8-HxCDF	9.5	-----	1.00				
1,2,3,7,8,9-HxCDF	-----	2.0	0.80	E	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	83.0	-----	0.93		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	12.0	-----	0.94		2,3,7,8-TCDD-37Cl4	0.20	81
1,2,3,6,7,8-HxCDD	24.0	-----	1.40				
1,2,3,7,8,9-HxCDD	20.0	-----	1.20				
Total HxCDD	980.0	-----	1.20				
1,2,3,4,6,7,8-HpCDF	39.0	-----	0.61		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	3.2	-----	0.67	J	Equivalence: 36 ng/Kg		
Total HpCDF	79.0	-----	0.64		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	260.0	-----	1.20				
Total HpCDD	610.0	-----	1.20				
OCDF	40.0	-----	0.59				
OCDD	900.0	-----	2.40				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

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J = Value below calibration range
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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP09-0005		
Lab Sample ID	10112776009		
Filename	U90929A_14		
Injected By	SMT		
Total Amount Extracted	16.1 g	Matrix	Solid
% Moisture	48.5	Dilution	NA
Dry Weight Extracted	8.29 g	Collected	09/16/2009 11:25
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U90929A_02 & U90929A_16	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	09/29/2009 23:25

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	25	0.68	E	2,3,7,8-TCDF-13C	2.00	65
Total TCDF	600.0	-----	0.68		2,3,7,8-TCDD-13C	2.00	73
					1,2,3,7,8-PeCDF-13C	2.00	76
2,3,7,8-TCDD	8.8	-----	0.93		2,3,4,7,8-PeCDF-13C	2.00	76
Total TCDD	1900.0	-----	0.93		1,2,3,7,8-PeCDD-13C	2.00	88
					1,2,3,4,7,8-HxCDF-13C	2.00	84
1,2,3,7,8-PeCDF	15.0	-----	0.76		1,2,3,6,7,8-HxCDF-13C	2.00	76
2,3,4,7,8-PeCDF	15.0	-----	0.59		2,3,4,6,7,8-HxCDF-13C	2.00	76
Total PeCDF	180.0	-----	0.67		1,2,3,7,8,9-HxCDF-13C	2.00	74
					1,2,3,4,7,8-HxCDD-13C	2.00	89
1,2,3,7,8-PeCDD	28.0	-----	0.99		1,2,3,6,7,8-HxCDD-13C	2.00	81
Total PeCDD	930.0	-----	0.99		1,2,3,4,6,7,8-HpCDF-13C	2.00	71
					1,2,3,4,7,8,9-HpCDF-13C	2.00	67
1,2,3,4,7,8-HxCDF	17.0	-----	0.78		1,2,3,4,6,7,8-HpCDD-13C	2.00	67
1,2,3,6,7,8-HxCDF	9.4	-----	0.52		OCDD-13C	4.00	51
2,3,4,6,7,8-HxCDF	9.1	-----	0.52				
1,2,3,7,8,9-HxCDF	2.9	-----	0.45	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	100.0	-----	0.57		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	17.0	-----	1.50		2,3,7,8-TCDD-37Cl4	0.20	78
1,2,3,6,7,8-HxCDD	34.0	-----	1.80				
1,2,3,7,8,9-HxCDD	29.0	-----	1.80				
Total HxCDD	980.0	-----	1.70				
1,2,3,4,6,7,8-HpCDF	42.0	-----	0.96		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	3.9	-----	1.30	J	Equivalence: 60 ng/Kg		
Total HpCDF	110.0	-----	1.20		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	530.0	-----	2.60				
Total HpCDD	1000.0	-----	2.60				
OCDF	51.0	-----	1.20				
OCDD	2500.0	-----	1.50				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
E = PCDE Interference

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
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Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP10-0005		
Lab Sample ID	10112776010		
Filename	U91001B_09		
Injected By	BAL		
Total Amount Extracted	14.1 g	Matrix	Solid
% Moisture	22.6	Dilution	NA
Dry Weight Extracted	10.9 g	Collected	09/16/2009 11:30
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U91001B_02 & U91001B_18	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	10/02/2009 00:28

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	9.8	0.60	E	2,3,7,8-TCDF-13C	2.00	62
Total TCDF	250.0	-----	0.60		2,3,7,8-TCDD-13C	2.00	72
					1,2,3,7,8-PeCDF-13C	2.00	66
2,3,7,8-TCDD	5.4	-----	0.44		2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	940.0	-----	0.44		1,2,3,7,8-PeCDD-13C	2.00	80
					1,2,3,4,7,8-HxCDF-13C	2.00	77
1,2,3,7,8-PeCDF	7.8	-----	0.65		1,2,3,6,7,8-HxCDF-13C	2.00	69
2,3,4,7,8-PeCDF	9.9	-----	0.45		2,3,4,6,7,8-HxCDF-13C	2.00	69
Total PeCDF	180.0	-----	0.55		1,2,3,7,8,9-HxCDF-13C	2.00	74
					1,2,3,4,7,8-HxCDD-13C	2.00	83
1,2,3,7,8-PeCDD	18.0	-----	0.82		1,2,3,6,7,8-HxCDD-13C	2.00	73
Total PeCDD	620.0	-----	0.82		1,2,3,4,6,7,8-HpCDF-13C	2.00	72
					1,2,3,4,7,8,9-HpCDF-13C	2.00	74
1,2,3,4,7,8-HxCDF	21.0	-----	1.10		1,2,3,4,6,7,8-HpCDD-13C	2.00	68
1,2,3,6,7,8-HxCDF	20.0	-----	0.43		OCDD-13C	4.00	52 Y
2,3,4,6,7,8-HxCDF	36.0	-----	1.10				
1,2,3,7,8,9-HxCDF	-----	4.4	0.61	E	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	520.0	-----	0.79		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	20.0	-----	2.70		2,3,7,8-TCDD-37Cl4	0.20	75
1,2,3,6,7,8-HxCDD	64.0	-----	1.50				
1,2,3,7,8,9-HxCDD	34.0	-----	1.60				
Total HxCDD	940.0	-----	2.00				
1,2,3,4,6,7,8-HpCDF	430.0	-----	0.83		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	32.0	-----	1.70		Equivalence: 64 ng/Kg		
Total HpCDF	1400.0	-----	1.30		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	1200.0	-----	2.30				
Total HpCDD	2200.0	-----	2.30				
OCDF	740.0	-----	0.68				
OCDD	6000.0	-----	0.60				

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Results reported on a dry weight basis and are valid to no more than 2 significant figures.
E = PCDE Interference
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP11-0005		
Lab Sample ID	10112776011		
Filename	U91001B_10		
Injected By	BAL		
Total Amount Extracted	14.7 g	Matrix	Solid
% Moisture	29.5	Dilution	NA
Dry Weight Extracted	10.4 g	Collected	09/16/2009 11:45
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U91001B_02 & U91001B_18	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	10/02/2009 01:18

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	-----	20.0	0.57	E	2,3,7,8-TCDF-13C	2.00	66	
Total TCDF	440.0	-----	0.57		2,3,7,8-TCDD-13C	2.00	78	
					1,2,3,7,8-PeCDF-13C	2.00	76	
2,3,7,8-TCDD	8.6	-----	0.59		2,3,4,7,8-PeCDF-13C	2.00	76	
Total TCDD	1100.0	-----	0.59		1,2,3,7,8-PeCDD-13C	2.00	90	
					1,2,3,4,7,8-HxCDF-13C	2.00	84	
1,2,3,7,8-PeCDF	9.9	-----	0.74		1,2,3,6,7,8-HxCDF-13C	2.00	74	
2,3,4,7,8-PeCDF	14.0	-----	0.63		2,3,4,6,7,8-HxCDF-13C	2.00	75	
Total PeCDF	200.0	-----	0.69		1,2,3,7,8,9-HxCDF-13C	2.00	79	
					1,2,3,4,7,8-HxCDD-13C	2.00	93	
1,2,3,7,8-PeCDD	21.0	-----	0.51		1,2,3,6,7,8-HxCDD-13C	2.00	77	
Total PeCDD	830.0	-----	0.51		1,2,3,4,6,7,8-HpCDF-13C	2.00	81	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	89	
1,2,3,4,7,8-HxCDF	23.0	-----	1.30		1,2,3,4,6,7,8-HpCDD-13C	2.00	83	
1,2,3,6,7,8-HxCDF	16.0	-----	0.46		OCDD-13C	4.00	68	Y
2,3,4,6,7,8-HxCDF	28.0	-----	0.97					
1,2,3,7,8,9-HxCDF	-----	4.3	0.59	E	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	390.0	-----	0.84		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	24.0	-----	1.90		2,3,7,8-TCDD-37Cl4	0.20	79	
1,2,3,6,7,8-HxCDD	73.0	-----	1.60					
1,2,3,7,8,9-HxCDD	49.0	-----	0.80					
Total HxCDD	1200.0	-----	1.40					
1,2,3,4,6,7,8-HpCDF	320.0	-----	1.30		Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	25.0	-----	2.00		Equivalence: 77 ng/Kg			
Total HpCDF	980.0	-----	1.70		(Using 2005 WHO Factors - Using PRL/2 where ND)			
1,2,3,4,6,7,8-HpCDD	1500.0	-----	4.00					
Total HpCDD	2700.0	-----	4.00					
OCDF	580.0	-----	2.40					
OCDD	7700.0	-----	3.50					

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E = PCDE Interference
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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP12-0005		
Lab Sample ID	10112776012		
Filename	U91001B_11		
Injected By	BAL		
Total Amount Extracted	13.8 g	Matrix	Solid
% Moisture	27.9	Dilution	NA
Dry Weight Extracted	9.92 g	Collected	09/16/2009 11:50
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U91001B_02 & U91001B_18	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	10/02/2009 02:07

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	7.7	0.50	E	2,3,7,8-TCDF-13C	2.00	72
Total TCDF	190.0	-----	0.50		2,3,7,8-TCDD-13C	2.00	86
					1,2,3,7,8-PeCDF-13C	2.00	81
2,3,7,8-TCDD	4.3	-----	0.65		2,3,4,7,8-PeCDF-13C	2.00	83
Total TCDD	550.0	-----	0.65		1,2,3,7,8-PeCDD-13C	2.00	98
					1,2,3,4,7,8-HxCDF-13C	2.00	86
1,2,3,7,8-PeCDF	5.2	-----	0.69		1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	5.9	-----	0.50		2,3,4,6,7,8-HxCDF-13C	2.00	77
Total PeCDF	99.0	-----	0.59		1,2,3,7,8,9-HxCDF-13C	2.00	82
					1,2,3,4,7,8-HxCDD-13C	2.00	97
1,2,3,7,8-PeCDD	13.0	-----	0.59		1,2,3,6,7,8-HxCDD-13C	2.00	75
Total PeCDD	390.0	-----	0.59		1,2,3,4,6,7,8-HpCDF-13C	2.00	84
					1,2,3,4,7,8,9-HpCDF-13C	2.00	91
1,2,3,4,7,8-HxCDF	12.0	-----	1.10		1,2,3,4,6,7,8-HpCDD-13C	2.00	84
1,2,3,6,7,8-HxCDF	7.0	-----	0.78		OCDD-13C	4.00	68 Y
2,3,4,6,7,8-HxCDF	14.0	-----	0.93				
1,2,3,7,8,9-HxCDF	2.3	-----	0.75	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	200.0	-----	0.89		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	16.0	-----	1.40		2,3,7,8-TCDD-37Cl4	0.20	82
1,2,3,6,7,8-HxCDD	37.0	-----	1.20				
1,2,3,7,8,9-HxCDD	24.0	-----	0.87				
Total HxCDD	600.0	-----	1.20				
1,2,3,4,6,7,8-HpCDF	170.0	-----	0.76		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	14.0	-----	0.69		Equivalence: 41 ng/Kg		
Total HpCDF	510.0	-----	0.73		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	710.0	-----	2.40				
Total HpCDD	1300.0	-----	2.40				
OCDF	330.0	-----	0.25				
OCDD	3800.0	-----	0.43				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
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NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
E = PCDE Interference
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP13-0005		
Lab Sample ID	10112776013		
Filename	U91001B_12		
Injected By	BAL		
Total Amount Extracted	14.1 g	Matrix	Solid
% Moisture	19.8	Dilution	NA
Dry Weight Extracted	11.3 g	Collected	09/16/2009 11:55
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U91001B_02 & U91001B_18	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	10/02/2009 02:55

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	4.9	0.43	E	2,3,7,8-TCDF-13C	2.00	72
Total TCDF	120.0	-----	0.43		2,3,7,8-TCDD-13C	2.00	82
					1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	3.1	-----	0.45		2,3,4,7,8-PeCDF-13C	2.00	79
Total TCDD	390.0	-----	0.45		1,2,3,7,8-PeCDD-13C	2.00	90
					1,2,3,4,7,8-HxCDF-13C	2.00	90
1,2,3,7,8-PeCDF	3.3	-----	0.42	J	1,2,3,6,7,8-HxCDF-13C	2.00	79
2,3,4,7,8-PeCDF	3.8	-----	0.41	J	2,3,4,6,7,8-HxCDF-13C	2.00	83
Total PeCDF	61.0	-----	0.41		1,2,3,7,8,9-HxCDF-13C	2.00	86
					1,2,3,4,7,8-HxCDD-13C	2.00	96
1,2,3,7,8-PeCDD	8.1	-----	0.60		1,2,3,6,7,8-HxCDD-13C	2.00	83
Total PeCDD	280.0	-----	0.60		1,2,3,4,6,7,8-HpCDF-13C	2.00	79
					1,2,3,4,7,8,9-HpCDF-13C	2.00	80
1,2,3,4,7,8-HxCDF	7.2	-----	0.54		1,2,3,4,6,7,8-HpCDD-13C	2.00	74
1,2,3,6,7,8-HxCDF	4.5	-----	0.55		OCDD-13C	4.00	50 Y
2,3,4,6,7,8-HxCDF	8.5	-----	0.52				
1,2,3,7,8,9-HxCDF	-----	1.6	0.56	I	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	130.0	-----	0.54		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	9.3	-----	0.59		2,3,7,8-TCDD-37Cl4	0.20	89
1,2,3,6,7,8-HxCDD	24.0	-----	0.87				
1,2,3,7,8,9-HxCDD	16.0	-----	0.79				
Total HxCDD	420.0	-----	0.75				
1,2,3,4,6,7,8-HpCDF	120.0	-----	0.77		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	9.5	-----	0.76		Equivalence: 26 ng/Kg		
Total HpCDF	360.0	-----	0.77		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	470.0	-----	1.10				
Total HpCDD	870.0	-----	1.10				
OCDF	220.0	-----	0.55				
OCDD	2600.0	-----	0.92				

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ND = Not Detected
NA = Not Applicable
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J = Value below calibration range
E = PCDE Interference
I = Interference present
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

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Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP14-0005		
Lab Sample ID	10112776014		
Filename	U91001B_13		
Injected By	BAL		
Total Amount Extracted	13.4 g	Matrix	Solid
% Moisture	34.4	Dilution	NA
Dry Weight Extracted	8.78 g	Collected	09/16/2009 12:00
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U91001B_02 & U91001B_18	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	10/02/2009 03:44

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	4.9	0.53	E	2,3,7,8-TCDF-13C	2.00	63
Total TCDF	120.0	-----	0.53		2,3,7,8-TCDD-13C	2.00	73
					1,2,3,7,8-PeCDF-13C	2.00	71
2,3,7,8-TCDD	2.8	-----	0.62		2,3,4,7,8-PeCDF-13C	2.00	73
Total TCDD	360.0	-----	0.62		1,2,3,7,8-PeCDD-13C	2.00	85
					1,2,3,4,7,8-HxCDF-13C	2.00	79
1,2,3,7,8-PeCDF	3.1	-----	0.78	J	1,2,3,6,7,8-HxCDF-13C	2.00	71
2,3,4,7,8-PeCDF	4.1	-----	0.51	J	2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	55.0	-----	0.64		1,2,3,7,8,9-HxCDF-13C	2.00	77
					1,2,3,4,7,8-HxCDD-13C	2.00	87
1,2,3,7,8-PeCDD	6.4	-----	0.50		1,2,3,6,7,8-HxCDD-13C	2.00	76
Total PeCDD	220.0	-----	0.50		1,2,3,4,6,7,8-HpCDF-13C	2.00	80
					1,2,3,4,7,8,9-HpCDF-13C	2.00	83
1,2,3,4,7,8-HxCDF	5.9	-----	0.81		1,2,3,4,6,7,8-HpCDD-13C	2.00	77
1,2,3,6,7,8-HxCDF	6.1	-----	0.49		OCDD-13C	4.00	61 Y
2,3,4,6,7,8-HxCDF	12.0	-----	0.53				
1,2,3,7,8,9-HxCDF	2.9	-----	0.74	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	170.0	-----	0.64		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	7.9	-----	0.88		2,3,7,8-TCDD-37Cl4	0.20	79
1,2,3,6,7,8-HxCDD	24.0	-----	1.30				
1,2,3,7,8,9-HxCDD	14.0	-----	0.79				
Total HxCDD	250.0	-----	0.98				
1,2,3,4,6,7,8-HpCDF	140.0	-----	0.89		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	12.0	-----	0.72		Equivalence: 25 ng/Kg		
Total HpCDF	430.0	-----	0.81		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	490.0	-----	1.80				
Total HpCDD	890.0	-----	1.80				
OCDF	310.0	-----	1.50				
OCDD	3100.0	-----	0.59				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
E = PCDE Interference
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP15-0005		
Lab Sample ID	10112776015		
Filename	U91001B_14		
Injected By	BAL		
Total Amount Extracted	12.7 g	Matrix	Solid
% Moisture	37.2	Dilution	NA
Dry Weight Extracted	7.96 g	Collected	09/16/2009 12:05
ICAL ID	U90911	Received	09/18/2009 09:13
CCal Filename(s)	U91001B_02 & U91001B_18	Extracted	09/25/2009 16:30
Method Blank ID	BLANK-21538	Analyzed	10/02/2009 04:32

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	15.0	0.86	E	2,3,7,8-TCDF-13C	2.00	66
Total TCDF	290.0	-----	0.86		2,3,7,8-TCDD-13C	2.00	75
					1,2,3,7,8-PeCDF-13C	2.00	70
2,3,7,8-TCDD	10.0	-----	0.33		2,3,4,7,8-PeCDF-13C	2.00	73
Total TCDD	870.0	-----	0.33		1,2,3,7,8-PeCDD-13C	2.00	69
					1,2,3,4,7,8-HxCDF-13C	2.00	98
1,2,3,7,8-PeCDF	-----	6.7	1.80	E	1,2,3,6,7,8-HxCDF-13C	2.00	68
2,3,4,7,8-PeCDF	7.7	-----	1.70		2,3,4,6,7,8-HxCDF-13C	2.00	69
Total PeCDF	95.0	-----	1.80		1,2,3,7,8,9-HxCDF-13C	2.00	77
					1,2,3,4,7,8-HxCDD-13C	2.00	96
1,2,3,7,8-PeCDD	31.0	-----	0.78		1,2,3,6,7,8-HxCDD-13C	2.00	70
Total PeCDD	740.0	-----	0.78		1,2,3,4,6,7,8-HpCDF-13C	2.00	83
					1,2,3,4,7,8,9-HpCDF-13C	2.00	90
1,2,3,4,7,8-HxCDF	-----	9.2	0.65	E	1,2,3,4,6,7,8-HpCDD-13C	2.00	81
1,2,3,6,7,8-HxCDF	6.6	-----	0.47		OCDD-13C	4.00	68 Y
2,3,4,6,7,8-HxCDF	11.0	-----	0.67				
1,2,3,7,8,9-HxCDF	3.8	-----	0.65	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	91.0	-----	0.61		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	38.0	-----	1.10		2,3,7,8-TCDD-37Cl4	0.20	82
1,2,3,6,7,8-HxCDD	98.0	-----	1.40				
1,2,3,7,8,9-HxCDD	70.0	-----	0.68				
Total HxCDD	1200.0	-----	1.10				
1,2,3,4,6,7,8-HpCDF	140.0	-----	0.40		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	12.0	-----	0.75		Equivalence: 100 ng/Kg		
Total HpCDF	480.0	-----	0.57		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	2700.0	-----	2.70				
Total HpCDD	4900.0	-----	2.70				
OCDF	350.0	-----	1.30				
OCDD	17000.0	-----	0.73				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range
E = PCDE Interference
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-21538	Matrix	Solid
Filename	U90929B_12	Dilution	NA
Total Amount Extracted	20.3 g	Extracted	09/25/2009 16:30
ICAL ID	U90911	Analyzed	09/30/2009 10:52
CCal Filename(s)	U90929A_16 & U90929B_15	Injected By	SMT

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.110		2,3,7,8-TCDF-13C	2.00	69
Total TCDF	ND	-----	0.110		2,3,7,8-TCDD-13C	2.00	79
					1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	ND	-----	0.150		2,3,4,7,8-PeCDF-13C	2.00	77
Total TCDD	ND	-----	0.150		1,2,3,7,8-PeCDD-13C	2.00	89
					1,2,3,4,7,8-HxCDF-13C	2.00	95
1,2,3,7,8-PeCDF	ND	-----	0.110		1,2,3,6,7,8-HxCDF-13C	2.00	85
2,3,4,7,8-PeCDF	ND	-----	0.088		2,3,4,6,7,8-HxCDF-13C	2.00	87
Total PeCDF	ND	-----	0.099		1,2,3,7,8,9-HxCDF-13C	2.00	85
					1,2,3,4,7,8-HxCDD-13C	2.00	94
1,2,3,7,8-PeCDD	ND	-----	0.092		1,2,3,6,7,8-HxCDD-13C	2.00	90
Total PeCDD	ND	-----	0.092		1,2,3,4,6,7,8-HpCDF-13C	2.00	80
					1,2,3,4,7,8,9-HpCDF-13C	2.00	72
1,2,3,4,7,8-HxCDF	ND	-----	0.098		1,2,3,4,6,7,8-HpCDD-13C	2.00	69
1,2,3,6,7,8-HxCDF	ND	-----	0.092		OCDD-13C	4.00	48
2,3,4,6,7,8-HxCDF	ND	-----	0.074				
1,2,3,7,8,9-HxCDF	ND	-----	0.110		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.14	-----	0.093	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.120		2,3,7,8-TCDD-37Cl4	0.20	77
1,2,3,6,7,8-HxCDD	ND	-----	0.088				
1,2,3,7,8,9-HxCDD	ND	-----	0.091				
Total HxCDD	ND	-----	0.099				
1,2,3,4,6,7,8-HpCDF	ND	-----	0.100		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.140		Equivalence: 0.18 ng/Kg		
Total HpCDF	ND	-----	0.120		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	0.37	-----	0.310	J			
Total HpCDD	0.72	-----	0.310	J			
OCDF	ND	-----	0.270				
OCDD	1.40	-----	0.320	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Value below calibration range

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-21539		
Filename	U90929A_15	Matrix	Solid
Total Amount Extracted	20.2 g	Dilution	NA
ICAL ID	U90911	Extracted	09/25/2009 16:30
CCal Filename(s)	U90929A_02 & U90929A_16	Analyzed	09/30/2009 00:13
Method Blank ID	BLANK-21538	Injected By	SMT

Native Isomers	**Qs** (ng)	**Qm** (ng)	% Rec.	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	0.20	0.21	103	2,3,7,8-TCDF-13C	2.00	60
Total TCDF				2,3,7,8-TCDD-13C	2.00	69
				1,2,3,7,8-PeCDF-13C	2.00	70
2,3,7,8-TCDD	0.20	0.18	92	2,3,4,7,8-PeCDF-13C	2.00	73
Total TCDD				1,2,3,7,8-PeCDD-13C	2.00	84
				1,2,3,4,7,8-HxCDF-13C	2.00	82
1,2,3,7,8-PeCDF	1.00	1.03	103	1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	1.00	0.99	99	2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.00	75
				1,2,3,4,7,8-HxCDD-13C	2.00	87
1,2,3,7,8-PeCDD	1.00	0.88	88	1,2,3,6,7,8-HxCDD-13C	2.00	78
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.00	73
				1,2,3,4,7,8,9-HpCDF-13C	2.00	70
1,2,3,4,7,8-HxCDF	1.00	0.98	98	1,2,3,4,6,7,8-HpCDD-13C	2.00	67
1,2,3,6,7,8-HxCDF	1.00	1.05	105	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	1.00	1.01	101			
1,2,3,7,8,9-HxCDF	1.00	1.03	103	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	0.98	98	2,3,7,8-TCDD-37Cl4	0.20	71
1,2,3,6,7,8-HxCDD	1.00	1.01	101			
1,2,3,7,8,9-HxCDD	1.00	0.97	97			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.00	0.98	98			
1,2,3,4,7,8,9-HpCDF	1.00	0.95	95			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.00	1.05	105			
Total HpCDD						
OCDF	2.00	1.73	87			
OCDD	2.00	2.05	103			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
P = Recovery outside of target range
X = Background subtracted value
Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
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Method 8290 Spiked Sample Report

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP01-0005-MS		
Lab Sample ID	10112776001-MS		
Filename	U90929B_02	Matrix	Solid
Total Amount Extracted	10.5 g	Dilution	NA
ICAL ID	U90911	Extracted	09/25/2009 16:30
CCal Filename(s)	U90929A_16 & U90929B_15	Analyzed	09/30/2009 02:41
Method Blank ID	BLANK-21538	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.42	210	2,3,7,8-TCDF-13C	2.00	68
				2,3,7,8-TCDD-13C	2.00	79
				1,2,3,7,8-PeCDF-13C	2.00	77
2,3,7,8-TCDD	0.20	0.24	119	2,3,4,7,8-PeCDF-13C	2.00	79
				1,2,3,7,8-PeCDD-13C	2.00	90
				1,2,3,4,7,8-HxCDF-13C	2.00	85
1,2,3,7,8-PeCDF	1.00	1.11	111	1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	1.00	1.09	109	2,3,4,6,7,8-HxCDF-13C	2.00	80
				1,2,3,7,8,9-HxCDF-13C	2.00	79
				1,2,3,4,7,8-HxCDD-13C	2.00	89
1,2,3,7,8-PeCDD	1.00	1.08	108	1,2,3,6,7,8-HxCDD-13C	2.00	84
				1,2,3,4,6,7,8-HpCDF-13C	2.00	74
				1,2,3,4,7,8,9-HpCDF-13C	2.00	72
1,2,3,4,7,8-HxCDF	1.00	1.15	115	1,2,3,4,6,7,8-HpCDD-13C	2.00	68
1,2,3,6,7,8-HxCDF	1.00	1.13	113	OCDD-13C	4.00	50
2,3,4,6,7,8-HxCDF	1.00	1.12	112			
1,2,3,7,8,9-HxCDF	1.00	1.07	107	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.09	109	2,3,7,8-TCDD-37Cl4	0.20	81
1,2,3,6,7,8-HxCDD	1.00	1.21	121			
1,2,3,7,8,9-HxCDD	1.00	1.15	115			
1,2,3,4,6,7,8-HpCDF	1.00	1.47	147			
1,2,3,4,7,8,9-HpCDF	1.00	0.98	98			
1,2,3,4,6,7,8-HpCDD	1.00	4.38	438			
OCDF	2.00	2.41	121			
OCDD	2.00	14.69	735			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
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Method 8290 Spiked Sample Report

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSP01-0005-MSD		
Lab Sample ID	10112776001-MSD		
Filename	U90929B_03	Matrix	Solid
Total Amount Extracted	11.2 g	Dilution	NA
ICAL ID	U90911	Extracted	09/25/2009 16:30
CCal Filename(s)	U90929A_16 & U90929B_15	Analyzed	09/30/2009 03:30
Method Blank ID	BLANK-21538	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.35	175	2,3,7,8-TCDF-13C	2.00	63
				2,3,7,8-TCDD-13C	2.00	69
				1,2,3,7,8-PeCDF-13C	2.00	72
2,3,7,8-TCDD	0.20	0.23	114	2,3,4,7,8-PeCDF-13C	2.00	72
				1,2,3,7,8-PeCDD-13C	2.00	82
				1,2,3,4,7,8-HxCDF-13C	2.00	82
1,2,3,7,8-PeCDF	1.00	1.10	110	1,2,3,6,7,8-HxCDF-13C	2.00	76
2,3,4,7,8-PeCDF	1.00	1.10	110	2,3,4,6,7,8-HxCDF-13C	2.00	75
				1,2,3,7,8,9-HxCDF-13C	2.00	76
				1,2,3,4,7,8-HxCDD-13C	2.00	83
1,2,3,7,8-PeCDD	1.00	1.02	102	1,2,3,6,7,8-HxCDD-13C	2.00	82
				1,2,3,4,6,7,8-HpCDF-13C	2.00	71
				1,2,3,4,7,8,9-HpCDF-13C	2.00	70
1,2,3,4,7,8-HxCDF	1.00	1.10	110	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	1.00	1.09	109	OCDD-13C	4.00	54
2,3,4,6,7,8-HxCDF	1.00	1.11	111			
1,2,3,7,8,9-HxCDF	1.00	1.07	107	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.06	106	2,3,7,8-TCDD-37Cl4	0.20	73
1,2,3,6,7,8-HxCDD	1.00	1.13	113			
1,2,3,7,8,9-HxCDD	1.00	1.09	109			
1,2,3,4,6,7,8-HpCDF	1.00	1.25	125			
1,2,3,4,7,8,9-HpCDF	1.00	1.03	103			
1,2,3,4,6,7,8-HpCDD	1.00	2.62	262			
OCDF	2.00	2.05	102			
OCDD	2.00	7.82	391			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
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Method 8290 Spike Sample Results

Client - Onsite Environmental, Inc.

Client Sample ID	WB-SO-DSP01-0005			Dry Weights	
Lab Sample ID	10112776001	Sample Filename	F90930A_05	Sample Amount	9.70 g
MS ID	10112776001-MS	MS Filename	U90929B_02	MS Amount	9.0 g
MSD ID	10112776001-MSD	MSD Filename	U90929B_03	MSD Amount	9.6 g

Analyte	Sample Conc. ng/Kg	MS/MSD Qs (ng)	MS Qm (ng)	MSD Qm (ng)	RPD	Background Subtracted MS % Rec.	MSD % Rec.	RPD
2,3,7,8-TCDF	0.000	0.20	0.42	0.35	18.3	174	136	24.5
2,3,7,8-TCDD	1.766	0.20	0.24	0.23	4.6	111	106	5.4
1,2,3,7,8-PeCDF	0.000	1.00	1.11	1.10	1.2	110	108	1.3
2,3,4,7,8-PeCDF	2.611	1.00	1.09	1.10	1.2	107	108	1.0
1,2,3,7,8-PeCDD	4.455	1.00	1.08	1.02	5.5	104	98	6.1
1,2,3,4,7,8-HxCDF	0.000	1.00	1.15	1.10	4.3	114	109	4.5
1,2,3,6,7,8-HxCDF	1.099	1.00	1.13	1.09	3.6	112	108	3.7
2,3,4,6,7,8-HxCDF	1.340	1.00	1.12	1.11	0.9	111	110	1.0
1,2,3,7,8,9-HxCDF	0.000	1.00	1.07	1.07	0.4	107	106	0.4
1,2,3,4,7,8-HxCDD	1.751	1.00	1.09	1.06	2.7	108	105	2.9
1,2,3,6,7,8-HxCDD	3.787	1.00	1.21	1.13	6.2	117	110	6.6
1,2,3,7,8,9-HxCDD	3.260	1.00	1.15	1.09	5.2	112	106	5.5
1,2,3,4,6,7,8-HpCDF	8.441	1.00	1.47	1.25	16.4	140	117	17.8
1,2,3,4,7,8,9-HpCDF	0.553	1.00	0.98	1.03	5.3	97	102	5.2
1,2,3,4,6,7,8-HpCDD	54.955	1.00	4.38	2.62	50.1	389	210	59.8
OCDF	18.357	2.00	2.41	2.05	16.3	112	94	18.2
OCDD	289.314	2.00	14.69	7.82	61.0	605	252	82.3

Definitions

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

October 8, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024-04-05
Laboratory Reference No. 0909-249

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on September 29, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

Case Narrative

Samples were collected on September 28, 2009, and received by the laboratory on September 29, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

NWTPH-Dx

Date Extracted: 9-29-09
Date Analyzed: 10-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SD-SD25-0005**	**WB-SD-SD26-0005**	**WB-SD-SD27-0005**
Lab ID:	09-249-01	09-249-02	09-249-03
Diesel Range:	**ND**	**94**	**37**
PQL:	68	18	23
Identification:	---	Diesel Range Organics	Diesel Range Organics
Lube Oil Range:	**490**	**37**	**320**
PQL:	60	36	46
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	91%	98%	88%
Flags:	Y,U1	Y,N	Y,N

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

NWTPH-Dx

Date Extracted: 9-29-09
Date Analyzed: 10-1-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SD-SD28-0005**	**WB-SD-SD29-0005**	**WB-SD-SD30-0005**
Lab ID:	09-249-04	09-249-05	09-249-06
Diesel Range:	**37**	**87**	**50**
PQL:	31	30	19
Identification:	Diesel Range Organics	Diesel Range Organics	Diesel Range Organics
Lube Oil Range:	**99**	**330**	**320**
PQL:	62	59	37
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			
o-Terphenyl:	96%	89%	82%
Flags:	Y	Y	Y,N

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

NWTPH-Dx

Date Extracted:	9-29-09
Date Analyzed:	10-1-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID:	**WB-SD-SD30-1005**	**WB-SD-SD31-0005**
Lab ID:	09-249-07	09-249-08
Diesel Range:	**77**	**ND**
PQL:	19	17
Identification:	Diesel Range Organics	---
Lube Oil Range:	**370**	**81**
PQL:	38	34
Identification:	Lube Oil	Lube Oil
Surrogate Recovery		
o-Terphenyl:	90%	78%
Flags:	Y,N	Y

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-29-09
Date Analyzed:	9-29-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0929S2
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	102%
Flags:	Y

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	9-29-09
Date Analyzed:	9-29-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	09-245-03	09-245-03 DUP
Diesel Range:	**5790**	**4990**
PQL:	130	130
RPD:	15	
Surrogate Recovery		
o-Terphenyl:	---	---
Flags:	Y,F	Y,F

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SD-SD25-0005**					
Laboratory ID:	09-249-01					
Naphthalene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.40	EPA 8270	10-5-09	10-5-09	
Phenanthrene	**0.042**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Anthracene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**0.11**	0.079	EPA 8270	10-5-09	10-5-09	
Pyrene	**0.14**	0.079	EPA 8270	10-5-09	10-5-09	
Benzo[a]anthracene	**0.045**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Chrysene	**0.057**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[b]fluoranthene	**0.083**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**0.018**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**0.050**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Indeno[1,2,3-cd]pyrene	**0.028**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**0.038**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*49*	*19 - 97*				
Phenol-d6	*64*	*22 - 108*				
Nitrobenzene-d5	*57*	*21 - 106*				
2-Fluorobiphenyl	*70*	*29 - 107*				
2,4,6-Tribromophenol	*81*	*44 - 121*				
Terphenyl-d14	*87*	*37 - 120*				

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SD-SD26-0005**					
Laboratory ID:	09-249-02					
Naphthalene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.24	EPA 8270	10-5-09	10-6-09	
Phenanthrene	**0.0097**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Anthracene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**0.020**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Pyrene	**0.020**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]anthracene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Chrysene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[b]fluoranthene	**0.012**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**ND**	0.0095	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*55*	*19 - 97*				
Phenol-d6	*64*	*22 - 108*				
Nitrobenzene-d5	*57*	*21 - 106*				
2-Fluorobiphenyl	*67*	*29 - 107*				
2,4,6-Tribromophenol	*78*	*44 - 121*				
Terphenyl-d14	*81*	*37 - 120*				

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SD-SD27-0005**					
Laboratory ID:	09-249-03					
Naphthalene	**ND**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**0.025**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.31	EPA 8270	10-5-09	10-6-09	
Phenanthrene	**0.027**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Anthracene	**0.017**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**0.090**	0.062	EPA 8270	10-5-09	10-6-09	
Pyrene	**0.18**	0.062	EPA 8270	10-5-09	10-6-09	
Benzo[a]anthracene	**0.080**	0.062	EPA 8270	10-5-09	10-6-09	
Chrysene	**0.11**	0.062	EPA 8270	10-5-09	10-6-09	
Benzo[b]fluoranthene	**0.077**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**0.021**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**0.069**	0.062	EPA 8270	10-5-09	10-6-09	
Indeno[1,2,3-cd]pyrene	**0.025**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**0.032**	0.012	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*49*	*19 - 97*				
Phenol-d6	*60*	*22 - 108*				
Nitrobenzene-d5	*57*	*21 - 106*				
2-Fluorobiphenyl	*62*	*29 - 107*				
2,4,6-Tribromophenol	*72*	*44 - 121*				
Terphenyl-d14	*72*	*37 - 120*				

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SD-SD28-0005**					
Laboratory ID:	09-249-04					
Naphthalene	**ND**	0.017	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.017	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.017	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.017	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.017	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**0.021**	0.017	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.42	EPA 8270	10-5-09	10-6-09	
Phenanthrene	**0.26**	0.083	EPA 8270	10-5-09	10-6-09	
Anthracene	**0.076**	0.017	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**0.33**	0.083	EPA 8270	10-5-09	10-6-09	
Pyrene	**0.31**	0.083	EPA 8270	10-5-09	10-6-09	
Benzo[a]anthracene	**0.15**	0.083	EPA 8270	10-5-09	10-6-09	
Chrysene	**0.15**	0.083	EPA 8270	10-5-09	10-6-09	
Benzo[b]fluoranthene	**0.13**	0.083	EPA 8270	10-5-09	10-6-09	
Benzo[k]fluoranthene	**0.11**	0.083	EPA 8270	10-5-09	10-6-09	
Benzo[a]pyrene	**0.13**	0.083	EPA 8270	10-5-09	10-6-09	
Indeno[1,2,3-cd]pyrene	**0.064**	0.017	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**0.026**	0.017	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**0.083**	0.083	EPA 8270	10-5-09	10-6-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*41*	*19 - 97*				
Phenol-d6	*55*	*22 - 108*				
Nitrobenzene-d5	*45*	*21 - 106*				
2-Fluorobiphenyl	*61*	*29 - 107*				
2,4,6-Tribromophenol	*76*	*44 - 121*				
Terphenyl-d14	*73*	*37 - 120*				

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SD-SD29-0005**					
Laboratory ID:	09-249-05					
Naphthalene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.40	EPA 8270	10-5-09	10-6-09	
Phenanthrene	**0.019**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Anthracene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**0.057**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Pyrene	**0.057**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]anthracene	**0.027**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Chrysene	**0.036**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[b]fluoranthene	**0.054**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**0.031**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Indeno[1,2,3-cd]pyrene	**0.019**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**0.024**	0.016	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*47*	*19 - 97*				
Phenol-d6	*58*	*22 - 108*				
Nitrobenzene-d5	*48*	*21 - 106*				
2-Fluorobiphenyl	*57*	*29 - 107*				
2,4,6-Tribromophenol	*71*	*44 - 121*				
Terphenyl-d14	*69*	*37 - 120*				

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SD-SD30-0005**					
Laboratory ID:	09-249-06					
Naphthalene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.25	EPA 8270	10-5-09	10-6-09	
Phenanthrene	**0.017**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Anthracene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**0.027**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Pyrene	**0.024**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]anthracene	**0.011**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Chrysene	**0.016**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[b]fluoranthene	**0.022**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**0.014**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**0.017**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*62*	*19 - 97*				
Phenol-d6	*73*	*22 - 108*				
Nitrobenzene-d5	*66*	*21 - 106*				
2-Fluorobiphenyl	*71*	*29 - 107*				
2,4,6-Tribromophenol	*77*	*44 - 121*				
Terphenyl-d14	*80*	*37 - 120*				

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SO-SD30-1005**					
Laboratory ID:	09-249-07					
Naphthalene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.25	EPA 8270	10-5-09	10-5-09	
Phenanthrene	**0.089**	0.051	EPA 8270	10-5-09	10-5-09	
Anthracene	**0.012**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**0.17**	0.051	EPA 8270	10-5-09	10-5-09	
Pyrene	**0.16**	0.051	EPA 8270	10-5-09	10-5-09	
Benzo[a]anthracene	**0.033**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Chrysene	**0.064**	0.051	EPA 8270	10-5-09	10-5-09	
Benzo[b]fluoranthene	**0.054**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**0.016**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**0.025**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Indeno[1,2,3-cd]pyrene	**0.015**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**0.019**	0.010	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*51*	*19 - 97*				
Phenol-d6	*66*	*22 - 108*				
Nitrobenzene-d5	*57*	*21 - 106*				
2-Fluorobiphenyl	*70*	*29 - 107*				
2,4,6-Tribromophenol	*81*	*44 - 121*				
Terphenyl-d14	*82*	*37 - 120*				

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SD-SD31-0005**					
Laboratory ID:	09-249-08					
Naphthalene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.23	EPA 8270	10-5-09	10-6-09	
Phenanthrene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Anthracene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Pyrene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]anthracene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Chrysene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[b]fluoranthene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**ND**	0.0090	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*61*	*19 - 97*				
Phenol-d6	*69*	*22 - 108*				
Nitrobenzene-d5	*63*	*21 - 106*				
2-Fluorobiphenyl	*65*	*29 - 107*				
2,4,6-Tribromophenol	*81*	*44 - 121*				
Terphenyl-d14	*74*	*37 - 120*				

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1005S1					
Naphthalene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.17	EPA 8270	10-5-09	10-5-09	
Phenanthrene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Anthracene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Pyrene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*54*	*19 - 97*				
Phenol-d6	*61*	*22 - 108*				
Nitrobenzene-d5	*62*	*21 - 106*				
2-Fluorobiphenyl	*66*	*29 - 107*				
2,4,6-Tribromophenol	*83*	*44 - 121*				
Terphenyl-d14	*87*	*37 - 120*				

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	09-249-07										
	MS	MSD	MS	MSD		MS	MSD				
Phenol	**0.916**	**0.987**	1.33	1.33	ND	69	74	38 - 97	7	30	
2-Chlorophenol	**0.853**	**0.972**	1.33	1.33	ND	64	73	28 - 102	13	38	
1,4-Dichlorobenzene	**0.273**	**0.383**	0.667	0.667	ND	41	57	14 - 84	34	41	
N-Nitroso-di-n-propylamine	**0.457**	**0.478**	0.667	0.667	ND	69	72	25 - 104	4	39	
1,2,4-Trichlorobenzene	**0.370**	**0.425**	0.667	0.667	ND	55	64	23 - 93	14	37	
4-Chloro-3-methylphenol	**1.13**	**1.09**	1.33	1.33	ND	85	82	49 - 113	4	31	
Acenaphthene	**0.479**	**0.461**	0.667	0.667	ND	72	69	37 - 101	4	40	
4-Nitrophenol	**1.22**	**1.13**	1.33	1.33	ND	92	85	30 - 136	8	31	
2,4-Dinitrotoluene	**0.534**	**0.471**	0.667	0.667	ND	80	71	36 - 122	13	32	
Pentachlorophenol	**1.19**	**1.09**	1.33	1.33	ND	89	82	15 - 143	9	34	
Pyrene	**0.697**	**0.572**	0.667	0.667	0.105	89	70	24 - 138	20	39	
Surrogate:											
2-Fluorophenol						*48*	*56*	*19 - 97*			
Phenol-d6						*60*	*65*	*22 - 108*			
Nitrobenzene-d5						*53*	*62*	*21 - 106*			
2-Fluorobiphenyl						*65*	*70*	*29 - 107*			
2,4,6-Tribromophenol						*77*	*82*	*44 - 121*			
Terphenyl-d14						*90*	*77*	*37 - 120*			

Date of Report: October 8, 2009
Samples Submitted: September 29, 2009
Laboratory Reference: 0909-249
Project: 235-1577-024-04-05

% MOISTURE

Date Analyzed: 9-29-09

Client ID	Lab ID	% Moisture
WB-SD-SD25-0005	09-249-01	59
WB-SD-SD26-0005	09-249-02	30
WB-SD-SD27-0005	09-249-03	46
WB-SD-SD28-0005	09-249-04	60
WB-SD-SD29-0005	09-249-05	58
WB-SD-SD30-0005	09-249-06	33
WB-SD-SD30-1005	09-249-07	34
WB-SD-SD31-0005	09-249-08	27

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: PARAMETRIX

Project Number: 235-1577-024-04-05

Project Name: WEST BAY PARK

Project Manager: DAVID DINKUHN

Sampled by: 11

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☑ ~~3 Day~~ (3-6 Day)
- ☐ Standard (7 working days)

(TPH analysis 5 working days)

- ☐ _____ (other)

Laboratory Number: 09-249

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx (1)	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM (2)	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	% MOISTURE	PENTACHLOROPHENOL (4) (PCP)	TOC	TOTAL SOLIDS	TOTAL SULFIDES	AMMONIA	GRAIN SIZE (3)	% Moisture, TOTAL VOLATILE SOLIDS (TVS)
1	WB-SD-SD25-0005	9/28/09	08:15	SD	6			X				X						X		X	X	X	X	X	X	X
2	WB-SD-SD26-0005		09:45		4			X				X								X	X	X	X	X	X	X
3	WB-SD-SD27-0005		10:00		4			X				X								X	X	X	X	X	X	X
4	WB-SD-SD28-0005		08:30		4			X				X								X	X	X	X	X	X	X
5	WB-SD-SD29-0005		08:45		4			X				X								X	X	X	X	X	X	X
6	WB-SD-SD30-0005		09:00		4			X				X								X	X	X	X	X	X	X
7	WB-SD-SD30-1005		09:15		4			X				X								X	X	X	X	X	X	X
8	WB-SD-SD31-0005		09:30		4			X				X								X	X	X	X	X	X	X

	Signature	Company	Date	Time
Relinquished by		PMX	9/28/09	1547
Received by		OSE	9/29/09	830
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

EIM EDDs

(1) PLS. REPORT PQLs SO THAT SUM OF DIESEL & OIL RANGE PQLs ≤ 100 mg/Kg

(2) SEDIMENT MANAGEMENT STANDARDS PAHs, SEE ATTACHED TABLE I

(3) INCL. HYDROMETER

(4) PCP PQL ≤ 0.36 mg/Kg

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Oct 6 2009
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your 235-1577-024-04-05 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
WB-SD-SD25-0005	Soil	09-A015904	DEM, NUT, CONV, GRAIN SIZE, GRAIN SIZE
WB-SD-SD26-0005	Soil	09-A015905	DEM, NUT, CONV, GRAIN SIZE, GRAIN SIZE
WB-SD-SD27-0005	Soil	09-A015906	DEM, NUT, CONV, GRAIN SIZE, GRAIN SIZE
WB-SD-SD28-0005	Soil	09-A015907	DEM, NUT, CONV, GRAIN SIZE, GRAIN SIZE
WB-SD-SD29-0005	Soil	09-A015908	DEM, NUT, CONV, GRAIN SIZE, GRAIN SIZE
WB-SD-SD30-0005	Soil	09-A015909	DEM, NUT, CONV, GRAIN SIZE, GRAIN SIZE
WB-SD-SD30-10005	Soil	09-A015910	DEM, NUT, CONV, GRAIN SIZE, GRAIN SIZE
WB-SD-SD31-0005	Soil	09-A015911	DEM, NUT, CONV, GRAIN SIZE, GRAIN SIZE

Your samples were received on Tuesday, September 29, 2009. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Method Detection Limits (MDL's), as opposed to Practical Quantitation Limits (PQL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young
Laboratory Manager

PO Number: 09-249

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
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Kirkland, WA 98034
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www.amtestlab.com

AMTEST LABORATORIES

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: 235-1577-024-04-05
PO Number: 09-249

Date Received: 09/29/09
Date Reported: 10/ 6/09

AMTEST Identification Number 09-A015904
Client Identification WB-SD-SD25-0005
Sampling Date 09/28/09, 08:15
All results reported on a dry weight basis.

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	37.7	%		0.1	SM 2540G	SL	09/30/09
Total Volatile Solids	16.3	%		0.1	SM 2540-G	SL	09/30/09

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	4.4	%		0.05	SW 846 9060	SL	10/01/09

Minerals

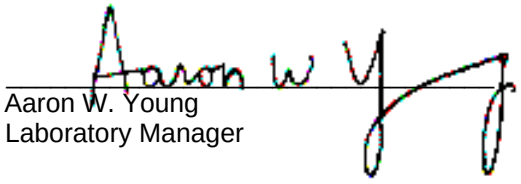
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfides	115.	mg/kg		2.7	PSEP p32	SL	10/01/09

Nutrients

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Available Ammonia	37.	mg/Kg		1.3	Plumb 1981	TS	10/05/09

Grain Size Distribution

PHI	OPENING (mm)	% RETENTION	FRACTION	PERCENT	METHOD	ANALYST	DATE
	4.75	10.3 %	GRAVEL	11.9	ASTM D422	MO	09/30/09
- 2	4.00	1.60 %			ASTM D422	MO	09/30/09
-1	2.00	9.10 %	SAND	40.3	ASTM D422	MO	09/30/09
0	1.00	5.80 %			ASTM D422	MO	09/30/09
+1	0.50	6.00 %			ASTM D422	MO	09/30/09
+ 2	0.25	7.60 %			ASTM D422	MO	09/30/09
+ 3	0.125	11.8 %			ASTM D422	MO	09/30/09
+ 4	0.063	7.20 %	SILT	22.9	ASTM D422	MO	09/30/09
+ 5	0.032	< 0.1 %			ASTM D422	MO	09/30/09
+ 6	0.016	6.10 %			ASTM D422	MO	09/30/09
+ 7	0.008	4.40 %			ASTM D422	MO	09/30/09
+ 8	0.004	5.20 %			ASTM D422	MO	09/30/09
+ 9	0.002	1.90 %	CLAY	24.9	ASTM D422	MO	09/30/09
+ 10	0.001	0.50 %			ASTM D422	MO	09/30/09
> + 10	< 0.001	22.5 %			ASTM D422	MO	09/30/09



Aaron W. Young
Laboratory Manager

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: 235-1577-024-04-05
PO Number: 09-249

Date Received: 09/29/09
Date Reported: 10/ 6/09

AMTEST Identification Number 09-A015905
Client Identification WB-SD-SD26-0005
Sampling Date 09/28/09, 09:45
All results reported on a dry weight basis.

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	67.8	%		0.1	SM 2540G	SL	09/30/09
Total Volatile Solids	3.6	%		0.1	SM 2540-G	SL	09/30/09

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	0.74	%		0.05	SW 846 9060	SL	10/01/09

Minerals

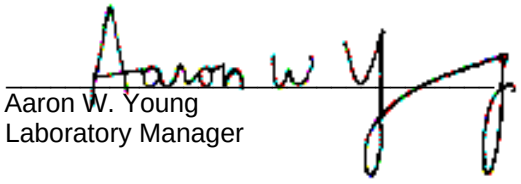
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfides	< 2.95	mg/kg		1.5	PSEP p32	SL	10/01/09

Nutrients

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Available Ammonia	< 0.7	mg/Kg		0.74	Plumb 1981	TS	10/05/09

Grain Size Distribution

PHI	OPENING (mm)	% RETENTION	FRACTION	PERCENT	METHOD	ANALYST	DATE
	4.75	12.1 %	GRAVEL	14.0	ASTM D422	MO	09/30/09
- 2	4.00	1.90 %			ASTM D422	MO	09/30/09
-1	2.00	10.0 %	SAND	63.0	ASTM D422	MO	09/30/09
0	1.00	11.6 %			ASTM D422	MO	09/30/09
+1	0.50	13.2 %			ASTM D422	MO	09/30/09
+ 2	0.25	23.0 %			ASTM D422	MO	09/30/09
+ 3	0.125	5.20 %			ASTM D422	MO	09/30/09
+ 4	0.063	5.00 %	SILT	15.5	ASTM D422	MO	09/30/09
+ 5	0.032	< 0.1 %			ASTM D422	MO	09/30/09
+ 6	0.016	3.00 %			ASTM D422	MO	09/30/09
+ 7	0.008	2.70 %			ASTM D422	MO	09/30/09
+ 8	0.004	4.80 %			ASTM D422	MO	09/30/09
+ 9	0.002	1.30 %	CLAY	7.70	ASTM D422	MO	09/30/09
+ 10	0.001	0.30 %			ASTM D422	MO	09/30/09
> + 10	< 0.001	6.10 %			ASTM D422	MO	09/30/09



Aaron W. Young
Laboratory Manager

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: 235-1577-024-04-05
PO Number: 09-249

Date Received: 09/29/09
Date Reported: 10/ 6/09

AMTEST Identification Number 09-A015906
Client Identification WB-SD-SD27-0005
Sampling Date 09/28/09, 10:00
All results reported on a dry weight basis.

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	54.9	%		0.1	SM 2540G	SL	09/30/09
Total Volatile Solids	13.5	%		0.1	SM 2540-G	SL	09/30/09

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	2.8	%		0.05	SW 846 9060	SL	10/01/09

Minerals

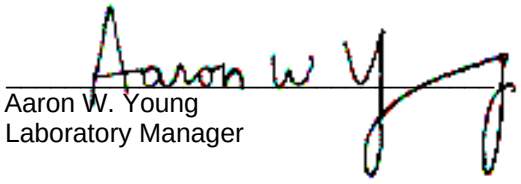
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfides	< 3.64	mg/kg		1.8	PSEP p32	SL	10/01/09

Nutrients

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Available Ammonia	< 0.9	mg/Kg		0.91	Plumb 1981	TS	10/05/09

Grain Size Distribution

PHI	OPENING (mm)	% RETENTION	FRACTION	PERCENT	METHOD	ANALYST	DATE
	4.75	34.3 %	GRAVEL	38.9	ASTM D422	MO	09/30/09
- 2	4.00	4.60 %			ASTM D422	MO	09/30/09
-1	2.00	12.8 %	SAND	43.1	ASTM D422	MO	09/30/09
0	1.00	7.10 %			ASTM D422	MO	09/30/09
+1	0.50	7.90 %			ASTM D422	MO	09/30/09
+ 2	0.25	8.80 %			ASTM D422	MO	09/30/09
+ 3	0.125	6.50 %			ASTM D422	MO	09/30/09
+ 4	0.063	3.50 %	SILT	12.9	ASTM D422	MO	09/30/09
+ 5	0.032	2.20 %			ASTM D422	MO	09/30/09
+ 6	0.016	2.80 %			ASTM D422	MO	09/30/09
+ 7	0.008	2.10 %			ASTM D422	MO	09/30/09
+ 8	0.004	2.30 %			ASTM D422	MO	09/30/09
+ 9	0.002	0.40 %	CLAY	5.10	ASTM D422	MO	09/30/09
+ 10	0.001	< 0.1 %			ASTM D422	MO	09/30/09
> + 10	< 0.001	4.70 %			ASTM D422	MO	09/30/09



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Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: 235-1577-024-04-05
PO Number: 09-249

Date Received: 09/29/09
Date Reported: 10/ 6/09

AMTEST Identification Number 09-A015907
Client Identification WB-SD-SD28-0005
Sampling Date 09/28/09, 08:30
All results reported on a dry weight basis.

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	32.9	%		0.1	SM 2540G	SL	09/30/09
Total Volatile Solids	21.8	%		0.1	SM 2540-G	SL	09/30/09

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	2.2	%		0.05	SW 846 9060	SL	10/01/09

Minerals

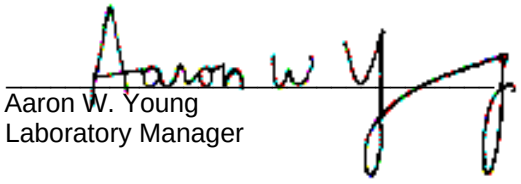
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfides	32.5	mg/kg		3.0	PSEP p32	SL	10/01/09

Nutrients

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Available Ammonia	< 1.5	mg/Kg		1.5	Plumb 1981	TS	10/05/09

Grain Size Distribution

PHI	OPENING (mm)	% RETENTION	FRACTION	PERCENT	METHOD	ANALYST	DATE
	4.75	7.40 %	GRAVEL	8.40	ASTM D422	MO	09/30/09
- 2	4.00	1.00 %			ASTM D422	MO	09/30/09
-1	2.00	5.20 %	SAND	49.8	ASTM D422	MO	09/30/09
0	1.00	8.90 %			ASTM D422	MO	09/30/09
+1	0.50	7.40 %			ASTM D422	MO	09/30/09
+ 2	0.25	9.10 %			ASTM D422	MO	09/30/09
+ 3	0.125	19.2 %			ASTM D422	MO	09/30/09
+ 4	0.063	12.3 %	SILT	27.7	ASTM D422	MO	09/30/09
+ 5	0.032	0.70 %			ASTM D422	MO	09/30/09
+ 6	0.016	4.40 %			ASTM D422	MO	09/30/09
+ 7	0.008	6.10 %			ASTM D422	MO	09/30/09
+ 8	0.004	4.20 %			ASTM D422	MO	09/30/09
+ 9	0.002	2.40 %	CLAY	14.2	ASTM D422	MO	09/30/09
+ 10	0.001	1.20 %			ASTM D422	MO	09/30/09
> + 10	< 0.001	10.6 %			ASTM D422	MO	09/30/09



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ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: 235-1577-024-04-05
PO Number: 09-249

Date Received: 09/29/09
Date Reported: 10/ 6/09

AMTEST Identification Number 09-A015908
Client Identification WB-SD-SD29-0005
Sampling Date 09/28/09, 08:45
All results reported on a dry weight basis.

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	38.1	%		0.1	SM 2540G	SL	09/30/09
Total Volatile Solids	23.2	%		0.1	SM 2540-G	SL	09/30/09

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	3.9	%		0.05	SW 846 9060	SL	10/01/09

Minerals

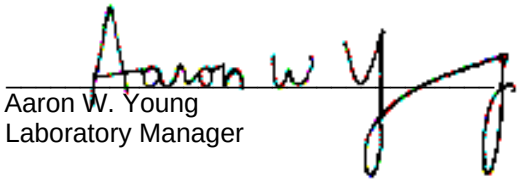
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfides	415.	mg/kg		2.6	PSEP p32	SL	10/01/09

Nutrients

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Available Ammonia	29.	mg/Kg		1.3	Plumb 1981	TS	10/05/09

Grain Size Distribution

PHI	OPENING (mm)	% RETENTION	FRACTION	PERCENT	METHOD	ANALYST	DATE
	4.75	25.1 %	GRAVEL	28.5	ASTM D422	MO	09/30/09
- 2	4.00	3.40 %			ASTM D422	MO	09/30/09
-1	2.00	12.9 %	SAND	45.4	ASTM D422	MO	09/30/09
0	1.00	9.70 %			ASTM D422	MO	09/30/09
+1	0.50	8.80 %			ASTM D422	MO	09/30/09
+ 2	0.25	7.10 %			ASTM D422	MO	09/30/09
+ 3	0.125	6.90 %			ASTM D422	MO	09/30/09
+ 4	0.063	5.40 %	SILT	14.9	ASTM D422	MO	09/30/09
+ 5	0.032	< 0.1 %			ASTM D422	MO	09/30/09
+ 6	0.016	2.30 %			ASTM D422	MO	09/30/09
+ 7	0.008	3.00 %			ASTM D422	MO	09/30/09
+ 8	0.004	4.20 %			ASTM D422	MO	09/30/09
+ 9	0.002	1.40 %	CLAY	11.4	ASTM D422	MO	09/30/09
+ 10	0.001	0.50 %			ASTM D422	MO	09/30/09
> + 10	< 0.001	9.50 %			ASTM D422	MO	09/30/09



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ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: 235-1577-024-04-05
PO Number: 09-249

Date Received: 09/29/09
Date Reported: 10/ 6/09

AMTEST Identification Number 09-A015909
Client Identification WB-SD-SD30-0005
Sampling Date 09/28/09, 09:00
All results reported on a dry weight basis.

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	69.2	%		0.1	SM 2540G	SL	09/30/09
Total Volatile Solids	9.6	%		0.1	SM 2540-G	SL	09/30/09

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	2.2	%		0.05	SW 846 9060	SL	10/01/09

Minerals

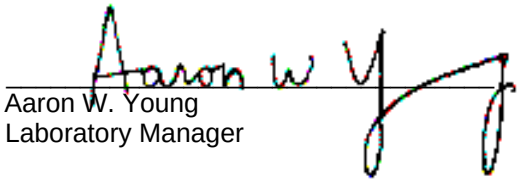
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfides	< 2.89	mg/kg		1.4	PSEP p32	SL	10/01/09

Nutrients

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Available Ammonia	13.	mg/Kg		0.72	Plumb 1981	TS	10/05/09

Grain Size Distribution

PHI	OPENING (mm)	% RETENTION	FRACTION	PERCENT	METHOD	ANALYST	DATE
	4.75	39.5 %	GRAVEL	41.8	ASTM D422	MO	09/30/09
- 2	4.00	2.30 %			ASTM D422	MO	09/30/09
-1	2.00	8.00 %	SAND	37.9	ASTM D422	MO	09/30/09
0	1.00	6.20 %			ASTM D422	MO	09/30/09
+1	0.50	8.00 %			ASTM D422	MO	09/30/09
+ 2	0.25	10.1 %			ASTM D422	MO	09/30/09
+ 3	0.125	5.60 %			ASTM D422	MO	09/30/09
+ 4	0.063	4.50 %	SILT	13.9	ASTM D422	MO	09/30/09
+ 5	0.032	2.60 %			ASTM D422	MO	09/30/09
+ 6	0.016	2.30 %			ASTM D422	MO	09/30/09
+ 7	0.008	2.30 %			ASTM D422	MO	09/30/09
+ 8	0.004	2.20 %			ASTM D422	MO	09/30/09
+ 9	0.002	0.80 %	CLAY	6.20	ASTM D422	MO	09/30/09
+ 10	0.001	0.30 %			ASTM D422	MO	09/30/09
> + 10	< 0.001	5.10 %			ASTM D422	MO	09/30/09



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ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: 235-1577-024-04-05
PO Number: 09-249

Date Received: 09/29/09
Date Reported: 10/ 6/09

AMTEST Identification Number 09-A015910
Client Identification WB-SD-SD30-10005
Sampling Date 09/28/09, 09:15
All results reported on a dry weight basis.

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	61.5	%		0.1	SM 2540G	SL	09/30/09
Total Volatile Solids	15.5	%		0.1	SM 2540-G	SL	09/30/09

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	1.4	%		0.05	SW 846 9060	SL	10/01/09

Minerals

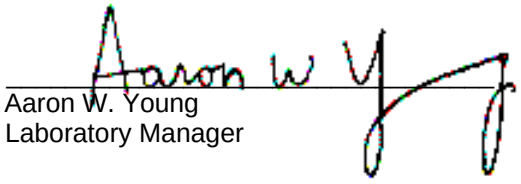
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfides	5.37	mg/kg		1.6	PSEP p32	SL	10/01/09

Nutrients

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Available Ammonia	3.1	mg/Kg		0.81	Plumb 1981	TS	10/05/09

Grain Size Distribution

PHI	OPENING (mm)	% RETENTION	FRACTION	PERCENT	METHOD	ANALYST	DATE
	4.75	33.2 %	GRAVEL	36.0	ASTM D422	MO	09/30/09
- 2	4.00	2.80 %			ASTM D422	MO	09/30/09
-1	2.00	10.8 %	SAND	43.4	ASTM D422	MO	09/30/09
0	1.00	6.70 %			ASTM D422	MO	09/30/09
+1	0.50	9.00 %			ASTM D422	MO	09/30/09
+ 2	0.25	11.2 %			ASTM D422	MO	09/30/09
+ 3	0.125	5.70 %			ASTM D422	MO	09/30/09
+ 4	0.063	3.90 %	SILT	14.6	ASTM D422	MO	09/30/09
+ 5	0.032	2.40 %			ASTM D422	MO	09/30/09
+ 6	0.016	2.00 %			ASTM D422	MO	09/30/09
+ 7	0.008	3.60 %			ASTM D422	MO	09/30/09
+ 8	0.004	2.70 %			ASTM D422	MO	09/30/09
+ 9	0.002	0.40 %	CLAY	6.00	ASTM D422	MO	09/30/09
+ 10	0.001	< 0.1 %			ASTM D422	MO	09/30/09
> + 10	< 0.001	5.60 %			ASTM D422	MO	09/30/09



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Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: 235-1577-024-04-05
PO Number: 09-249

Date Received: 09/29/09
Date Reported: 10/ 6/09

AMTEST Identification Number 09-A015911
Client Identification WB-SD-SD31-0005
Sampling Date 09/28/09, 09:30
All results reported on a dry weight basis.

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	71.1	%		0.1	SM 2540G	SL	09/30/09
Total Volatile Solids	4.8	%		0.1	SM 2540-G	SL	09/30/09

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	2.2	%		0.05	SW 846 9060	SL	10/01/09

Minerals

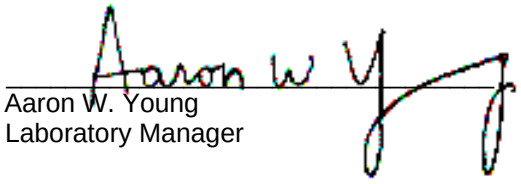
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfides	< 2.81	mg/kg		1.4	PSEP p32	SL	10/01/09

Nutrients

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Available Ammonia	< 0.7	mg/Kg		0.70	Plumb 1981	TS	10/05/09

Grain Size Distribution

PHI	OPENING (mm)	% RETENTION	FRACTION	PERCENT	METHOD	ANALYST	DATE
	4.75	32.3 %	GRAVEL	34.3	ASTM D422	MO	09/30/09
- 2	4.00	2.00 %			ASTM D422	MO	09/30/09
-1	2.00	5.60 %	SAND	34.4	ASTM D422	MO	09/30/09
0	1.00	3.70 %			ASTM D422	MO	09/30/09
+1	0.50	7.20 %			ASTM D422	MO	09/30/09
+ 2	0.25	10.6 %			ASTM D422	MO	09/30/09
+ 3	0.125	7.30 %			ASTM D422	MO	09/30/09
+ 4	0.063	11.3 %	SILT	25.1	ASTM D422	MO	09/30/09
+ 5	0.032	0.10 %			ASTM D422	MO	09/30/09
+ 6	0.016	6.80 %			ASTM D422	MO	09/30/09
+ 7	0.008	4.40 %			ASTM D422	MO	09/30/09
+ 8	0.004	2.50 %			ASTM D422	MO	09/30/09
+ 9	0.002	1.30 %	CLAY	6.30	ASTM D422	MO	09/30/09
+ 10	0.001	0.70 %			ASTM D422	MO	09/30/09
> + 10	< 0.001	4.30 %			ASTM D422	MO	09/30/09



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Professional Analytical Services

QC Summary for sample numbers: 09-A015904 to 09-A015911

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUPLICATE VALUE	RPD
09-A015911	Total Organic Carbon	%	2.2	2.4	8.7
09-A015911	Total Organic Carbon	%	2.2	1.7	26.
09-A015904	Available Ammonia	mg/Kg	14.	16.	13.
09-A015904	Available Ammonia	mg/Kg	14.	18.	25.
09-A016201	Available Ammonia	mg/Kg	3.4	3.4	0.00
09-A015807	Total Solids	%	31.3	32.6	4.1
09-A015817	Total Solids	%	79.1	79.1	0.00
09-A015911	Total Solids	%	71.1	70.5	0.85
09-A015911	Total Volatile Solids	%	4.8	5.6	15.
09-A015911	Total Sulfides	mg/kg	< 2	< 2	
09-A015904		%	10.3	10.3	0.00
09-A015904		%	10.3	9.10	12.
09-A015904	- 2	%	1.60	1.20	29.
09-A015904	- 2	%	1.60	2.10	27.
09-A015904	-1	%	9.10	7.20	23.
09-A015904	-1	%	9.10	7.40	21.
09-A015904	0	%	5.80	6.20	6.7
09-A015904	0	%	5.80	5.60	3.5
09-A015904	+1	%	6.00	5.80	3.4
09-A015904	+1	%	6.00	6.00	0.00
09-A015904	+ 2	%	7.60	6.80	11.
09-A015904	+ 2	%	7.60	8.20	7.6
09-A015904	+ 3	%	11.8	12.6	6.6
09-A015904	+ 3	%	11.8	13.0	9.7
09-A015904	+ 4	%	7.20	9.30	25.
09-A015904	+ 4	%	7.20	8.00	11.
09-A015904	+ 5	%	< 0.1	< 0.1	
09-A015904	+ 5	%	< 0.1	1.00	
09-A015904	+ 6	%	6.10	4.80	24.
09-A015904	+ 6	%	6.10	4.80	24.
09-A015904	+ 7	%	4.40	5.70	26.
09-A015904	+ 7	%	4.40	4.70	6.6
09-A015904	+ 8	%	5.20	5.20	0.00
09-A015904	+ 8	%	5.20	5.20	0.00
09-A015904	+ 9	%	1.90	1.90	0.00
09-A015904	+ 9	%	1.90	3.30	54.
09-A015904	+ 10	%	0.50	0.50	0.00

DUPLICATES continued....

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUPLICATE VALUE	RPD
09-A015904	+ 10	%	0.50	1.60	100
09-A015904	> + 10	%	22.5	22.5	0.00
09-A015904	> + 10	%	22.5	20.1	11.

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
09-A015911	Available Ammonia	mg/Kg	< 0.5	24.	25.	96.00 %
09-A016202	Available Ammonia	mg/Kg	8.8	35.	25.	104.80 %
09-A015910	Total Sulfides	mg/kg	3.30	90.4	100.	87.10 %

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Total Organic Carbon	%	1.0	0.87	87.0 %
Available Ammonia	mg/Kg	2.5	2.6	104. %
Available Ammonia	mg/Kg	25.	25.	100. %
Total Sulfides	mg/kg	180.	170.	94.4 %

BLANKS

ANALYTE	UNITS	RESULT
Total Organic Carbon	%	< 0.05
Available Ammonia	mg/Kg	< 0.5
Available Ammonia	mg/Kg	< 0.5
Total Solids	%	< 0.1
Total Solids	%	< 0.1
Total Volatile Solids	%	< 0.1
Total Sulfides	mg/kg	< 2

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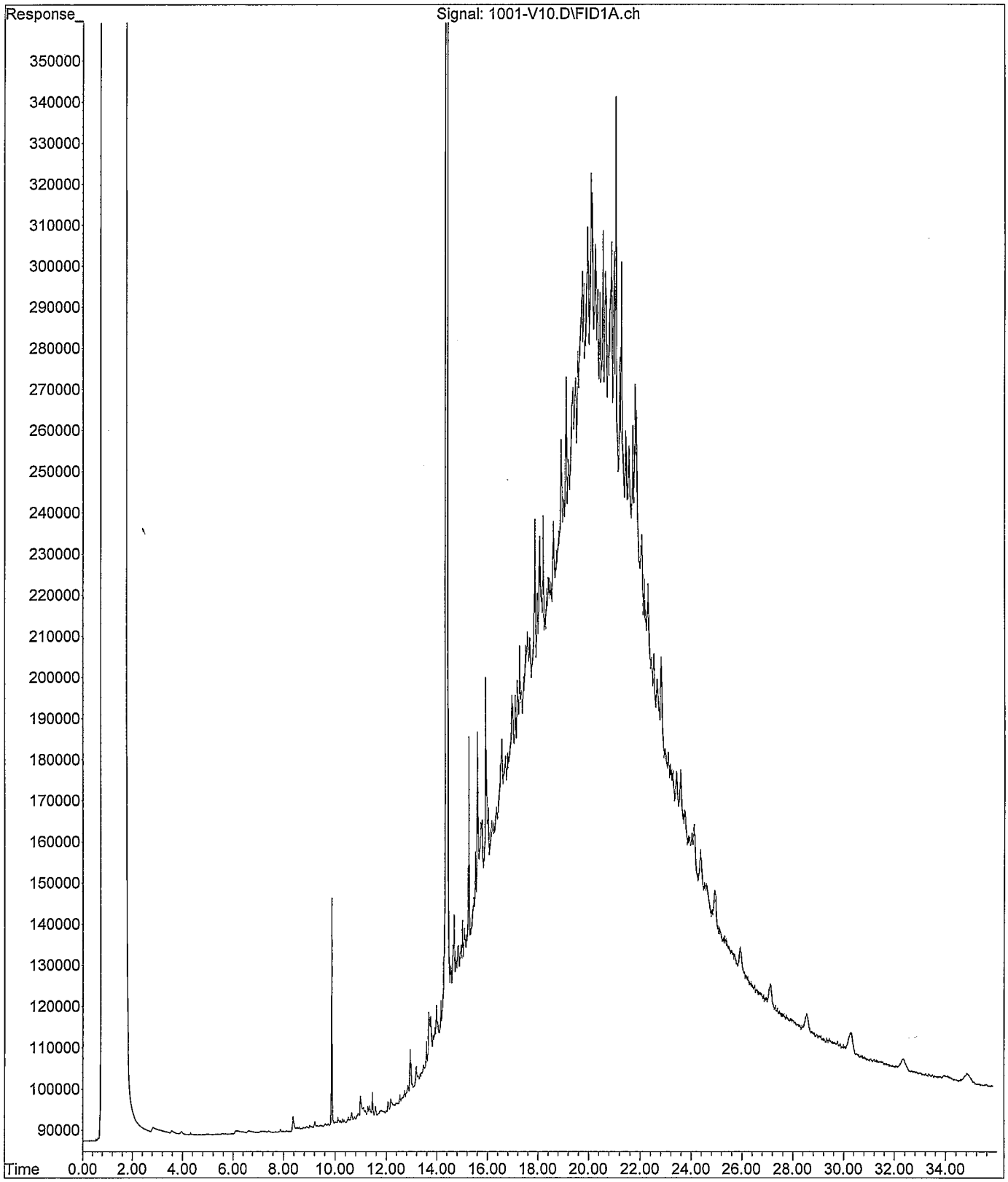
Operator : ZT
Acquired : 1 Oct 09 6124 p using AcqMethod V090730F.M
Instrument : Vigo
Sample Name: 09-249-01
Misc Info :
Vial Number: 10



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Operator : ZT
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Sample Name: 09-249-02
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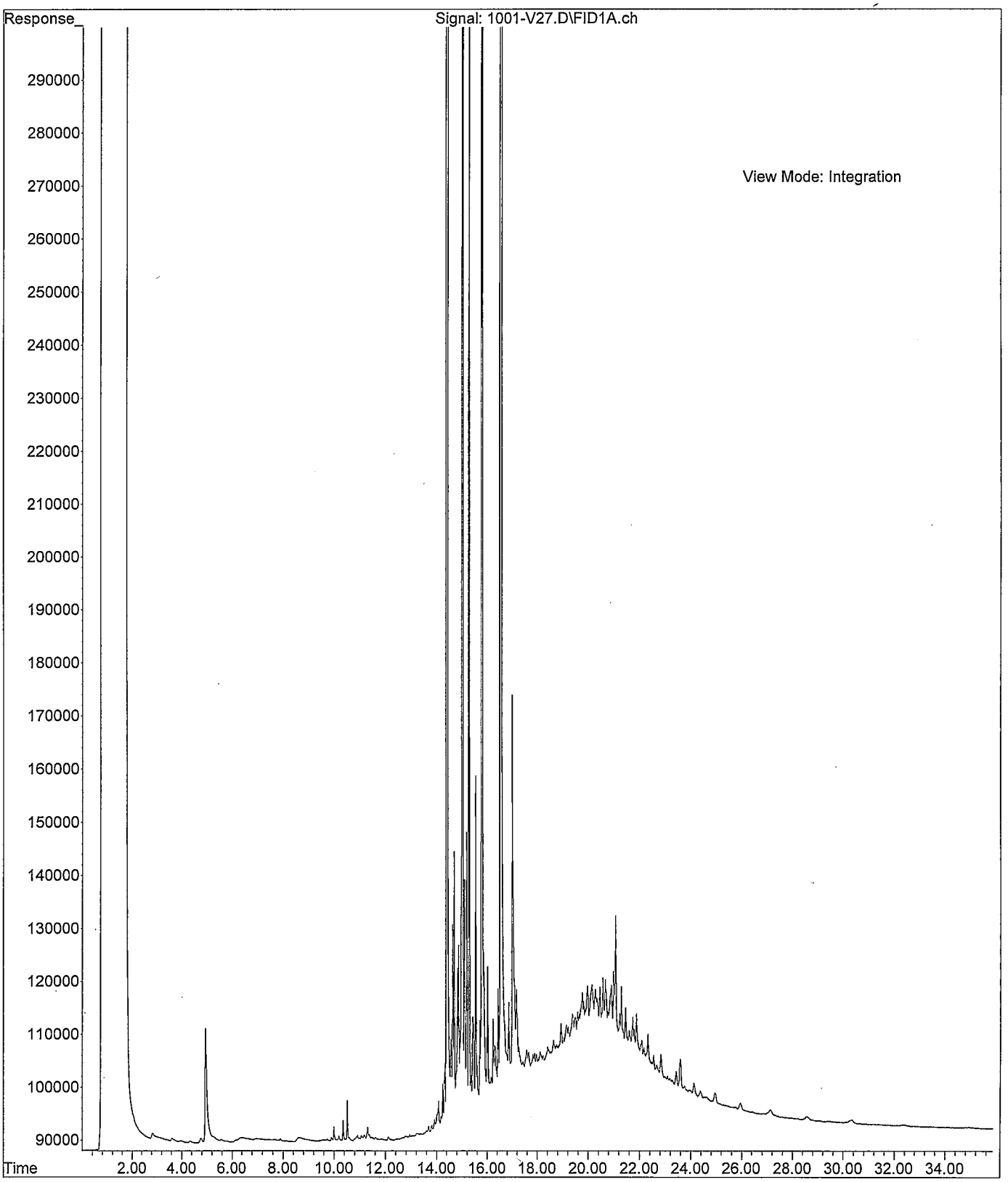
Vial Number: 27



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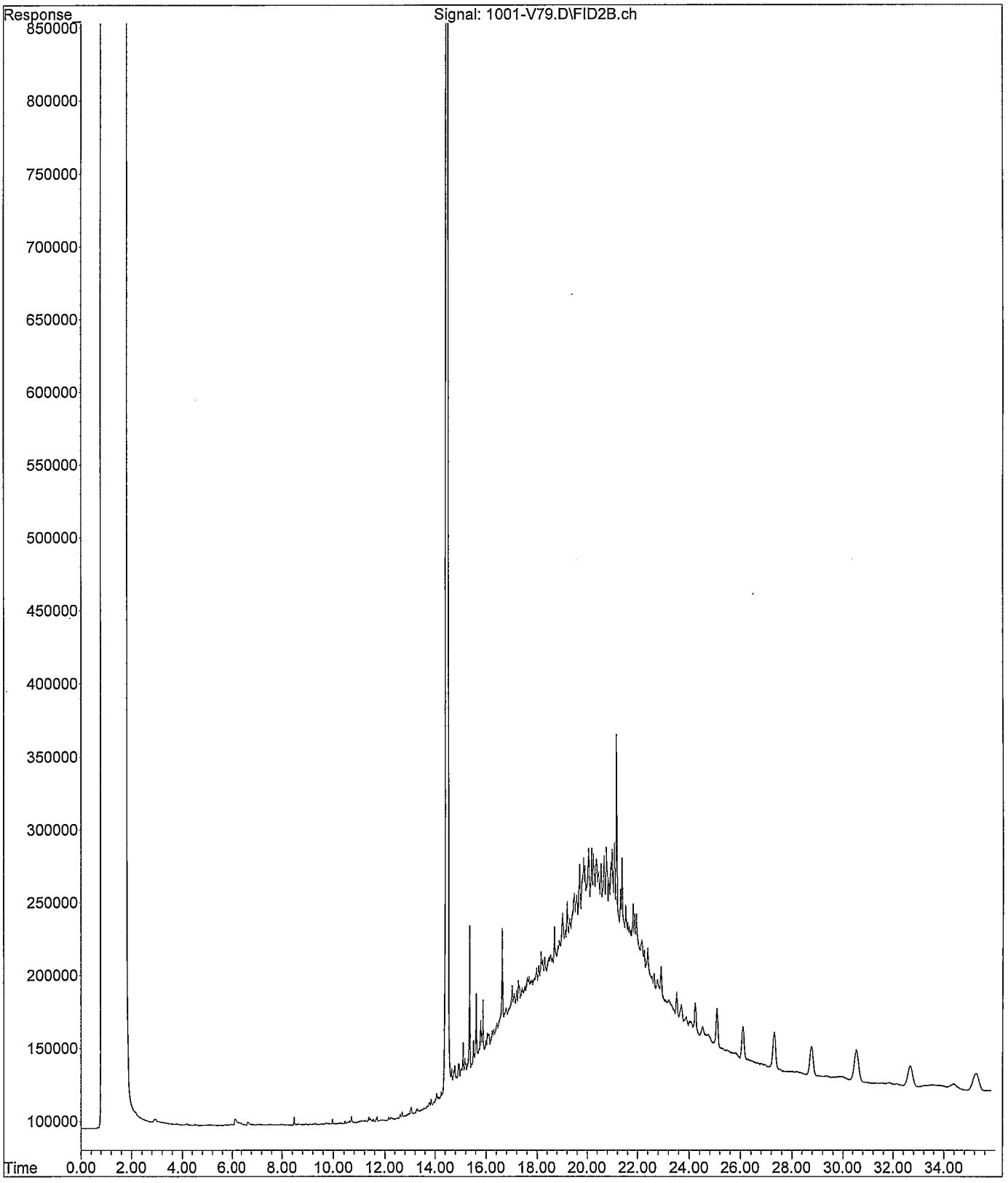
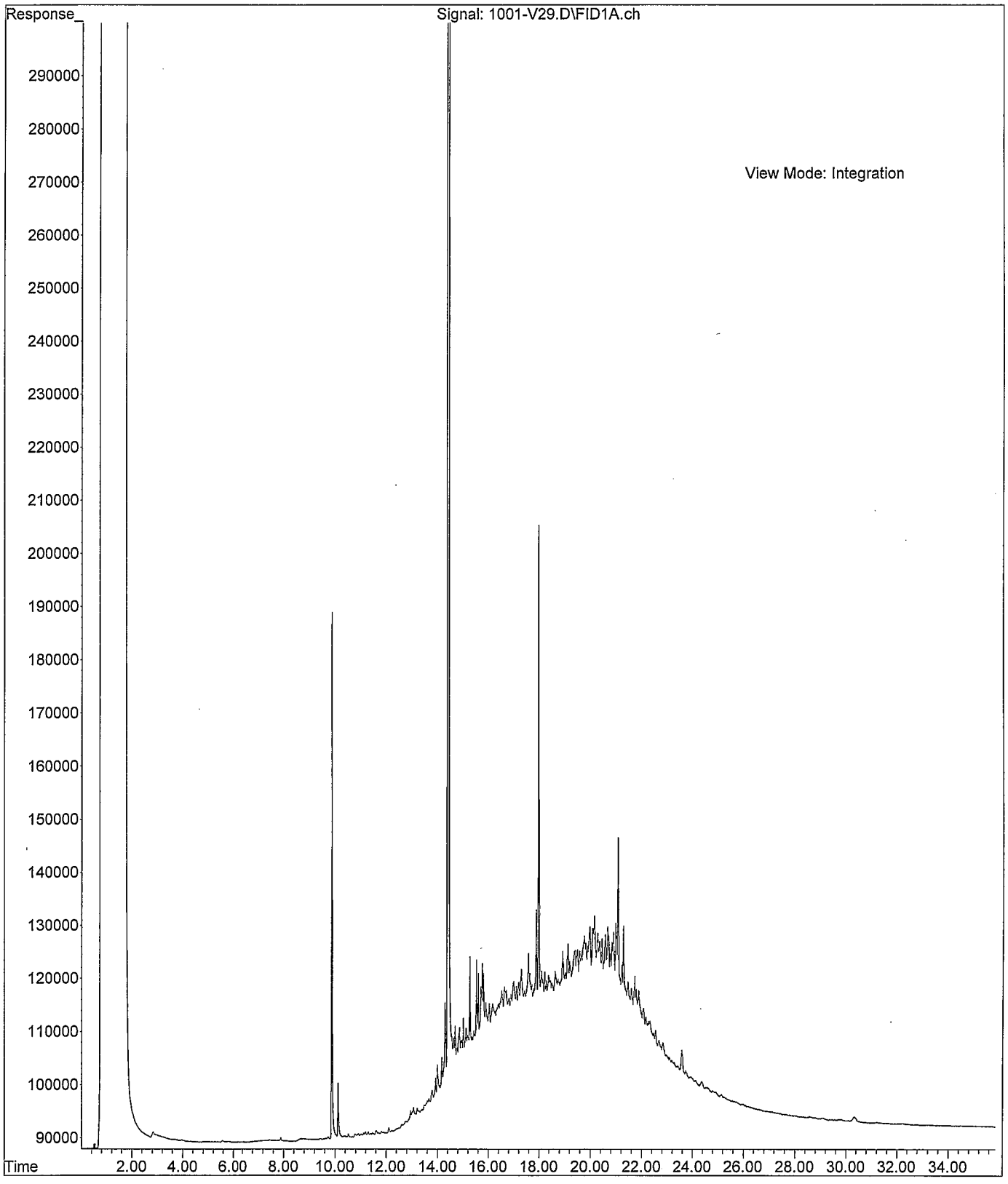
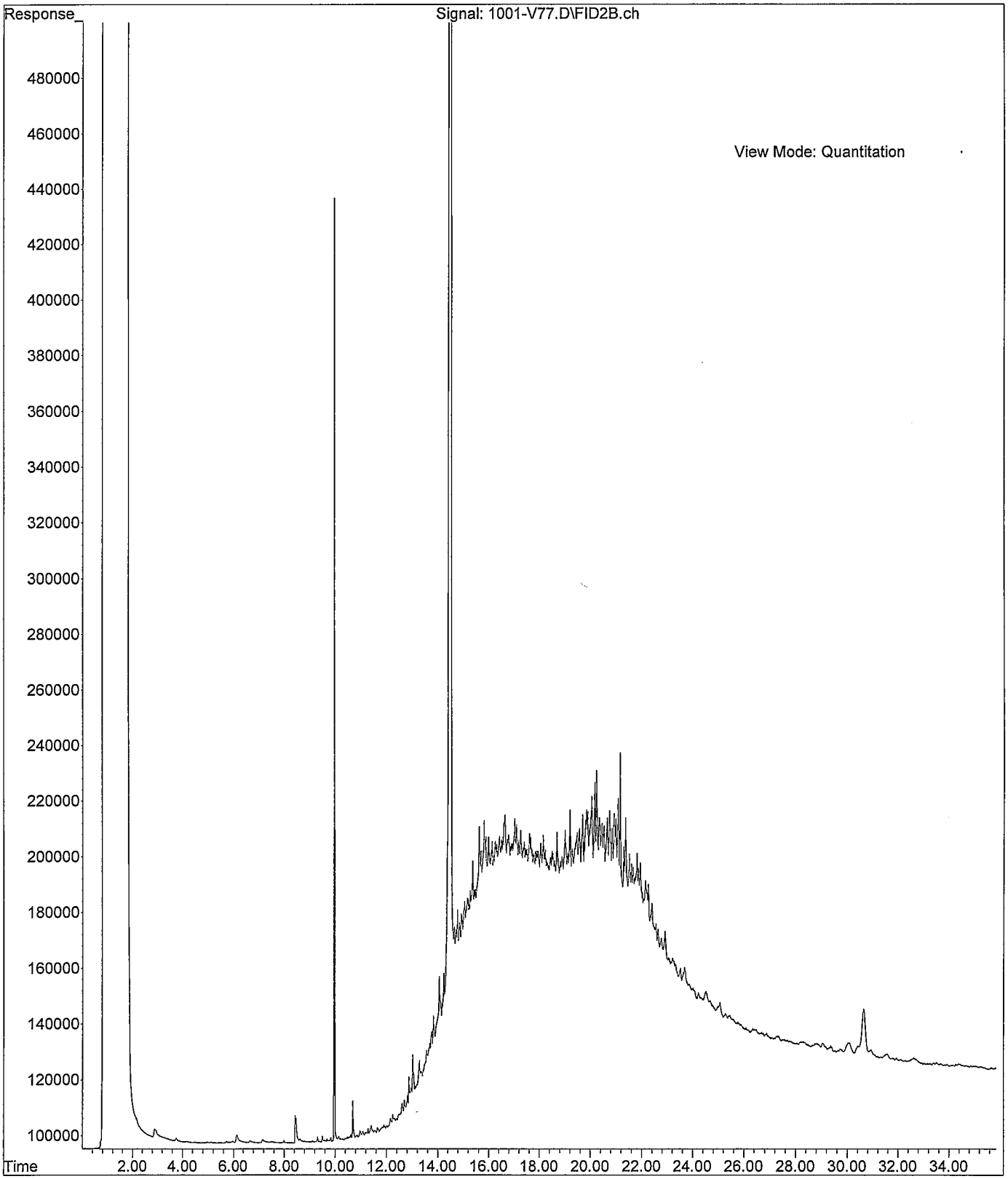
Operator : ZT
Acquired : 2 Oct 09 6:51 a using AcqMethod V090730F.M
Instrument : Vigo
Sample Name: 09-249-03
Misc Info :
Vial Number: 79



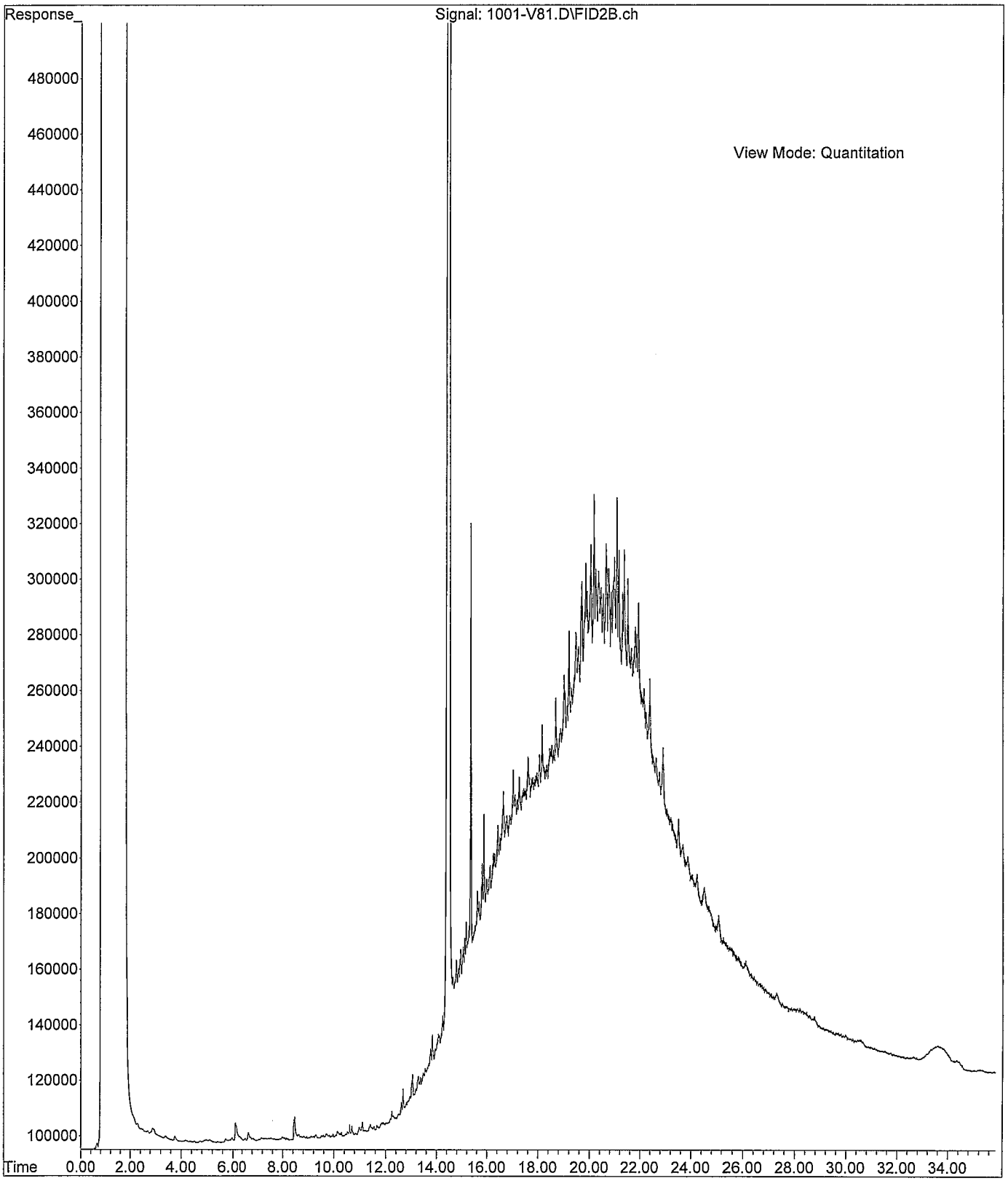
File :X:\DIESELS\VIGO\DATA\V091001\1001-V29.D
Operator : ZT
Acquired : 2 Oct 09 6:51 a using AcqMethod V090730F.M
Instrument : Vigo
Sample Name: 09-249-04
Misc Info :
Vial Number: 29



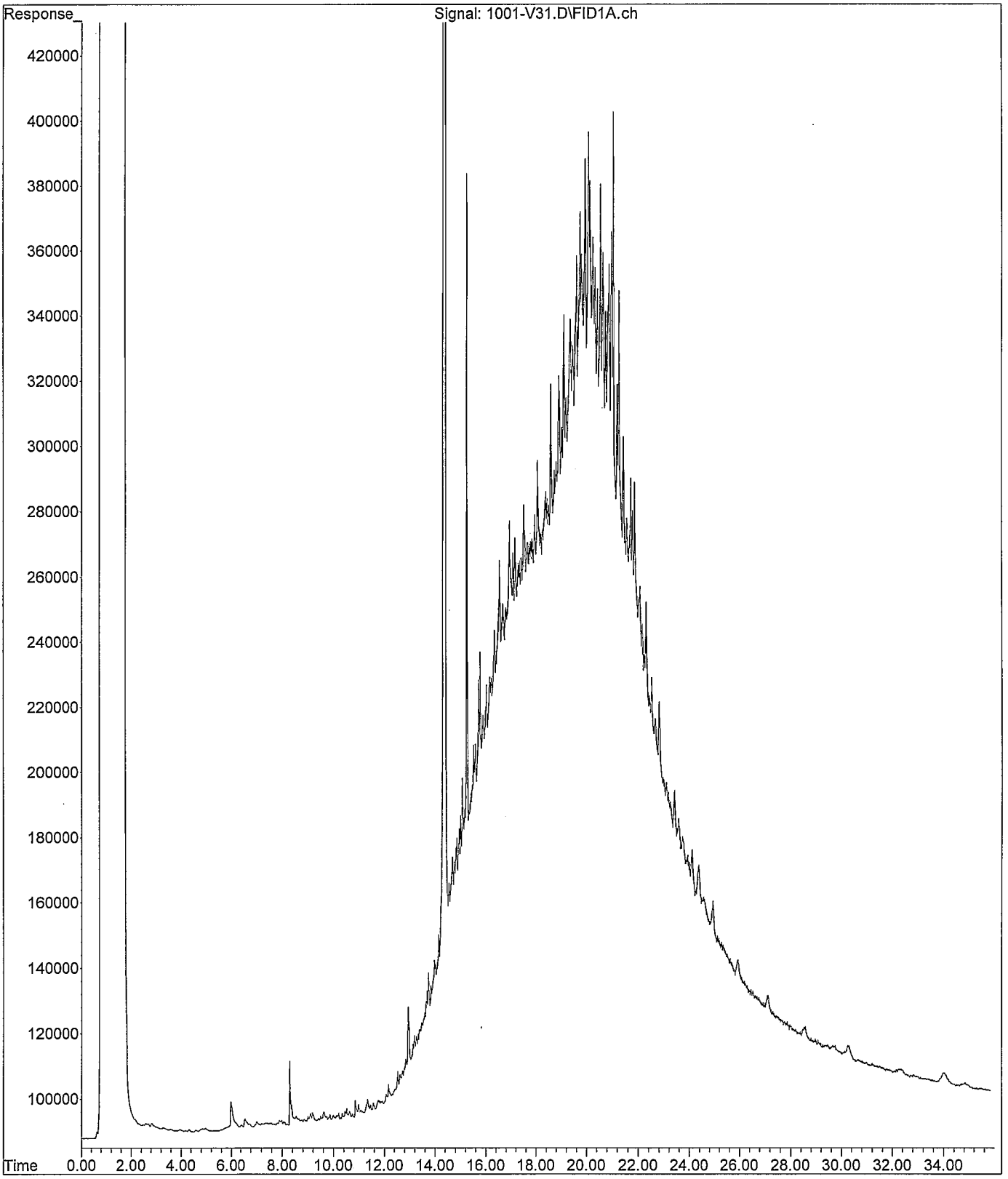
File :X:\DIESELS\VIGO\DATA\V091001.SEC\1001-V77.D
Operator : ZT
Acquired : 2 Oct 09 5:31 a using AcqMethod V090730F.M
Instrument : Vigo
Sample Name: 09-249-05
Misc Info :
Vial Number: 77



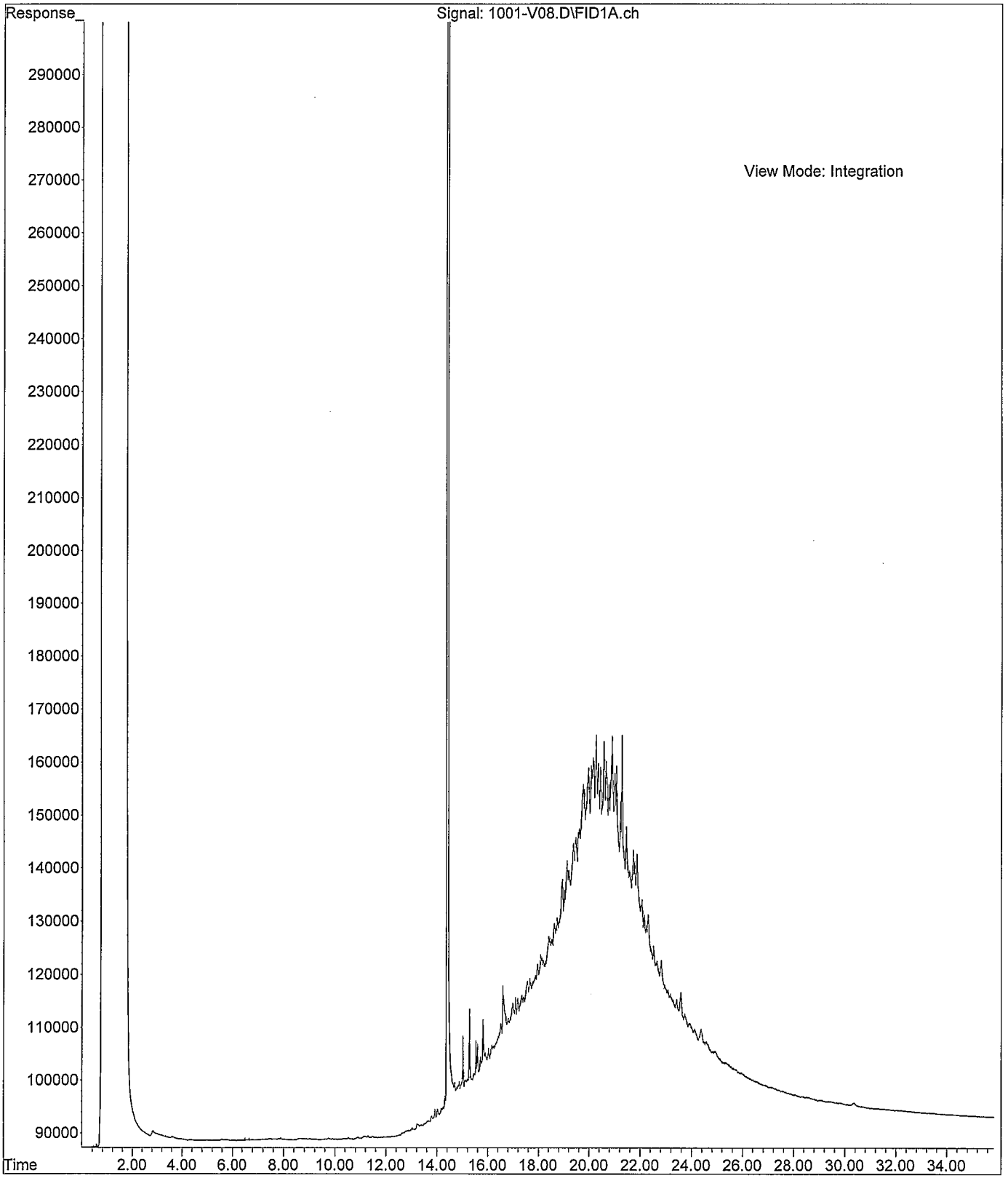
File :X:\DIESELS\VIGO\DATA\V091001.SEC\1001-V81.D
Operator : ZT
Acquired : 2 Oct 09 8:11 a using AcqMethod V090730F.M
Instrument : Vigo
Sample Name: 09-249-06
Misc Info :
Vial Number: 81



File :X:\DIESELS\VIGO\DATA\V091001\1001-V31.D
Operator : ZT
Acquired : 2 Oct 09 8:11 a using AcqMethod V090730F.M
Instrument : Vigo
Sample Name: 09-249-07
Misc Info :
Vial Number: 31



File :X:\DIESELS\VIGO\DATA\V091001\1001-V08.D
Operator : ZT
Acquired : 1 Oct 09 4124 p using AcqMethod V090730F.M
Instrument : Vigo
Sample Name: 09-249-08
Misc Info :
Vial Number: 8



OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

October 12, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024-04-05
Laboratory Reference No. 0910-022

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on October 2, 2009

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: October 12, 2009
Samples Submitted: October 2, 2009
Laboratory Reference: 0910-022
Project: 235-1577-024-04-05

Case Narrative

Samples were collected on September 30, 2009, and received by the laboratory on October 2, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: October 12, 2009
Samples Submitted: October 2, 2009
Laboratory Reference: 0910-022
Project: 235-1577-024-04-05

NWTPH-Dx

Date Extracted: 10-6-09
Date Analyzed: 10-6-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**WB-SD-RF01-0005**	**WB-SD-RF02-0005**
Lab ID:	10-022-01	10-022-02
Diesel Range:	**ND**	**ND**
PQL:	31	32
Identification:	---	---
Lube Oil Range:	**ND**	**ND**
PQL:	62	63
Identification:	---	---
Surrogate Recovery		
o-Terphenyl:	71%	59%
Flags:	Y	Y

Date of Report: October 12, 2009
Samples Submitted: October 2, 2009
Laboratory Reference: 0910-022
Project: 235-1577-024-04-05

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-6-09
Date Analyzed:	10-6-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1006S2
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	71%
Flags:	Y

Date of Report: October 12, 2009
Samples Submitted: October 2, 2009
Laboratory Reference: 0910-022
Project: 235-1577-024-04-05

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 10-6-09
Date Analyzed: 10-6-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	10-028-01	10-028-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	64%	65%
Flags:	Y	Y

Date of Report: October 12, 2009
Samples Submitted: October 2, 2009
Laboratory Reference: 0910-022
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SD-RF01-0005**					
Laboratory ID:	10-022-01					
Naphthalene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.21	EPA 8270	10-5-09	10-6-09	
Phenanthrene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Anthracene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Pyrene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]anthracene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Chrysene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[b]fluoranthene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**ND**	0.0082	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*76*	*19 - 97*				
Phenol-d6	*82*	*22 - 108*				
Nitrobenzene-d5	*83*	*21 - 106*				
2-Fluorobiphenyl	*69*	*29 - 107*				
2,4,6-Tribromophenol	*76*	*44 - 121*				
Terphenyl-d14	*88*	*37 - 120*				

Date of Report: October 12, 2009
Samples Submitted: October 2, 2009
Laboratory Reference: 0910-022
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**WB-SD-RF02-0005**					
Laboratory ID:	10-022-02					
Naphthalene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.21	EPA 8270	10-5-09	10-6-09	
Phenanthrene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Anthracene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Pyrene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]anthracene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Chrysene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[b]fluoranthene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**ND**	0.0083	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*39*	*19 - 97*				
Phenol-d6	*45*	*22 - 108*				
Nitrobenzene-d5	*44*	*21 - 106*				
2-Fluorobiphenyl	*45*	*29 - 107*				
2,4,6-Tribromophenol	*65*	*44 - 121*				
Terphenyl-d14	*81*	*37 - 120*				

Date of Report: October 12, 2009
Samples Submitted: October 2, 2009
Laboratory Reference: 0910-022
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1005S1					
Naphthalene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthylene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Acenaphthene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Fluorene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Pentachlorophenol	**ND**	0.17	EPA 8270	10-5-09	10-5-09	
Phenanthrene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Anthracene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Fluoranthene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Pyrene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Indeno[1,2,3-cd]pyrene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270/SIM	10-5-09	10-7-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*54*	*19 - 97*				
Phenol-d6	*61*	*22 - 108*				
Nitrobenzene-d5	*62*	*21 - 106*				
2-Fluorobiphenyl	*66*	*29 - 107*				
2,4,6-Tribromophenol	*83*	*44 - 121*				
Terphenyl-d14	*87*	*37 - 120*				

Date of Report: October 12, 2009
Samples Submitted: October 2, 2009
Laboratory Reference: 0910-022
Project: 235-1577-024-04-05

PAHs by EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	09-249-07										
	MS	MSD	MS	MSD		MS	MSD				
Phenol	**0.916**	**0.987**	1.33	1.33	ND	69	74	38 - 97	7	30	
2-Chlorophenol	**0.853**	**0.972**	1.33	1.33	ND	64	73	28 - 102	13	38	
1,4-Dichlorobenzene	**0.273**	**0.383**	0.667	0.667	ND	41	57	14 - 84	34	41	
N-Nitroso-di-n-propylamine	**0.457**	**0.478**	0.667	0.667	ND	69	72	25 - 104	4	39	
1,2,4-Trichlorobenzene	**0.370**	**0.425**	0.667	0.667	ND	55	64	23 - 93	14	37	
4-Chloro-3-methylphenol	**1.13**	**1.09**	1.33	1.33	ND	85	82	49 - 113	4	31	
Acenaphthene	**0.479**	**0.461**	0.667	0.667	ND	72	69	37 - 101	4	40	
4-Nitrophenol	**1.22**	**1.13**	1.33	1.33	ND	92	85	30 - 136	8	31	
2,4-Dinitrotoluene	**0.534**	**0.471**	0.667	0.667	ND	80	71	36 - 122	13	32	
Pentachlorophenol	**1.19**	**1.09**	1.33	1.33	ND	89	82	15 - 143	9	34	
Pyrene	**0.697**	**0.572**	0.667	0.667	0.105	89	70	24 - 138	20	39	
Surrogate:											
2-Fluorophenol						*48*	*56*	*19 - 97*			
Phenol-d6						*60*	*65*	*22 - 108*			
Nitrobenzene-d5						*53*	*62*	*21 - 106*			
2-Fluorobiphenyl						*65*	*70*	*29 - 107*			
2,4,6-Tribromophenol						*77*	*82*	*44 - 121*			
Terphenyl-d14						*90*	*77*	*37 - 120*			

Date of Report: October 12, 2009
Samples Submitted: October 2, 2009
Laboratory Reference: 0910-022
Project: 235-1577-024-04-05

% MOISTURE

Date Analyzed: 10-5&6-09

Client ID	Lab ID	% Moisture
WB-SD-RF01-0005	10-022-01	19
WB-SD-RF02-0005	10-022-02	21

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Oct 9 2009
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your 235-1577-024-04-05 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
WB-SD-RF01-0005	Soil	09-A016201	DEM, NUT, CONV, GRAIN SIZE
WB-SD-RF02-0005	Soil	09-A016202	DEM, NUT, CONV, GRAIN SIZE

Your samples were received on Friday, October 2, 2009. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Method Detection Limits (MDL's), as opposed to Practical Quantitation Limits (PQL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

Aaron W. Young
Laboratory Manager

BACT = Bacteriological
CONV = Conventionals
TC=Total Coliforms
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals
APC=Aerobic Plate Count

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

AMTEST LABORATORIES

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: 235-1577-024-04-05

Date Received: 10/02/09
Date Reported: 10/ 9/09

AMTEST Identification Number 09-A016201
Client Identification WB-SD-RF01-0005
Sampling Date 09/30/09, 13:00
All results reported on a dry weight basis.

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	79.8	%		0.01	SM 2540G	MO	10/05/09
Total Volatile Solids	1.22	%		0.01	PSEP p20	MO	10/07/09
Total Sulfides	< 2.5	mg/kg		1.00	PSEP p32	SL	10/08/09

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	0.16	%		0.05	SW 846 9060	SL	10/08/09

Nutrients

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Available Ammonia	4.3	mg/Kg		0.63	Plumb 1981	TS	10/05/09

Grain Size Distribution

PHI	OPENING (mm)	% RETENTION	FRACTION	PERCENT	METHOD	ANALYST	DATE
	4.75	< 0.1 %	GRAVEL	0.10	ASTM D422	MO	10/06/09
- 2	4.00	0.10 %			ASTM D422	MO	10/06/09
-1	2.00	0.30 %	SAND	38.4	ASTM D422	MO	10/06/09
0	1.00	< 0.1 %			ASTM D422	MO	10/06/09
+1	0.50	0.50 %			ASTM D422	MO	10/06/09
+ 2	0.25	14.2 %			ASTM D422	MO	10/06/09
+ 3	0.125	23.4 %			ASTM D422	MO	10/06/09
+ 4	0.063	7.50 %	SILT	60.1	ASTM D422	MO	10/06/09
+ 5	0.032	50.4 %			ASTM D422	MO	10/06/09
+ 6	0.016	0.90 %			ASTM D422	MO	10/06/09
+ 7	0.008	0.50 %			ASTM D422	MO	10/06/09
+ 8	0.004	0.80 %			ASTM D422	MO	10/06/09
+ 9	0.002	0.10 %	CLAY	1.40	ASTM D422	MO	10/06/09
+ 10	0.001	< 0.1 %			ASTM D422	MO	10/06/09
> + 10	< 0.001	1.30 %			ASTM D422	MO	10/06/09

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

AMTEST LABORATORIES

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: 235-1577-024-04-05

Date Received: 10/02/09
Date Reported: 10/ 9/09

AMTEST Identification Number 09-A016202
Client Identification WB-SD-RF02-0005
Sampling Date 09/30/09, 13:00
All results reported on a dry weight basis.

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	76.6	%		0.01	SM 2540G	MO	10/05/09
Total Volatile Solids	1.30	%		0.01	PSEP p20	MO	10/07/09
Total Sulfides	< 2.5	mg/kg		1.00	PSEP p32	SL	10/08/09

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	0.30	%		0.05	SW 846 9060	SL	10/08/09

Nutrients

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Available Ammonia	11.	mg/Kg		0.65	Plumb 1981	TS	10/05/09

Grain Size Distribution

PHI	OPENING (mm)	% RETENTION	FRACTION	PERCENT	METHOD	ANALYST	DATE
	4.75	< 0.1 %	GRAVEL	***	ASTM D422	MO	10/06/09
- 2	4.00	< 0.1 %			ASTM D422	MO	10/06/09
-1	2.00	< 0.1 %	SAND	19.1	ASTM D422	MO	10/06/09
0	1.00	0.10 %			ASTM D422	MO	10/06/09
+1	0.50	1.60 %			ASTM D422	MO	10/06/09
+ 2	0.25	3.70 %			ASTM D422	MO	10/06/09
+ 3	0.125	13.7 %			ASTM D422	MO	10/06/09
+ 4	0.063	21.3 %	SILT	78.4	ASTM D422	MO	10/06/09
+ 5	0.032	53.6 %			ASTM D422	MO	10/06/09
+ 6	0.016	2.30 %			ASTM D422	MO	10/06/09
+ 7	0.008	0.90 %			ASTM D422	MO	10/06/09
+ 8	0.004	0.30 %			ASTM D422	MO	10/06/09
+ 9	0.002	0.50 %	CLAY	2.60	ASTM D422	MO	10/06/09
+ 10	0.001	0.30 %			ASTM D422	MO	10/06/09
> + 10	< 0.001	1.80 %			ASTM D422	MO	10/06/09

AMTEST LABORATORIES

Aaron W. Young
Laboratory Manager

AMTEST LABORATORIES

QC Summary for sample numbers: 09-A016201 to 09-A016202

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUPLICATE VALUE	RPD
09-A016202	Total Organic Carbon	%	0.30	0.30	0.00
09-A016202	Total Organic Carbon	%	0.30	0.35	15.
09-A015904	Available Ammonia	mg/Kg	14.	16.	13.
09-A015904	Available Ammonia	mg/Kg	14.	18.	25.
09-A016201	Available Ammonia	mg/Kg	3.4	3.4	0.00
09-A016201	Total Solids	%	79.8	80.0	0.25
09-A016201	Total Volatile Solids	%	1.22	1.22	0.00
09-A016202	Total Sulfides	mg/kg	< 2.5	< 2.5	
09-A016201		%	< 0.1	< 0.1	
09-A016201		%	< 0.1	0.10	
09-A016201	- 2	%	0.10	< 0.1	
09-A016201	- 2	%	0.10	< 0.1	
09-A016201	-1	%	0.30	< 0.1	
09-A016201	-1	%	0.30	0.30	0.00
09-A016201	0	%	< 0.1	< 0.1	
09-A016201	0	%	< 0.1	0.10	
09-A016201	+1	%	0.50	0.50	0.00
09-A016201	+1	%	0.50	0.80	46.
09-A016201	+ 2	%	14.2	10.4	31.
09-A016201	+ 2	%	14.2	15.9	11.
09-A016201	+ 3	%	23.4	29.6	23.
09-A016201	+ 3	%	23.4	25.8	9.8
09-A016201	+ 4	%	7.50	4.50	50.
09-A016201	+ 4	%	7.50	3.30	78.
09-A016201	+ 5	%	50.4	51.5	2.2
09-A016201	+ 5	%	50.4	50.2	0.40
09-A016201	+ 6	%	0.90	0.90	0.00
09-A016201	+ 6	%	0.90	0.40	77.
09-A016201	+ 7	%	0.50	0.50	0.00
09-A016201	+ 7	%	0.50	1.00	67.
09-A016201	+ 8	%	0.80	0.80	0.00
09-A016201	+ 8	%	0.80	0.80	0.00
09-A016201	+ 9	%	0.10	0.10	0.00
09-A016201	+ 9	%	0.10	0.10	0.00
09-A016201	+ 10	%	< 0.1	< 0.1	
09-A016201	+ 10	%	< 0.1	< 0.1	
09-A016201	> + 10	%	1.30	1.30	0.00
09-A016201	> + 10	%	1.30	1.30	0.00

AMTEST LABORATORIES

QC Summary for sample numbers: 09-A016201 to 09-A016202...

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
09-A015911	Available Ammonia	mg/Kg	< 0.5	24.	25.	96.00 %
09-A016202	Available Ammonia	mg/Kg	8.8	35.	25.	104.80 %
09-A016201	Total Sulfides	mg/kg	< 2.5	11.4	15.0	76.00 %

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Total Organic Carbon	%	1.1	0.96	87.3 %
Available Ammonia	mg/Kg	2.5	2.6	104. %
Available Ammonia	mg/Kg	25.	25.	100. %
Total Sulfides	mg/kg	100.	82.8	82.8 %

BLANKS

ANALYTE	UNITS	RESULT
Total Organic Carbon	%	< 0.05
Available Ammonia	mg/Kg	< 0.5
Available Ammonia	mg/Kg	< 0.5
Total Sulfides	mg/kg	< 2.5

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

RUSH

Laboratory Reference #: 10-022

Subcontract Laboratory: AMTEST

Contact Person:

Address:

Phone Number:

Date/Time:

Turnaround Request:

1 Day 2 Day 3 Day

Standard

Other: 5 day

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 235-1577-024-04-05

Project Name:

(27)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis (Grain Size, T.V.S., TOC, Total Solids, Total Sulfides, Ammonia)
10201	WB-SD-RF01-0005	9/30/09	1300	S	2	↓
10202	WB-SD-RF02-0005	↓	1400	↓	↓	↓

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by:		OnSite Env	10/2/09	1445	Include Hydrometer
Received by:		Amtest	10/2/09	1445	
Relinquished by:					
Received by:					
Relinquished by:					
Received by:					

EIM

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix
Project Number: 235-1577-024-04-05
Project Name: West Bay Park
Project Manager: David Dinkuhn
Sampled by: D. Dinkuhn / C. Eaton

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Day ☑ ~~3 Day~~ (3-6 Day)
☐ Standard (7 working days)
(TPH analysis 5 working days)
☐ _____ (other)

Laboratory Number: 10-022

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx (1)	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM (2)	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	~~HEM by 1664~~ %Moisture	Pentachlorophenol (PCP) (4)	TOC	Total Solids	Total Sulfides	Ammonia	Grain Size (3)	% Moisture Total Volatile Solids (tvs)
1	WB-SD-RF01-0005	9/30	1300	SD	4			X				X						X	X	X	X	X	X	X	X
2	WB-SD-RF02-0005	9/30	1400	SD	4			X				X						↓	X	X	X	X	X	X	X

	Signature	Company	Date	Time
Relinquished by	C.M. Eaton	Bio-Marine	9/30	1700
Received by	B. Ng	PMX	9/30	1700
Relinquished by	B. Ng	PMX	10/1	0830
Received by	UPS	UPS	10/1	0830
Relinquished by				
Received by		OSE	10/2/08	1000
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
EIM EDDs
(1) PLS report PQLs so that sum of diesel & oil range PQLs ≤ 100 mg/kg
(2) Sediment management standards PAHs, See Attached Table I.
(3) Include Hydrometer
(4) PCP PQL ≤ 0.36 mg/kg

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

October 13, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0910-035

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on October 2, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Pace Analytical™

www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Report Prepared for:

David Baumeister
Onsite Environmental, Inc.
14648 NE 95th Street
Redmond WA 98052

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

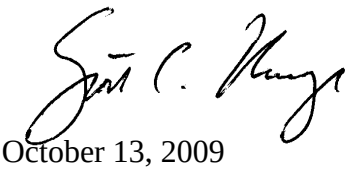
Pace Project #: 10114088
Sample Receipt Date: 10/06/2009
Client Project #: 235-1577-024
Client Sub PO #: N/A
State Cert #: C218

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed by:



October 13, 2009

Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

Report Prepared Date:
October 12, 2009

Report of Laboratory Analysis

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on two samples submitted by a representative of Onsite Environmental, Inc. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. Reporting limits were based on signal-to-noise measurements.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 44-95%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, interfering substances impacted the determinations of PCDD or PCDF congeners. The affected values were flagged "I" where incorrect isotope ratios were obtained, or "P" where polychlorinated diphenyl ethers were present.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected congeners. These were below the calibration range of the method. Sample levels similar to the corresponding blank levels were flagged "B" on the results tables and may be, at least partially, attributed to the background. It should be noted that levels less than ten times the background are not generally considered to be statistically different from the background.

A laboratory spike sample was also prepared with the sample batch using clean sand that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 86-106%. These results indicate a high degree of accuracy for these determinations. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

Appendix A

Sample Management

Report No....10114088_8290

10114088

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 10-035

Subcontract Laboratory: Pace Analytical Service, Inc.

Contact Person: Scott Unze / Dioxin Manger

Address: 1700 Elm St. Ste. 200 Minneapolis, MN 55414

Phone Number: (612) 607-6383

Date/Time: _____

Turnaround Request:

1 Day 2 Day 3 Day

Standard

Other: 5 day

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 235-1577-024

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis
	WB-SO-DSW08-0010	10/2	0755	S	2	DIOXINS/FURANS 001
	WB-SO-DSW09-0005	↓	0825	↓	↓	↓ 002

151

	Signature	Company	Date	Time
Relinquished by:		OSE	10/5/09	1530
Received by:		Pace	10/6/09	0919
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Comments/Special Instructions

T=0.4

EIM

PLEASE RETURN COOLER & BLUE ICE

Pace Analytical

Sample Condition Upon Receipt

Client Name: Onsite environmental **Project #** 10114088

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 1Z684E1W1393533007

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____ Temp Blank: Yes ✓ No _____

Thermometer Used 80344042 or 179425 **Type of Ice:** Wet (Blue) None ☐ Samples on ice, cooling process has begun

Cooler Temperature 0.4° **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and initials of person examining contents: 10/6/09

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☐Yes ☑No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes ☐No ☑N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	Samp #
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: P **Date:** 10/06/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR.

F-L213Rev.00, 05Aug2009

Pace Analytical Services, Inc.
1700 Elm Street SE, Suite 200, Minneapolis, MN 55414

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

REPORT OF LABORATORY ANALYSIS

Appendix B

Sample Analysis Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSW08-0010		
Lab Sample ID	10114088001		
Filename	P91010B_15		
Injected By	BAL		
Total Amount Extracted	17.0 g	Matrix	Solid
% Moisture	10.8	Dilution	NA
Dry Weight Extracted	15.1 g	Collected	10/02/2009 07:55
ICAL ID	P91006	Received	10/06/2009 09:19
CCal Filename(s)	P91010B_03 & P91010B_19	Extracted	10/06/2009 17:30
Method Blank ID	BLANK-21732	Analyzed	10/11/2009 03:48

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.39	-----	0.096	BJ	2,3,7,8-TCDF-13C	2.00	68
Total TCDF	4.60	-----	0.096		2,3,7,8-TCDD-13C	2.00	84
					1,2,3,7,8-PeCDF-13C	2.00	58
2,3,7,8-TCDD	-----	0.23	0.096	I	2,3,4,7,8-PeCDF-13C	2.00	55
Total TCDD	16.00	-----	0.096		1,2,3,7,8-PeCDD-13C	2.00	68
					1,2,3,4,7,8-HxCDF-13C	2.00	78
1,2,3,7,8-PeCDF	-----	0.25	0.120	I	1,2,3,6,7,8-HxCDF-13C	2.00	63
2,3,4,7,8-PeCDF	0.53	-----	0.200	J	2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	9.10	-----	0.160		1,2,3,7,8,9-HxCDF-13C	2.00	67
					1,2,3,4,7,8-HxCDD-13C	2.00	95
1,2,3,7,8-PeCDD	1.00	-----	0.120	J	1,2,3,6,7,8-HxCDD-13C	2.00	83
Total PeCDD	15.00	-----	0.120		1,2,3,4,6,7,8-HpCDF-13C	2.00	79
					1,2,3,4,7,8,9-HpCDF-13C	2.00	65
1,2,3,4,7,8-HxCDF	1.70	-----	0.100	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	85
1,2,3,6,7,8-HxCDF	-----	1.40	0.250	P	OCDD-13C	4.00	53 Y
2,3,4,6,7,8-HxCDF	1.50	-----	0.180	J			
1,2,3,7,8,9-HxCDF	0.58	-----	0.180	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	44.00	-----	0.180		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	2.20	-----	0.240	J	2,3,7,8-TCDD-37Cl4	0.20	84
1,2,3,6,7,8-HxCDD	6.20	-----	0.220				
1,2,3,7,8,9-HxCDD	3.00	-----	0.220	J			
Total HxCDD	42.00	-----	0.230				
1,2,3,4,6,7,8-HpCDF	54.00	-----	0.310		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	3.30	-----	0.510		Equivalence: 5.1 ng/Kg		
Total HpCDF	160.00	-----	0.410		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	150.00	-----	0.510				
Total HpCDD	260.00	-----	0.510				
OCDF	110.00	-----	0.330				
OCDD	920.00	-----	0.500				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
B = Less than 10x higher than method blank level
P = PCDE Interference
I = Interference present
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Onsite Environmental, Inc.

Client's Sample ID	WB-SO-DSW09-0005		
Lab Sample ID	10114088002		
Filename	P91010B_16		
Injected By	BAL		
Total Amount Extracted	16.8 g	Matrix	Solid
% Moisture	17.1	Dilution	NA
Dry Weight Extracted	13.9 g	Collected	10/02/2009 08:25
ICAL ID	P91006	Received	10/06/2009 09:19
CCal Filename(s)	P91010B_03 & P91010B_19	Extracted	10/06/2009 17:30
Method Blank ID	BLANK-21732	Analyzed	10/11/2009 04:36

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	0.19	0.13	I	2,3,7,8-TCDF-13C	2.00	63
Total TCDF	0.68	-----	0.13	BJ	2,3,7,8-TCDD-13C	2.00	76
					1,2,3,7,8-PeCDF-13C	2.00	57
2,3,7,8-TCDD	ND	-----	0.19		2,3,4,7,8-PeCDF-13C	2.00	55
Total TCDD	2.60	-----	0.19		1,2,3,7,8-PeCDD-13C	2.00	67
					1,2,3,4,7,8-HxCDF-13C	2.00	78
1,2,3,7,8-PeCDF	ND	-----	0.15		1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	0.15	-----	0.12	BJ	2,3,4,6,7,8-HxCDF-13C	2.00	70
Total PeCDF	0.40	-----	0.14	BJ	1,2,3,7,8,9-HxCDF-13C	2.00	63
					1,2,3,4,7,8-HxCDD-13C	2.00	90
1,2,3,7,8-PeCDD	-----	0.16	0.14	I	1,2,3,6,7,8-HxCDD-13C	2.00	81
Total PeCDD	3.80	-----	0.14		1,2,3,4,6,7,8-HpCDF-13C	2.00	73
					1,2,3,4,7,8,9-HpCDF-13C	2.00	58
1,2,3,4,7,8-HxCDF	-----	0.23	0.19	I	1,2,3,4,6,7,8-HpCDD-13C	2.00	77
1,2,3,6,7,8-HxCDF	0.22	-----	0.15	J	OCDD-13C	4.00	44 Y
2,3,4,6,7,8-HxCDF	ND	-----	0.15				
1,2,3,7,8,9-HxCDF	ND	-----	0.20		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	4.10	-----	0.17		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.41	-----	0.29	J	2,3,7,8-TCDD-37Cl4	0.20	79
1,2,3,6,7,8-HxCDD	0.89	-----	0.26	J			
1,2,3,7,8,9-HxCDD	0.64	-----	0.33	J			
Total HxCDD	7.60	-----	0.29				
1,2,3,4,6,7,8-HpCDF	5.70	-----	0.40		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.37		Equivalence: 0.75 ng/Kg		
Total HpCDF	12.00	-----	0.38		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	18.00	-----	0.68				
Total HpCDD	40.00	-----	0.68				
OCDF	11.00	-----	0.62				
OCDD	140.00	-----	1.10				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
B = Less than 10x higher than method blank level
I = Interference present
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-21732	Matrix	Solid
Filename	P91009A_08	Dilution	NA
Total Amount Extracted	10.5 g	Extracted	10/06/2009 17:30
ICAL ID	P91006	Analyzed	10/09/2009 20:12
CCal Filename(s)	P91009A_05 & P91009A_21	Injected By	BAL

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.048	-----	0.042	J	2,3,7,8-TCDF-13C	2.00	70
Total TCDF	0.110	-----	0.042	J	2,3,7,8-TCDD-13C	2.00	85
					1,2,3,7,8-PeCDF-13C	2.00	73
2,3,7,8-TCDD	ND	-----	0.061		2,3,4,7,8-PeCDF-13C	2.00	78
Total TCDD	ND	-----	0.061		1,2,3,7,8-PeCDD-13C	2.00	90
					1,2,3,4,7,8-HxCDF-13C	2.00	75
1,2,3,7,8-PeCDF	0.052	-----	0.031	J	1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	0.039	-----	0.021	J	2,3,4,6,7,8-HxCDF-13C	2.00	78
Total PeCDF	0.091	-----	0.026	J	1,2,3,7,8,9-HxCDF-13C	2.00	76
					1,2,3,4,7,8-HxCDD-13C	2.00	88
1,2,3,7,8-PeCDD	ND	-----	0.042		1,2,3,6,7,8-HxCDD-13C	2.00	86
Total PeCDD	ND	-----	0.042		1,2,3,4,6,7,8-HpCDF-13C	2.00	84
					1,2,3,4,7,8,9-HpCDF-13C	2.00	80
1,2,3,4,7,8-HxCDF	-----	0.033	0.025	I	1,2,3,4,6,7,8-HpCDD-13C	2.00	83
1,2,3,6,7,8-HxCDF	ND	-----	0.025		OCDD-13C	4.00	95 Y
2,3,4,6,7,8-HxCDF	-----	0.026	0.023	I			
1,2,3,7,8,9-HxCDF	ND	-----	0.032		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.029	-----	0.026	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.100		2,3,7,8-TCDD-37Cl4	0.20	83
1,2,3,6,7,8-HxCDD	ND	-----	0.094				
1,2,3,7,8,9-HxCDD	ND	-----	0.090				
Total HxCDD	ND	-----	0.095				
1,2,3,4,6,7,8-HpCDF	-----	0.230	0.038	P	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.049		Equivalence: 0.095 ng/Kg		
Total HpCDF	ND	-----	0.044		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	0.390	-----	0.083	J			
Total HpCDD	0.750	-----	0.083	J			
OCDF	0.520	-----	0.100	J			
OCDD	2.700	-----	0.062	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
P = PCDE Interference
I = Interference present
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-21733		
Filename	P91009A_06	Matrix	Solid
Total Amount Extracted	10.0 g	Dilution	NA
ICAL ID	P91006	Extracted	10/06/2009 17:30
CCal Filename(s)	P91009A_05 & P91009A_21	Analyzed	10/09/2009 18:31
Method Blank ID	BLANK-21732	Injected By	BAL

Native Isomers	**Qs** (ng)	**Qm** (ng)	% Rec.	**Internal Standards**	**ng's Added**	**Percent Recovery**	
2,3,7,8-TCDF	0.20	0.18	91	2,3,7,8-TCDF-13C	2.00	67	
Total TCDF				2,3,7,8-TCDD-13C	2.00	85	
				1,2,3,7,8-PeCDF-13C	2.00	70	
2,3,7,8-TCDD	0.20	0.19	94	2,3,4,7,8-PeCDF-13C	2.00	74	
Total TCDD				1,2,3,7,8-PeCDD-13C	2.00	88	
				1,2,3,4,7,8-HxCDF-13C	2.00	68	
1,2,3,7,8-PeCDF	1.00	0.92	92	1,2,3,6,7,8-HxCDF-13C	2.00	76	
2,3,4,7,8-PeCDF	1.00	0.89	89	2,3,4,6,7,8-HxCDF-13C	2.00	76	
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.00	75	
				1,2,3,4,7,8-HxCDD-13C	2.00	81	
1,2,3,7,8-PeCDD	1.00	0.86	86	1,2,3,6,7,8-HxCDD-13C	2.00	89	
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.00	82	
				1,2,3,4,7,8,9-HpCDF-13C	2.00	78	
1,2,3,4,7,8-HxCDF	1.00	0.92	92	1,2,3,4,6,7,8-HpCDD-13C	2.00	82	
1,2,3,6,7,8-HxCDF	1.00	0.90	90	OCDD-13C	4.00	92	Y
2,3,4,6,7,8-HxCDF	1.00	0.91	91				
1,2,3,7,8,9-HxCDF	1.00	0.88	88	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	1.00	0.94	94	2,3,7,8-TCDD-37Cl4	0.20	83	
1,2,3,6,7,8-HxCDD	1.00	0.95	95				
1,2,3,7,8,9-HxCDD	1.00	0.98	98				
Total HxCDD							
1,2,3,4,6,7,8-HpCDF	1.00	1.03	103				
1,2,3,4,7,8,9-HpCDF	1.00	0.99	99				
Total HpCDF							
1,2,3,4,6,7,8-HpCDD	1.00	1.01	101				
Total HpCDD							
OCDF	2.00	2.01	100				
OCDD	2.00	2.12	106				

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Parametrix
Project Number: 235-1577-024
Project Name: West Bay
Project Manager: D. Dinkuhn
Sampled by: B. Hardy

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☐ Standard (7 working days)
(TPH analysis 5 working days)
☒ 5 Day (other)

Laboratory Number: 10-035

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	Dioxins/Furans						% Moisture
1	WB-SO-DSW08-0010	10/2	0755	SO	2														X						X
2	WB-SO-DSW09-0005	10/2	0825	SO	2														X						X

	Signature	Company	Date	Time
Relinquished by	B. Hardy	Parametrix	10/2	1150
Received by	[illegible]	ALPHA Spectra	10/2	1130
Relinquished by	[illegible]	Spectra	10/2	150
Received by	[illegible]	OnSite Env.	10/2/09	1350
Relinquished by				
Received by				

Comments/Special Instructions:

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

November 9, 2009

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 235-1577-024
Laboratory Reference No. 0911-009

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on November 3, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: November 9, 2009
Samples Submitted: November 3, 2009
Laboratory Reference: 0911-009
Project: 235-1577-024

Case Narrative

Samples were collected on October 27, 2009, and received by the laboratory on November 3, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: November 9, 2009
Samples Submitted: November 3, 2009
Laboratory Reference: 0911-009
Project: 235-1577-024

NWTPH-Dx

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Date Prepared	Date Analyzed	Flags
Lab ID:	11-009-01				
Client ID:	**WB-SD-SD26/27-0005**				
Diesel Range	**ND**	63	11-4-09	11-5-09	Y,U1
Lube Oil	**320**	41	11-4-09	11-5-09	Y
Surrogate: o-terphenyl	79%	50-150			

Date of Report: November 9, 2009
Samples Submitted: November 3, 2009
Laboratory Reference: 0911-009
Project: 235-1577-024

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-4-09
Date Analyzed:	11-4-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1104S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	77%
Flags:	Y

Date of Report: November 9, 2009
Samples Submitted: November 3, 2009
Laboratory Reference: 0911-009
Project: 235-1577-024

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	11-4-09
Date Analyzed:	11-5-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	11-012-01	11-012-01 DUP
Diesel Range:	**45.7**	**34.7**
PQL:	25	25
RPD:	27	
Surrogate Recovery		
o-Terphenyl:	86%	90%
Flags:	Y	Y

Date of Report: November 9, 2009
Samples Submitted: November 3, 2009
Laboratory Reference: 0911-009
Project: 235-1577-024

% MOISTURE

Date Analyzed: 11-4-09

Client ID	Lab ID	% Moisture
WB-SD-SD26/27-0005	11-009-01	39

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in the diesel range are impacting the lube oil range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.

Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: PARAMETRIX

Project Number: 235-1577-024

Project Name: WEST BAY PARK

Project Manager: D. DINKUHN

Sampled by: SAME

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☑ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 11-009

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	% Moisture
1	WB-SD-SD26/27-0105	10/27/09	1500	SO	1			X											X

	Signature	Company	Date	Time
Relinquished by		PMX	11/2/09	0900
Received by		CH2MHILL	11/3/09	940
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

Pls. Report Dx so that PQLs For Diesel & Lube Oil Add Up to ≤ 100 mg/kg

EIM

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy, Yellow - Report Copy, Pink - Client Copy

APPENDIX C

Disposal Summary

Contaminated Soil			Concrete Haul		
Daily Tonnage	Date delivered	disposal site			
193.1	9/8/2009	Weyerhaeuser	26.64	9/25/2009	Concrete Recyclers
301.1	9/9/2009	Weyerhaeuser	28	9/25/2009	Concrete Recyclers
194.4	9/10/2009	Weyerhaeuser	26.1	9/25/2009	Concrete Recyclers
184.3	9/11/2009	Weyerhaeuser	24.52	9/25/2009	Concrete Recyclers
259.2	9/14/2009	Weyerhaeuser	26.81	9/25/2009	Concrete Recyclers
348.7	9/15/2009	Weyerhaeuser	26.3	9/25/2009	Concrete Recyclers
328.0	9/16/2009	Weyerhaeuser	26.76	9/25/2009	Concrete Recyclers
499.0	9/17/2009	Weyerhaeuser	25.19	9/25/2009	Concrete Recyclers
308.0	9/18/2009	Weyerhaeuser	29.19	9/25/2009	Concrete Recyclers
208.4	9/19/2009	Weyerhaeuser direct haul	25.54	9/28/2009	Concrete Recyclers
364.4	9/21/2009	Weyerhaeuser	24.97	9/28/2009	Concrete Recyclers
488.7	9/22/2009	Weyerhaeuser	23.28	9/28/2009	Concrete Recyclers
78.4	9/23/2009	Weyerhaeuser	30.19	9/28/2009	Concrete Recyclers
178.3	10/5/2009	Weyerhaeuser			
440.3	10/6/2009	Weyerhaeuser			
395.3	10/7/2009	Weyerhaeuser			
344.0	10/8/2009	Weyerhaeuser			
368.1	10/9/2009	Weyerhaeuser			
178.5	10/12/2009	Weyerhaeuser			
31.7	10/13/2009	Weyerhaeuser			
			343.49		
					6035.39
5,691.9					

APPENDIX D

Sediment Field Logs and Reference Sediment Map

PARAMETRIX

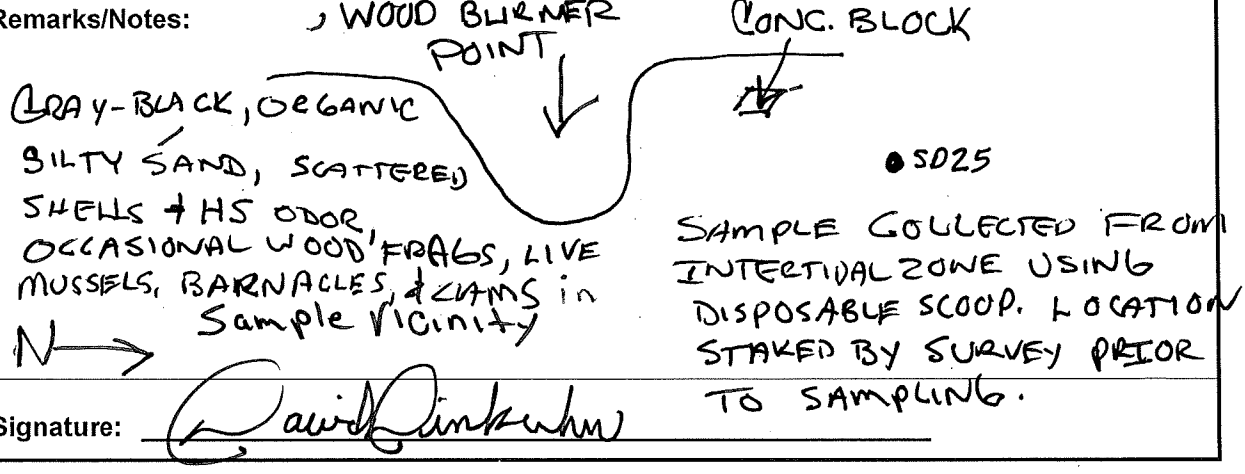
Form 02-EN-98/Rev. 10/02

FIELD PARAMETERS
SOIL SAMPLING

Sample #: SD25

Project Number:	235-1577-024
Project Name:	WEST BAY PARK
Project Address:	900 W. BAY DRIVE
Client Name:	OLYMPIA PARKS
Sample Location:	SEE SKETCH
Date:	9/28/09
Sampled By:	D. DINKUHN
Depth of Sample (feet):	0-4"
Date/Time Sampled:	9/28/09 0815
Air temperature:	50°F
Weather Conditions:	SUN
PID Measurements (ppm):	NA
Sample Number:	WB-SD-SD25-0005
Sampled By:	D. DINKUHN
Laboratory:	ON SITE / NEWFIELDS
Chain-of-Custody (yes/no):	YES
Date Sent to Lab:	9/29/09
Shipment Method:	UPS

Remarks/Notes:



SAMPLE COLLECTED FROM INTERTIDAL ZONE USING DISPOSABLE SCOOP. LOCATION STAKED BY SURVEY PRIOR TO SAMPLING.

Signature: David Dinkuhn

PARAMETRIX

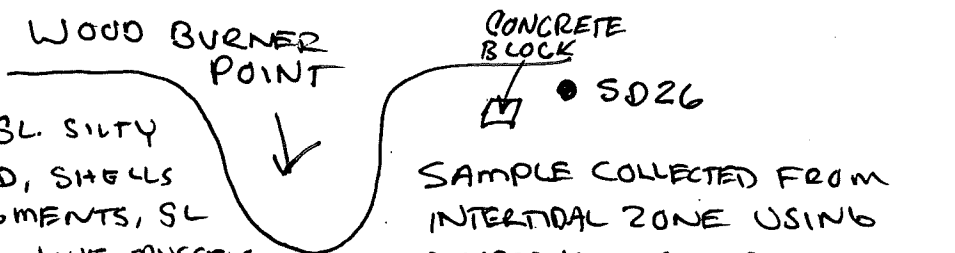
Form 02-EN-98/Rev. 10/02

FIELD PARAMETERS
SOIL SAMPLING

Sample #: SD26

Project Number:	235-1577-024
Project Name:	WEST BAY PARK
Project Address:	900 WEST BAY DRIVE
Client Name:	OLYMPIA PARKS
Sample Location:	SEE SKETCH
Date:	9/28/09
Sampled By:	D. DINKUHN
Depth of Sample (feet):	0-4"
Date/Time Sampled:	9/28/09 0945
Air temperature:	50°F
Weather Conditions:	SUN
PID Measurements (ppm):	NA
Sample Number:	WB-SD-SD26-0005
Sampled By:	D. DINKUHN
Laboratory:	ON SITE / NEWFIELDS
Chain-of-Custody (yes/no):	YES
Date Sent to Lab:	9/29/09
Shipment Method:	UPS

Remarks/Notes:



GRAY-BLACK, SL. SILTY GRAVELLY SAND, SHELLS AND WOOD FRAGMENTS, SL ORGANIC ODOR, LIVE MUSSELS, BARNACLES, & CLAMS IN SAMPLE VICINITY

SAMPLE COLLECTED FROM INTERTIDAL ZONE USING DISPOSABLE SCOOP. LOCATION STAKED BY SURVEY PRIOR TO SAMPLING.

Signature: David Dinkuhn

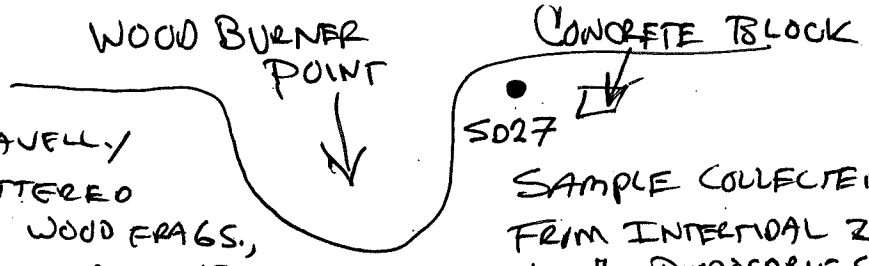
FIELD PARAMETERS
SOIL SAMPLING

Sample #: SD27

Project Number:	235-1577-024
Project Name:	WEST BAY PARK
Project Address:	900 WEST BAY DRIVE
Client Name:	OLYMPIA PARKS
Sample Location:	SEE SKETCH
Date:	9/28/09
Sampled By:	D. DINKUHN
Depth of Sample (feet):	0-4"
Date/Time Sampled:	9/28/09 1000
Air temperature:	50 °F
Weather Conditions:	SUN
PID Measurements (ppm):	NA
Sample Number:	WB-SD-SD27-0005
Sampled By:	D. DINKUHN
Laboratory:	ON SITE / NEWFIELDS
Chain-of-Custody (yes/no):	YES
Date Sent to Lab:	9/29/09
Shipment Method:	UPS

Remarks/Notes:

GRAY-BLACK, SL SILTY, GRAVELLY SAND, SCATTERED SHELLS AND WOOD FRAGS., SL. ORGANIC ODOR, LIVE MUSSELS, BARNACLES, & CLAMS in sample vicinity



SAMPLE COLLECTED FROM INTERTIDAL ZONE USING DISPOSABLE SCOOP. LOCATION STAKED BY SURVEY PRIOR TO SAMPLING.

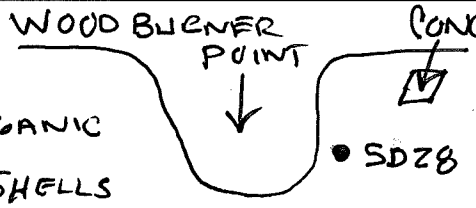
Signature: David Dinkuhn

FIELD PARAMETERS
SOIL SAMPLING

Sample #: SD 28

Project Number:	235-1577-024
Project Name:	WEST BAY PARK
Project Address:	900 WEST BAY DRIVE
Client Name:	OLYMPIA PARKS
Sample Location:	SEE SKETCH
Date:	9/29/09
Sampled By:	D. DINKUHN
Depth of Sample (feet):	0-4"
Date/Time Sampled:	9/28/09 0830
Air temperature:	50 °F
Weather Conditions:	SUN
PID Measurements (ppm):	NA
Sample Number:	WB-SD-SD28-0005
Sampled By:	D. DINKUHN
Laboratory:	ON SITE / NEWFIELDS
Chain-of-Custody (yes/no):	YES
Date Sent to Lab:	9/29/09
Shipment Method:	UPS

Remarks/Notes:



GRAY-BLACK, ORGANIC SILTY SAND, SHELLS & OCCASIONAL WOOD FRAGMENTS, LIVE MUSSELS, BARNACLES, & CLAMS, SL. ORGANIC ODOR. (in sample vicinity

SAMPLE COLLECTED FROM INTERTIDAL ZONE USING DISPOSABLE SCOOP. LOCATION STAKED BY SURVEY PRIOR TO SAMPLING.

Signature: David Dinkuhn

PARAMETRIX

Form 02-EN-98/Rev. 10/02

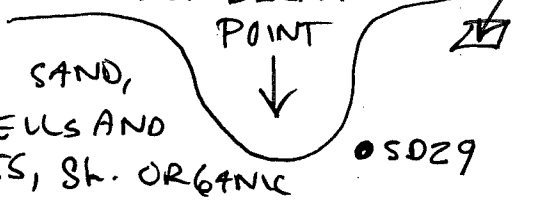
FIELD PARAMETERS
SOIL SAMPLING

Sample #: SD29

Project Number:	235-1577-024
Project Name:	WEST BAY PARK
Project Address:	900 WEST BAY DRIVE
Client Name:	OLYMPIA PARKS
Sample Location:	SEE SKETCH
Date:	9/28/09
Sampled By:	D. DINKUHN
Depth of Sample (feet):	0-4"
Date/Time Sampled:	9/28/09 0845
Air temperature:	50°F
Weather Conditions:	SUN
PID Measurements (ppm):	NA
Sample Number:	WB-SD-SD29-0005
Sampled By:	D. DINKUHN
Laboratory:	ONSITE / NEWFIELDS
Chain-of-Custody (yes/no):	YES
Date Sent to Lab:	9/29/09
Shipment Method:	HPS

Remarks/Notes:

GRAY-BLACK, SILTY, GRAVELLY SAND, SCATTERED SHELLS AND WOOD FRAGMENTS, SL. ORGANIC ODOR, LIVE MUSSELS, BARNACLES, AND CLAMS in sample vicinity



SAMPLE COLLECTED FROM INTERTIDAL ZONE USING DISPOSABLE SCOOP. LOCATION STAKED BY SURVEY PRIOR TO SAMPLING.

Signature: David Winkuhn

PARAMETRIX

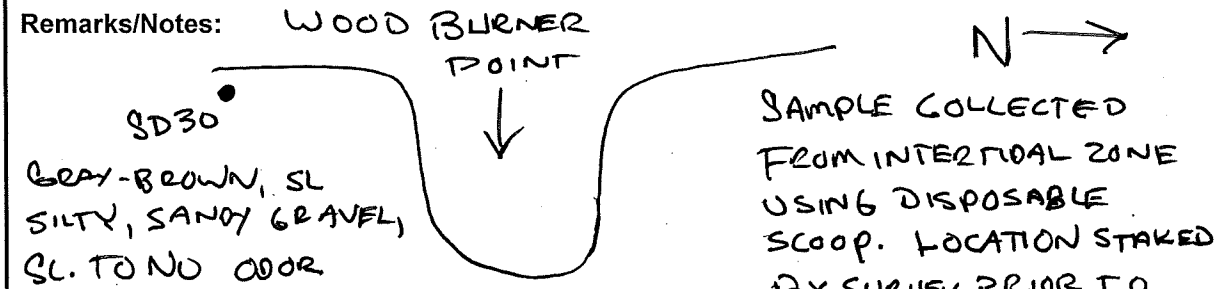
Form 02-EN-98/Rev. 10/02

FIELD PARAMETERS
SOIL SAMPLING

Sample #: SD30

Project Number:	235-1577-024
Project Name:	WEST BAY PARK
Project Address:	900 WEST BAY DRIVE
Client Name:	OLYMPIA PARKS
Sample Location:	SEE SKETCH
Date:	9/28/09
Sampled By:	D. DINKUHN
Depth of Sample (feet):	0"-4"
Date/Time Sampled:	9/28/09 0900
Air temperature:	50°F
Weather Conditions:	SUN
PID Measurements (ppm):	NA
Sample Number:	WB-SD-SD30-0005
Sampled By:	D. DINKUHN
Laboratory:	ON SITE/NEWFIELDS
Chain-of-Custody (yes/no):	YES
Date Sent to Lab:	9/29/09
Shipment Method:	HPS

Remarks/Notes:



Signature: David Dinkuhn

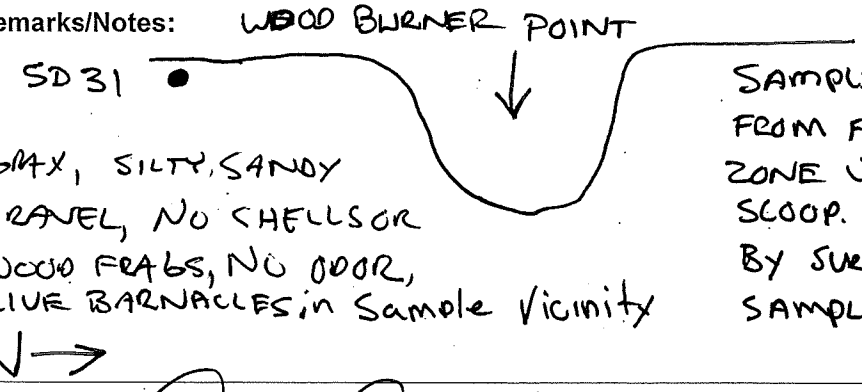
DUPLICATE COLLECTED 0915
WB-SD-SD30-1005

FIELD PARAMETERS
SOIL SAMPLING

Sample #: SD31

Project Number:	235-1577-024
Project Name:	WEST BAY PARK
Project Address:	900 WEST BAY DRIVE
Client Name:	OLYMPIA PARKS
Sample Location:	SEE SKETCH
Date:	9/28/09
Sampled By:	D. DINKUHN
Depth of Sample (feet):	0-4"
Date/Time Sampled:	9/28/09 0930
Air temperature:	50°F
Weather Conditions:	SUN
PID Measurements (ppm):	NA
Sample Number:	WB-SD-SD31-0005
Sampled By:	D. DINKUHN
Laboratory:	ON SITE / NEWFIELDS
Chain-of-Custody (yes/no):	YES
Date Sent to Lab:	09/29/09
Shipment Method:	UPS

Remarks/Notes:



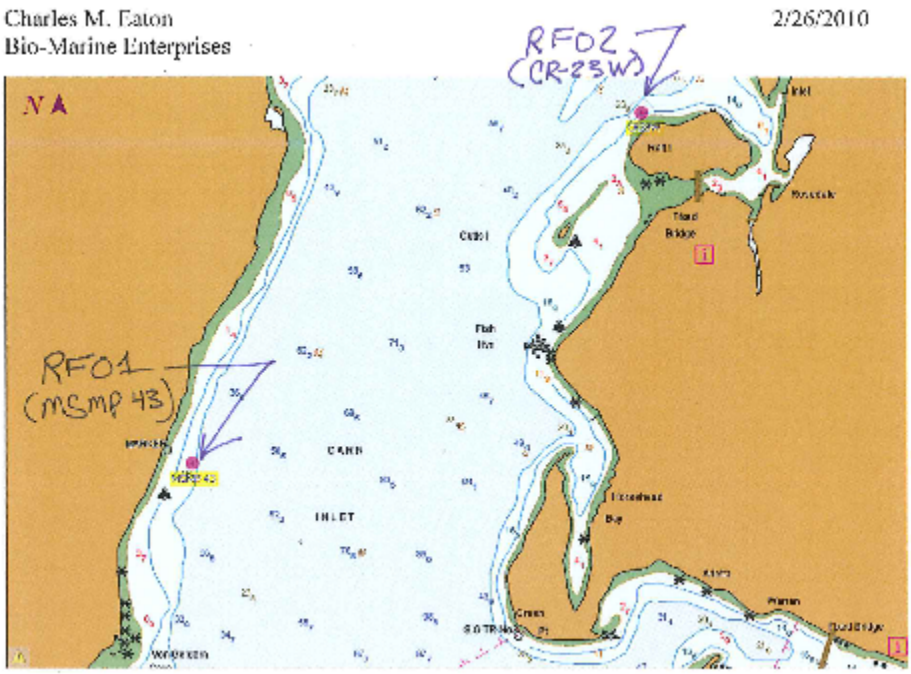
SAMPLE COLLECTED FROM FROM INTERTIDAL ZONE USING DISPOSABLE SCOOP. LOCATION STAKED BY SURVEY PRIOR TO SAMPLING.

Signature: David Dinkuhn

Appendix D Reference Sediment Samples

Two reference sediment samples were collected by Charles Eaton of Bio-Marine Enterprises on September 30, 2009. The samples were collected from Ecology approved reference sample stations in Carr Inlet.

Sample RF-01 was collected from a reference station in Carr Inlet that historically provides sediments with 15 percent fines on average and consisted of gray-brown silty medium sand free of odor and organisms. RF-02 historically provides sediments with 33 percent fines and consisted of gray-brown silty sand also free of odor and organisms. A map of these sample locations is provided below. A spreadsheet with sample coordinates is attached.



Parametrix reference sediment collection, 30-September-2009

Charles M. Eaton
Bio-Marine Enterprises
cmeaton@msn.com

PARAMETIX, Carr Inlet Reference Sediment Collection
30-September-2009

Station No.	Sample No.	Time	Recorded Depth m.	Predicted Tide (m.):	Predicted Depth, m. (MLLW)	Distance to Center of Station (meters)	Sample Location DGPS (Trimble NT300D) NAD 1983, Dec. Minutes Latitude	Longitude	Station Target NAD 1983 Decimal Minutes Latitude	Longitude	GPS Status PDOP/ HDOP
MSMP 43	1	1241	21.2	1.86	-19.3	0.2	47 17.8700	122 44.5449	47 17.8700	122 44.5450	1.1
(15% fines)											
CR-23W	1	1358	17.8	2.9	-13.6	0.2	47 19.9792	122 40.5831	47 19.9790	122 40.5830	1.0
(33% fines)											

APPENDIX E

Biological Report

BIOLOGICAL TESTING OF SEDIMENT FOR SOLID WOOD INCORPORATED SITE (WEST BAY PARK)

OLYMPIA, WASHINGTON

REVISED AUGUST 2010:
VERSION 1.2

PREVIOUS SUBMITTAL: JANUARY 2010

PREPARED FOR:
PARAMETRIX, INC.
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BREMERTON, WA 98312

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NEWFIELDS

1.0 INTRODUCTION

NewFields conducted biological toxicity testing with sediment samples collected by Parametrix as part of a sediment characterization being performed at the Solid Wood Incorporated Site (West Bay Park) in Olympia, Washington. Sediments were evaluated for biological effects following guidance provided by the Washington State Department of Ecology (WDOE) Sediment Management Standards (SMS) under the Washington Administrative Code (WAC) 173-204-315. This report presents the results of the toxicity testing portion of the West Bay Park sediment investigation.

2.0 METHODS

This section summarizes the test methods followed for this biological characterization. Test methods followed guidance provided by the Puget Sound Estuary Program (PSEP 1995), the WDOE Sampling and Analysis Plan Appendix (SAPA; Ecology 2008), and the various updates presented during the Annual Sediment Management Review meetings (SMARM). Sediment toxicity was evaluated using three standard PSEP bioassays; the 10-day amphipod test, the juvenile polychaete survival and growth test, and the 48 to 96-hour benthic larval test.

2.1 SAMPLE AND ANIMAL RECEIPT

Eight test sediments were collected on September 28, 2009 and were received at NewFields on October 1, 2009. Reference sediments were collected from two stations within Carr Inlet on September 30, 2009 and were also received at NewFields on October 1, 2009. Sediment samples were stored in a walk-in cold room at 4 ± 2ºC in the dark. For the purposes of this report, the sample identifiers are abbreviated to their unique identifier. For example, sample WB-SD-SD25-0005 is abbreviated as sample SD25 in the following text. Four of the eight samples collected were chosen by Parametrix to be evaluated for biological effects based upon the results of chemical analyses. In addition, a composite sample composed of samples SD26 (1/3 by volume) and SD27 (2/3 by volume) was also included in the suite of testing. This sample was composited by Newfields personnel on October 27, 2009. Subsamples of this composited sample were delivered to Parametrix on October 28, 2009 for subsequent chemical analyses. Test sediments were not sieved prior to testing; however, large debris (wood or rock larger than ~3 cm) was manually removed to prevent a negative impact on the survival and recovery of the test organisms (i.e., mortality due to crushing). All tests were conducted within the eight-week (56 day) holding time.

Amphipods (*Eohaustorius estuarius*) were supplied by Northwest Aquatic Sciences in Newport, Oregon. Animals were held in native sediment at 15°C prior to test initiation. Juvenile polychaete worms (*Neanthes arenaceodentata*) were utilized from in-house cultures. Juvenile polychaetes were held in seawater at 20°C (*Neanthes* were cultured in water-only and were not held in sediment prior to testing). *Mytilus galloprovincialis* (mussel) broodstock were provided by Taylor Shellfish, Inc. in Shelton, Washington. Broodstock were held in unfiltered seawater at 16°C prior to spawning.

Native *E. estuarius* sediment from Yaquina Bay, Oregon was provided by Northwest Aquatic Sciences for use as control sediment treatments for the amphipod and juvenile polychaete tests.

2.2 SAMPLE GRAIN SIZE AND REFERENCE COMPARISON

Sediment grain size is one of the characteristics used in selecting the appropriate reference sediment(s) to compare the chemical and biological responses of project sediments to. The percent fines value is defined as the amount of sediment that passes through a 62.5-µm sieve, expressed as a percentage of the total sample analyzed. This is also the sum of the silt and clay

fraction of sediment. Conventional grain-size analyses were performed on the project sediments by AmTest Laboratories and Analytical Resources, Inc. The percent-fines determination of the project sediments are summarized in Table 1. For evaluating the biological interpretive guidance for the SMS bioassays, this report will utilize reference sediment RF02 for for all samples. Given the difference between the grain size of reference sediment RF01 and all other treatments, this reference will not be used for comparison.

Table 1. Sample and Reference Grain Size Comparison.

Treatment	Percent Fines	Treatment Compared To:
RF01	4.7	
RF02	21.3	
SD25	47.8	RF02
SD26/27	23.2 / 18	RF02
SD28	41.9	RF02
SD29	26.3	RF02
SD30	20.6	RF02

2.3 ULTRA-VIOLET LIGHT EXPOSURE

Test sediment samples were exposed to ultra-violet (UV) light during the entire test exposure. The UV light regime followed guidance provided by Sub-Appendix D (Ecology 2008) and in consultation with Ecology. UV light was provided by fluorescent light ballast containing one Duro-Test Vita-Lite® (40W, 5500°K, 91 CRI) fluorescent bulb and one standard fluorescent bulb (Phillips F40CW). The UV bulbs were placed within 12" above the sediment surface. All test chambers in the UV exposures were left uncovered to prevent any UV loss. Tests were conducted on water-tables to ensure that the additional lighting did not alter water temperatures in the test chambers. In all other respects, the methods followed the standard testing protocols are summarized below.

2.4 10-DAY AMPHIPOD BIOASSAY

The 10-day acute toxicity test with *E. estuarius* was initiated on October 28, 2009. To prepare the test exposures, approximately 175 mL of sediment was placed in clean, acid and solvent-rinsed 1-L glass jars, which were then filled with 775 mL of 0.45-µm filtered seawater at 28 ppt. Seven replicate chambers were prepared for each test treatment, the two reference sediments, and the native control sediment. The control and reference sediments were tested with the test treatments. Five replicates were used to evaluate sediment toxicity while the remaining two replicates were designated as sacrificial surrogate chambers. One surrogate chamber was sacrificed at test initiation to measure porewater and overlying ammonia and sulfides. The remaining surrogate chamber was used for measuring daily water quality throughout the test, as well as porewater and overlying ammonia and sulfides at test termination. Total ammonia as nitrogen was monitored using an Orion meter fitted with an ammonia ion-specific probe. Total sulfides as S^{2-} were monitored using a HACH DR/4000V Spectrophotometer.

Test chambers were placed in randomly assigned positions in a 15°C water bath and allowed to equilibrate overnight. Trickle-flow aeration was provided to prevent dissolved oxygen concentrations from dropping below acceptable levels.

Immediately prior to test initiation, water quality parameters were measured in the surrogate chamber for each treatment. Dissolved oxygen (DO), temperature, pH, and salinity were then monitored in the surrogate chambers daily until test termination. Target test parameters were:

Dissolved Oxygen:	≥5.0 mg/L
pH:	7.8 ± 0.5 units
Temperature:	15 ± 1°C
Salinity:	28 ± 1‰

The tests were initiated by randomly allocating 20 *E. estuarius* into each test chamber, ensuring that each of the amphipods successfully buried into the sediment. Amphipods that did not bury within approximately one hour were replaced with healthy amphipods. The 10-day amphipod bioassay was conducted as a static test with no feeding during the exposure period. At test termination, sediment from each test chamber was sieved through a 0.5-mm screen and all recovered amphipods transferred into a Petri dish. The number of surviving and dead amphipods was then determined under a dissecting microscope. A water-only, 4-day reference-toxicant test was conducted concurrently with the sediment tests using cadmium chloride. The cadmium reference-toxicant test was used to ensure animals used in the test were healthy and of similar sensitivity to prior tests.

2.5 20-DAY JUVENILE POLYCHAETE BIOASSAY

The 20-day chronic toxicity test with *N. arenaceodentata* was initiated on November 5, 2009. Test exposures were prepared with approximately 175 mL of sediment placed in clean, acid and solvent-rinsed 1-L glass jars, which were then filled with 775 mL of 0.45-µm filtered seawater at 28 ppt. Seven replicate chambers were prepared for each test treatment, the two reference sediments, and control sediment. Five replicates were used to evaluate sediment toxicity while the remaining two replicates were designated as sacrificial surrogate chambers. One surrogate chamber was sacrificed at test initiation to measure overlying and interstitial ammonia and sulfides. The remaining surrogate chamber was used for measuring daily water quality throughout the test, as well as overlying and interstitial ammonia and sulfides at test termination. Total ammonia as nitrogen was monitored using an Orion meter fitted with an ammonia ion-specific probe. Total sulfides as S^{2-} were monitored using a HACH DR/4000V Spectrophotometer.

Test chambers were placed in randomly assigned positions in a water bath at 20°C and allowed to equilibrate overnight. Trickle-flow aeration was provided to prevent dissolved oxygen concentrations from dropping below acceptable levels.

Immediately prior to test initiation, water quality parameters were measured. Dissolved oxygen, temperature, pH, and salinity were then monitored in the surrogates daily until test termination. Target test parameters were:

Dissolved Oxygen:	≥5.5 mg/L
pH:	7.8 ± 0.5 units
Temperature:	20 ± 1°C
Salinity:	28 ± 2‰

The juvenile polychaete test was initiated by randomly allocating five *N. arenaceodentata* into each test chamber, and observing whether each of the worms successfully buried into the sediment. Worms that did not bury within approximately one hour were replaced with healthy worms. The 20-day test was conducted as a static-renewal test, with exchanges of 300 mL of water occurring every third day. *N. arenaceodentata* were fed every other day with 40 mg of

TetraMarin® (approximately 8 mg dry weight per worm). At test termination, sediment from each test chamber was sieved through a 0.5-mm screen and all recovered worms transferred into a Petri dish. The number of surviving and dead worms was determined. All surviving worms were then transferred to pre-weighed, aluminum foil weigh-boats, and then dried in a drying oven at 60°C for approximately 24 hours. Each weigh-boat was removed, cooled in a dessicator, and then weighed on a microbalance to 0.01 mg. A water-only, 4-day reference-toxicant test was conducted concurrently with the sediment test, using cadmium chloride. The cadmium reference-toxicant test was used to ensure animals used in the test were healthy and of similar sensitivity to prior tests.

2.6 LARVAL DEVELOPMENTAL BIOASSAY

Test sediment was evaluated using the larval benthic toxicity test with the mussel, *M. galloprovencialis*. The mussel larval test was initiated on October 30, 2009. The control and reference sediments were tested with the test treatments. To prepare the test exposures, 18 g (±1 g) of test sediment was placed in clean, acid and solvent-rinsed 1-L glass jars, which were then filled to 900 mL with 0.45-µm filtered seawater. Six replicate chambers were prepared for each test treatment, reference sediment, and the native sediment control treatment. Five of the replicates were used to evaluate the test; the sixth replicate was used as a water quality surrogate. Each chamber was shaken for 10 seconds and then placed in predetermined randomly-assigned positions in a water bath at 16°C.

To collect gametes for each test, mussels were placed in clean seawater and acclimated at 16°C for approximately 20 minutes. The water bath temperature was then increased over a period of 15 minutes to 20°C. Mussels were held at 20°C and monitored for spawning individuals. Spawning females and males were removed from the water bath and placed in individual containers with seawater. These individuals were allowed to spawn until sufficient gametes were available to initiate the test. After the spawning period, eggs are transferred to fresh seawater and filtered through a .5 mm Nitex® mesh screen to remove large debris, feces, and excess gonadal matter. A composite is made of the sperm and diluted with fresh seawater. The fertilization process was initiated by adding sperm to the isolated egg containers. Egg-sperm solutions were periodically homogenized with a perforated plunger during the fertilization process and sub-samples observed under the microscope for egg and sperm viability. Approximately one to one and a half hours after fertilization, embryo solutions were checked for fertilization rate. Only those embryo stocks with >90% fertilization were used to initiate the tests. Embryo solutions were rinsed free of excess sperm and then combined to create one embryo stock solution. Density of the embryo stock solution was determined by counting the number of embryos in a subsample of homogenized stock solution. This was used to determine the volume of embryo stock solution to deliver approximately 27,000 embryos to each test chamber.

Dissolved oxygen, temperature, pH, and salinity were monitored in water quality surrogates to prevent loss or transfer of larvae by adhesion to water-quality probes. Ammonia and sulfides in the overlying water were measured on Day 0 and Day 2. Total ammonia as nitrogen was monitored using an Orion meter fitted with an ammonia ion-specific probe. Total sulfides as S^{-2} were monitored using a HACH DR/4000V Spectrophotometer. Target test parameters were as follows:

Dissolved Oxygen:	≥4.8 mg/L
pH:	7.8 ± 0.5 units
Temperature:	16 ± 1°C
Salinity:	28 ± 1‰

The development test was conducted as a static test without aeration. The protocol calls for test termination when 95% of the embryos in the control have reached the prodissoconch I stage (approximately 48-60 hours). At termination, the overlying seawater was decanted into a clean 1-L jar and mixed with a perforated plunger. From this container, a 10 mL subsample was transferred to a scintillation vial and preserved in 5% buffered formalin. Larvae were subsequently stained with a dilute solution of Rose Bengal in 70% alcohol to help visualization of larvae. The number of normal and abnormal larvae was enumerated on an inverted microscope. Normal larvae included all D-shaped prodissoconch I stage larvae. Abnormal larvae included abnormally shaped prodissoconch I larvae and all early stage larvae. A water-only reference-toxicant test with copper sulfate was conducted concurrently with the sediment test.

2.7 DATA ANALYSIS AND QA/QC

All water quality and endpoint data were entered into Excel spreadsheets. Water quality parameters were summarized by calculating the mean, minimum, and maximum values for each test treatment. Endpoint data were calculated for each replicate and the mean values and standard deviations were determined for each test treatment.

All hand-entered data was reviewed for data entry errors, which were corrected prior to summary calculations. A minimum of 10% of all calculations and data sorting were reviewed for errors. Review counts were conducted on any apparent outliers.

For the larval test, the normalized combined mortality and abnormality endpoint was used to evaluate the test sediment. This was based on the number of normal larvae in each treatment and reference sample divided by the mean number of normal larvae in the control replicates, as defined in Ecology (2005).

For SMS suitability determinations, comparisons were made according to SAPA and Fox et al. (1998). Data reported as percent mortality or survival were transformed using an arcsine square root transformation prior to statistical analysis. All data were tested for normality using the Wilk-Shapiro test and equality of variance using Levene's test. Determinations of statistical significance were based on one-tailed Student's t-tests with an alpha of 0.05. A comparison of the larval endpoint relative to the reference was made using an alpha level of 0.10. For samples failing to meet assumptions of normality, a Mann-Whitney test was conducted to determine significance. For those samples failing to meet the assumptions of normality and equality of variance, a t-test on rankits was used.

3.0 RESULTS

The results of the sediment testing, including a summary of test results and water quality observations are presented in this section. Data for each of the replicates, as well as laboratory bench sheets are provided Appendix A and statistical analyses are provided in Appendix B.

3.1 10-DAY AMPHIPOD BIOASSAY

The bioassay test with *E. estuarius* was validated with 4% mortality in the native sediment control, which met the SMS performance criteria of ≤10% mortality. This indicates that the test conditions were suitable for adequate amphipod survival. Mean survival for all samples is shown in Table 2. Summaries of water quality measurements, ammonia and sulfide concentrations, and test conditions are presented in Tables 3, 4, and 5.

The LC_{50} for the cadmium reference-toxicant test was 9.0 mg Cd/L, which is within the control chart limits (4.2 to 12.0 mg Cd/L) at the time of testing, indicating that the test organisms used in this study were of similar sensitivity of those previously tested at NewFields.

Temperature and dissolved oxygen measurements were within acceptable limits throughout the test. Salinity was observed slightly below the recommended limits of 28 ± 1 ppt (minimum of 26 ppt). These salinities were still well within the tolerance range of 2 - 28 ppt (USACE 1998) for this estuarine species. Measurements of pH were recorded slightly above the recommended limits beginning on Day 1 throughout all test treatments, increasing over the duration of the test. The slight increase over time is an artifact of conducting the UV light exposure procedure. Algal growth is also stimulated in the test chambers due to the UV light exposure and this increased growth is often associated with a rise in pH. Values within the test chambers reached a maximum of 9.3 pH units, but were still within the tolerance range of the test organisms. These deviations would not be expected to affect the test results. Any procedures that may have been employed to adjust the salinity or pH of the test chambers may have been more detrimental to the test design and could have been interpreted as biasing the test results. No corrective action was taken with these deviations.

All except one (SD29) of the test treatments had ammonia levels below the threshold concentration of 30 mg/L total ammonia (Barton 2002). The initial measurement for SD29 for interstitial ammonia was 85.2 mg/L, well above the threshold level. Initial sulfide concentrations in interstitial water were below the NOEC (3.47 mg/L; Kendall and Barton 2004) for most samples; all final concentrations were below this level. Initial sulfides in sample SD28 was above the threshold for major effects seen in polychaetes(15 mg/L) at 15.38 mg/L. Sulfide concentrations appear to have dropped rapidly based on the high rate of survival in these samples and concentrations below 1 mg/L at test termination. Ammonia and sulfide concentrations were detected at levels expected to influence the toxicity in samples SD29 and SD28, respectively, to the amphipod *E. estuarius*.

Mean mortality in the reference treatments (RF01 and RF02) was 3 and 1% respectively, which met the SMS performance criteria (<25% mortality) and indicated that the reference sediments were acceptable for suitability determination. Mean mortality in the five test treatments ranged from 4 -64%.

Table 2. Test Results for *Eohaustorius estuarius*.

Treatment	Replicate	Number Initiated	Number Surviving	Percentage Survival	Mean Percentage		Standard Deviation
					Survival	Mortality	
Control	1	20	19	95	96	4	4.2
	2	20	20	100			
	3	20	18	90			
	4	20	19	95			
	5	20	20	100			
RF01	1	20	18	90	97	3	4.5
	2	20	20	100			
	3	20	20	100			
	4	20	20	100			
	5	20	19	95			
RF02	1	20	19	95	99	1	2.2
	2	20	20	100			
	3	20	20	100			
	4	20	20	100			
	5	20	20	100			
SD25	1	20	19	95	95	5	3.5
	2	20	19	95			
	3	20	18	90			
	4	20	20	100			
	5	20	19	95			
SD26/27	1	20	18	90	96	4	4.2
	2	20	20	100			
	3	20	19	95			
	4	20	19	95			
	5	20	20	100			
SD28	1	20	17	85	95	5	6.1
	2	20	19	95			
	3	20	19	95			
	4	20	20	100			
	5	20	20	100			
SD29	1	20	14	70	36	64	39.6
	2	20	17	85			
	3	20	5	25			
	4	20	0	0			
	5	20	0	0			
SD30	1	20	18	90	93	7	5.7
	2	20	19	95			
	3	20	19	95			
	4	20	17	85			
	5	20	20	100			

Table 3. Water Quality Summary for *Eohaustorius estuarius*.

Treatment	Dissolved Oxygen (mg/L)			Temperature (°C)			Salinity (ppt)			pH (units)		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Control	8.4	8.1	9.7	15.5	15.2	15.7	28.0	28	28	8.3	8.2	8.5
RF01	8.4	8.0	9.7	15.5	15.2	15.7	28.0	28	28	8.4	8.2	8.7
RF02	8.4	8.0	9.6	15.5	15.2	15.7	28.0	28	28	8.5	8.2	8.9
SD25	8.0	7.6	9.1	15.8	15.6	16.3	27.5	27	28	8.4	8.1	9.1
SD26/27	8.4	7.9	9.4	15.6	15.2	15.8	26.6	26	27	8.5	8.2	8.9
SD28	8.3	7.8	9.0	15.6	15.3	16.0	27.8	27	28	8.6	8.2	9.3
SD29	8.0	7.5	9.4	15.7	15.4	16.4	28.0	28	28	8.5	8.2	8.9
SD30	8.4	7.9	9.5	15.5	15.2	15.8	27.5	27	28	8.3	8.1	8.8

Table 4. Ammonia and Sulfide Summary for *Eohaustorius estuarius*.

Treatment	Overlying Ammonia (mg/L Total)		Interstitial Ammonia (mg/L Total)		Overlying Sulfides (mg/L Total)		Interstitial Sulfides (mg/L Total)	
	Day 0	Day 10	Day 0	Day 10	Day 0	Day 10	Day 0	Day 10
Control	0.00	0.00	<0.5	<0.5	0.002	0.016	0.024	0.031
RF01	1.04	0.00	9.08	NA	0.037	0.000	0.419	0.341
RF02	2.53	0.00	14.2	1.77	0.026	0.018	0.560	0.185
SD25	4.93	2.93	25.0	5.78	0.037	0.053	0.419	0.210
SD26/27	0.60	<0.5	1.27	<0.5	0.011	0.004	0.240	0.061
SD28	2.93	0.77	20.2	2.19	0.017	0.034	15.38	0.222
SD29	14.3	23.9	85.2	44.1	0.017	0.046	0.388	0.031
SD30	1.42	<0.5	3.83	1.12	0.010	0.008	0.192	0.106

Table 5. Test Condition Summary for *Eohaustorius estuarius*.

Test Conditions: PSEP *E. estuarius* (SMS)		
Sample Identification	RF01, RF02, SD25, SD26/27, SD28, SD29, SD30	
Date sampled	September 28-30, 2009	
Date received at NewFields Northwest	October 1, 2009	
Test dates	October 28 – November 7, 2009	
Sample storage conditions	4°C, dark, nitrogen headspace	
Days of holding Recommended: ≤8 weeks (56 days)	30 days	
Source of control sediment	Yaquina Bay, Oregon	
Test Species	***E. estuarius***	
Supplier	Northwestern Aquatic Science, Newport, OR	
Date acquired	October 27, 2009	
Acclimation/holding time	1 day	
Age class	Subadult, 3-5 mm	
Test Procedures	PSEP 1995 with SMARM revisions	
Regulatory Program	SMS	
Test location	NewFields Northwest Laboratory	
Test type/duration	10-Day static	
Control water	North Hood Canal, sand filtered	
Test temperature	Recommended: 15 ± 1 °C	Achieved: 15.2 - 16.4 °C
Test Salinity	Recommended: 28 ± 1 ppt	Achieved: 26 - 28 ppt
Test dissolved oxygen	Recommended: > 5.0 mg/L	Achieved: 7.5 - 9.7 mg/L
Test pH	Recommended: 7.8 ± 0.5	Achieved: 8.1 – 9.3
SMS control performance standard	Recommended: Control ≤ 10% mortality	Achieved: 4% Pass
SMS reference performance standard	Recommended: Reference mortality < 25%	Achieved: 3 and 1% Pass
SMS pass/fail SQS	Treatment – Reference < 25% mortality = PASS	SD29 Fail; All Others Pass
SMS pass/fail CSL	Treatment – Reference < 30% mortality = PASS	SD29 Fail; All Others Pass
Reference Toxicant LC_{50}	9.0 mg Cd/L	mg NH_4/L
Acceptable Range	4.2 to 12.0 mg Cd/L	4.2 to 12.0 mg NH_4/L
Test Lighting	Continuous	
Test chamber	1-Liter Glass Chamber	
Replicates/treatment	5 + 2 surrogates (one used for WQ measurements throughout the test)	
Organisms/replicate	20	
Exposure volume	175 mL sediment/ 775 mL water	
Feeding	None	
Water renewal	None	
Deviations from Test Protocol	Salinity and pH	

3.2 20-DAY JUVENILE POLYCHAETE BIOASSAY

No mortality was observed in the *N. arenaceodentata* control sediment and mean individual growth (MIG) in the control sediment was 0.526 mg/ind/day. These values fall within the test acceptability criteria of <10% mean mortality and ≥0.38 mg/ind/day mean individual growth (Kendall 1996), indicating that the test conditions were suitable for adequate polychaete survival and growth. A summary of the test results for all samples is shown in Table 6. Summaries of water quality measurements, ammonia and sulfide concentrations, and test conditions are presented in Tables 7, 8, and 9.

The LC_{50} for the cadmium reference-toxicant test was 11.1 mg Cd/L, which is within the control chart limits (0.3 to 13.5 mg Cd/L) at the time of testing, indicating that the test organisms used in this study were of similar sensitivity of those previously tested at NewFields.

Temperature and dissolved oxygen measurements were within acceptable limits throughout the test. Salinity and pH was recorded slightly above the recommended limits throughout all test treatments. The slight increase over time is an artifact of conducting the UV light exposure procedure. The slight increase in salinity is most likely due to evaporation from the uncovered test chambers. Conducting the test without covers was required to avoid impeding UV light transmittance. Salinity reached a maximum of 32 ppt, within the tolerance range for *N. arenaceodentata* of 20-35 ppt (USACE 1998). Algal growth is also stimulated in the test chambers due to the UV light exposure and this increased growth is often associated with a rise in pH. Values within the test chambers reached a maximum of 8.6 pH units, but were still within the tolerance range (6-9 units) of the test organisms. These deviations would not be expected to affect the test results. The static-renewal design of the test was able to temper the deviations at the time of water exchange (every 3 days). Any additional procedures that may have been employed to adjust the salinity or pH of the test chambers may have been more detrimental the test design and could have been interpreted as biasing the test results. No corrective action was taken with these deviations.

All except one (SD29) of the test treatments had ammonia levels in the overlying water below the no-effect threshold concentration of 10 mg/L total ammonia (Kendall 2004). The initial measurement for SD29 for overlying water was 15.4 mg/L and interstitial ammonia was 43.4 mg/L. Initial sulfide concentrations in interstitial water were below the NOEC (3.47 mg/L; Kendall and Barton 2004) for most samples; all final concentrations were below this level. Initial sulfides in sample SD25 was close to the threshold for minor effects (5.5 mg/L; Kendall 2004) at 4.26 mg/L. Sulfide concentrations appear to have dropped rapidly due to the high rate of survival in these samples and concentrations below 1 mg/L at test termination. Ammonia and sulfide concentrations were detected at levels expected to influence the toxicity in samples SD29 and SD25, respectively, to the polychaete *N. arenaceodentata*.

Mean individual growth for the reference treatments compared to the Control were greater than 80% of the Control, meeting the recommended SMS performance standards (Ecology 2008). These results indicate that these reference sediments were acceptable for suitability determination. Survival in the test treatments ranged from 96 to 100%; MIG in the test treatments ranged from 0.394 to 0.571 mg/ind/day.

Table 6. Test Results for *Neanthes arenaceodentata*.

Treatment	Replicate	Number Initiated	Number Surviving	Individual Growth (mg/ind/day)	Mean Mortality (%)	MIG (mg/ind/day)	MIG Std Dev
Control	1	5	5	0.471	0	0.526	0.080
	2	5	5	0.529			
	3	5	5	0.571			
	4	5	5	0.429			
	5	5	5	0.632			
RF01	1	5	5	0.491	0	0.519	0.080
	2	5	5	0.513			
	3	5	5	0.481			
	4	5	5	0.657			
	5	5	5	0.454			
RF02	1	5	5	0.599	0	0.623	0.129
	2	5	5	0.670			
	3	5	5	0.602			
	4	5	5	0.443			
	5	5	5	0.799			
SD25	1	5	5	0.543	4	0.450	0.077
	2	5	5	0.454			
	3	5	5	0.345			
	4	5	5	0.500			
	5	5	4	0.407			
SD26/27	1	5	5	0.486	0	0.514	0.058
	2	5	5	0.603			
	3	5	5	0.454			
	4	5	5	0.536			
	5	5	5	0.491			
SD28	1	5	5	0.415	0	0.455	0.042
	2	5	5	0.495			
	3	5	5	0.479			
	4	5	5	0.404			
	5	5	5	0.484			
SD29	1	5	5	0.381	4	0.394	0.075
	2	5	4	0.275			
	3	5	5	0.422			
	4	5	5	0.478			
	5	5	5	0.412			
SD30	1	5	5	0.577	4	0.571	0.101
	2	5	5	0.465			
	3	5	5	0.530			
	4	5	4	0.736			
	5	5	5	0.548			

Table 7. Water Quality Summary for *Neanthes arenaceodentata*.

Treatment	Dissolved Oxygen (mg/L)			Temperature (°C)			Salinity (ppt)			pH (units)		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Control	7.5	7.1	7.7	19.8	19.5	20.2	29.0	28	30	8.0	7.9	8.2
RF01	7.4	7.2	7.7	20.1	19.6	20.3	28.9	28	30	8.0	7.9	8.4
RF02	7.5	7.3	7.8	20.1	19.7	20.3	30.0	29	32	8.2	8.0	8.6
SD25	7.4	7.1	7.8	20.1	19.7	20.3	29.5	28	31	8.4	8.2	8.6
SD26/27	7.4	7.1	7.6	20.1	19.6	20.3	28.4	27	30	8.1	7.9	8.5
SD28	7.3	7.0	7.8	20.0	19.5	20.3	28.8	28	30	8.3	8.0	8.5
SD29	7.4	6.6	8.0	19.7	19.1	20.3	29.6	28	31	8.3	8.0	8.5
SD30	7.3	7.1	7.6	20.0	19.6	20.3	28.7	28	30	8.0	7.9	8.3

Table 8. Ammonia and Sulfide Summary for *Neanthes arenaceodentata*.

Treatment	Overlying Ammonia (mg/L Total)		Interstitial Ammonia (mg/L Total)		Overlying Sulfides (mg/L Total)		Interstitial Sulfides (mg/L Total)	
	Day 0	Day 20	Day 0	Day 20	Day 0	Day 20	Day 0	Day 20
Control	<0.05	2.93	<0.05	3.34	0.004	0.020	0.046	0.025
RF01	1.32	< 0.5	7.85	0.514	0.095	0.017	0.419	1.030
RF02	4.09	<0.05	13.3	1.10	0.066	0.065	0.187	0.170
SD25	6.75	0.877	20.7	1.02	0.017	0.018	4.255	0.165
SD26/27	< 0.5	< 0.5	2.26	< 0.5	0.026	0.015	0.111	0.310
SD28	4.98	< 0.5	18.6	0.939	0.036	0.011	0.711	0.255
SD29	15.4	<0.05	43.4	< 0.5	0.042	0.044	0.222	0.465
SD30	< 0.5	< 0.5	< 0.5	0.560	0.005	0.007	0.107	0.690

Table 9. Test Condition Summary for *Neanthes arenaceodentata*.

Test Conditions: PSEP *N. arenaceodentata* (SMS)		
Sample Identification	RF01, RF02, SD25, SD26/27, SD28, SD29, SD30	
Date sampled	September 28-30, 2009	
Date received at NewFields Northwest	October 1, 2009	
Test dates	November 5 – 25, 2009	
Sample storage conditions	4°C, dark, nitrogen headspace	
Days of holding Recommended: ≤8 weeks (56 days)	38 days	
Source of control sediment	Yaquina Bay, Oregon	
Test Species	***N. arenaceodentata***	
Supplier	In-House Culture	
Date acquired	Isolated November 4, 2009	
Acclimation/holding time	1 day	
Age class	Juvenile (Initial weight 0.255 mg)	
Test Procedures	PSEP 1995 with SMARM revisions	
Regulatory Program	SMS	
Test location	NewFields Northwest Laboratory	
Test type/duration	20-Day static renewal	
Control water	North Hood Canal, sand filtered	
Test temperature	Recommended: 20 ± 1 °C	Achieved: 19.1 - 20.3 °C
Test Salinity	Recommended: 28 ± 2 ppt	Achieved: 27 - 32 ppt
Test dissolved oxygen	Recommended: > 6.0 mg/L	Achieved: 6.6 - 8.0 mg/L
Test pH	Recommended: 7.8 ± 0.5	Achieved: 7.9 – 8.6
Initial biomass	Recommended: 0.5 - 1.0 mg Minimum: 0.25 mg	0.255 mg
SMS control performance standard	Recommended: Control ≤ 10% mortality	Achieved: 0% Pass
(Mean Individual Growth - MIG)	Recommended: > 0.72 mg/ind/day Minimum: > 0.38 mg/ind/day	Achieved: 0.526 mg/ind/day Pass
SMS reference performance standard	Recommended: MIGReference/MIGControl > 80%	Achieved: 98.7 and 100% Pass
SMS pass/fail SQS	SQS Acceptability: $MIG_{Treatment}/MIG_{Reference} \geq 70\%$	All Pass
SMS pass/fail CSL	CSL Acceptability: $MIG_{Treatment}/MIG_{Reference} \geq 50\%$	All Pass
Reference Toxicant LC_{50}	11.1 mg Cd/L	
Acceptable Range	0.3 to 13.5 mg/L	
Test Lighting	Continuous	
Test chamber	1-Liter Glass Chamber	
Replicates/treatment	5 + 2 surrogates (one used for WQ measurements throughout the test)	
Organisms/replicate	5	
Exposure volume	175 mL sediment/ 950 mL water	
Feeding	40 mg/jar every other day (8mg/ind every other day)	
Water renewal	Water renewed every third day (1/3 volume of exposure chamber)	
Deviations from Test Protocol	Salinity and pH	

3.3 LARVAL DEVELOPMENT BIOASSAY

The larval development test with *M. galloprovencialis* was validated by 6.4% mean combined mortality in the control treatment, within the SMS acceptability criteria of <30%. A summary of the test results for all samples is shown in Table 10. Summaries of water quality measurements, ammonia and sulfide concentrations, and test conditions are presented in Tables 11, 12, and 13.

Salinity and temperature were within the acceptable limits throughout the duration of the test. Dissolved oxygen concentrations fell below the recommended range in treatments SD25, SD28, and SD29 on Day 1 of the testing period. Aeration was initiated on these treatments on Day 1. This corrective action succeeded in raising the dissolved oxygen to acceptable limits and levels remained within limits for the duration of the test. Measurements of pH were recorded slightly above the recommended limits beginning on Day 2 (termination day) throughout several test treatments. Values within the test chambers reached a maximum of 8.5 pH units, but were still within the tolerance range of the test organisms. These deviations would not be expected to affect the test results.

The highest recorded total ammonia value was 1.88 mg/L total ammonia in the sample SD28 at test termination. This value is well below the mean No Observed Effect Concentration (LOEC) of 6.7 mg/L total ammonia based upon historical data from this laboratory. Ammonia and sulfide values detected in the test chambers were below the threshold values for *M. galloprovencialis* and should not be a contributing factor to any toxic response observed.

The EC_{50} for the copper reference-toxicant test for combined proportion normal was 12.3 µg Cu/L, within the control chart limits (2.9 to 15.3 µg Cu/L) at the time of testing. The results of the reference-toxicant test indicate that the test organisms used in this study were similar in sensitivity to those previously tested at NewFields.

Mean control-normalized normal survival in the reference treatments (RF01 and RF02) was 96.3 and 86.1%; mean normal survival in the test treatments ranged from 18.6% to 94.7%.

Table 10. Test Results for *Mytilus galloprovencialis*.

Treatment	Replicate	Combined Normal Survival (%)[1]	Mean Combined Normal Survival (%)	Std. Dev.	Normalized Combined Mortality/Abnormality (NCMA)	Mean NCMA (%)	Std. Dev.
Control	1	100.0	93.6	9.2	0.0	6.4	9.2
	2	100.0			0.0		
	3	80.2			19.8		
	4	100.0			0.0		
	5	87.7			12.3		
RF01	1	89.4	96.3	4.5	10.6	3.7	4.5
	2	100.0			0.0		
	3	94.7			5.3		
	4	100.0			0.0		
	5	97.7			2.3		
RF02	1	86.0	86.1	5.8	14.0	13.9	5.8
	2	92.8			7.2		
	3	77.8			22.2		
	4	83.8			16.2		
	5	90.2			9.8		
SD25	1	83.4	93.0	6.9	16.6	7.0	6.9
	2	99.5			0.5		
	3	88.3			11.7		
	4	97.7			2.3		
	5	96.2			3.8		
SD26/27	1	94.7	94.7	3.4	5.3	5.3	3.4
	2	90.5			9.5		
	3	98.4			1.6		
	4	97.7			2.3		
	5	92.0			8.0		
SD28	1	70.2	76.8	17.7	29.8	23.2	17.7
	2	51.8			48.2		
	3	98.0			2.0		
	4	75.5			24.5		
	5	88.3			11.7		
SD29	1	4.1	18.6	33.1	95.9	81.4	33.1
	2	3.0			97.0		
	3	77.8			22.2		
	4	3.4			96.6		
	5	4.9			95.1		
SD30	1	49.2	47.4	10.1	50.8	52.6	10.1
	2	64.2			35.8		
	3	42.4			57.6		
	4	38.7			61.3		
	5	42.4			57.6		

[1] Reference and treatment normal survivals are normalized to mean Control normal survival.

Table 11. Water Quality Summary for *Mytilus galloprovencialis*.

Treatment	Dissolved Oxygen (mg/L)			Temperature (°C)			pH (units)			Salinity (ppt)		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Control	7.6	7.4	8.0	16.3	16.0	16.8	8.2	8.0	8.4	28.0	28	28
RF01	7.3	7.2	7.4	16.4	15.7	16.9	8.1	7.9	8.3	28.7	28	29
RF02	6.4	5.6	7.2	16.4	16.1	16.8	8.1	8.0	8.2	28.3	28	29
SD25	5.3	4.7	5.8	16.1	15.7	16.5	8.0	7.9	8.1	28.7	28	29
SD26/27	6.1	4.0	8.1	16.3	15.5	16.8	8.1	7.9	8.4	28.0	28	28
SD28	5.5	1.7	8.3	16.1	15.6	16.7	8.1	7.8	8.5	28.7	28	29
SD29	6.4	5.9	7.3	16.4	16.1	16.8	8.0	7.9	8.0	28.0	28	28
SD30	6.3	5.9	7.1	16.2	15.8	16.5	8.1	8.0	8.2	28.0	28	28

Table 12. Ammonia and Sulfide Summary for *Mytilus galloprovencialis*.

Treatment	Overlying Ammonia (mg/L Total)		Overlying Sulfides (mg/L Total)	
	Initial	Final	Initial	Final
Control	<0.5	<0.5	0.003	0.000
RF01	<0.5	<0.5	0.096	0.006
RF02	<0.5	<0.5	0.115	0.001
SD25	<0.5	<0.5	0.091	0.000
SD26/27	<0.5	<0.5	0.096	0.002
SD28	1.50	1.88	0.060	0.001
SD29	<0.5	<0.5	0.044	0.003
SD30	<0.5	<0.5	0.068	0.000

Table 13. Test Condition Summary for *Mytilus galloprovencialis*.

Test Conditions: PSEP *M. galloprovencialis* (SMS)		
Sample Identification	RF01, RF02, SD25, SD26/27, SD28, SD29, SD30	
Date sampled	September 28-30, 2009	
Date received at NewFields Northwest	October 1, 2009	
Test dates	October 30 – November 1, 2009	
Sample storage conditions	4°C, dark, nitrogen headspace	
Holding time Recommended: < 8 weeks (56 days)	32 days	
Test Species	***M. galloprovencialis***	
Supplier	Taylor Shellfish, Shelton, WA	
Date acquired	October 28, 2009	
Acclimation/holding time	2 days	
Age class	<2-h old embryos	
Test Procedures	PSEP 1995 with SMARM revisions	
Regulatory Program	SMS	
Test location	NewFields Northwest Laboratory	
Test type/duration	48-60 Hour static test (Actual: 48 hours)	
Control water	North Hood Canal sea water, 0.45µm filtered	
Test temperature	Recommended: 16 ± 1 °C	Achieved: 15.5-16.9 °C
Test Salinity	Recommended: 28 ± 1 ppt	Achieved: 28-29 ppt
Test dissolved oxygen	Recommended: > 5.0 mg/L	Achieved: 1.7-8.7 mg/L
Test pH	Recommended: 7.8 ± 0.5	Achieved: 7.8-8.5
Stocking Density	Recommended: 20 – 40 embryos/mL	Achieved: 27 embryos/mL
SMS control performance standard	Recommended: Control normal survival ≥ 70%	Achieved: 93.6%, Pass
SMS reference performance standard	Recommended: Reference survival/Control survival ≥ 65%	Achieved: 96.3 and 86.1%, Pass
SMS pass/fail SQS	(Treatment normal/Control normal)/ (Reference normal/ Control normal) > 0.85 = PASS	SD29 and SD30 Fail
SMS pass/fail CSL	(Treatment normal/Control normal)/ (Reference normal/ Control normal) > 0.70 = PASS	SD29 and SD30 Fail
Reference Toxicant LC_{50}	12.3 µg Cu/L	
Acceptable Range	2.9 to 15.3 µg Cu/L	
Test Lighting	14hr Light / 10hr Dark	
Test chamber	1-Liter Glass Chamber	
Replicates/treatment	5 + 1 surrogate (used for WQ measurements throughout the test)	
Exposure volume	18 g sediment/ 900 mL water	
Feeding	none	
Water renewal	none	
Deviations from Test Protocol	Dissolved oxygen and pH	

4.0 DISCUSSION

Sediments were evaluated based on Sediment Management Standards (SMS) criteria. The biological criteria are based on both statistical significance (a statistical comparison) and the degree of biological response (a numerical comparison). The SMS criteria are derived from the Washington Department of Ecology Sampling and Analysis Plan Appendix (WDOE 2008). Comparisons were made for each treatment against the reference sample. Two numerical comparisons were made under SMS, the Sediment Quality Standards (SQS) and the Cleanup Standards Limit (CSL).

4.1 AMPHIPOD TEST SUITABILITY DETERMINATION

Under the SMS program, a treatment will fail SQS if mean mortality in the test sediment is >25% more than the mean mortality in the appropriate reference sediment and the difference is statistically significant ($p \leq 0.05$). Treatments fail the CSL if mean mortality in the test treatment >30%, relative to the reference sediment and the difference is statistically significant.

Sample SD29 failed to meet both the SQS and the CSL criteria compared to reference RF02. All other sediment treatments analyzed in the *E. estuarius* bioassay met the requirements for SQS and CSL (passing). The comparison results are summarized in Table 14 below. Initial and final total ammonia concentrations in interstitial water samples for this sample (86 and 44 mg/L respectively) exceeded the threshold value of 30 mg/L provided by Barton (2002).

Table 14. SMS Comparison for *Eohaustorius estuarius*.

Treatment	Mean Mortality (%)	Comparison To:	Statistically More than Reference ?	Mortality Comparison to Reference M_T-M_R (%)	Fails SQS? > 25 %	Fails CSL? > 30 %
Control	4					
RF01	3					
RF02	1					
SD25	5	RF02	**Yes**	4	No	No
SD26/27	4	RF02	No	3	No	No
SD28	5	RF02	No	4	No	No
SD29	64	RF02	**Yes**	63	**Yes**	**Yes**
SD30	7	RF02	**Yes**	6	No	No

SQS: Statistical Significance and M_T-M_R >25%
CSL: Statistical Significance and M_T-M_R >30%

4.2 JUVENILE POLYCHAETE TEST SUITABILITY DETERMINATION

Suitability determinations for the juvenile polychaete test were based on mean individual growth (MIG). A test treatment fails SQS criteria if MIG is statistically lower in the test treatment, relative to the reference, and MIG in the test treatment is <70% that of the reference. The treatments will fail CSL criteria if MIG is significantly lower than the reference treatment and is <50% that of the treatment.

Sample SD29 failed to meet the SQS criteria compared to reference RF02, but passed the CSL criteria. All other sediment treatments met the requirements for SQS and CSL (passing). The comparison results are summarized in Table 15 below. The initial overlying water concentrations of total ammonia in this sample (15.4 mg/L) exceeded the threshold value (10

mg/L) provided by Kendall (2004). The final (20 day) water concentrations did not exceed this threshold.

Table 15. SMS Comparison for *Neanthes arenaceodentata*.

Treatment	MIG (mg/ind/day)	Comparison To:	Statistically Less than Reference?	MIG Relative to Reference MIG_T/MIG_R (%)	Fails SQS? < 70%	Fails CSL? < 50%
Control	0.526					
RF01	0.519					
RF02	0.623					
SD25	0.450	RF02	**Yes**	72.2	No	No
SD26/27	0.514	RF02	No	82.5	No	No
SD28	0.455	RF02	**Yes**	73.0	No	No
SD29	0.394	RF02	**Yes**	63.2	**Yes**	No
SD30	0.571	RF02	No	91.7	No	No

SQS: Statistical Significance and MIG_T/MIG_R <70%
CSL: Statistical Significance and MIG_T/MIG_R <50%

4.3 LARVAL TEST SUITABILITY DETERMINATION

Larval test treatments fail SQS criteria if the percentage of normal larvae in the test treatment is significantly lower than that of the reference and if the normal larval development in the test treatment is less than 85% of the normal development in the reference. Treatments fail CSL criteria if the percentage of normal larvae in the test treatment is significantly lower than that of the reference and if the normal larval development in the test treatment is less than 70% of the normal development in the reference.

Samples SD29 and SD30 failed to meet both the SQS and the CSL criteria compared to reference RF02. All other sediment treatments met the requirements for SQS and CSL (passing). The comparison results are summarized in Table 16 below.

Table 16. SMS Comparison for *Mytilus galloprovencialis*.

Treatment	Mean Normal Survival (%)	Comparison To:	Statistically Less than Reference?	Normal Survival Comparison to Reference $(N_T/N_C)/(N_R/N_C)$	Fails SQS? < 85%	Fails CSL? < 70%
Control	93.6					
RF01	96.3					
RF02	86.1					
SD25	93.0	RF02	No	108.0	No	No
SD26/27	94.7	RF02	No	110.0	No	No
SD28	76.8	RF02	No	89.2	No	No
SD29	18.6	RF02	**Yes**	21.6	**Yes**	**Yes**
SD30	47.4	RF02	**Yes**	55.1	**Yes**	**Yes**

SQS: Statistical Significance and $N_{CT}<0.85*N_{CR}$
CSL: Statistical Significance and $N_{CT}<0.70*N_{CR}$

4.4 RESULTS OF CHEMICAL ANALYSES

Analytical chemistry results were provided by Parametrix. Results of the total petroleum hydrocarbon analyses performed on the West Bay Park sediments are summarized in Table 17 below.

Table 17. Total Petroleum Hydrocarbon Analytical Results

Treatment	Diesel Range Organics	Lube Oil Range Organics	Sum TPH	CSL [2] (Sum of Diesel and Lube Oil Range Results)
	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
RF01	31U	62U	93U [1]	100
RF02	32U	63U	95U [1]	100
SD25	68U	490	**558/U [1]**	100
SD26/27	63U	320	**383/U [1]**	100
SD28	37	99	**136**	100
SD29	87	330	**417**	100
SD30 [3]	77	370	**447**	100

mg/kg dw = milligrams per kilogram dry weight
U = Analyte not detected above given practical quantitation limit
[1] Sum includes U flagged data result(s)
[2] Cleanup Screening Level (CSL) based on the sum of the diesel range organics and lube oil range organics results
[3] Duplicate analysis results
BOLD = Exceeds CSL criterion

4.5 SUMMARY

Two samples (SD29 and SD30) failed to meet SQS or CSL performance criteria for one or more of the bioassay tests performed on the West Bay Park sediments (Table 17). The failures for the amphipod and polychaete at station SD29 are consistent with the concentrations of total ammonia that were observed in these tests. The response at station SD30 by the larval test organism is not correlated to total ammonia effects.

Table 17. Summary of West Bay Park SMS Evaluation.

Treatment	Reference Compared To:	Sediment Quality Standards			Cleanup Screening Levels		
		Amphipod	Polychaete	Larval	Amphipod	Polychaete	Larval
SD25	RF02						
SD26/27	RF02						
SD28	RF02						
SD29	RF02	**X**	**X**	**X**	**X**		**X**
SD30	RF02			**X**			**X**

X = Does not meet criterion

5.0 ADDITIONAL DATA

5.1 AMMONIA AND SULFIDE SUMMARY

Initial ammonia concentrations measured in sample SD29 in the *E. estuarius* (85.2 mg/L) and the *N. arenaceodentata* test (43.4 mg/L) were at levels that may have impacted the survival and growth of the test organisms. Table 18 summarizes the initial ammonia and sulfide data for three bioassay tests performed on the West Bay Park sediments.

Interstitial sulfides measured in sample SD28 in the *E. estuarius* test (15.38 mg/L) was at levels suspected to cause mortality in amphipods; however no decrease in survival was expressed in this treatment. This sulfide measurement taken from the surrogate chamber may not have been representative of all replicates of this treatment.

Responses observed in the treatment SD30 in the larval development test do not seem to be associated with ammonia or sulfides.

Table 18. Initial Measurements of Ammonia and Sulfides.

Treatment	Total Ammonia (mg/L)			Total Sulfides (mg/L)		
	Interstitial		Overlying	Interstitial		Overlying
	Amphipod	Polychaete	Larval	Amphipod	Polychaete	Larval
Control	<0.5	<0.5	<0.5	0.024	0.046	0.003
RF01	9.08	7.85	<0.5	0.419	0.419	0.096
RF02	14.2	13.3	<0.5	0.560	0.187	0.115
SD25	25.0	20.7	<0.5	0.419	4.255	0.091
SD26/27	1.27	2.26	<0.5	0.240	0.111	0.096
SD28	20.2	18.6	1.50	15.38	0.711	0.060
SD29	85.2	43.4	<0.5	0.388	0.222	0.044
SD30	3.83	< 0.5	<0.5	0.192	0.107	0.068

5.2 ANECDOTAL OBSERVATIONS

Inspection of the two sediments (SD29 and SD30) that expressed significant biological responses may contribute additional information to the interpretation of the results. Below is a brief description of the two sediments in question including photographs (Figures 1-4).

5.2.1 Sample SD29

Sample SD29 was a dark sediment having a strong dead mollusk odor. While distributing this sediment to the bioassay test chambers many whole mussel shells were discovered, many still containing tissue. When possible, these shells and tissue matter were removed and not included in the bioassay test chamber. Figure 1 below shows the appearance of the sediment as removed from the sample container. Figure 2 below shows the sorted material retained after wet-sieving sample SD29 through a 0.5mm sieve. This photograph shows this sample containing woody debris, rock and pebble, shell fragments, mussel shells, barnacle shells, and clam shells.

Mussel and barnacle species are typically found associated with a hard substrate in the intertidal zone. The specimens of mussels and barnacles in this sample still contained tissue, indicating that these organisms were recently removed or scraped off of an attachment point. These could possible have been an artifact of the piling removal associated with this biological

evaluation. The decomposition of the tissue contributed by these mussels and barnacles may have been the contributing factor to the elevated ammonia concentrations observed in this sample, and consequently the negative biological responses observed in the bioassays.

Figure 1. Sample SD29

Figure 2. Sample SD29 Material Recovered After Wet-Sieving

5.2.2 Sample SD30

Sample SD30 was of a brown color having no distinguishing odor. This sample contained many large rocks and pebbles that were not included into the bioassay test chambers. Figure 3 below shows the appearance of the sediment as removed from the sample container. Figure 4 below depicts the size of the rocks that were hand removed from the sample. No woody debris is evident in this sample. There are no obvious physical characteristics that may explain the biological responses observed in this treatment.

Figure 3. Sample SD30

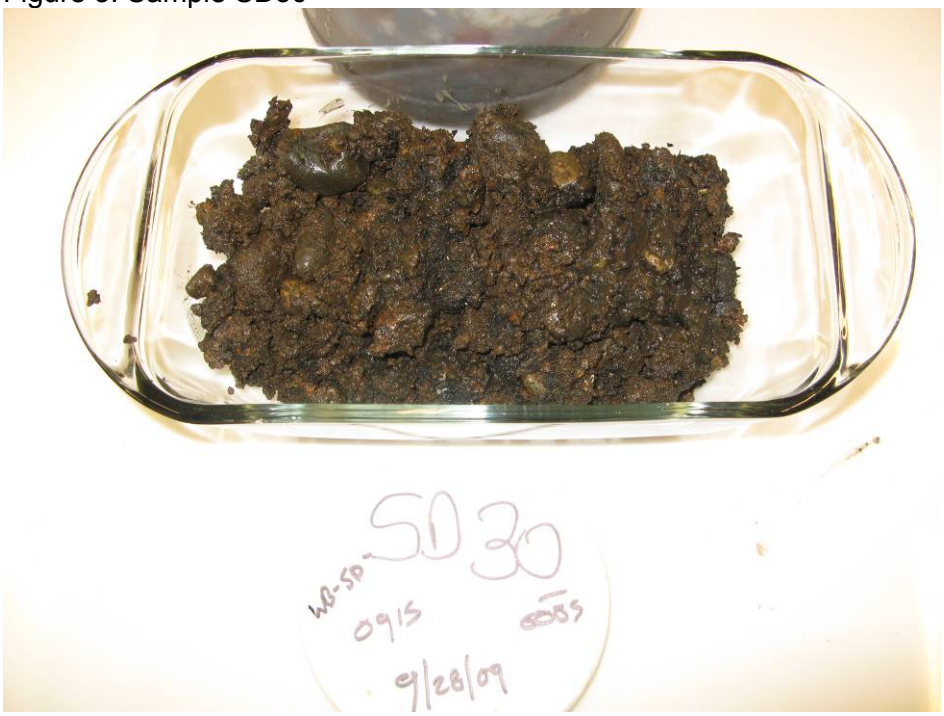

Figure 4. Sample SD30 Material Recovered After Wet-Sieving

6.0 REFERENCES

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PSEP. 1995. Puget Sound Protocols and Guidelines. Puget Sound Estuary Program. Puget Sound Water Quality Action Team, Olympia, Washington.

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USEPA/USACE. 1998. Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S: - Testing Manual. EPA 823-B-98-004. February 1998.

APPENDIX A

LABORATORY DOCUMENTS

APPENDIX A.1.1

Eohaustorius estuarius

Amphipod Bioassay

Laboratory Data Sheets

NEWFIELDS

10-DAY SOLID PHASE TEST OBSERVATION DATA

CLIENT	PROJECT	SPECIES	NEWFIELDS LABORATORY	PROTOCOL
Paramatrix	West Bay	*Eohaustorius estuarius*	Port Gamble Bath 5	PSEP 1995
NEWFIELDS JOB NUMBER	PROJECT MANAGER B. Hester	TEST START DATE 28-Oct-09	TEST END DATE 7-Nov-09	

#E = Emergence
#M = Number of Mortality
G = Growth
(fungal, bacterial, or algal)
D = No Air Flow (DO?)
N = Normal

Client/NewFields ID	Rep	Jar #	Initial # of Organisms	ENDPOINT DATA AND OBSERVATIONS										Number Alive
				Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	
				Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	
			20	10/29	10/30	10/31	11/01	11/2	11/3	11/4	11/5	11/6	11.7	
				Technician	Technician	Technician	Technician	Technician	Technician	Technician	Technician	Technician	Technician	
				MMB	MMB	JL	JL	MMB	MMB	MMB	MMB	TS	BH	
Control	1			N	N	N	N	N	N	N	N	N	N	19
	2			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	20
	3													18 IM
	4													19 IM
	5											↓	↓	20
WB-SD-RF01	1											G	G	18
	2											G	↓	20
	3											G		20
	4											G		20
	5											G	↓	19
WB-SD-RF02	1						↓					G	G	19
	2						G					G	↓	20
	3						N					G		20
	4						↓					N		20
	5			↓	↓		G	↓				G	↓	20
WB-SD-SD25	1			1E	N		N	N				G	G	19
	2			N	↓		1E	1E				G	1E ↓	19
	3			↓	↓	↓	N	N	↓	↓	↓	G		18
	4			↓	1E, G	G	G	G	G	G	G	G	↓	20
	5			2E	N	1E	1E, G	1E, IM	IM	2E	N	G	IM	19

NEWFIELDS

10-DAY SOLID PHASE TEST OBSERVATION DATA

CLIENT	PROJECT	SPECIES	NEWFIELDS LABORATORY	PROTOCOL
Paramatrix	West Bay	*Eohaustorius estuarius*	Port Gamble Bath 5	PSEP 1995
NEWFIELDS JOB NUMBER	**PROJECT MANAGER**	**TEST START DATE**	**TEST END DATE**	
.	B. Hester	28-Oct-09	7-Nov-09	

#E = Emergence
#M = Number of Mortality
G = Growth (fungal, bacterial, or algal)
D = No Air Flow (DO?)
N = Normal

Client/NewFields ID	Rep	Jar #	Initial # of Organisms	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Number Alive
				ENDPOINT DATA AND OBSERVATIONS										
				Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	
			20	10/29	10/30	10/31	11/01	11/2	11/3	11/4	11/5	11/6	11.7	
				Technician	Technician	Technician	Technician	Technician	Technician	Technician	Technician	Technician	Technician	
				MMB	MMB	JL	JL	MMB	MMB	MMB	MMB	B	BH	
WB-SD-MIXX	1			N	N	N	N	N	N	N	N	G	G	18
	2											N	N	20
	3											G	G	19
	4											N	N	19
	5											N	N	20
WB-SD-SD28	1						G	N				G	G	17
	2						N	N				G	G	19
	3					G	G	G, 1M				G	G	19
	4					N	N	N				1E	G	20
	5					1E		1E				G	G	20
WB-SD-SD29	1			2E	N	N	2E, G	N	1M, G	1M, G	G	G	G	14 1M
	2			N	1E		G	N	N	N	N	G	G	17 1M
	3			N	N		G	G, 1M	G, 1E, 2M	G	G	G	G	B 3M
	4			G	G	G	G	G	G, 5M	G	G	G	G	0 5M
	5			N	N	N	G	G, 11M	G, 15M(?)	G, 1SM	G ①	G	G	0
WB-SD-SD30	1			N	N		N	N	N	N	N	G	G	18
	2											G	G	19
	3											G	G	19
	4											G	G	17
	5						1E		1E		1E	G	G	20

① Mat suspended ~ 2 cm above surface of sediment. MMB 11/5/09.

NEWFIELDS

10 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATA SHEET

CLIENT	PROJECT	SPECIES		NEWFIELDS LABORATORY	PROTOCOL
Paramatrix	West Bay	*Eohaustorius estuarius*		Port Gamble Bath 5	PSEP 1995
NEWFIELDS JOB NUMBER	PROJECT MANAGER	TEST START DATE	TIME	TEST END DATE	TIME
.	B. Hester	28-Oct-09	1400	7-Nov-09	1300

				WATER QUALITY DATA									
			Test Conditions	DO (mg/L) >5.0 mg/L		Temperature (°C) 15±1		Salinity (ppt) 28±1		pH 7.8±0.5		Tech	Date
Client/NewFields ID	Day	Rep	Jar#	meter	mg/L	meter	deg C	meter	ppt	meter	unit		
Control	0	WQ	27	6	8.1	6	15.5	1	28	1	8.2	CR	10/28
WB-SD-RF01	0	WQ	30	↓	8.0	↓	15.6	↓	28	↓	8.2	↓	↓
WB-SD-RF02	0	WQ	38	↓	8.0	↓	15.6	↓	28	↓	8.2	↓	↓
WB-SD-SD25	0	WQ	6	↓	7.9	↓	15.6	↓	28	↓	8.3	↓	↓
WB-SD-MIXX	0	WQ	37	↓	7.9	↓	15.6	↓	27	↓	8.2	↓	↓
WB-SD-SD28	0	WQ	20	↓	7.8	↓	15.5	↓	28	↓	8.2	↓	↓
WB-SD-SD29	0	WQ	13	↓	7.5	↓	15.5	↓	28	↓	8.2	↓	↓
WB-SD-SD30	0	WQ	25	↓	7.9	↓	15.6	↓	28	↓	8.1	↓	↓
Control	1	WQ	27	6	9.7	6	15.1	1	28	1	8.4	MMB	10/29/09
WB-SD-RF01	1	WQ	30	↓	9.7	↓	15.1	↓	28	↓	8.4	↓	↓
WB-SD-RF02	1	WQ	38	↓	9.6	↓	15.1	↓	28	↓	8.5	↓	↓
WB-SD-SD25	1	WQ	6	↓	9.1	↓	15.3	↓	28	↓	8.4	↓	↓
WB-SD-MIXX	1	WQ	37	↓	9.4	↓	15.2	↓	27	↓	8.4	↓	↓
WB-SD-SD28	1	WQ	20	↓	8.9	↓	15.2	↓	28	↓	8.3	↓	↓
WB-SD-SD29	1	WQ	13	↓	9.4	↓	15.3	↓	28	↓	8.5	↓	↓
WB-SD-SD30	1	WQ	25	↓	9.5	↓	15.1	↓	28	↓	8.3	↓	↓

NEWFIELDS

10 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATA SHEET

CLIENT	PROJECT
Paramatrix	West Bay
NEWFIELDS JOB NUMBER	PROJECT MANAGER
.	B. Hester

SPECIES		NEWFIELDS LABORATORY	PROTOCOL
Eohaustorius estuarius		Port Gamble Bath 5	PSEP 1995
TEST START DATE	TIME	TEST END DATE	TIME
28-Oct-09	1400	7-Nov-09	1300

				WATER QUALITY DATA									
			Test Conditions	DO (mg/L) >5.0 mg/L		Temperature (°C) 15±1		Salinity (ppt) 28±1		pH 7.8±0.5		Tech	Date
Client/NewFields ID	Day	Rep	Jar#	meter	mg/L	meter	deg C	meter	ppt	meter	unit		
Control	2	WQ	27	6	8.2	6	15.5	1	28	1	8.4	MMB	10/30/09
WB-SD-RF01	2	WQ	30	↓	8.0	↓	15.7	↓	28	↓	8.4	↓	↓
WB-SD-RF02	2	WQ	38		8.0		15.6		28		8.5		
WB-SD-SD25	2	WQ	6		7.6		15.6		28		8.1		
WB-SD-MIXX	2	WQ	37		8.0		15.8		27		8.4		
WB-SD-SD28	2	WQ	20		7.8		15.6		28		8.3		
WB-SD-SD29	2	WQ	13		7.7		15.6		28		8.4		
WB-SD-SD30	2	WQ	25	↓	8.1	↓	15.3	↓	28	↓	8.2	↓	↓
Control	3	WQ	27	6	8.5	6	15.5	1	28	1	8.4	JL	10/31/09
WB-SD-RF01	3	WQ	30	↓	8.4	↓	15.6	↓	28	↓	8.4	↓	↓
WB-SD-RF02	3	WQ	38		8.4		15.6		28		8.5		
WB-SD-SD25	3	WQ	6	6	7.7		16.3		28		8.3		
WB-SD-MIXX	3	WQ	37		8.4		15.5		27		8.4		
WB-SD-SD28	3	WQ	20		8.1		15.7		28		8.4		
WB-SD-SD29	3	WQ	13		7.9		15.8		28		8.5		
WB-SD-SD30	3	WQ	25	↓	8.3	↓	15.6	↓	28	↓	8.3	↓	↓

NEWFIELDS

10 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATA SHEET

CLIENT	PROJECT
Paramatrix	West Bay
NEWFIELDS JOB NUMBER	PROJECT MANAGER
	B. Hester

SPECIES		NEWFIELDS LABORATORY	PROTOCOL
Eohaustorius estuarius		Port Gamble Bath 5	PSEP 1995
TEST START DATE	TIME	TEST END DATE	TIME
28-Oct-09	1400	7-Nov-09	1300

				WATER QUALITY DATA									
			Test Conditions	DO (mg/L) >5.0 mg/L		Temperature (°C) 15±1		Salinity (ppt) 28±1		pH 7.8±0.5		Tech	Date
Client/NewFields ID	Day	Rep	Jar#	meter	mg/L	meter	deg C	meter	ppt	meter	unit		
Control	4	WQ	27	6	8.4	6	15.6	1	28	1	8.4	JL	11/01
WB-SD-RF01	4	WQ	30		8.4		15.6		28		8.4		
WB-SD-RF02	4	WQ	38		8.4		15.5		28		8.5		
WB-SD-SD25	4	WQ	6		7.8		15.9		28		8.4		
WB-SD-MIXX	4	WQ	37		8.3		15.5		27		8.4		
WB-SD-SD28	4	WQ	20		8.1		15.8		28		8.5		
WB-SD-SD29	4	WQ	13		7.8		15.7		29		8.6		
WB-SD-SD30	4	WQ	25		8.2		15.7		28		8.3		
Control	5	WQ	27	6	8.3	6	15.3	1	28	1	8.2	MMB	11/2
WB-SD-RF01	5	WQ	30		8.3		15.5		28		8.2		
WB-SD-RF02	5	WQ	38		8.3		15.4		28		8.3		
WB-SD-SD25	5	WQ	6		7.8		15.9		27		8.2		
WB-SD-MIXX	5	WQ	37		8.3		15.5		26		8.2		
WB-SD-SD28	5	WQ	20		8.2		15.3		28		8.4		
WB-SD-SD29	5	WQ	13		7.9		15.5		28		8.4		
WB-SD-SD30	5	WQ	25		8.2		15.4		27		8.1		

NEWFIELDS

10 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATA SHEET

CLIENT	PROJECT	SPECIES		NEWFIELDS LABORATORY	PROTOCOL
Paramatrix	West Bay	*Eohaustorius estuarius*		Port Gamble Bath 5	PSEP 1995
NEWFIELDS JOB NUMBER	PROJECT MANAGER	TEST START DATE	TIME	TEST END DATE	TIME
	B. Hester	28-Oct-09	1400	7-Nov-09	1300

				WATER QUALITY DATA									
			Test Conditions	DO (mg/L) >5.0 mg/L		Temperature (°C) 15±1		Salinity (ppt) 28±1		pH 7.8±0.5		Tech	Date
Client/NewFields ID	Day	Rep	Jar#	meter	mg/L	meter	deg C	meter	ppt	meter	unit		
Control	6	WQ	27	6	8.5	6	15.2	1	28	1	8.2	CR	11/3/09
WB-SD-RF01	6	WQ	30		8.5		15.2		28		8.3		
WB-SD-RF02	6	WQ	38		8.5		15.2		28		8.4		
WB-SD-SD25	6	WQ	6		7.8		15.6		27		8.4		
WB-SD-MIXX	6	WQ	37		8.6		15.5		27		8.4		
WB-SD-SD28	6	WQ	20		8.5		15.3		28		8.6		
WB-SD-SD29	6	WQ	13		7.9		15.4		28		8.5		
WB-SD-SD30	6	WQ	25		8.4		15.2		27		8.1		
Control	7	WQ	27	6	8.2	6	15.3	1	28	1	8.3	MMB	11/4/09
WB-SD-RF01	7	WQ	30		8.3		15.2		28		8.4		
WB-SD-RF02	7	WQ	38		8.3		15.2		28		8.5		
WB-SD-SD25	7	WQ	6		7.8		15.8		27		8.5		
WB-SD-MIXX	7	WQ	37		8.4		15.2		26		8.5		
WB-SD-SD28	7	WQ	20		9.0		15.4		28		8.8		
WB-SD-SD29	7	WQ	13		7.8		15.5		28		8.6		
WB-SD-SD30	7	WQ	25		8.3		15.4		27		8.4		

NEWFIELDS

10 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATA SHEET

CLIENT	PROJECT	SPECIES		NEWFIELDS LABORATORY	PROTOCOL
Paramatrix	West Bay	*Eohaustorius estuarius*		Port Gamble Bath 5	PSEP 1995
NEWFIELDS JOB NUMBER	PROJECT MANAGER	TEST START DATE	TIME	TEST END DATE	TIME
.	B. Hester	28-Oct-09	1400	7-Nov-09	1300

				WATER QUALITY DATA									
			Test Conditions	DO (mg/L) >5.0 mg/L		Temperature (°C) 15±1		Salinity (ppt) 28±1		pH 7.8±0.5		Tech	Date
Client/NewFields ID	Day	Rep	Jar#	meter	mg/L	meter	deg C	meter	ppt	meter	unit		
Control	8	WQ	27	6	8.1	6	15.5	1	28	1	8.2	MMB	11/5/09
WB-SD-RF01	8	WQ	30	↓	8.6	↓	15.5	↓	28	↓	8.4	↓	↓
WB-SD-RF02	8	WQ	38		8.4		15.6		28		8.5		
WB-SD-SD25	8	WQ	6		8.1		15.9		27		8.3		
WB-SD-MIXX	8	WQ	37		8.7		16.6		26		8.6		
WB-SD-SD28	8	WQ	20		8.8		15.6		28		9.2 ①		
WB-SD-SD29	8	WQ	13		8.2		15.7		28		8.5		
WB-SD-SD30	8	WQ	25	↓	8.3	↓	15.6	↓	27	↓	8.3	↓	↓
Control	9	WQ	27	6	8.3	6	15.5	1	28	1	8.5	TS	11/6
WB-SD-RF01	9	WQ	30	↓	8.3	↓	15.4	↓	28	↓	8.7	↓	↓
WB-SD-RF02	9	WQ	38		8.3		15.7		28		8.9		
WB-SD-SD25	9	WQ	6		8.4		15.8		27		8.9		
WB-SD-MIXX	9	WQ	37		8.4		15.8		27		8.9		
WB-SD-SD28	9	WQ	20		8.3		15.6		27		9.3		
WB-SD-SD29	9	WQ	13		8.5		15.7		28		8.9		
WB-SD-SD30	9	WQ	25	↓	8.5	↓	15.5	↓	27	↓	8.8	↓	↓

① Checked pH in all rep.'s: ①9.3 ②9.0 ③9.3 ④9.0 ⑤9.2

NEWFIELDS

10 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATA SHEET

CLIENT	PROJECT
Paramatrix	West Bay
NEWFIELDS JOB NUMBER	PROJECT MANAGER
	B. Hester

SPECIES		NEWFIELDS LABORATORY	PROTOCOL
Eohaustorius estuarius		Port Gamble Bath 5	PSEP 1995
TEST START DATE	TIME	TEST END DATE	TIME
28-Oct-09	1400	7-Nov-09	1300

				WATER QUALITY DATA									
			Test Conditions	DO (mg/L) >5.0 mg/L		Temperature (°C) 15±1		Salinity (ppt) 28±1		pH 7.8±0.5		Tech	Date
Client/NewFields ID	Day	Rep	Jar#	meter	mg/L	meter	deg C	meter	ppt	meter	unit		
Control	10	WQ	27	6	8.2	6	15.7	1	28	1	8.3	JL	11/07
WB-SD-RF01	10	WQ	30	1	8.3	1	15.5	1	28	1	8.5	1	1
WB-SD-RF02	10	WQ	38	1	8.3	1	15.6	1	28	1	8.7	1	1
WB-SD-SD25	10	WQ	6	1	8.3	1	16.1	1	27	1	9.1	1	1
WB-SD-MIXX	10	WQ	37	1	8.1	1	15.8	1	26	1	8.6	1	1
WB-SD-SD28	10	WQ	20	1	8.0	1	16.0	1	27	1	9.0	1	1
WB-SD-SD29	10	WQ	13	1	7.6	1	16.4	1	28	1	8.7	1	1
WB-SD-SD30	10	WQ	25	↓	8.3	↓	15.8	↓	27	↓	8.7	↓	↓

NEWFIELDS

Ammonia and Sulfide Analysis Record

Client/Project: Parametrix / ~~West Bay~~ ~~URS / Boise Cascade~~	Organism: Eoh	Test Duration (days): 10

PRETEST / ~~INITIAL~~ / FINAL / ~~OTHER (circle one)~~ DAY of TEST: 0
OVERLYING (OV) / FOREWATER (PW) (circle one)

Comments: _____

Calibration Standards Temperature		Sample temperature should be within ±1°C of standards temperature at time and date of analysis.
Date:	Temperature:	
11/5/09	20.0	

Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp °C	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
Control	Swtr.	10/28/09 MMB	0	20.0	11/5/09 MMB	Y			0.002
RF01			1.04						0.037
RF02			2.53						0.026
SD25			4.93						0.037
MIXX			0.603						0.011
SD28			2.93						0.017
SD29			14.3						0.017
SD30			1.42						0.010
Control	Swtr.	10/28/09 MMB	④ 20.5 ~~1.42~~	20.0	11/5/09 MMB	Y	7.2	29	0.024
RF01			9.08				7.4	30	0.419
RF02			14.2				7.4	30	②0.112 = 0.560
SD25			25.0				7.3	28	0.419
MIXX			1.27				7.5	26	0.240
SD28			20.2				7.5	29	③0.615 = 15.38
SD29			85.2				7.7	29	①0.194 = 0.388
SD30			3.83				7.2	28	0.192

OVERLYING

① Diluted samples by 1/2, MMB 10/28/09.
② Diluted samples by 1/5, MMB 10/28/09.
③ Diluted sample by 1/25, MMB 10/28/09.
④ WC, MMB 11/5/09.

NEWFIELDS

Ammonia and Sulfide Analysis Record

Client/Project: City of Olympia / West Bay	Organism: Eohs	Test Duration (days): 10

PRETEST / INITIAL / FINAL / OTHER (circle one) DAY of TEST: 10

OVERLYING (OV) / POREWATER (PW) (circle one)

Comments: _____

Calibration Standards Temperature		Sample temperature should be within ±1°C of standards temperature at time and date of analysis.
Date:	Temperature:	
11/9/09	20.0	

	Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp °C	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
OVERLYING	Control	Surr.	11/9/09 MMB	Ø	20.0	11/9/09 MMB	N			0.016
	RF·01	↓	↓	Ø	↓	↓	↓			Ø
	RF·02			Ø						0.018
	25			2.93						0.053
	MIXX			<0.5						0.004
	28			0.773						0.034
	29			23.9						0.046
	30			<0.5						0.008
POREWATER	Control	Surr.	11/9/09 MMB	<0.5	20.0	11/9/09 MMB	N	7.6	28	0.031
	RF·01	↓	↓	②	↓	↓	↓	8.0	29	0.341
	RF·02			1.77				8.1	29	0.185
	25			5.78				7.8	27	0.210
	MIXX			<0.5				8.0	27	0.061
	28			2.19				8.1	28	0.222
	29			44.1				8.5	27	① 0.031
	30	↓	↓	1.12	↓	↓	↓	8.0	27	0.106

① Used 2.5 ml sample * 10 x multiplier, MMB 11/9/09. 0.031 x 10 = 0.310 mg/L

② Not enough sample to measure, MMB 11/9/09.

NEWFIELDS

ORGANISM RECEIPT LOG

Date:	Time:	NewFields Batch No.
10/27/09	1350	NAS 9838

Organism / Project:	Source:
Echs /	Northwestern Aquatic Sciences

Address:	Invoice Attached
On File	(Yes) No

Phone:	Contact:
On File	On File

No. Ordered:	No. Received:	Source Batch:
1350	1485	Field collected

Condition of Organisms:	Approximate Size or Age:
Good	3-5 mm
Shipper:	**B of L (Tracking No.)**
FedEx	8704 9284 9838
Condition of Container:	**Received By:**
Good	MMB

Confirmation of ID of Organism:	Technician (Initials):
Yes (No)	MMB

pH (Units)	Temp. (°C)	D.O. (mg/L)	Conductivity or Salinity (Include Units)	Technician (Initials)
(1)	8.4	(1)	32 ppt	MMB

Notes: (1) Unable to measure, not enough liquid. MMB 10/27/09

Northwestern Aquatic Sciences
3814 Yaquina Bay Rd., P.O. Box 1437, Newport, OR 97365
Tel: 541-265-7225, Fax: 541-265-2799, www.nwaquatic.com

SUBJECT: Animal Collection Data Sheet (shipping)

SOLD TO: Newfields Northwest
4729 NE View Dr.
P.O. Box 216
Port Gamble WA 98364

FedEx# 3689-9072-8

Brian Hester/Collin Ray
360.297.6044

DATE OF SHIPMENT: 10-26-09

ANIMAL HISTORY

Species	Age/Size	Number Shipped
Eohaustorius estuarius	3-5mm	1350+ 10%

WATER QUALITY AT TIME OF SHIPMENT

Temperature (°C): 14.5	pH: 8.2	Salinity (ppt): 28.5	D.O.(mg/L): 8.4
Other:			

PACKAGED BY: YVES NAKAHARA **DATE:** 10-26-09

FIELD COLLECTION/CULTURE NOTES

Collected 10-22-09 Yaquina Bay, OR.
Interstitial WQ: Temp: 14.0 °C, Salinity 34.0 ppt. Salinity adjusted down ~5 ppt.
Held at 15°C in aerated water.

ADDITIONAL COMMENTS

2-liters of 0.5 mm sieved home sediment included.

PLEASE RETURN ALL SHIPPING MATERIALS

If you have any questions, Please call Gary Buhler or Gerald Irissarri at (541) 265-7225. Thank You.

APPENDIX A.1.2

Eohaustorius estuarius

Amphipod Bioassay

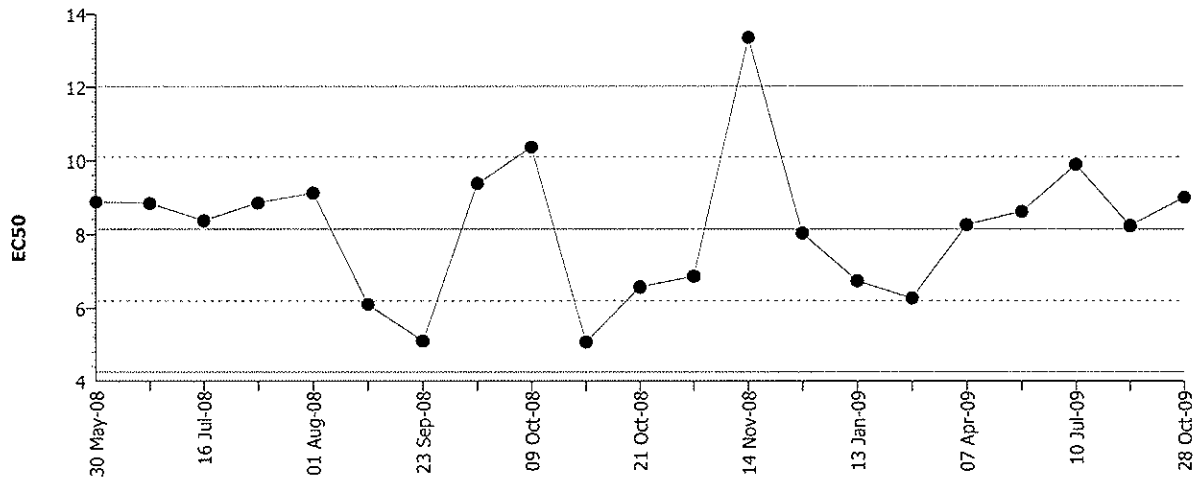
Reference Toxicant Test

CETIS QC Chart

Report Date: 04 Jan-10 11:04 AM

Eohaustorius 10-d Survival and Reburial Sediment Test — **NewFields**

Test Type: Survival-Reburial | **Organism:** Eohaustorius estuarius (Amphipod) | **Material:** Cadmium chloride
Protocol: EPA/600/R-94/025 (1994) | **Endpoint:** Proportion Survived | **Source:** Reference Toxicant-REF



Mean:	8.13842	**Count:**	20	**-1s Warning Limit:**	6.19271	**-2s Action Limit:**	4.24701
Sigma:	1.94570	**CV:**	23.91%	**+1s Warning Limit:**	10.0841	**+2s Action Limit:**	12.0298

Quality Control Data

Point	Year	Month	Day	Data	Delta	Sigma	Warning	Action	Test Link	Analysis
1	2008	May	30	8.87317	0.73475	0.37763			13-3382-4100	20-7672-2429
2		Jun	27	8.83113	0.69272	0.35602			14-3368-4084	04-4152-2772
3		Jul	16	8.35797	0.21956	0.11284			09-4785-0917	05-8512-9332
4			26	8.84336	0.70495	0.36231			04-2285-3356	06-1210-3839
5		Aug	1	9.11399	0.97557	0.50140			16-8866-7768	08-6766-3207
6			26	6.09565	-2.04276	-1.04988	(-)		05-3187-8218	10-7868-4568
7		Sep	23	5.09679	-3.04162	-1.56325	(-)		02-2340-6976	12-6046-2683
8		Oct	3	9.37148	1.23307	0.63374			12-9882-1875	12-8093-3143
9			9	10.36136	2.22294	1.14249	(+)		07-7236-5738	09-5362-0444
10			10	5.07151	-3.06690	-1.57624	(-)		08-5307-5163	12-8225-3680
11			21	6.56493	-1.57349	-0.80870			02-5567-7485	08-9907-2675
12			28	6.85362	-1.28480	-0.66033			11-3814-9085	05-5479-4141
13		Nov	14	13.35570	5.21728	2.68144	(+)	(+)	10-0142-7604	10-4633-3899
14		Dec	23	8.02451	-0.11391	-0.05854			04-4756-6255	16-0393-7069
15	2009	Jan	13	6.73179	-1.40662	-0.72294			02-2312-8980	19-2857-8265
16		Feb	6	6.26547	-1.87295	-0.96261			15-7764-3447	07-6235-2432
17		Apr	7	8.24630	0.10788	0.05545			03-3346-8852	06-9882-7808
18		May	26	8.60595	0.46753	0.24029			15-0082-8781	12-4452-3693
19		Jul	10	9.88120	1.74279	0.89571			15-8878-4364	11-3056-1329
20		Sep	15	8.22244	0.08402	0.04318			00-1415-4162	19-1946-6930
21		Oct	28	8.99170	0.85329	0.43855			11-1793-4979	19-2713-9222

CETIS Test Summary

Report Date: 16 Nov-09 4:36 PM
Test Link: 11-1793-4979

Eohaustorius 10-d Survival and Reburial Sediment Test

NewFields

Test No:	12-2196-6405	Test Type:	Survival-Reburial	Duration:	4d 1h
Start Date:	28 Oct-09 05:00 PM	Protocol:	EPA/600/R-94/025 (1994)	Species:	Eohaustorius estuarius
Ending Date:	01 Nov-09 06:00 PM	Dil Water:	Laboratory Seawater	Source:	Northwestern Aquatic Science, OR
Setup Date:	28 Oct-09 05:00 PM	Brine:	Not Applicable		
Comments:	P080418.70				

Sample No:	06-0292-7500	Code:	602927500	Client:	Internal Lab
Sample Date:	28 Oct-09 05:00 PM	Material:	Cadmium chloride	Project:	Reference Toxicant
Receive Date:		Source:	Reference Toxicant		
Sample Age:	N/A	Station:	P080418.70		

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
08-9503-3305	Proportion Survived	5	10	7.07107	32.80%	Dunnett's Multiple Comparison

Point Estimate Summary

Analysis	Endpoint	% Effect	Conc-mg/L	95% LCL	95% UCL	Method
19-2713-9222	Proportion Survived	50	8.991705	6.428589	12.57675	Trimmed Spearman-Karber

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
08-9503-3305	Proportion Survived	Control Response	0.96667	0.9 - NL	Yes	Passes acceptability criteria
19-2713-9222	Proportion Survived	Control Response	0.96667	0.9 - NL	Yes	Passes acceptability criteria

Proportion Survived Summary

Conc-mg/L	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
	Dilution Water	3	0.96667	0.90000	1.00000	0.03333	0.05774	5.97%
2.5		3	0.73333	0.60000	0.90000	0.08819	0.15275	20.83%
5		3	0.66667	0.40000	1.00000	0.17638	0.30551	45.83%
10		3	0.53333	0.40000	0.70000	0.08819	0.15275	28.64%
20		3	0.03333	0.00000	0.10000	0.03333	0.05774	173.21
40		3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00%

Proportion Survived Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3
0	Dilution Water	1.00000	0.90000	1.00000
2.5		0.90000	0.60000	0.70000
5		0.40000	0.60000	1.00000
10		0.70000	0.50000	0.40000
20		0.10000	0.00000	0.00000
40		0.00000	0.00000	0.00000

CETIS Data Worksheet

Report Date: 16 Nov-09 4:36 PM
Link: 11-1793-4979

Eohaustorius 10-d Survival and Reburial Sediment Test **NewFields**

Start Date: 28 Oct-09 05:00 PM **Species:** Eohaustorius estuarius **Sample Code:** 602927500
Ending Date: 01 Nov-09 06:00 PM **Protocol:** EPA/600/R-94/025 (1994) **Sample Source:** Reference Toxicant
Sample Date: 28 Oct-09 05:00 PM **Material:** Cadmium chloride **Sample Station:** P080418.70

Conc-mg/L	Code	Rep	Pos	# Exposed	# Survived	# Reburied	Notes
0	D	1	7	10	10		
0	D	2	1	10	9		
0	D	3	13	10	10		
2.5		1	16	10	9		
2.5		2	10	10	6		
2.5		3	14	10	7		
5		1	12	10	4		
5		2	18	10	6		
5		3	3	10	10		
10		1	11	10	7		
10		2	8	10	5		
10		3	5	10	4		
20		1	6	10	1		
20		2	17	10	0		
20		3	9	10	0		
40		1	2	10	0		
40		2	4	10	0		
40		3	15	10	0		

NEWFIELDS

Cadmium Reference Toxicant Test
Survival Data Sheet

CLIENT	PROJECT	NEWFIELDS JOB NO.	SPECIES	PROJECT MANAGER	NEWFIELDS LABORATORY	PROTOCOL
Paramatrix	West Bay	.	*Eohaustorius estuarius*	B. Hester	Port Gamble Bath 5	PSEP 1995

SURVIVAL & BEHAVIOR DATA

OBSERVATION KEY
N = Normal
LOE = Loss of equilibium
Q = Quinscent
DC = Discoloration
NB = No body
F = Floating on surface

INITIAL # OF ORGANISMS: 10

CLIENT/ NEWFIELDS ID	CONC. value	CONC. units	REP	INITIAL NUMBER	DATE 10/29/09 #ALIVE	#DEAD	OBS	DATE 10/30 #ALIVE	#DEAD	OBS	DATE 10/31 #ALIVE	#DEAD	OBS	DATE 11/01 #ALIVE	#DEAD	OBS
					TECHNICIAN MMB			TECHNICIAN MMB			TECHNICIAN JL			TECHNICIAN JL		
Ref.Tox.- cadmium	0	mg/L	1		10	Ø	2F	10	Ø	1F	10	Ø	1F	10	Ø	N
			2		10	Ø	4F	10	Ø	1F	10	Ø	3F	9	1	2F
			3		10	Ø	N	10	Ø	N	10	Ø	N	10	Ø	N
Ref.Tox.- cadmium	2.5	mg/L	1		10	Ø	1F	10	Ø	N	10	Ø	N	9	1	N
			2		10	Ø	1F	10	Ø	1F	6	4	N	6	Ø	1F
			3		10	Ø	1F	10	Ø	1F	7	3	1F	7	Ø	N
Ref.Tox.- cadmium	5	mg/L	1		10	Ø	N	10	Ø	1F	5	5	1F	4	1	1F
			2		10	Ø	1F	7	3	1F	7	Ø	1F	6	1	N
			3		10	Ø	2F	10	Ø	N	10	Ø	1F	10	Ø	N
Ref.Tox.- cadmium	10	mg/L	1		10	Ø	N	9	1	1F	7	2	N	7	Ø	Q
			2		10	Ø	1F	9	1	N	7	2	1F	5	2	Q
			3		10	Ø	1F	10	Ø	1F	5	5	N	4	1	Q
Ref.Tox.- cadmium	20	mg/L	1		10	Ø	3F	8	2	Q	4	4	DC	1	3	Q
			2		10	Ø	N	9	1	N	②45	4	DC	Ø	5	DC
			3		9	1	2F	7	2	DC	3	4	DC,Q	Ø	3	DC
Ref.Tox.- cadmium	40	mg/L	1		10	Ø	1F	6	4	Q	②~~00~~	~~Ø~~6	DC			
			2		10	Ø	N①	3	7	DC	30	3	↓			
			3		10	Ø	N	4	6	DC	Ø	4	↓			

① Babies present, removed from chamber. MMB 10/29/09.

② WC, JL 10/31

NEWFIELDS

Cadmium Reference Toxicant Test
Water Quality Data Sheet

CLIENT	PROJECT	SPECIES	NEWFIELDS LABORATORY	PROTOCOL
Paramatrix	West Bay	*Eohaustorius estuarius*	Port Gamble Bath 5	PSEP 1995

NEWFIELDS JOB NUMBER	PROJECT MANAGER	QUANTITY OF STOCK : 8.0mL	QUANTITY OF DILUENT: 1500mL	INIT
	B. Hester	ACTUAL: 6.011 g	ACTUAL: 1500.1 g	MMB
				DATE PREP 10/28/09

TEST ID	LOT #:	TEST START DATE	TIME	TEST END DATE	TIME
P080418.70	0651OTC	28Oct09	1700	01Nov09	1800

WATER QUALITY DATA

DILTIN.WAT.BATCH	TEMP REC#	REFERENCE TOX. MATERIAL	REFERENCE TOXXICANT	LOT NO.	96-H LC_{50}
FSW102708.01		cadmium chloride	cadmium		

TEST CONDITIONS	DO (mg/L)	TEMP(°C)	SAL (ppt)	pH	TECHNICIAN	AMMONIA	SULFIDES
	≥ 5.0	15 ± 1	28 ± 1	8.0 ± 0.5			

CLIENT/ NEWFIELDS ID	CONCENTRATION value	CONCENTRATION units	DAY	REP	D.O. meter	D.O. mg/L	TEMP. meter	TEMP. °C	SALINITY meter	SALINITY ppt	pH meter	pH unit	WQ TECH	AMMONIA meter	AMMONIA mg/L	AMMONIA Tech	SULFIDES meter	SULFIDES mg/L	SULFIDES Tech
Ref.Tox.-cadmium	0	mg/L	0	Stock	6	7.1	6	15.7	1	28	1	7.6	CR						
			1	Surr	6	8.3	6	15.4	1	28	1	8.0	MMB						
			2	Surr	6	7.3	6	15.8	1	27	1	7.6	MMB						
			3	Surr	6	7.4	6	17.1	1	27	1	7.2	JL						
			4	Surr	6	7.1	6	16.3	1	27	1	7.6	JL						
Ref.Tox.-cadmium	2.5	mg/L	0	Stock	6	7.6	6	15.6	1	28	1	7.7	CR						
			1	Surr	6	8.9	6	15.2	1	28	1	8.1	MMB						
			2	Surr	6	7.3	6	15.7	1	28	1	7.9	MMB						
			3	Surr	6	7.2	6	15.5	1	28	1	7.5	JL						
			4	Surr	6	7.3	6	15.4	1	28	1	7.8	JL						
Ref.Tox.-cadmium	5	mg/L	0	Stock	6	7.9	6	15.6	1	28	1	7.7	CR						
			1	Surr	6	8.7	6	15.1	1	28	1	8.1	MMB						
			2	Surr	6	7.2	6	15.4	1	28	1	7.9	MMB						
			3	Surr	6	7.7	6	15.4	1	28	1	7.8	JL						
			4	Surr	6	7.8	6	15.3	1	28	1	8.0	JL						
Ref.Tox.-cadmium	10	mg/L	0	Stock	6	7.8	6	15.6	1	28	1	7.8	CR						
			1	Surr	6	8.8	6	15.1	1	28	1	8.1	MMB						
			2	Surr	6	7.5	6	15.2	1	28	1	8.0	MMB						
			3	Surr	6	7.7	6	15.5	1	28	1	7.8	JL						
			4	Surr	6	8.0	6	15.3	1	28	1	8.0	JL						
Ref.Tox.-cadmium	20	mg/L	0	Stock	6	7.8	6	15.5	1	28	1	7.8	CR						
			1	Surr	6	8.8	6	15.0	1	28	1	8.2	MMB						
			2	Surr	6	7.6	6	15.2	1	28	1	8.0	MMB						
			3	Surr	6	7.7	6	15.4	1	28	1	7.9	JL						
			4	Surr	6	7.9	6	15.2	1	28	1	8.1	JL						
Ref.Tox.-cadmium	40	mg/L	0	Stock	6	7.9	6	15.4	1	28	1	7.8	CR						
			1	Surr	6	9.1	6	15.6	1	28	1	8.2	MMB						
			2	Surr	6	7.7	6	15.2	1	28	1	8.1	MMB						
			3	Surr	6		6		1		1		JL						
			4	Surr															

APPENDIX A.2.1

Neanthes arenaceodentata

Juvenile Polychaete Bioassay

Laboratory Data Sheets

NEWFIELDS

20-DAY SOLID PHASE BIOASSAY
OBSERVATION DATASHEET

CLIENT	PROJECT	JOB NO.	PROJECT MANAGER	NEWFIELDS LABORATORY	PROTOCOL	SPECIES
City of Olympia	West Bay	1101-010-860	B. Hester	Port Gamble Bath 6	PSEP 1995	*Neanthes arenaceodentata*

ENDPOINT DATA & OBSERVATIONS

#S= Number on the Surface
#M= Number of Mortality
L=Anoxic Surface
F=Fungal Patches
A=Algal Patches
D=No Air Flow (DO?)
U=Excess food
N=Normal
B=No Burrows

INITIAL # OF ORGANISMS: 5

CLIENT/ NEWFIELDS ID	REP	JAR	INITIAL #	Date and Initials	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	NUMBER REMAINING	TARE WEIGHT (mg)	TOTAL WEIGHT (mg)
					11/6 KS	11/07 JL	11/08 JL	11/9 CR	11/10 CR	11/11 MMB	11/12 CR	11.13 BH	11/14 JL	11/15 JL	11/16 MMB	11/17 MMB	11/18 CR	11/19 TS	11/20 TS	11/21 JL	11/22 JL	11/23 TS	11/24 MMB	11/25 MMB			
Control /	1		5		N	N	N	N	N	N	N	N	N	N	N	N	N	G	G	N	N	G	G	G	5	1 88.60	136.94
	2		5					U	U										N	N			N	N	5	2 86.29	140.42
	3		5					U	N										N				N		5	3 80.98	139.34
	4		5					N										N	N			N	N		5	4 68.07	112.29
	5		5				G											G	G			G	N		5	5 75.53	139.98
WB-SD-RF01 /	1		5			G,U	G								G	G	G					G	G	G	5	6 87.88	138.26
	2		5			N	N		U						G										5	7 78.94	131.52
	3		5						N						G										5	8 85.35	134.72
	4		5						U						G										5	9 76.31	143.29
	5		5						N						G										6	10 71.59	118.27
WB-SD-RF02 /	1		5					G	G	N	U	G			G										5	11 89.27	150.48
	2		5					G	G		N				G										5	12 82.69	150.99
	3		5				G	G	G,U		N				G										5	13 85.84	147.32
	4		5				G	G	G	G	G				G										5	14 90.10	135.66
	5		5				N	N	U	N	N				G										5	15 94.02	175.19

Zero Time Tare Wts. (mg)
1: 73.18
2: 70.77
3: 71.76

Zero Time Weights (mg) With Worms
1: 74.46
2: 71.83
3: 73.25

NEWFIELDS

20-DAY SOLID PHASE BIOASSAY
OBSERVATION DATASHEET

CLIENT	PROJECT	JOB NO.	PROJECT MANAGER	NEWFIELDS LABORATORY	PROTOCOL	SPECIES
City of Olympia	West Bay	1101-010-860	B. Hester	Port Gamble Bath 6	PSEP 1995	*Neanthes arenaceodentata*

ENDPOINT DATA & OBSERVATIONS

#S= Number on the Surface
#M= Number of Mortality
L=Anoxic Surface
F=Fungal Patches
A=Algal Patches
D=No Air Flow (DO?)
U=Excess food
N=Normal
B=No Burrows

INITIAL # OF ORGANISMS: 5

CLIENT/ NEWFIELDS ID	REP	JAR	Date and Initials	INITIAL #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	NUMBER REMAINING	TARE WEIGHT (mg)	TOTAL WEIGHT (mg)
			11/6		N	JL 11/07	JL 11/08	CR 11/9	CR 11/10	MMB 11/11	CR 11/12	BH 11/13	JL 11/14	JL 11/15	MMB 11/16	MMB 11/17	CR 11/18	TS 11/19	TS 11/20	JL 11/21	JL 11/22	TS 11/23	MMB 11/24	MMB 11/25			
WB-SD-SD25 /	1			5	N	G	N	N	N	N	G	G	N	N	G	G	G	G	G	N	N	G	G	G	5	16 87.55	143.10
	2			5		G	↓	G,U	G,U	N	U		↓	↓											5	17 87.14	133.79
	3			5		N	G	G,U	G	G	G		G	G							↓				5	18 83.60	119.41
	4			5		G	G	G	G,U	G	G		G	N							DC				5	19 77.20	128.50
	5			5		N	N	N	N	N	U	↓	N								N				4	20 86.98	120.57
WB-SD-MIXX /	1			5						N	N	N			G										5	21 94.07	143.96
	2			5						↓	↓	↓			↓										5	22 78.09	139.68
	3			5																					5	23 76.32	122.98
	4			5																					4	24 84.62	139.46
	5			5		↓	↓	↓	↓	↓	↓	↓		↓	↓										5	25 88.52	138.89
WB-SD-SD28 /	1			5		G	G	G	G,U	G	G	G			G						G				5	26 89.90	132.71
	2			5		G,U	G	G	G	N	G,U		↓	↓	G						DC				5	27 76.80	127.56
	3			5		G	G	G	G	G	G,U		G,U	G,U	G						N				5	28 93.80	142.96
	4			5		G	G	G,U	G	G	G,U		G,U	N	G						↓				5	29 95.84	137.47
	5			5	↓	G	G	G	G	G	G	↓	G,U	G,U	G, N	↓	U	↓	↓	↓	N	↓	↓	↓	5	30 92.40	142.04

NEWFIELDS

20-DAY SOLID PHASE BIOASSAY
OBSERVATION DATASHEET

CLIENT	PROJECT	JOB NO.	PROJECT MANAGER	NEWFIELDS LABORATORY	PROTOCOL	SPECIES
City of Olympia	West Bay	1101-010-860	B. Hester	Port Gamble Bath 6	PSEP 1995	*Neanthes arenaceodentata*

ENDPOINT DATA & OBSERVATIONS

#S= Number on the Surface
#M= Number of Mortality
L=Anoxic Surface
F=Fungal Patches
A=Algal Patches
D=No Air Flow (DO?)
U=Excess food
N=Normal
B=No Burrows

INITIAL # OF ORGANISMS: 5

CLIENT/ NEWFIELDS ID	REP	JAR	INITIAL #	Date and Initials	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	NUMBER REMAINING	TARE WEIGHT (mg)	TOTAL WEIGHT (mg)
				11/6	11/07	11/08	11/9	11/10	11/11	11/12	11/13	11/14	11/15	11/16	11/17	11/18	11/19	11/20	11/21	11/22	11/23	11/24	11/25			
WB-SD-SD29 /	1		5	N	N	G	G	G	G	G	G	G	N	G	G	G	G	G	N	N	G	G	G	5	31 90.63	130.02
	2		5		G	G	G		G			G	G	G			G		G	G				4	32 90.32	113.36
	3		5		G	G	G		G			G	N	G					N	N				5	33 80.19	123.65
	4		5		G	G	G		G			G	G	G										5	34 89.18	138.26
	5		5		G	G	N	N	N			N	N	G										5	35 89.07	131.45
WB-SD-SD30 /	1		5		N	N	G	G	G					G										5	36 83.23	142.19
	2		5				G	G,U	G															5	37 83.02	130.79
	3		5				G	G	G															5	38 75.39	129.62
	4		5				N	N	G															4	39 74.85	134.78
	5		5					G	G															5	40 76.27	132.30

DIE CR 11/9

41 83.19
42 84.86
43 84.48
44 85.66

NEWFIELDS

20 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATASHEET

CLIENT	PROJECT	START TIME/ END TIME	DILUTION WATER BATCH	PROTOCOL	TEST START DATE
City of Olympia	West Bay	1330 / 1130	FSW110409.01	PSEP 1995	5-Nov-2009
JOB NUMBER	**PROJECT MANAGER**	**NEWFIELDS LABORATORY**	**TEMP. RECDR./HOBO#**	**TEST SPECIES**	**TEST END DATE**
1101-010-860	B. Hester			*Neanthes arenaceodentata*	25-Nov-2009

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) > 6.0		TEMP (C) 20 ± 1		SALINITY (ppt) 28 ± 1		pH 8.0±1.0				
CLIENT/NEWFIELDS ID	DAY	REP	JAR	D.O. meter	D.O. mg/L	TEMP meter	TEMP °C	SALINITY meter	SALINITY ppt	pH meter	pH unit	WATER RENEWAL	Feeding	TECH/DATE
WB-SD-SD29 /	0	Surr	22	6	6.6	6	20.1	1	28	1	8.1		BH	CR 11/5/09
WB-SD-SD29 /	1	Surr		6	7.5	6	19.5	1	29	1	8.4			TS 11/6
WB-SD-SD29 /	2	Surr		6	7.4	6	19.5	1	29	1	8.1		JL	JL 11/07
WB-SD-SD29 /	3	Surr		6	7.3	6	19.2	1	30	1	8.4	JL		JL 11/08
WB-SD-SD29 /	4	Surr		6	7.1	6	20.3	1	29	1	8.5		CR	CR 11/9
WB-SD-SD29 /	5	Surr		6	7.6	6	19.8	1	29	1	8.4			CR 11/10
WB-SD-SD29 /	6	Surr		6	7.6	6	19.6	1	30	1	8.2	MMB →		MMB 11/11
WB-SD-SD29 /	7	Surr		6	7.2	6	19.5	1	30	1	8.0			CR 11/12
WB-SD-SD29 /	8	Surr		6	7.2	6	20.2	1	29	1	8.2		BH	BH 11.13
WB-SD-SD29 /	9	Surr		6	7.3	6	19.5	1	31	1	8.2	JL		JL 11/14
WB-SD-SD29 /	10	Surr		6	7.4	6	19.4	1	30	1	8.2		JL	JL 11/15
WB-SD-SD29 /	11	Surr		6	7.3	6	19.6	1	30	1	8.3			CR 11/16
WB-SD-SD29 /	12	Surr		6	7.4	6	19.9	1	30	1	8.3	MMB →		MMB 11/17
WB-SD-SD29 /	13	Surr		6	7.6	6	19.5	1	29	1	8.2			MMB 11/18
WB-SD-SD29 /	14	Surr		6	7.7	6	19.6	1	29	1	8.3		TS	TS 11/19
WB-SD-SD29 /	15	Surr		6	7.9	6	19.4	1	30	1	8.3	TS		TS 11/20
WB-SD-SD29 /	16	Surr		6	8.0	6	19.1	1	30	1	8.5		JL	JL 11/21
WB-SD-SD29 /	17	Surr		6	7.7	6	19.5	1	30	1	8.3			JL 11/22
WB-SD-SD29 /	18	Surr		6	7.8	6	19.8	1	30	1	8.3	TS	TS	TS 11/23
WB-SD-SD29 /	19	Surr		6	7.6	6	19.9	1	30	1	8.3			MMB 11/24
WB-SD-SD29 /	20	Surr		6	7.2	6	19.9	1	30	1	8.1			MMB 11/25

NEWFIELDS

20 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATASHEET

CLIENT	PROJECT	START TIME/ END TIME	DILUTION WATER BATCH	PROTOCOL	TEST START DATE
City of Olympia	West Bay	1330 / 1130	FSW110409.01	PSEP 1995	5-Nov-2009
JOB NUMBER	**PROJECT MANAGER**	**NEWFIELDS LABORATORY**	**TEMP. RECDR./HOBO#**	**TEST SPECIES**	**TEST END DATE**
1101-010-860	B. Hester			*Neanthes arenaceodentata*	25-Nov-2009

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) > 6.0		TEMP (C) 20 ± 1		SALINITY (ppt) 28 ± 1		pH 8.0±1.0				
CLIENT/NEWFIELDS ID	DAY	REP	JAR	D.O. meter	D.O. mg/L	TEMP meter	TEMP °C	SALINITY meter	SALINITY ppt	pH meter	pH unit	WATER RENEWAL	Feeding	TECH/DATE
Control /	0	Surr	23	6	7.3	6	19.8	1	29	1	7.9		BH	CR 11/5/09
Control /	1	Surr		6	7.4	6	19.9	1	28	1	8.2			TS 11/6
Control /	2	Surr		6	7.6	6	19.8	1	29	1	8.0		JL	JL 11/07
Control /	3	Surr		6	7.6	6	19.6	1	29	1	8.2	JL		JL 11/08
Control /	4	Surr		6	7.4	6	20.0	1	29	1	8.2		CR	CR 11/9
Control /	5	Surr		6	7.6	6	19.5	1	29	1	7.9			CR 11/10
Control /	6	Surr		6	7.7	6	19.9	1	29	1	8.1	MMB →		MMB 11/11
Control /	7	Surr		6	7.3	6	20.0	1	29	1	7.9			CR 11/12
Control /	8	Surr		6	7.4	6	20.2	1	29	1	8.1		BH	BH 11.13
Control /	9	Surr		6	7.4	6	19.8	1	30	1	8.0	JL		JL 11/14
Control /	10	Surr		6	7.7	6	19.7	1	29	1	8.1		JL	JL 11/15
Control /	11	Surr		6	7.3	6	19.8	1	28	1	8.1			CR 11/16
Control /	12	Surr		6	7.4	6	20.0	1	29	1	8.0	MMB →	→	MMB 11/17
Control /	13	Surr		6	7.2	6	19.5	1	28	1	7.9			MMB 11/18
Control /	14	Surr		6	7.5	6	19.7	1	28	1	8.0		TS	TS 11/19
Control /	15	Surr		6	7.1	6	19.7	1	29	1	7.9	TS		TS 11/20
Control /	16	Surr		6	7.6	6	19.7	1	29	1	8.1		JL	JL 11/21
Control /	17	Surr		6	7.6	6	19.8	1	30	1	8.1			JL 11/22
Control /	18	Surr		6	7.7	6	19.8	1	30	1	8.1	TS	TS	TS 11/23
Control /	19	Surr		6	7.6	6	20.1	1	29	1	8.1			MMB 11/24
Control /	20	Surr		6	7.3	6	20.0	1	30	1	8.1			MMB 11/25

NEWFIELDS

20 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATASHEET

CLIENT	PROJECT	START TIME/ END TIME	DILUTION WATER BATCH	PROTOCOL	TEST START DATE
City of Olympia	West Bay	1330 / 1130	FSW110409.01	PSEP 1995	5-Nov-2009
JOB NUMBER	**PROJECT MANAGER**	**NEWFIELDS LABORATORY**	**TEMP. RECDR./HOBO#**	**TEST SPECIES**	**TEST END DATE**
1101-010-860	B. Hester			*Neanthes arenaceodentata*	25-Nov-2009

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) >6.0		TEMP (C) 20 ± 1		SALINITY (ppt) 28 ± 1		pH 8.0±1.0				
CLIENT/NEWFIELDS ID	DAY	REP	JAR	D.O. meter	D.O. mg/L	TEMP meter	TEMP °C	SALINITY meter	SALINITY ppt	pH meter	pH unit	WATER RENEWAL	Feeding	TECH/DATE
WB-SD-SD28 /	0	Surr	29	6	7.0	6	20.2	1	28	1	8.2		BH	CR 11/5/09
WB-SD-SD28 /	1	Surr		6	7.3	6	20.0	1	29	1	8.3			TS 11/6
WB-SD-SD28 /	2	Surr		6	7.2	6	20.0	1	29	1	8.0		JL	JL 11/07
WB-SD-SD28 /	3	Surr		6	7.2	6	19.8	1	29	1	8.2	JL		JL 11/08
WB-SD-SD28 /	4	Surr		6	7.0	6	20.3	1	29	1	8.4		CR	CR 11/9
WB-SD-SD28 /	5	Surr		6	7.3	6	20.1	1	29	1	8.4			CR 11/10
WB-SD-SD28 /	6	Surr		6	7.2	6	20.2	1	29	1	8.1	MMB →		MMB 11/11
WB-SD-SD28 /	7	Surr		6	7.0	6	20.2	1	29	1	8.0			CR 11/12
WB-SD-SD28 /	8	Surr		6	7.2	6	20.2	1	29	1	8.2		BH	BH 11.13
WB-SD-SD28 /	9	Surr		6	7.1	6	19.8	1	30	1	8.2	JL		JL 11/14
WB-SD-SD28 /	10	Surr		6	7.5	6	19.8	1	29	1	8.4		JL	JL 11/15
WB-SD-SD28 /	11	Surr		6	7.1	6	20.0	1	28	1	8.4			CR 11/16
WB-SD-SD28 /	12	Surr		6	7.3	6	20.0	1	29	1	8.4	MMB →		MMB 11/17
WB-SD-SD28 /	13	Surr		6	7.1	6	19.5	1	28	1	8.2			MMB 11/18
WB-SD-SD28 /	14	Surr		6	7.7	6	19.8	1	28	1	8.4		TS	TS 11/19
WB-SD-SD28 /	15	Surr		6	7.6	6	19.8	1	29	1	8.3	TS		TS 11/20
WB-SD-SD28 /	16	Surr		6	7.8	6	20.0	1	29	1	8.5		JL	JL 11/21
WB-SD-SD28 /	17	Surr		6	7.7	6	19.8	1	29		8.3			JL 11/22
WB-SD-SD28 /	18	Surr		6	7.6	6	19.9	1	29	1	8.3	TS	TS	TS 11/23
WB-SD-SD28 /	19	Surr		6	7.5	6	20.1	1	28	1	8.2			MMB 11/24
WB-SD-SD28 /	20	Surr		6	7.3	6	20.2	1	28	1	8.2			MMB 11/25

NEWFIELDS

20 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATASHEET

CLIENT	PROJECT	START TIME/ END TIME	DILUTION WATER BATCH	PROTOCOL	TEST START DATE
City of Olympia	West Bay	1330 / 1130	FSW110409.01	PSEP 1995	5-Nov-2009
JOB NUMBER	**PROJECT MANAGER**	**NEWFIELDS LABORATORY**	**TEMP. RECDR./HOBO#**	**TEST SPECIES**	**TEST END DATE**
1101-010-860	B. Hester			*Neanthes arenaceodentata*	25-Nov-2009

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) >6.0		TEMP (C) 20 ± 1		SALINITY (ppt) 28 ± 1		pH 8.0±1.0				
CLIENT/NEWFIELDS ID	DAY	REP	JAR	D.O. meter	D.O. mg/L	TEMP meter	TEMP °C	SALINITY meter	SALINITY ppt	pH meter	pH unit	WATER RENEWAL	Feeding	TECH/DATE
WB-SD-SD30 /	0	Surr	32	6	7.6	6	20.2	1	29	1	8.0		BH	CR 11/5/09
WB-SD-SD30 /	1	Surr		6	7.4	6	20.0	1	29	1	8.2			TS 11/6
WB-SD-SD30 /	2	Surr		6	7.5	6	20.0	1	29	1	8.0		JL	JL 11/07
WB-SD-SD30 /	3	Surr		6	7.5	6	19.9	1	29	1	8.1	JL		JL 11/08
WB-SD-SD30 /	4	Surr		6	7.2	6	20.3	1	28	1	8.3		CR	CR 11/9
WB-SD-SD30 /	5	Surr		6	7.4	6	20.2	1	28	1	8.3			CR 11/10
WB-SD-SD30 /	6	Surr		6	7.5	6	20.1	1	29	1	8.0	MMB →		MMB 11/11
WB-SD-SD30 /	7	Surr		6	7.3	6	20.1	1	29	1	7.9			CR 11/12
WB-SD-SD30 /	8	Surr		6	7.2	6	20.2	1	29	1	8.0		BH	BH 11.13
WB-SD-SD30 /	9	Surr		6	7.3	6	19.9	1	30	1	7.9	JL		JL 11/14
WB-SD-SD30 /	10	Surr		6	7.4	6	20.0	1	29	1	8.0		JL	JL 11/15
WB-SD-SD30 /	11	Surr		6	7.1	6	20.1	1	28	1	8.0			CR 11/16
WB-SD-SD30 /	12	Surr		6	7.2	6	20.1	1	29	1	7.9	MMB →		MMB 11/17
WB-SD-SD30 /	13	Surr		6	7.2	6	19.6	1	28	1	7.9			MMB 11/18
WB-SD-SD30 /	14	Surr		6	7.3	6	20.0	1	28	1	8.0		TS	TS 11/19
WB-SD-SD30 /	15	Surr		6	7.1	6	19.9	1	29	1	7.9	TS		TS 11/20
WB-SD-SD30 /	16	Surr		6	7.4	6	20.0	1	28	1	8.0		JL	JL 11/21
WB-SD-SD30 /	17	Surr		6	7.5	6	20.0	1	29	1	8.0			JL 11/22
WB-SD-SD30 /	18	Surr		6	7.6	6	20.0	1	29	1	8.0	TS	TS	TS 11/23
WB-SD-SD30 /	19	Surr		6	7.4	6	20.2	1	28	1	7.9			MMB 11/24
WB-SD-SD30 /	20	Surr		6	7.2	6	20.2	1	28	1	7.9			MMB 11/25

NEWFIELDS

20 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATASHEET

CLIENT	PROJECT	START TIME/ END TIME	DILUTION WATER BATCH	PROTOCOL	TEST START DATE
City of Olympia	West Bay	1330 / 1130	FSW110409.01	PSEP 1995	5-Nov-2009
JOB NUMBER	**PROJECT MANAGER**	**NEWFIELDS LABORATORY**	**TEMP. RECDR./HOBO#**	**TEST SPECIES**	**TEST END DATE**
1101-010-860	B. Hester			*Neanthes arenaceodentata*	25-Nov-2009

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) >6.0		TEMP (C) 20 ± 1		SALINITY (ppt) 28 ± 1		pH 8.0±1.0				
CLIENT/NEWFIELDS ID	DAY	REP	JAR	D.O. meter	D.O. mg/L	TEMP meter	TEMP °C	SALINITY meter	SALINITY ppt	pH meter	pH unit	WATER RENEWAL	Feeding	TECH/DATE
WB-SD-MIXX /	0	Surr	33	6	7.1	6	20.3	1	27	1	8.3		BH	CR 11/5/09
WB-SD-MIXX /	1	Surr		6	7.4	6	20.1	1	28	1	8.3			TS 11/6
WB-SD-MIXX /	2	Surr		6	7.5	6	20.1	1	28	1	8.2		JL	JL 11/07
WB-SD-MIXX /	3	Surr		6	7.5	6	19.9	1	28	1	8.2	JL		JL 11/08
WB-SD-MIXX /	4	Surr		6	7.4	6	20.3	1	28	1	8.5		CR	CR 11/9
WB-SD-MIXX /	5	Surr		6	7.5	6	20.2	1	28	1	8.4			CR 11/10
WB-SD-MIXX /	6	Surr		6	7.5	6	20.1	1	28	1	8.0	MMB →		MMB 11/11
WB-SD-MIXX /	7	Surr		6	7.3	6	20.2	1	29	1	7.9			CR 11/12
WB-SD-MIXX /	8	Surr		6	7.4	6	20.1	1	29	1	8.0		BH	BH 11.13
WB-SD-MIXX /	9	Surr		6	7.5	6	19.9	1	30	1	8.0	JL		JL 11/14
WB-SD-MIXX /	10	Surr		6	7.5	6	20.0	1	29	1	8.0		JL	JL 11/15
WB-SD-MIXX /	11	Surr		6	7.2	6	20.1	1	28	1	8.1			CR 11/16
WB-SD-MIXX /	12	Surr		6	7.4	6	20.0	1	29	1	8.1	MMB →		MMB 11/17
WB-SD-MIXX /	13	Surr		6	7.4	6	19.6	1	28	1	8.0			MMB 11/18
WB-SD-MIXX /	14	Surr		6	7.5	6	20.0	1	28	1	8.0		TS	TS 11/19
WB-SD-MIXX /	15	Surr		6	7.3	6	19.9	1	29	1	7.9	TS		TS 11/20
WB-SD-MIXX /	16	Surr		6	7.5	6	20.0	1	28	1	8.1		JL	JL 11/21
WB-SD-MIXX /	17	Surr		6	7.5	6	20.0	1	29	1	8.0			JL 11/22
WB-SD-MIXX /	18	Surr		6	7.6	6	20.0	1	29	1	8.0	TS	TS	TS 11/23
WB-SD-MIXX /	19	Surr		6	7.4	6	20.2	1	28	1	8.0			MMB 11/24
WB-SD-MIXX /	20	Surr		6	7.2	6	20.2	1	29	1	7.9			MMB 11/25

NEWFIELDS

20 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATASHEET

CLIENT	PROJECT	START TIME/ END TIME	DILUTION WATER BATCH	PROTOCOL	TEST START DATE
City of Olympia	West Bay	1330 / 1130	FSW110409.01	PSEP 1995	5-Nov-2009
JOB NUMBER	**PROJECT MANAGER**	**NEWFIELDS LABORATORY**	**TEMP. RECDR./HOBO#**	**TEST SPECIES**	**TEST END DATE**
1101-010-860	B. Hester			*Neanthes arenaceodentata*	25-Nov-2009

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) >6.0		TEMP (C) 20 ± 1		SALINITY (ppt) 28 ± 1		pH 8.0±1.0				
CLIENT/NEWFIELDS ID	DAY	REP	JAR	D.O. meter	D.O. mg/L	TEMP meter	TEMP °C	SALINITY meter	SALINITY ppt	pH meter	pH unit	WATER RENEWAL	Feeding	TECH/DATE
WB-SD-RF01 /	0	Surr	38	6	7.4	6	20.0	1	28	1	8.1		BH	CR 11/5/09
WB-SD-RF01 /	1	Surr		6	7.4	6	20.1	1	29	1	8.3			TS 11/6
WB-SD-RF01 /	2	Surr		6	7.4	6	20.2	1	29	1	8.1		JL	JL 11/07
WB-SD-RF01 /	3	Surr		6	7.2	6	20.0	1	29	1	8.1	JL		JL 11/08
WB-SD-RF01 /	4	Surr		6	7.3	6	20.3	1	29	1	8.4		CR	CR 11/9
WB-SD-RF01 /	5	Surr		6	7.4	6	20.2	1	29	1	8.3			CR 11/10
WB-SD-RF01 /	6	Surr		6	7.5	6	20.1	1	29	1	8.0	MMB →		MMB 11/11
WB-SD-RF01 /	7	Surr		6	7.2	6	20.2	1	29	1	7.9			CR 11/12
WB-SD-RF01 /	8	Surr		6	7.3	6	20.2	1	29	1	7.9		BH	BH 11.13
WB-SD-RF01 /	9	Surr		6	7.4	6	19.9	1	30	1	7.9	JL		JL 11/14
WB-SD-RF01 /	10	Surr		6	7.6	6	20.0	1	29	1	8.0		JL	JL 11/15
WB-SD-RF01 /	11	Surr		6	7.3	6	20.1	1	29	1	8.0			CR 11/16
WB-SD-RF01 /	12	Surr		6	7.7	6	20.0	1	29	1	8.0	MMB →		MMB 11/17
WB-SD-RF01 /	13	Surr		6	7.4	6	19.6	1	28	1	7.9			MMB 11/18
WB-SD-RF01 /	14	Surr		6	7.7	6	19.9	1	28	1	7.9		TS	TS 11/19
WB-SD-RF01 /	15	Surr		6	7.4	6	19.8	1	29	1	7.9	TS		TS 11/20
WB-SD-RF01 /	16	Surr		6	7.6	6	19.9	1	29	1	8.0		JL	JL 11/21
WB-SD-RF01 /	17	Surr		6	7.5	6	20.1	1	29	1	8.0			JL 11/22
WB-SD-RF01 /	18	Surr		6	7.7	6	20.0	1	29	1	8.0	TS	TS	TS 11/23
WB-SD-RF01 /	19	Surr		6	7.5	6	20.2	1	28	1	8.0			MMB 11/24
WB-SD-RF01 /	20	Surr		6	7.4	6	20.3	1	29	1	7.9			MMB 11/25

NEWFIELDS

20 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATASHEET

CLIENT	PROJECT	START TIME/ END TIME	DILUTION WATER BATCH	PROTOCOL	TEST START DATE
City of Olympia	West Bay	1330 / 1130	FSW110409.01	PSEP 1995	5-Nov-2009
JOB NUMBER	**PROJECT MANAGER**	**NEWFIELDS LABORATORY**	**TEMP. RECDR./HOBO#**	**TEST SPECIES**	**TEST END DATE**
1101-010-860	B. Hester			*Neanthes arenaceodentata*	25-Nov-2009

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) >6.0		TEMP (C) 20 ± 1		SALINITY (ppt) 28 ± 1		pH 8.0±1.0				
CLIENT/NEWFIELDS ID	DAY	REP	JAR	D.O. meter	D.O. mg/L	TEMP meter	TEMP °C	SALINITY meter	SALINITY ppt	pH meter	pH unit	WATER RENEWAL	Feeding	TECH/DATE
WB-SD-RF02 /	0	Surr	40	6	7.3	6	20.2	1	29	1	8.2		BH	CR 11/5/09
WB-SD-RF02 /	1	Surr		6	7.5	6	20.1	1	29	1	8.5			TS 11/6
WB-SD-RF02 /	2	Surr		6	7.5	6	20.2	1	30	1	8.3		JL	JL 11/07
WB-SD-RF02 /	3	Surr		6	7.5	6	20.0	1	31	1	8.3	JL		JL 11/08
WB-SD-RF02 /	4	Surr		6	7.3	6	20.3	1	30	1	8.6		CR	CR 11/9
WB-SD-RF02 /	5	Surr		6	7.4	6	20.3	1	30	1	8.4			CR 11/10
WB-SD-RF02 /	6	Surr		6	7.5	6	20.1	1	31	1	8.1	MMB →		MMB 11/11
WB-SD-RF02 /	7	Surr		6	7.3	6	20.2	1	30	1	8.0			CR 11/12
WB-SD-RF02 /	8	Surr		6	7.3	6	20.2	1	30	1	8.1		BH	BH 11.13
WB-SD-RF02 /	9	Surr		6	7.4	6	20.0	1	32	1	8.1	JL		JL 11/14
WB-SD-RF02 /	10	Surr		6	7.5	6	20.0	1	30	1	8.2		JL	JL 11/15
WB-SD-RF02 /	11	Surr		6	7.3	6	20.2	1	30	1	8.2			CR 11/16
WB-SD-RF02 /	12	Surr		6	7.5	6	20.1	1	30	1	8.3	MMB →		MMB 11/17
WB-SD-RF02 /	13	Surr		6	7.5	6	19.7	1	29	1	8.1			MMB 11/18
WB-SD-RF02 /	14	Surr		6	7.8	6	20.0	1	① ~~28~~ 29	1	8.2		TS	TS 11/19
WB-SD-RF02 /	15	Surr		6	7.5	6	20.1	1	29	1	8.2	TS		TS 11/20
WB-SD-RF02 /	16	Surr		6	7.7	6	20.1	1	30	1	8.3		JL	JL 11/21
WB-SD-RF02 /	17	Surr		6	7.6	6	20.1	1	30	1	8.2			JL 11/22
WB-SD-RF02 /	18	Surr		6	7.7	6	20.1	1	30	1	8.2	TS	TS	TS 11/23
WB-SD-RF02 /	19	Surr		6	7.6	6	20.2	1	30	1	8.2			MMB 11/24
WB-SD-RF02 /	20	Surr		6	7.5	6	20.3	1	31	1	8.1			MMB 11/25

① WE TS 11/19/09

NEWFIELDS

20 DAY SOLID PHASE BIOASSAY
WATER QUALITY DATASHEET

CLIENT	PROJECT	START TIME/ END TIME	DILUTION WATER BATCH	PROTOCOL	TEST START DATE
City of Olympia	West Bay	1330 / 1130	FSW110409.01	PSEP 1995	5-Nov-2009
JOB NUMBER	**PROJECT MANAGER**	**NEWFIELDS LABORATORY**	**TEMP. RECDR./HOBO#**	**TEST SPECIES**	**TEST END DATE**
1101-010-860	B. Hester			*Neanthes arenaceodentata*	25-Nov-2009

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) >6.0		TEMP (C) 20 ± 1		SALINITY (ppt) 28 ± 1		pH 8.0±1.0				
CLIENT/NEWFIELDS ID	DAY	REP	JAR	D.O. meter	D.O. mg/L	TEMP meter	TEMP °C	SALINITY meter	SALINITY ppt	pH meter	pH unit	WATER RENEWAL	Feeding	TECH/DATE
WB-SD-SD25 /	0	Surr		6	7.1	6	20.2	1	28	1	8.3		BH	CR 11/5/09
WB-SD-SD25 /	1	Surr		6	7.2	6	20.1	1	29	1	8.4			TS 11/6
WB-SD-SD25 /	2	Surr		6	7.4	6	20.3	1	29	1	8.3		JL	JL 11/07
WB-SD-SD25 /	3	Surr		6	7.4	6	20.1	1	30	1	8.3	JL		JL 11/08
WB-SD-SD25 /	4	Surr		6	7.3	6	20.3	1	29	1	8.6		CR	CR 11/9
WB-SD-SD25 /	5	Surr		6	7.4	6	20.3	1	29	1	8.5			CR 11/10
WB-SD-SD25 /	6	Surr		6	7.4	6	20.2	1	30	1	8.2	MMB →		MMB 11/11
WB-SD-SD25 /	7	Surr		6	7.3	6	20.2	1	⊙ ~~29~~ 30	1	8.2			CR 11/12
WB-SD-SD25 /	8	Surr		6	7.3	6	20.2	1	30	1	8.4		BH	BH 11.13
WB-SD-SD25 /	9	Surr		6	7.5	6	20.0	1	31	1	8.4	JL		JL 11/14
WB-SD-SD25 /	10	Surr		6	7.6	6	20.0	1	30	1	8.5		JL	JL 11/15
WB-SD-SD25 /	11	Surr		6	7.3	6	20.2	1	30	1	8.5			CR 11/16
WB-SD-SD25 /	12	Surr		6	7.7	6	20.1	1	30	1	8.6	MMB →		MMB 11/17
WB-SD-SD25 /	13	Surr		6	7.5	6	19.7	1	29	1	8.5			MMB 11/18
WB-SD-SD25 /	14	Surr		6	7.8	6	20.1	1	29	1	8.5		TS	TS 11/19
WB-SD-SD25 /	15	Surr		6	7.4	6	20.1	1	29	1	8.4	TS		TS 11/20
WB-SD-SD25 /	16	Surr		6	7.7	6	20.1	1	29	1	8.4		JL	JL 11/21
WB-SD-SD25 /	17	Surr		6	7.6	6	20.1	1	30	1	8.4			JL 11/22
WB-SD-SD25 /	18	Surr		6	7.6	6	20.1	1	30	1	8.3	TS	TS	TS 11/23
WB-SD-SD25 /	19	Surr		6	7.3	6	20.3	1	29	1	8.2			MMB 11/24
WB-SD-SD25 /	20	Surr		6	7.2	6	20.3	1	29	1	8.2			MMB 11/25

⊙ IE CR 11/12

NEWFIELDS

Ammonia and Sulfide Analysis Record

Client/Project:	Organism:	Test Duration (days):
Olympia / West Bay	Neanthes	20

PRETEST / ~~INITIAL~~ / FINAL / OTHER (circle one) DAY of TEST: Ø

~~OVERLYING (OV)~~ / POREWATER (PW) (circle one)

Comments: &

Calibration Standards Temperature		Sample temperature should be within ±1°C of standards temperature at time and date of analysis.
Date:	Temperature:	
11/5/09	20.0	

	Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp °C	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
OVERLYING	Control	Surr.	11/5/09 MMB	Ø	20.0	11/5/09 MMB	N			0.004
	RF01			1.32						0.095
	RF02			4.09						0.066
	25			6.75						0.017
	MIXX			<0.5						0.026
	28			4.98						0.036
	29			15.4						0.042
	30			<0.5						0.005
POREWATER	Control	Surr.	11/5/09 MMB	Ø	20.0	11/5/09 MMB	N	7.5	30	0.046
	RF01			7.85				7.6	30	0.419
	RF02			13.3				7.6	30	0.187
	25			20.7				7.6	28	0.851 = 4.255 ①
	MIXX			2.26				7.8	24	0.111
	28			18.6				7.6	29	0.711
	29			43.4				7.6	29	0.222
	30			<0.5				7.6	29	0.107

① Used 5ml sample & 5x multiplier, MMB 11/5/09.

NEWFIELDS

Ammonia and Sulfide Analysis Record

Client/Project:	Organism:	Test Duration (days):
Parametrix/ West Bay	Neanthes	20

PRETEST / ~~INITIAL~~ / FINAL / ~~OTHER (circle one)~~ DAY of TEST: 20

OVERLYING (OV) / & POREWATER (PW) (circle one)

Comments:

Calibration Standards Temperature		Sample temperature should be within ±1°C of standards temperature at time and date of analysis.
Date:	**Temperature:**	
24 November 2009	20.0	

Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp °C	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
OV Control	Surr.	11/25/09 MMB	2.93	19.0	11/25/09 MMB	N			0.020
OV RF01			<0.5						0.017
OV RF02			Ø						0.065
OV SD25			0.877						0.018
OV SDMIXX			<0.5						0.015
OV SD 28			<0.5						0.011
OV SD 29			Ø						0.044
OV SD 30	▼	▼	<0.5	▼	▼	▼			0.007
PW Control	Surr.	11/25/09 MMB	3.34	20.0			7.5	30	0.005 = 0.025 ②
PW RF01			0.514				7.5	28	0.206 = 1.03
PW RF02			1.10				7.2	30	0.034 = 0.170
PW SD25			1.02				7.2	29	0.033 0.165
PW SDMIXX			<0.5				7.4	29	0.062 = 0.310
PW SD 28			0.939				7.4	29	0.059 = 0.255
PW SD 29			<0.5				7.4	30	0.093 = 0.465
PW SD 30	▼	▼	0.560 ①	▼			7.2	29	0.138 = 0.690

① SM, MMB 11/25/09.

② Used 5mL sample & 5x multiplier for PW.S2, MMB 11/25/09.

APPENDIX A.2.2

Neanthes arenaceodentata

Juvenile Polychaete Bioassay

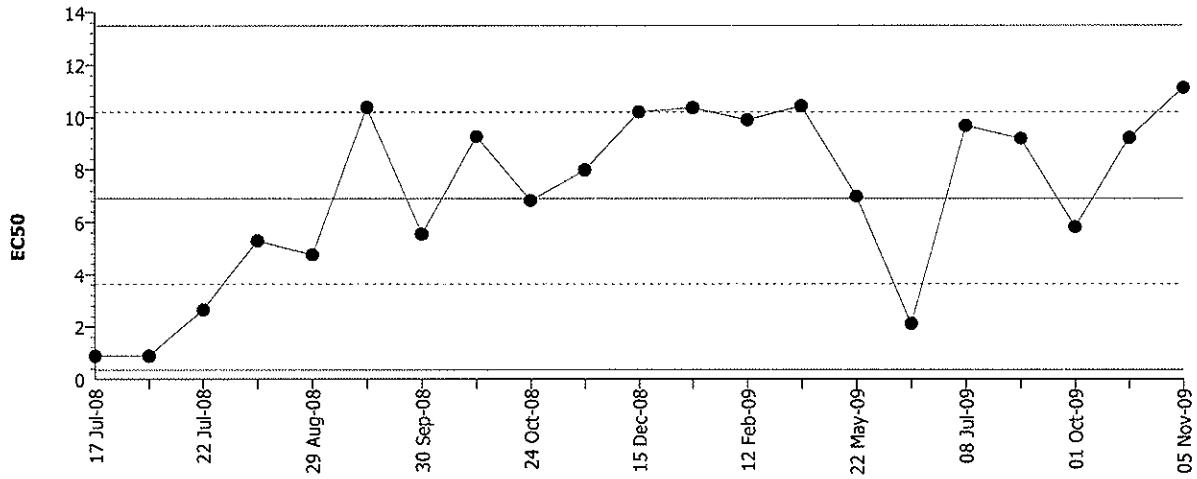
Reference Toxicant Test

CETIS QC Chart

Report Date: 04 Jan-10 10:52 AM

Reference Toxicant 96-h Acute Survival Test — **NewFields**

Test Type: Survival | **Organism:** Neanthes arenaceodentata (Polycha | **Material:** Cadmium chloride
Protocol: PSEP (1995) | **Endpoint:** Proportion Survived | **Source:** Reference Toxicant-REF



Mean:	6.91813	**Count:**	20	**-1s Warning Limit:**	3.63365	**-2s Action Limit:**	0.34917
Sigma:	3.28448	**CV:**	47.48%	**+1s Warning Limit:**	10.2026	**+2s Action Limit:**	13.4871

Quality Control Data

Point	Year	Month	Day	Data	Delta	Sigma	Warning	Action	Test Link	Analysis
1	2008	Jul	17	0.87499	-6.04314	-1.83991	(-)		06-1312-8965	10-8468-5592
2			17	0.87499	-6.04314	-1.83991	(-)		09-5264-4294	10-3139-3283
3			22	2.65108	-4.26704	-1.29915	(-)		09-1847-5700	19-0325-7284
4		Aug	5	5.30308	-1.61504	-0.49172			09-6649-9664	19-2133-7136
5			29	4.77241	-2.14572	-0.65329			15-6320-1917	00-4033-1812
6		Sep	26	10.37648	3.45835	1.05294	(+)		13-3931-9804	10-1469-9091
7			30	5.55412	-1.36401	-0.41529			12-4813-7676	16-8014-1063
8		Oct	9	9.26124	2.34312	0.71339			10-8928-1380	14-5099-7781
9			24	6.83792	-0.08021	-0.02442			01-6211-1396	02-6609-2616
10		Nov	6	7.98431	1.06619	0.32461			03-0276-3056	03-6039-0267
11		Dec	15	10.20151	3.28338	0.99967			04-2773-5757	11-9967-9635
12			23	10.35175	3.43362	1.04541	(+)		05-3594-8530	18-4696-4584
13	2009	Feb	12	9.89631	2.97818	0.90674			08-2613-0187	03-6192-0859
14		Mar	13	10.41923	3.50110	1.06595	(+)		06-4166-0913	14-5903-8301
15		May	22	6.99775	0.07962	0.02424			06-2028-7021	01-7463-1270
16		Jun	19	2.10462	-4.81351	-1.46553	(-)		05-1798-5894	14-0781-4256
17		Jul	8	9.67028	2.75215	0.83793			14-8761-0675	14-7362-5223
18		Sep	11	9.18955	2.27142	0.69156			11-1925-4533	10-0197-8961
19		Oct	1	5.82902	-1.08910	-0.33159			14-2143-9155	06-3990-2854
20			27	9.21191	2.29379	0.69837			04-9635-3924	05-3870-0641
21		Nov	5	11.10823	4.19010	1.27573	(+)		17-5107-1104	07-4788-9959

CETIS Test Summary

Report Date: 30 Nov-09 3:20 PM
Test Link: 17-5107-1104

Reference Toxicant 96-h Acute Survival Test — NewFields

Test No:	04-4538-8796	**Test Type:**	Survival	**Duration:**	95h
Start Date:	05 Nov-09 03:30 PM	**Protocol:**	PSEP (1995)	**Species:**	Neanthes arenaceodentata
Ending Date:	09 Nov-09 03:00 PM	**Dil Water:**	Laboratory Seawater	**Source:**	Other
Setup Date:	05 Nov-09 03:30 PM	**Brine:**	Not Applicable		

Sample No:	12-9667-8725	**Code:**	1296678725	**Client:**	Internal Lab
Sample Date:	30 Nov-09 03:18 PM	**Material:**	Cadmium chloride	**Project:**	Reference Toxicant
Receive Date:	30 Nov-09 03:18 PM	**Source:**	Reference Toxicant		
Sample Age:	N/A	**Station:**	P080418.71		

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
18-0667-8047	Proportion Survived	7.5	15	10.6066	N/A	Fisher Exact

Point Estimate Summary

Analysis	Endpoint	% Effect	Conc-mg/L	95% LCL	95% UCL	Method
07-4788-9959	Proportion Survived	50	11.10823	10.15941	12.14566	Trimmed Spearman-Karber

Proportion Survived Summary

Conc-mg/L	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Water	3	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
1.875		3	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
3.75		3	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
7.5		3	1.00000	1.00000	1.00000	0.00000	0.00000	0.00%
15		3	0.06667	0.00000	0.20000	0.06667	0.11547	173.21
30		3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00%

Proportion Survived Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3
0	Dilution Water	1.00000	1.00000	1.00000
1.875		1.00000	1.00000	1.00000
3.75		1.00000	1.00000	1.00000
7.5		1.00000	1.00000	1.00000
15		0.00000	0.20000	0.00000
30		0.00000	0.00000	0.00000

CETIS Data Worksheet

Report Date: 30 Nov-09 3:20 PM
Link: 17-5107-1104

Reference Toxicant 96-h Acute Survival Test **NewFields**

Start Date:	05 Nov-09 03:30 PM	**Species:**	Neanthes arenaceodentata	**Sample Code:**	1296678725
Ending Date:	09 Nov-09 03:00 PM	**Protocol:**	PSEP (1995)	**Sample Source:**	Reference Toxicant
Sample Date:	30 Nov-09 03:18 PM	**Material:**	Cadmium chloride	**Sample Station:**	P080418.71

Conc-mg/L	Code	Rep	Pos	# Exposed	# Survived	Notes
0	D	1	4	5	5	
0	D	2	8	5	5	
0	D	3	10	5	5	
1.875		1	6	5	5	
1.875		2	12	5	5	
1.875		3	14	5	5	
3.75		1	1	5	5	
3.75		2	11	5	5	
3.75		3	18	5	5	
7.5		1	13	5	5	
7.5		2	7	5	5	
7.5		3	2	5	5	
15		1	15	5	0	
15		2	3	5	1	
15		3	16	5	0	
30		1	17	5	0	
30		2	5	5	0	
30		3	9	5	0	

NEWFIELDS

96-H_JR REFERENCE TOXICANT .EST
OBSERVATION DATASHEET

SPECIES
Neanthes arenaceodentata

CLIENT	PROJECT	NEWFIELDS JOB #	PROJECT MANAGER	NEWFIELDS LAB	PROTOCOL
City of Olympia	West Bay	1101-010-860	B. Hester	Port Gamble Bath 6	PSEP 1995

SURVIVAL & BEHAVIOR DATA

#S= Number on the Surface
#M= Number of Mortality
L=Anoxic Surface
F=Fungal Patches
D=No Air Flow (DO?)
U=Excess food
N=Normal
B=No Burrows

INITIAL # OF ORGANISMS: 5

CLIENT/ NEWFIELDS ID	CONC. value	CONC. units	REP	INITIAL NUMBER	DAY 1 DATE	DAY 1 TECHNICIAN	DAY 1 #ALIVE	DAY 1 #DEAD	DAY 1 OBS	DAY 2 DATE	DAY 2 TECHNICIAN	DAY 2 #ALIVE	DAY 2 #DEAD	DAY 2 OBS	DAY 3 DATE	DAY 3 TECHNICIAN	DAY 3 #ALIVE	DAY 3 #DEAD	DAY 3 OBS	DAY 4 DATE	DAY 4 TECHNICIAN	DAY 4 #ALIVE	DAY 4 #DEAD	DAY 4 OBS
Ref.Tox.-cadmium	0	mg/L	1	5	11/6	TS	5	0	N	11/07	JL	5	0	N	11/08	JL	5	0	N	11/9	CR	5	0	N
			2				5	0				5	0	N			5	0	N			5	0	N
			3				5	0				5	0	N			5	0	N			5	0	N
Ref.Tox.-cadmium	1.875	mg/L	1				5	0				5	0	N			5	0	N			5	0	N
			2				5	0				5	0	N			5	0	N			5	0	N
			3				5	0				5	0	N			5	0	N			5	0	N
Ref.Tox.-cadmium	3.75	mg/L	1				5	0				5	0	N			5	0	N			5	0	N
			2				5	0				5	0	N			5	0	N			5	0	N
			3				5	0				5	0	N			5	0	N			5	0	N
Ref.Tox.-cadmium	7.5	mg/L	1				5	0				5	0	N			5	0	N			5	0	N
			2				5	0				5	0	N			5	0	N			5	0	N
			3				5	0				5	0	N			5	0	N			5	0	N
Ref.Tox.-cadmium	15	mg/L	1				5	0				5	0	Q			~~0~~ 5	~~1~~ 4	NA Q			0	1	N
			2				5	0				5	0	Q			5	~~0~~	Q			1	4	N
			3				5	0				5	0	Q			4	1	Q			0	4	N
Ref.Tox.-cadmium	30	mg/L	1				5	0				0	5	NA										
			2				5	0				0	5											
			3				5	0				0	5											

① IE, JL 11/08

NEWFIELDS

96-HOUR REFERENCE TOXICANT TEST WATER QUALITY DATASHEET

CLIENT	PROJECT	SPECIES	NEWFIELDS LABORATORY		PROTOCOL
City of Olympia	West Bay	*Neanthes arenaceodentata*	Port Gamble Bath 6		PSEP 1995
NEWFIELDS JOB NUMBER	PROJECT MANAGER	QUANTITY OF STOCK : 4.5 mL	QUANTITY OF DILUENT: 1500mL		INIT MMB
1101-010-860	B. Hester	ACTUAL: 4.5099	ACTUAL: 1500.09		DATE PREP 11/5/09
Test ID	LOT #:	TEST START DATE:	TIME	TEST END DATE	TIME
P080418.71	06510TC	05Nov09	1530	09Nov09	1500

WATER QUALITY DATA

DILTIN.WAT.BATCH	TEMP REC#	REFERENCE TOX. MATERIAL	REFERENCE TOXICANT
FSW110409.01		cadmium chloride	cadmium

TEST CONDITIONS	DO (mg/L)	TEMP(C)	SAL (ppt)	pH	TECHNICIAN
	> 6.0	20 ± 1	28 ± 1	8.00 ± 1	

CLIENT/ NEWFIELDS ID	CONCENTRATION value	CONCENTRATION units	DAY	REP	D.O. meter	D.O. mg/L	TEMP. meter	TEMP. °C	SALINITY meter	SALINITY ppt	pH meter	pH unit	WQ TECH
Ref.Tox.-cadmium	0	mg/L	0	Stock	6	7.7	6	19.3	1	28	1	7.9	CR
			1	Rep	6	7.5	6	19.4	1	28	1	8.3	TS
			2	Rep	6	7.7	6	19.1	1	28	1	7.6	JL
			3	Rep	6	7.7	6	19.0	1	28	1	7.9	JL
			4	Rep	6	7.5	6	19.6	1	28	1	8.2	CR
Ref.Tox.-cadmium	1.875	mg/L	0	Stock	6	7.8	6	19.6	1	28	1	8.0	CR
			1	Rep	6	7.5	6	19.9	1	28	1	8.4	TS
			2	Rep	6	7.6	6	19.7	1	28	1	7.8	JL
			3	Rep	6	7.7	6	19.6	1	28	1	8.1	JL
			4	Rep	6	7.5	6	19.8		28		8.3	CR
Ref.Tox.-cadmium	3.75	mg/L	0	Stock	6	7.8	6	19.7	1	28	1	8.0	CR
			1	Rep	6	7.5	6	20.0	1	28	1	8.4	TS
			2	Rep	6	7.6	6	19.9	1	28	1	7.9	JL
			3	Rep	6	7.6	6	19.8	1	28	1	8.1	JL
			4	Rep	6	7.5	6	20.1	1	29	1	8.5	CR

NEWFIELDS

96-HOUR REFERENCE TOXICANT TEST WATER QUALITY DATASHEET

CLIENT	PROJECT	SPECIES	NEWFIELDS LABORATORY		PROTOCOL
City of Olympia	West Bay	*Neanthes arenaceodentata*	Port Gamble Bath 6		PSEP 1995
NEWFIELDS JOB NUMBER	PROJECT MANAGER	QUANTITY OF STOCK : 4.5 mL	QUANTITY OF DILUENT: 1500mL		INIT MMB
1101-010-860	B. Hester	ACTUAL: 4.509 g	ACTUAL: 1500.0 g		DATE PREP 11/5/09 ~~11/5/09~~
Test ID P080418.71	LOT #: 06 510TC	TEST START DATE:	TIME	TEST END DATE	TIME
		05Nov09	1530	09Nov09	1500

WATER QUALITY DATA

DILTIN.WAT.BATCH	TEMP REC#	REFERENCE TOX. MATERIAL	REFERENCE TOXICANT
FSW110409.01		cadmium chloride	cadmium

TEST CONDITIONS					DO (mg/L) > 6.0		TEMP(C) 20 ± 1		SAL (ppt) 28 ± 1		pH 8.00 ± 1		TECHNICIAN
Ref.Tox.-cadmium	7.5 mg/L	0	Stock		6	7.7	6	19.9	1	28	1	8.1	CR
		1	Rep		6	7.5	6	20.1	1	28	1	8.4	TS
		2	Rep		6	7.6	6	20.0	1	28	1	8.0	JL
		3	Rep		6	7.6	6	19.9	1	28	1	8.2	JL
		4	Rep		6	7.5	6	20.1	1	28	1	8.5	CR
Ref.Tox.-cadmium	15 mg/L	0	Stock		6	7.7	6	19.9	1	28	1	8.1	CR
		1	Rep		6	7.5	6	20.1	1	28	1	8.4	TS
		2	Rep		6	7.6	6	20.1	1	28	1	8.0	JL
		3	Rep		6	7.5	6	20.0	1	28	1	8.2	JL
		4	Rep		6	7.4	6	20.2	1	28	1	8.6	CR
Ref.Tox.-cadmium	30 mg/L	0	Stock		6	7.7	6	20.0	1	28	1	8.1	CR
		1	Rep		6	7.5	6	20.3	1	28	1	8.4	TS
		2	Rep		6	7.6	6	20.1	1	28	1	8.0	JL
		3	Rep										
		4	Rep										

APPENDIX A.3.1

Mytilus galloprovencialis

Bivalve Embryo Bioassay

Laboratory Data Sheets

NEWFIELDS

LARVAL DEVELOPMENT TEST
ENDPOINT DATA

SPECIES					
Mytilus galloprovencialis					
CLIENT	**PROJECT**	**JOB NUMBER**	**PROJECT MANAGER**	**NEWFIELDS LAB / LOCATION**	**PROTOCOL**
Paramatrix	West Bay		B. Hester	Port Gamble / Bath 5	PSEP (1995)
ORGANISM BATCH	**TEST START DATE:**		**TIME**	**TEST END DATE:**	**TIME**
TS 102809	10/30/09		1650	11/1/09	1700

LARVAL OBSERVATION DATA

CLIENT/ NEWFIELDS ID	REP	NUMBER NORMAL	NUMBER	DATE	TECHNICIAN	COMMENTS
STOCKING DENSITY	1		268	11/30/09	CR	
	2		238			
	3		275			
	4		282			
	5		277			
Control /	1	279	① 3 5			
	2	270	6			
	3	215	2 2			
	4	332	3 3			
	5	235	2 3			
WB-SD-RF01-0005 /	1	238	4 3			
	2	274	2 1			
	3	252	2			
	4	280	0 3			
	5	260	1 2			
WB-SD-RF02-0005 /	1	229	5 4			
	2	247	3 2			
	3	207	5 1			
	4	223	2 0			
	5	240	3 1			
WB-SD-SD25-0005 /	1	222	5			
	2	265	3			
	3	235	5			
	4	260	2			
	5	256	3			

① WC CR 12/1/09

NEWFIELDS

LARVAL DEVELOPMENT TEST
ENDPOINT DATA

SPECIES					
Mytilus galloprovencialis					
CLIENT	PROJECT	JOB NUMBER	PROJECT MANAGER	NEWFIELDS LAB / LOCATION	PROTOCOL
Paramatrix	West Bay		B. Hester	Port Gamble / Bath 5	PSEP (1995)

ORGANISM BATCH	TEST START DATE:	TIME	TEST END DATE:	TIME
TS102809	10/30/09	1650	11/1/09	1700

LARVAL OBSERVATION DATA

CLIENT/ NEWFIELDS ID	REP	NUMBER NORMAL	NUMBER	DATE	TECHNICIAN	COMMENTS
WB-SD-SD28-0005 /	1	187	5	11/30/09	GR	
	2	138	17			
	3	261	3			
	4	201	3			
	5	235	1			
WB-SD-SD29-0005 /	1	11	52			
	2	8	87			
	3	207	7			
	4	9	72			
	5	13	108			
WB-SD-SD30-0005 /	1	~~151~~ 131	82			
	2	171	34			
	3	113	80			
	4	103	102			
	5	113	138			
WB-SD-SD26/27-0005 /	1	252	1			
	2	241	4			
	3	262	1			
	4	260	1			
	5	245	0			

LARVAL DEVELOPMENT TEST
WATER QUALITY DATA

CLIENT	PROJECT	SPECIES		NEWFIELDS LAB / LOCATION	PROTOCOL
Paramatrix	West Bay	*Mytilus galloprovencialis*		Port Gamble / Bath 5	PSEP (1995)
JOB NUMBER	**PROJECT MANAGER**	**TEST START DATE**	**TIME**	**TEST END DATE**	**TIME**
	B. Hester	30Oct09	1650	11/1/09	1700

* Day 3&4 observations needed only if development endpoint not met by day 2

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) >5.0		Temp (°C) 16 ± 1		Sal (ppt) 31 ± 1		pH 7.8 ± 0.5		Ammonia NA		Sulfide NA		TECH	DATE
CLIENT/ NEWFIELDS ID	DAY	Random #	REP	D.O.		TEMP.		SALINITY		pH		AMMONIA		SULFIDE			
				meter	mg/L	meter	°C	meter	ppt	meter	unit	Techn.	mg/L (total)	Techn.	mg/L (Total)		
Control /	0	32	WQ Surr	6	7.4	6	16.8	1	28	1	8.0					BH	10.30
Control /	1	32	WQ Surr	6	7.5	6	16.0	1	28	1	8.3					JL	10/31
Control /	2	32	WQ Surr	6	8.0	6	16.0	1	28	1	8.4					JL	11/01
Control /	3	32	WQ Surr														
Control /	4	32	WQ Surr														
WB-SD-RF01-0005 /	0	52	WQ Surr	6	7.4	6	16.5	1	29	1	7.9					BH	10.30
WB-SD-RF01-0005 /	1	52	WQ Surr	6	7.2	6	16.9	1	28	1	8.2					JL	10/31
WB-SD-RF01-0005 /	2	52	WQ Surr	6	7.2	6	15.7	1	29	1	8.3					JL	11/01
WB-SD-RF01-0005 /	3	52	WQ Surr														
WB-SD-RF01-0005 /	4	52	WQ Surr														
WB-SD-RF02-0005 /	0	5	WQ Surr	6	7.2	6	16.8	1	28	1	8.0					BH	10.30
WB-SD-RF02-0005 /	1	5	WQ Surr	6	5.6	6	16.2	1	28	1	8.1					JL	10/31
WB-SD-RF02-0005 /	2	5	WQ Surr	6	6.3	6	16.1	1	29	1	8.2					JL	11/01
WB-SD-RF02-0005 /	3	5	WQ Surr														
WB-SD-RF02-0005 /	4	5	WQ Surr														

LARVAL DEVELOPMENT TEST
WATER QUALITY DATA

CLIENT	PROJECT	SPECIES		NEWFIELDS LAB / LOCATION	PROTOCOL
Paramatrix	West Bay	*Mytilus galloprovencialis*		Port Gamble / Bath 5	PSEP (1995)
JOB NUMBER	**PROJECT MANAGER**	**TEST START DATE**	**TIME**	**TEST END DATE**	**TIME**
	B. Hester	30Oct09	1650	11/1/09	1700

* Day 3&4 observations needed only if development endpoint not met by day 2

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) >5.0		Temp (°C) 16 ± 1		Sal (ppt) 31 ± 1		pH 7.8 ± 0.5		Ammonia NA		Sulfide NA		TECH	DATE
				D.O.		TEMP.		SALINITY		pH		AMMONIA		SULFIDE			
CLIENT/ NEWFIELDS ID	DAY	Random #	REP	meter	mg/L	meter	°C	meter	ppt	meter	unit	Techn.	mg/L (total)	Techn.	mg/L (Total)		
WB-SD-SD25-0005 /	0	1	WQ Surr	6	5.8	6	16.5	1	29	1	8.1					BH	10.30
WB-SD-SD25-0005 /	1	1	WQ Surr	6	(4.7)	6	16.0	1	29	1	7.9					JL	10/31
WB-SD-SD25-0005 /	2	1	WQ Surr	6	5.3	6	15.7	1	28	1	8.1					JL	11/01
WB-SD-SD25-0005 /	3	1	WQ Surr														
WB-SD-SD25-0005 /	4	1	WQ Surr														
WB-SD-SD28-0005 /	0	21	WQ Surr	6	6.2	6	16.8	1	28	1	7.9					BH	10.30
WB-SD-SD28-0005 /	1	21	WQ Surr	6	(4.0)	6	16.5	1	28	1	8.0					JL	10/31
WB-SD-SD28-0005 /	2	21	WQ Surr	6	8.1	6	15.5	1	28	1	8.4					JL	11/01
WB-SD-SD28-0005 /	3	21	WQ Surr														
WB-SD-SD28-0005 /	4	21	WQ Surr														
WB-SD-SD29-0005 /	0	38	WQ Surr	6	6.6	6	16.7	1	28	1	7.8					BH	10.30
WB-SD-SD29-0005 /	1	38	WQ Surr	6	(4.7)	6	16.1	1	29	1	8.0					JL	10/31
WB-SD-SD29-0005 /	2	38	WQ Surr	6	8.3	6	15.6	1	29	1	8.5					JL	11/01
WB-SD-SD29-0005 /	3	38	WQ Surr														
WB-SD-SD29-0005 /	4	38	WQ Surr														

LARVAL DEVELOPMENT TEST
WATER QUALITY DATA

CLIENT	PROJECT	SPECIES		NEWFIELDS LAB / LOCATION	PROTOCOL
Paramatrix	West Bay	*Mytilus galloprovencialis*		Port Gamble / Bath 5	PSEP (1995)
JOB NUMBER	**PROJECT MANAGER**	**TEST START DATE**	**TIME**	**TEST END DATE**	**TIME**
	B. Hester	30Oct09	1650	11/1/09	1700

* Day 3&4 observations needed only if development endpoint not met by day 2

WATER QUALITY DATA

TEST CONDITIONS				DO (mg/L) >5.0		Temp (°C) 16 ± 1		Sal (ppt) 31 ± 1		pH 7.8 ± 0.5		Ammonia NA		Sulfide NA		TECH	DATE
CLIENT/ NEWFIELDS ID	DAY	Random #	REP	D.O.		TEMP.		SALINITY		pH		AMMONIA		SULFIDE			
				meter	mg/L	meter	°C	meter	ppt	meter	unit	Techn.	mg/L (total)	Techn.	mg/L (Total)		
WB-SD-SD30-0005 /	0	19	WQ Surr	6	7.3	6	16.8	1	28	1	7.9					BH	10.30
WB-SD-SD30-0005 /	1	19	WQ Surr	6	5.9	6	16.4	1	28	1	8.0					JL	10/31
WB-SD-SD30-0005 /	2	19	WQ Surr	6	6.1	6	16.1	1	28	1	8.0					JL	11/01
WB-SD-SD30-0005 /	3	19	WQ Surr														
WB-SD-SD30-0005 /	4	19	WQ Surr														
WB-SD-SD26/27-0005 /	0	7	WQ Surr	6	7.1	6	16.5	1	28	1	8.0					BH	10.30
WB-SD-SD26/27-0005 /	1	7	WQ Surr	6	5.9	6	16.4	1	28	1	8.1					JL	10/31
WB-SD-SD26/27-0005 /	2	7	WQ Surr	6	5.9	6	15.8	1	28	1	8.2					JL	11/01
WB-SD-SD26/27-0005 /	3	7	WQ Surr														
WB-SD-SD26/27-0005 /	4	7	WQ Surr														

NEWFIELDS

Ammonia and Sulfide Analysis Record

Client/Project:	Organism:	Test Duration (days):
West Bay	Larval -	48-60hr

PRETEST / INITIAL / FINAL / OTHER (circle one) **DAY of TEST:** 0
OVERLYING (OV) / POREWATER (PW) (circle one)

Comments: _____

Calibration Standards Temperature		Sample temperature should be within ±1°C of standards temperature at time and date of analysis.
Date:	**Temperature:**	
11/5/09	20.0	

Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp °C	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
∅	Surr	TS 10/30/09	∅	20.0	NMB 11/5/09 ~~TS 10/30/09~~	Y	NA →		0.003
RF-01			∅						0.096
RF-02			∅						0.115
25			<0.5						0.091
26/27			∅						0.068
28			<0.5						0.096
29			1.50						0.060
30			∅						0.044

NEWFIELDS

Ammonia and Sulfide Analysis Record

Client/Project:	Organism:	Test Duration (days):
Parametrix/West Bay	Mytilus	48-60

PRETEST / INITIAL / FINAL / OTHER (circle one) **DAY of TEST:** 2
OVERLYING (OV) / POREWATER (PW) (circle one)

Comments: _____

Calibration Standards Temperature		Sample temperature should be within ±1°C of standards temperature at time and date of analysis.
Date:	**Temperature:**	
11/5/09	20.0	

Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp °C	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
Control	Seawat.	11/2/09 CR	Ø	19.5	11/5/09 MMB	Y			0.000
RF01			Ø						0.006
RF02			Ø						0.005
SD25			<0.5						0.001
SD26/27			Ø						0.000
SD28			<0.5						0.002
SD29			1.88						0.001
SD30			Ø						0.003
SedimentControl			Ø						0.000

NEWFIELDS

LARVAL DEVELOPMENT TEST INITIATION DATA SHEET

CLIENT	PROJECT	JOB NUMBER	PROJECT MANAGER	LABORATORY	PROTOCOL
Paramatrix	West Bay		B. Hester	Port Gamble Bath 5	PSEP (1995)

TEST ORGANISM SPAWNING DATA

SPECIES		
Mytilus galloprovencialis		
SUPPLIER		ORGANISM BATCH
Taylor shellfish		TS102809
DATE RECEIVED	TIME RECEIVED	DATE USED
10.28.09	0900	10.30.09
SPAWNING METHOD	INITIAL SPAWNING TIME	FINAL SPAWNING TIME
Heat shock	1330	1440
MALES / FEMALES	SPERM VIABILITY	EGG CONDITION
6 / 4	✓	Good
BEGIN FERTILIZATION	END FERTILIZATION	CONDITION OF EMBRYOS
1440	1650	Good

SAMPLE STORAGE
4 Degrees Celsius - dark
SEDIMENT TREATMENT
none
TEST CHAMBERS
1 L Mason Jars
EXPOSURE VOLUME
900mL seawater / 18g Sediment
TIME OF SHAKE
1200
TIME OF INITIATION
1650

SPECIAL CONDITIONS

UV LIGHT EXPOSURE (YES/NO)	AERATION FROM TEST INITIATION (YES/NO)
Yes	No
SCREEN TUBE TEST (YES/NO)	OTHER (EXPLAIN)
No	

EMBRYO DENSITY CALCULATIONS

ess stock = 94 · 100 = 9400 eggs/mL

test target 27,000. $\frac{27{,}000}{9400}$ = 2.87 mL/chamber

RT target $\frac{2700}{9400}$ = 0.29 · 50 mL = $\frac{14 \text{ ml ess stock}}{36 \text{ ml } C\text{-}H_2O}$

Dilute 0.100 mL/vial

NEWFIELDS

ORGANISM RECEIPT LOG

Date:	Time:	NewFields Batch No.
10.28.09	0900	TS102809

Organism / Project:	Source:
Mytilus galloprovencialis	Taylor Shellfish

Address:	Invoice Attached
On File	Yes (No)

Phone:	Contact:
On File	Karen Underwood

No. Ordered:	No. Received:	Source Batch:
1 batch	1 batch	Field

Condition of Organisms:	Approximate Size or Age:
Good	Adult

Shipper:	B of L (Tracking No.)
NewFields Courier	NA

Condition of Container:	Received By:
Good	BH

Confirmation of ID of Organism:	Technician (Initials):
Yes (No)	

pH (Units)	Temp. (°C)	D.O. (mg/L)	Conductivity or Salinity (Include Units)	Technician (Initials)
*			→	

Notes: * transported dry

APPENDIX A.3.2

Mytilus galloprovencialis

Bivalve Embryo Bioassay

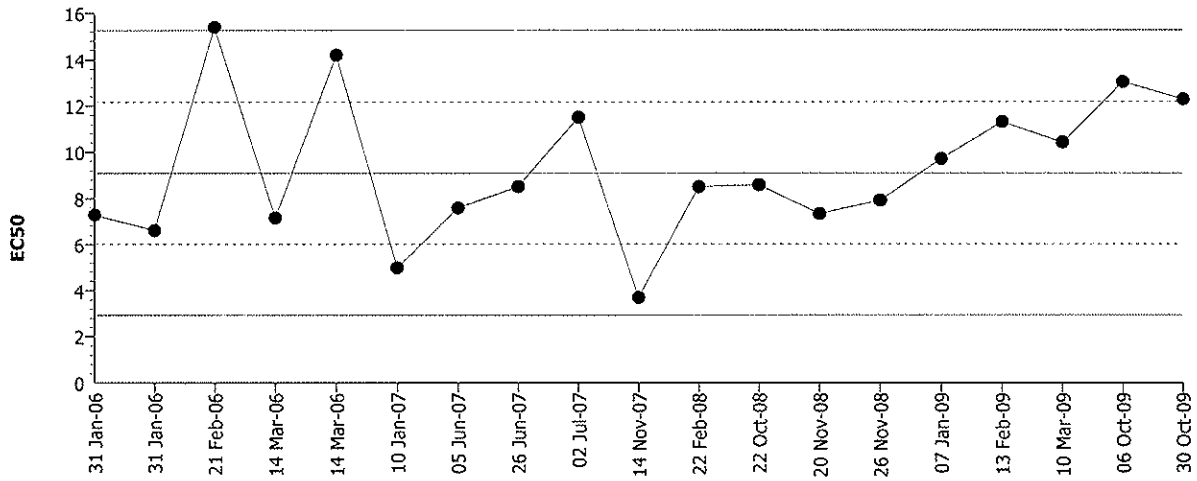
Reference Toxicant Test

CETIS QC Chart

Report Date: 04 Jan-10 10:55 AM

Mussel Shell Development Test — **NewFields**

Test Type: Development-Survival | **Organism:** Mytilus species (Mussel) | **Material:** Copper sulfate
Protocol: EPA/600/R-95/136 (1995) | **Endpoint:** Combined Proportion Normal | **Source:** Reference Toxicant-REF



Mean:	9.09214	**Count:**	18	**-1s Warning Limit:**	6.0132	**-2s Action Limit:**	2.93426
Sigma:	3.07894	**CV:**	33.86%	**+1s Warning Limit:**	12.1711	**+2s Action Limit:**	15.2500

Quality Control Data

Point	Year	Month	Day	Data	Delta	Sigma	Warning	Action	Test Link	Analysis
1	2006	Jan	31	7.27814	-1.81399	-0.58916			07-7532-7374	03-9619-0590
2			31	6.61806	-2.47407	-0.80355			13-7720-1086	09-0953-9971
3		Feb	21	15.39971	6.30757	2.04862	(+)	(+)	13-4991-4803	05-4083-6897
4		Mar	14	7.14387	-1.94827	-0.63277			06-2606-4386	01-1874-9985
5			14	14.18912	5.09698	1.65543	(+)		04-5028-3346	02-3972-6078
6	2007	Jan	10	4.98039	-4.11175	-1.33544	(-)		14-3905-0090	14-8759-6838
7		Jun	5	7.58039	-1.51175	-0.49100			13-7829-5492	02-0555-4940
8			26	8.51244	-0.57970	-0.18828			01-3435-1614	10-7297-9254
9		Jul	2	11.50108	2.40894	0.78239			05-4911-0140	15-1586-2946
10		Nov	14	3.68371	-5.40843	-1.75659	(-)		15-3555-7493	15-2027-0867
11	2008	Feb	22	8.50255	-0.58959	-0.19149			06-6162-8975	04-4740-6893
12		Oct	22	8.57836	-0.51378	-0.16687			13-5164-0440	13-1167-6043
13		Nov	20	7.33284	-1.75930	-0.57140			09-2389-8810	07-3147-8972
14			26	7.91375	-1.17838	-0.38272			15-3498-9291	14-5622-3642
15	2009	Jan	7	9.69234	0.60021	0.19494			10-8012-7714	12-5942-1542
16		Feb	13	11.30617	2.21403	0.71909			06-5042-8719	03-4482-1393
17		Mar	10	10.41783	1.32569	0.43057			11-1588-2942	03-7041-4637
18		Oct	6	13.02772	3.93558	1.27823	(+)		07-1777-5694	02-4229-6683
19			30	12.27036	3.17822	1.03225	(+)		13-9607-6739	18-9877-8634

CETIS Test Summary

Report Date: 01 Dec-09 4:15 PM
Test Link: 13-9607-6739

Mussel Shell Development Test — **NewFields**

Test No:	17-9534-2045	**Test Type:**	Development-Survival	**Duration:**	48h
Start Date:	30 Oct-09 05:15 PM	**Protocol:**	EPA/600/R-95/136 (1995)	**Species:**	Mytilus species
Ending Date:	01 Nov-09 05:00 PM	**Dil Water:**	Laboratory Seawater	**Source:**	Other
Setup Date:	30 Oct-09 05:15 PM	**Brine:**	Not Applicable		

Sample No:	04-5021-7476	**Code:**	450217476	**Client:**	Internal Lab
Sample Date:	01 Dec-09 04:11 PM	**Material:**	Copper sulfate	**Project:**	Reference Toxicant
Receive Date:	01 Dec-09 04:11 PM	**Source:**	Reference Toxicant		
Sample Age:	N/A	**Station:**	P090420.21		

Comparison Summary

Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
04-7544-5343	Combined Proportion Norma	5	10	7.07107	11.88%	Dunnett's Multiple Comparison

Point Estimate Summary

Analysis	Endpoint	% Effect	Conc-µg/L	95% LCL	95% UCL	Method
18-9877-8634	Combined Proportion Normal	5	5.440802	0.8644938	6.023173	Linear Interpolation
		10	6.182305	4.370707	6.957076	
		15	7.009175	5.18453	7.988662	
		20	7.931239	5.970497	9.205263	
		25	8.959456	6.798292	10.53506	
		40	11.10641	10.05213	11.76778	
		50	12.27036	11.30394	12.8732	

Test Acceptability

Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision
04-7544-5343	Combined Proportion Normal	PMSD	0.11881	NL - 0.25	No	Passes acceptability criteria

Combined Proportion Normal Summary

Conc-µg/L	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Water	3	0.91958	0.86770	1.00000	0.04077	0.07061	7.68%
2.5		3	0.93645	0.92996	0.94553	0.00468	0.00810	0.86%
5		3	0.91180	0.87938	0.95720	0.02338	0.04050	4.44%
10		3	0.65370	0.61479	0.68482	0.02059	0.03566	5.46%
20		3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00%
40		3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00%

Combined Proportion Normal Detail

Conc-µg/L	Control Type	Rep 1	Rep 2	Rep 3
0	Dilution Water	0.89105	0.86770	1.00000
2.5		0.93385	0.94553	0.92996
5		0.87938	0.95720	0.89883
10		0.68482	0.61479	0.66148
20		0.00000	0.00000	0.00000
40		0.00000	0.00000	0.00000

CETIS Data Worksheet

Report Date: 01 Dec-09 4:15 PM
Link: 13-9607-6739

Mussel Shell Development Test **NewFields**

Start Date: 30 Oct-09 05:15 PM **Species:** Mytilus species **Sample Code:** 450217476
Ending Date: 01 Nov-09 05:00 PM **Protocol:** EPA/600/R-95/136 (1995) **Sample Source:** Reference Toxicant
Sample Date: 01 Dec-09 04:11 PM **Material:** Copper sulfate **Sample Station:** P090420.21

Conc-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	D	1	2	257	231	231	229	
0	D	2	6	257	224	224	223	
0	D	3	13	257	258	258	258	
2.5		1	8	257	241	241	240	
2.5		2	16	257	244	244	243	
2.5		3	12	257	241	241	239	
5		1	11	257	229	229	226	
5		2	3	257	252	252	246	
5		3	5	257	231	231	231	
10		1	9	257	265	265	176	
10		2	15	257	234	234	158	
10		3	14	257	254	254	170	
20		1	17	257	218	218	0	
20		2	1	257	191	191	0	
20		3	10	257	196	196	0	
40		1	18	257	42	42	0	
40		2	4	257	14	14	0	
40		3	7	257	24	24	0	

NEWFIELDS

LARVAL DEVELOPMENT TEST
COPPER REF TOX OBSERVATION SHEET

SPECIES
Mytilus galloprovencialis

CLIENT	PROJECT	JOB NUMBER	PROJECT MANAGER	NEWFIELDS LAB / LOCATION	PROTOCOL
Paramatrix	West Bay		B. Hester	Port Gamble / Incubator	PSEP (1995)

TEST ID	ORGANISM BATCH	TEST START DATE:	TIME	TEST END DATE:	TIME
P090420.21	~~+9~~ TS 102809	10/30/09	1715	11/1/09	1700

LARVAL OBSERVATION DATA

CLIENT/ NEWFIELDS ID	CONC. value	CONC. units	VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECHNICIAN	COMMENTS
Ref.Tox. - Copper	0	µg/L		1	229	2	12/1/09	CR	
				2	223	1			
				3	258	0			
Ref.Tox. - Copper	2.5	µg/L		1	240	1			
				2	243	1			
				3	239	2			
Ref.Tox. - Copper	5	µg/L		1	226	3			
				2	246	6			
				3	231	0			
Ref.Tox. - Copper	10	µg/L		1	176	89			
				2	158	76			
				3	170	84			
Ref.Tox. - Copper	20	µg/L		1	0	218			
				2	0	191			
				3	0	196			
Ref.Tox. - Copper	40	µg/L		1	0	42			
				2	0	14			
				3	0	24			

STOCKING DENSITY		1		293	11/30/09	CR	
		2		240			
		3		237			

NEWFIELDS

LARVAL DEVELOPMENT TEST
COPPER REF TOX WQ

CLIENT	PROJECT	SPECIES	NEWFIELDS LAB / LOCATION		PROTOCOL
Parametrix	West Bay	*Mytilus galloprovencialis*	Port Gamble / Incubator		PSEP (1995)
JOB NUMBER	PROJECT MANAGER	QUANTITY OF TOXICANT: 0.039 mL	QUANTITY OF DILUENT: 500mL		INIT
	B. Hester	ACTUAL:	ACTUAL:		
TEST ID	LOT #:	TEST START DATE:	TIME	TEST END DATE	TIME
P090420.21	1904209	30Oct09	1715	~~11/3/09~~ 11/1/09	~~0930~~ 1700

WATER QUALITY DATA

DILTIN.WAT.BATCH	ORGANISM BATCH	REFERENCE TOX. MATERIAL	REFERENCE TOXXICANT
FSW1029109.01		Copper Sulfate	Copper

TEST CONDITIONS					DO (mg/L)		TEMP(C)		SAL (ppt)		pH		TECH.	DATE
					>5.0		16 ± 1		28 ± 1		7.8 ± 0.5			
CLIENT/ NEWFIELDS ID	CONCENTRATION value	CONCENTRATION units	DAY	REP	D.O. meter	D.O. mg/L	TEMP. meter	TEMP. °C	SALINITY meter	SALINITY ppt	pH meter	pH unit		
Ref.Tox.-Copper	0	µg/L	0	Stock	6	7.8	6	16.0	1	28	1	8.2	BH	10.30
			1	Stock	↓	7.9	↓	17.6	↓	28	↓	8.1	JL	10/31
			2	Stock	↓	7.9	↓	17.0	↓	28	↓	8.1	JL	11/01
			3	Stock	↓		↓		↓		↓			
			4	Stock	↓	7.9	↓	16.6	↓	28		~~8.0~~	~~CR~~	11/3
Ref.Tox.-Copper	2.5	µg/L	0	Stock	6	7.7	6	16.4	1	28	1	8.2	BH	10.30
			1	Stock	↓	8.1	↓	17.0	↓	29	↓	8.2	JL	10/31
			2	Stock	↓	8.1	↓	16.9	↓	29	↓	8.2	JL	11/01
			3	Stock	↓		↓		↓		↓			
			4	Stock	↓	8.2	↓	16.3	↓	28	↓	8.1	CR	11/3
Ref.Tox.-Copper	5	µg/L	0	Stock	6	7.6	6	16.4	1	28	1	8.2	BH	10.30
			1	Stock	↓	8.1	↓	16.8	↓	29	↓	8.3	JL	10/31
			2	Stock	↓	8.2	↓	16.6	↓	29	↓	8.3	JL	11/01
			3	Stock	↓		↓		↓		↓			
			4	Stock	↓	8.2	↓	16.1	↓	28	↓	8.1	CR	11/3
Ref.Tox.-Copper	10	µg/L	0	Stock	6	7.6	6	16.4	1	28	1	8.2	BH	10.30
			1	Stock	↓	8.2	↓	16.7	↓	29	↓	8.3	JL	10/31
			2	Stock	↓	8.2	↓	16.6	↓	29	↓	8.3	JL	11/01
			3	Stock	↓		↓		↓		↓			
			4	Stock	↓	8.2	↓	16.0	↓	28	↓	8.1	CR	11/3
Ref.Tox.-Copper	20	µg/L	0	Stock	6	7.6	6	16.4	1	28	1	8.2	BH	10.30
			1	Stock	↓	8.2	↓	16.7	↓	29	↓	8.1	JL	10/31
			2	Stock	↓	8.2	↓	16.5	↓	29	↓	8.3	JL	11/01
			3	Stock	↓		↓		↓		↓			
			4	Stock	↓	8.3	↓	15.8	↓	28	↓	8.2	CR	11/3
Ref.Tox.-Copper	40	µg/L	0	Stock	6	7.6	6	16.4	1	28	1	8.2	BH	10.30
			1	Stock	↓	8.2	↓	16.6	↓	29	↓	8.2	JL	10/31
			2	Stock	↓	8.2	↓	16.5	↓	29	↓	8.3	JL	11/01
			3	Stock	↓		↓		↓		↓			
			4	Stock	↓	8.3	↓	15.9	↓	28	↓	8.2	CR	11/3

APPENDIX B

STATISTICAL COMPARISONS

Test	Endpoint	Treatment	Comparison	Probability Normal	Probability Homogeneous	Test Type	Test Probability	Significant?	One-Tail Comparison
Eohaustorius	Percent Mortality	RF01	Control	0.079	0.802	T-test Equal Var	0.676		Treatment <= Comparison
Eohaustorius	Percent Mortality	RF02	Control	0.212	0.176	T-test Equal Var	0.897		Treatment <= Comparison
Eohaustorius	Percent Mortality	SD26/27	RF01	0.079	0.802	T-test Equal Var	0.324		Treatment <= Comparison
Eohaustorius	Percent Mortality	SD25	RF01	0.576	0.241	T-test Equal Var	0.165		Treatment <= Comparison
Eohaustorius	Percent Mortality	SD28	RF01	0.116	0.914	T-test Equal Var	0.286		Treatment <= Comparison
Eohaustorius	Percent Mortality	SD29	RF01	0.608	0.026	T-test Unequal Var	0.008	Yes	Treatment > Comparison
Eohaustorius	Percent Mortality	SD30	RF01	0.696	0.543	T-test Equal Var	0.115		Treatment <= Comparison
Eohaustorius	Percent Mortality	SD26/27	RF02	0.212	0.176	T-test Equal Var	0.103		Treatment <= Comparison
Eohaustorius	Percent Mortality	SD25	RF02	0.377	0.867	T-test Equal Var	0.029	Yes	Treatment > Comparison
Eohaustorius	Percent Mortality	SD28	RF02	0.281	0.184	T-test Equal Var	0.098		Treatment <= Comparison
Eohaustorius	Percent Mortality	SD29	RF02	0.251	0.012	T-test Unequal Var	0.007	Yes	Treatment > Comparison
Eohaustorius	Percent Mortality	SD30	RF02	0.184	0.599	T-test Equal Var	0.024	Yes	Treatment > Comparison
Larval	Percent Normal Developmment	RF01	Control	0.036	0.075	Rankit Unequal Var	0.586		Treatment >= Comparison
Larval	Percent Normal Developmment	RF02	Control	0.262	0.004	T-test Unequal Var	0.053	Yes	Treatment < Comparison
Larval	Percent Normal Developmment	SD25	RF01	0.270	0.944	T-test Equal Var	0.168		Treatment >= Comparison
Larval	Percent Normal Developmment	SD26/27	RF01	0.570	0.191	T-test Equal Var	0.161		Treatment >= Comparison
Larval	Percent Normal Developmment	SD28	RF01	0.932	0.334	T-test Equal Var	0.015	Yes	Treatment < Comparison
Larval	Percent Normal Developmment	SD29	RF01	0.002	0.168	Mann-Whitney	0.017	Yes	Treatment < Comparison
Larval	Percent Normal Developmment	SD30	RF01	0.373	0.354	T-test Equal Var	0.000	Yes	Treatment < Comparison
Larval	Percent Normal Developmment	SD25	RF02	0.887	0.148	T-test Equal Var	0.949		Treatment >= Comparison
Larval	Percent Normal Developmment	SD26/27	RF02	0.517	0.947	T-test Equal Var	0.990		Treatment >= Comparison
Larval	Percent Normal Developmment	SD28	RF02	0.892	0.087	T-test Unequal Var	0.220		Treatment >= Comparison
Larval	Percent Normal Developmment	SD29	RF02	0.001	0.078	Rankit Equal Var	0.003	Yes	Treatment < Comparison
Larval	Percent Normal Developmment	SD30	RF02	0.657	0.750	T-test Equal Var	0.000	Yes	Treatment < Comparison
Neanthes	Individual Growth	RF01	Control	0.451	0.848	T-test Equal Var	0.447		Treatment >= Comparison
Neanthes	Individual Growth	RF02	Control	0.997	0.505	T-test Equal Var	0.903		Treatment >= Comparison
Neanthes	Individual Growth	SD25	RF01	0.695	0.900	T-test Equal Var	0.100		Treatment >= Comparison
Neanthes	Individual Growth	SD26/27	RF01	0.051	0.693	T-test Equal Var	0.454		Treatment >= Comparison
Neanthes	Individual Growth	SD28	RF01	0.127	0.450	T-test Equal Var	0.076		Treatment >= Comparison
Neanthes	Individual Growth	SD29	RF01	0.942	0.929	T-test Equal Var	0.017	Yes	Treatment < Comparison
Neanthes	Individual Growth	SD30	RF01	0.049	0.730	Mann-Whitney	0.838		Treatment >= Comparison
Neanthes	Individual Growth	SD25	RF02	0.990	0.473	T-test Equal Var	0.017	Yes	Treatment < Comparison
Neanthes	Individual Growth	SD26/27	RF02	0.631	0.278	T-test Equal Var	0.062		Treatment >= Comparison
Neanthes	Individual Growth	SD28	RF02	0.453	0.188	T-test Equal Var	0.012	Yes	Treatment < Comparison
Neanthes	Individual Growth	SD29	RF02	0.860	0.401	T-test Equal Var	0.004	Yes	Treatment < Comparison
Neanthes	Individual Growth	SD30	RF02	0.456	0.665	T-test Equal Var	0.251		Treatment >= Comparison

T-test Results, This is a 2-tailed result
See Summary Page for 1-tail Result
15:50 Tuesday, January 5, 2010

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=RF01 ----------

The TTEST Procedure

Variable: result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
Control	5	0.1546	0.1465	0.0655	0	0.3218
Reference	5	0.1095	0.1537	0.0687	0	0.3218
Diff (1-2)		0.0451	0.1501	0.0949		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Control		0.1546	-0.0273	0.3364	0.1465	0.0877	0.4209
Reference		0.1095	-0.0814	0.3003	0.1537	0.0921	0.4416
Diff (1-2)	Pooled	0.0451	-0.1738	0.2640	0.1501	0.1014	0.2876
Diff (1-2)	Satterthwaite	0.0451	-0.1739	0.2641			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	0.48	0.6474
Satterthwaite	Unequal	7.9815	0.48	0.6475

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.10	0.9278

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=RF02 ----------

The TTEST Procedure

Variable: result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
Control	5	0.1546	0.1465	0.0655	0	0.3218
Reference	5	0.0451	0.1009	0.0451	0	0.2255
Diff (1-2)		0.1095	0.1257	0.0795		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Control		0.1546	-0.0273	0.3364	0.1465	0.0877	0.4209
Reference		0.0451	-0.0801	0.1703	0.1009	0.0604	0.2898
Diff (1-2)	Pooled	0.1095	-0.0739	0.2928	0.1257	0.0849	0.2409
Diff (1-2)	Satterthwaite	0.1095	-0.0781	0.2970			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	1.38	0.2060
Satterthwaite	Unequal	7.0971	1.38	0.2106

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	2.11	0.4877

---------- Test=Larval Endpoint=Percent Normal De Treatment=RF02 ----------

The TTEST Procedure

Variable: result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
Control	5	1.4069	0.2273	0.1016	1.1100	1.5708
Reference	5	1.1948	0.0849	0.0380	1.0797	1.2989
Diff (1-2)		0.2121	0.1716	0.1085		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Control		1.4069	1.1247	1.6891	0.2273	0.1362	0.6531
Reference		1.1948	1.0894	1.3003	0.0849	0.0509	0.2441
Diff (1-2)	Pooled	0.2121	-0.0381	0.4623	0.1716	0.1159	0.3287
Diff (1-2)	Satterthwaite	0.2121	-0.0653	0.4895			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	1.95	0.0864
Satterthwaite	Unequal	5.0959	1.95	0.1070

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	7.16	0.0827

---------- Test=Neanthes Endpoint=Individual Growth Treatment=RF01 ----------

The TTEST Procedure

Variable: result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
Control	5	0.5262	0.0800	0.0358	0.4294	0.6317
Reference	5	0.5192	0.0799	0.0357	0.4540	0.6570
Diff (1-2)		0.00702	0.0799	0.0506		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Control		0.5262	0.4269	0.6255	0.0800	0.0479	0.2298
Reference		0.5192	0.4200	0.6184	0.0799	0.0479	0.2296
Diff (1-2)	Pooled	0.00702	-0.1096	0.1236	0.0799	0.0540	0.1532
Diff (1-2)	Satterthwaite	0.00702	-0.1096	0.1236			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	0.14	0.8930
Satterthwaite	Unequal	8	0.14	0.8930

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.00	0.9987

---------- Test=Neanthes Endpoint=Individual Growth Treatment=RF02 ----------

The TTEST Procedure

Variable: result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
Control	5	0.5262	0.0800	0.0358	0.4294	0.6317
Reference	5	0.6227	0.1291	0.0577	0.4428	0.7989
Diff (1-2)		-0.0964	0.1074	0.0679		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Control		0.5262	0.4269	0.6255	0.0800	0.0479	0.2298
Reference		0.6227	0.4624	0.7829	0.1291	0.0773	0.3709
Diff (1-2)	Pooled	-0.0964	-0.2530	0.0602	0.1074	0.0725	0.2057
Diff (1-2)	Satterthwaite	-0.0964	-0.2586	0.0657			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-1.42	0.1933
Satterthwaite	Unequal	6.6769	-1.42	0.2005

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	2.60	0.3764

---------- Test=Larval Endpoint=Percent Normal De Treatment=RF01 ----------

The TTEST Procedure

Variable: rankit (Rank for Variable result)

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
Control	5	-0.0654	1.1197	0.5008	-1.5466	0.7401
Reference	5	0.0654	0.6442	0.2881	-0.6554	0.7401
Diff (1-2)		-0.1307	0.9134	0.5777		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Control		-0.0654	-1.4557	1.3250	1.1197	0.6709	3.2176
Reference		0.0654	-0.7345	0.8652	0.6442	0.3859	1.8510
Diff (1-2)	Pooled	-0.1307	-1.4629	1.2015	0.9134	0.6170	1.7499
Diff (1-2)	Satterthwaite	-0.1307	-1.5238	1.2624			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-0.23	0.8267
Satterthwaite	Unequal	6.3863	-0.23	0.8281

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	3.02	0.3095

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=26/27 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	0.1095	0.1537	0.0687	0	0.3218
Test	5	0.1546	0.1465	0.0655	0	0.3218
Diff (1-2)		-0.0451	0.1501	0.0949		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		0.1095	-0.0814	0.3003	0.1537	0.0921	0.4416
Test		0.1546	-0.0273	0.3364	0.1465	0.0877	0.4209
Diff (1-2)	Pooled	-0.0451	-0.2640	0.1738	0.1501	0.1014	0.2876
Diff (1-2)	Satterthwaite	-0.0451	-0.2641	0.1739			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-0.48	0.6474
Satterthwaite	Unequal	7.9815	-0.48	0.6475

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.10	0.9278

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=SD25 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	0.1095	0.1537	0.0687	0	0.3218
Test	5	0.1997	0.1191	0.0533	0	0.3218
Diff (1-2)		-0.0902	0.1375	0.0870		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		0.1095	-0.0814	0.3003	0.1537	0.0921	0.4416
Test		0.1997	0.0517	0.3476	0.1191	0.0714	0.3423
Diff (1-2)	Pooled	-0.0902	-0.2907	0.1103	0.1375	0.0929	0.2634
Diff (1-2)	Satterthwaite	-0.0902	-0.2929	0.1125			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-1.04	0.3299
Satterthwaite	Unequal	7.532	-1.04	0.3318

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.66	0.6338

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=SD28 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	0.1095	0.1537	0.0687	0	0.3218
Test	5	0.1697	0.1702	0.0761	0	0.3977
Diff (1-2)		-0.0603	0.1621	0.1025		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		0.1095	-0.0814	0.3003	0.1537	0.0921	0.4416
Test		0.1697	-0.0415	0.3810	0.1702	0.1019	0.4889
Diff (1-2)	Pooled	-0.0603	-0.2968	0.1762	0.1621	0.1095	0.3106
Diff (1-2)	Satterthwaite	-0.0603	-0.2972	0.1766			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-0.59	0.5728
Satterthwaite	Unequal	7.9185	-0.59	0.5729

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.23	0.8484

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=SD29 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	0.1095	0.1537	0.0687	0	0.3218
Test	5	1.0332	0.5449	0.2437	0.3977	1.5708
Diff (1-2)		-0.9238	0.4004	0.2532		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		0.1095	-0.0814	0.3003	0.1537	0.0921	0.4416
Test		1.0332	0.3566	1.7098	0.5449	0.3265	1.5659
Diff (1-2)	Pooled	-0.9238	-1.5077	-0.3399	0.4004	0.2704	0.7670
Diff (1-2)	Satterthwaite	-0.9238	-1.5905	-0.2570			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-3.65	0.0065
Satterthwaite	Unequal	4.6323	-3.65	0.0169

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	12.57	0.0310

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=SD30 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	0.1095	0.1537	0.0687	0	0.3218
Test	5	0.2341	0.1495	0.0669	0	0.3977
Diff (1-2)		-0.1246	0.1516	0.0959		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		0.1095	-0.0814	0.3003	0.1537	0.0921	0.4416
Test		0.2341	0.0485	0.4197	0.1495	0.0896	0.4296
Diff (1-2)	Pooled	-0.1246	-0.3458	0.0965	0.1516	0.1024	0.2904
Diff (1-2)	Satterthwaite	-0.1246	-0.3458	0.0965			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-1.30	0.2298
Satterthwaite	Unequal	7.9939	-1.30	0.2299

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.06	0.9585

---------- Test=Larval Endpoint=Percent Normal De Treatment=SD25 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	1.4272	0.1455	0.0651	1.2393	1.5708
Test	5	1.3335	0.1445	0.0646	1.1511	1.5036
Diff (1-2)		0.0937	0.1450	0.0917		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		1.4272	1.2466	1.6079	0.1455	0.0872	0.4180
Test		1.3335	1.1541	1.5129	0.1445	0.0865	0.4151
Diff (1-2)	Pooled	0.0937	-0.1177	0.3052	0.1450	0.0979	0.2777
Diff (1-2)	Satterthwaite	0.0937	-0.1177	0.3052			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	1.02	0.3365
Satterthwaite	Unequal	7.9996	1.02	0.3365

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.01	0.9894

---------- Test=Larval Endpoint=Percent Normal De Treatment=SD26/27 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	1.4272	0.1455	0.0651	1.2393	1.5708
Test	5	1.3486	0.0813	0.0363	1.2580	1.4449
Diff (1-2)		0.0787	0.1178	0.0745		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		1.4272	1.2466	1.6079	0.1455	0.0872	0.4180
Test		1.3486	1.2477	1.4495	0.0813	0.0487	0.2336
Diff (1-2)	Pooled	0.0787	-0.0932	0.2505	0.1178	0.0796	0.2257
Diff (1-2)	Satterthwaite	0.0787	-0.1018	0.2591			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	1.06	0.3221
Satterthwaite	Unequal	6.2756	1.06	0.3302

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	3.20	0.2857

---------- Test=Larval Endpoint=Percent Normal De Treatment=SD28 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	1.4272	0.1455	0.0651	1.2393	1.5708
Test	5	1.1005	0.2373	0.1061	0.8038	1.4306
Diff (1-2)		0.3267	0.1968	0.1245		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		1.4272	1.2466	1.6079	0.1455	0.0872	0.4180
Test		1.1005	0.8059	1.3952	0.2373	0.1422	0.6818
Diff (1-2)	Pooled	0.3267	0.0397	0.6137	0.1968	0.1329	0.3770
Diff (1-2)	Satterthwaite	0.3267	0.0291	0.6243			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	2.62	0.0304
Satterthwaite	Unequal	6.6348	2.62	0.0359

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	2.66	0.3663

---------- Test=Larval Endpoint=Percent Normal De Treatment=SD30 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	1.4272	0.1455	0.0651	1.2393	1.5708
Test	5	0.7596	0.1026	0.0459	0.6713	0.9298
Diff (1-2)		0.6677	0.1259	0.0796		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		1.4272	1.2466	1.6079	0.1455	0.0872	0.4180
Test		0.7596	0.6322	0.8869	0.1026	0.0614	0.2947
Diff (1-2)	Pooled	0.6677	0.4841	0.8512	0.1259	0.0850	0.2411
Diff (1-2)	Satterthwaite	0.6677	0.4804	0.8549			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	8.39	<.0001
Satterthwaite	Unequal	7.1883	8.39	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	2.01	0.5149

---------- Test=Neanthes Endpoint=Individual Growth Treatment=SD25 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	0.5192	0.0799	0.0357	0.4540	0.6570
Test	5	0.4498	0.0773	0.0346	0.3453	0.5427
Diff (1-2)		0.0694	0.0786	0.0497		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		0.5192	0.4200	0.6184	0.0799	0.0479	0.2296
Test		0.4498	0.3538	0.5459	0.0773	0.0463	0.2223
Diff (1-2)	Pooled	0.0694	-0.0453	0.1841	0.0786	0.0531	0.1507
Diff (1-2)	Satterthwaite	0.0694	-0.0453	0.1841			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	1.40	0.2005
Satterthwaite	Unequal	7.9915	1.40	0.2005

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.07	0.9512

---------- Test=Neanthes Endpoint=Individual Growth Treatment=SD26/27 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	0.5192	0.0799	0.0357	0.4540	0.6570
Test	5	0.5140	0.0578	0.0258	0.4539	0.6032
Diff (1-2)		0.00524	0.0697	0.0441		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		0.5192	0.4200	0.6184	0.0799	0.0479	0.2296
Test		0.5140	0.4422	0.5857	0.0578	0.0346	0.1660
Diff (1-2)	Pooled	0.00524	-0.0964	0.1069	0.0697	0.0471	0.1336
Diff (1-2)	Satterthwaite	0.00524	-0.0982	0.1087			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	0.12	0.9083
Satterthwaite	Unequal	7.2839	0.12	0.9086

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.91	0.5451

---------- Test=Neanthes Endpoint=Individual Growth Treatment=SD28 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	0.5192	0.0799	0.0357	0.4540	0.6570
Test	5	0.4552	0.0424	0.0190	0.4035	0.4948
Diff (1-2)		0.0640	0.0640	0.0405		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		0.5192	0.4200	0.6184	0.0799	0.0479	0.2296
Test		0.4552	0.4026	0.5079	0.0424	0.0254	0.1219
Diff (1-2)	Pooled	0.0640	-0.0293	0.1573	0.0640	0.0432	0.1226
Diff (1-2)	Satterthwaite	0.0640	-0.0347	0.1626			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	1.58	0.1524
Satterthwaite	Unequal	6.0884	1.58	0.1642

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	3.55	0.2475

---------- Test=Neanthes Endpoint=Individual Growth Treatment=SD29 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF01	5	0.5192	0.0799	0.0357	0.4540	0.6570
Test	5	0.3936	0.0749	0.0335	0.2752	0.4780
Diff (1-2)		0.1257	0.0774	0.0490		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF01		0.5192	0.4200	0.6184	0.0799	0.0479	0.2296
Test		0.3936	0.3006	0.4865	0.0749	0.0448	0.2151
Diff (1-2)	Pooled	0.1257	0.0127	0.2386	0.0774	0.0523	0.1483
Diff (1-2)	Satterthwaite	0.1257	0.0127	0.2387			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	2.57	0.0333
Satterthwaite	Unequal	7.9661	2.57	0.0334

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.14	0.9023

---------- Test=Larval Endpoint=Percent Normal De Treatment=SD29 ----------

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Result
Classified by Variable group

group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
RF01	5	40.0	27.50	4.772607	8.0
Test	5	15.0	27.50	4.772607	3.0

Average scores were used for ties.

Wilcoxon Two-Sample Test

Statistic	40.0000
Normal Approximation	
Z	2.5143
One-Sided Pr > Z	0.0060
Two-Sided Pr > |Z|	0.0119
t Approximation	
One-Sided Pr > Z	0.0165
Two-Sided Pr > |Z|	0.0331

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test

Chi-Square	6.8598
DF	1
Pr > Chi-Square	0.0088

---------- Test=Neanthes Endpoint=Individual Growth Treatment=SD30 ----------

The NPAR1WAY Procedure

Wilcoxon Scores (Rank Sums) for Variable Result
Classified by Variable group

group	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
RF01	5	22.0	27.50	4.787136	4.40
Test	5	33.0	27.50	4.787136	6.60

Wilcoxon Two-Sample Test

Statistic	22.0000
Normal Approximation	
Z	-1.0445
One-Sided Pr < Z	0.1481
Two-Sided Pr > |Z|	0.2963
t Approximation	
One-Sided Pr < Z	0.1618
Two-Sided Pr > |Z|	0.3235

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test

Chi-Square	1.3200
DF	1
Pr > Chi-Square	0.2506

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=26/27 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.0451	0.1009	0.0451	0	0.2255
Test	5	0.1546	0.1465	0.0655	0	0.3218
Diff (1-2)		-0.1095	0.1257	0.0795		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.0451	-0.0801	0.1703	0.1009	0.0604	0.2898
Test		0.1546	-0.0273	0.3364	0.1465	0.0877	0.4209
Diff (1-2)	Pooled	-0.1095	-0.2928	0.0739	0.1257	0.0849	0.2409
Diff (1-2)	Satterthwaite	-0.1095	-0.2970	0.0781			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-1.38	0.2060
Satterthwaite	Unequal	7.0971	-1.38	0.2106

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	2.11	0.4877

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=SD25 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.0451	0.1009	0.0451	0	0.2255
Test	5	0.1997	0.1191	0.0533	0	0.3218
Diff (1-2)		-0.1546	0.1104	0.0698		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.0451	-0.0801	0.1703	0.1009	0.0604	0.2898
Test		0.1997	0.0517	0.3476	0.1191	0.0714	0.3423
Diff (1-2)	Pooled	-0.1546	-0.3155	0.00642	0.1104	0.0746	0.2115
Diff (1-2)	Satterthwaite	-0.1546	-0.3163	0.00719			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-2.21	0.0577
Satterthwaite	Unequal	7.7877	-2.21	0.0586

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.40	0.7546

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=SD28 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.0451	0.1009	0.0451	0	0.2255
Test	5	0.1697	0.1702	0.0761	0	0.3977
Diff (1-2)		-0.1246	0.1399	0.0885		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.0451	-0.0801	0.1703	0.1009	0.0604	0.2898
Test		0.1697	-0.0415	0.3810	0.1702	0.1019	0.4889
Diff (1-2)	Pooled	-0.1246	-0.3286	0.0793	0.1399	0.0945	0.2679
Diff (1-2)	Satterthwaite	-0.1246	-0.3371	0.0878			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-1.41	0.1965
Satterthwaite	Unequal	6.5017	-1.41	0.2048

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	2.85	0.3352

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=SD29 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.0451	0.1009	0.0451	0	0.2255
Test	5	1.0332	0.5449	0.2437	0.3977	1.5708
Diff (1-2)		-0.9881	0.3919	0.2478		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.0451	-0.0801	0.1703	0.1009	0.0604	0.2898
Test		1.0332	0.3566	1.7098	0.5449	0.3265	1.5659
Diff (1-2)	Pooled	-0.9881	-1.5596	-0.4166	0.3919	0.2647	0.7507
Diff (1-2)	Satterthwaite	-0.9881	-1.6592	-0.3170			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-3.99	0.0040
Satterthwaite	Unequal	4.2737	-3.99	0.0143

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	29.19	0.0064

---------- Test=Eohaustorius Endpoint=Percent Mortality Treatment=SD30 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.0451	0.1009	0.0451	0	0.2255
Test	5	0.2341	0.1495	0.0669	0	0.3977
Diff (1-2)		-0.1890	0.1275	0.0806		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.0451	-0.0801	0.1703	0.1009	0.0604	0.2898
Test		0.2341	0.0485	0.4197	0.1495	0.0896	0.4296
Diff (1-2)	Pooled	-0.1890	-0.3750	-0.00302	0.1275	0.0861	0.2443
Diff (1-2)	Satterthwaite	-0.1890	-0.3796	0.00162			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-2.34	0.0472
Satterthwaite	Unequal	7.0161	-2.34	0.0515

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	2.20	0.4645

---------- Test=Larval Endpoint=Percent Normal De Treatment=SD25 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	1.1948	0.0849	0.0380	1.0797	1.2989
Test	5	1.3335	0.1445	0.0646	1.1511	1.5036
Diff (1-2)		-0.1387	0.1185	0.0749		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		1.1948	1.0894	1.3003	0.0849	0.0509	0.2441
Test		1.3335	1.1541	1.5129	0.1445	0.0865	0.4151
Diff (1-2)	Pooled	-0.1387	-0.3115	0.0342	0.1185	0.0800	0.2270
Diff (1-2)	Satterthwaite	-0.1387	-0.3189	0.0415			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-1.85	0.1014
Satterthwaite	Unequal	6.4707	-1.85	0.1102

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	2.89	0.3282

---------- Test=Larval Endpoint=Percent Normal De Treatment=SD26/27 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	1.1948	0.0849	0.0380	1.0797	1.2989
Test	5	1.3486	0.0813	0.0363	1.2580	1.4449
Diff (1-2)		-0.1538	0.0831	0.0526		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		1.1948	1.0894	1.3003	0.0849	0.0509	0.2441
Test		1.3486	1.2477	1.4495	0.0813	0.0487	0.2336
Diff (1-2)	Pooled	-0.1538	-0.2750	-0.0325	0.0831	0.0562	0.1593
Diff (1-2)	Satterthwaite	-0.1538	-0.2750	-0.0325			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	-2.92	0.0192
Satterthwaite	Unequal	7.9845	-2.92	0.0192

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.09	0.9340

---------- Test=Larval Endpoint=Percent Normal De Treatment=SD28 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	1.1948	0.0849	0.0380	1.0797	1.2989
Test	5	1.1005	0.2373	0.1061	0.8038	1.4306
Diff (1-2)		0.0943	0.1782	0.1127		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		1.1948	1.0894	1.3003	0.0849	0.0509	0.2441
Test		1.1005	0.8059	1.3952	0.2373	0.1422	0.6818
Diff (1-2)	Pooled	0.0943	-0.1656	0.3542	0.1782	0.1204	0.3414
Diff (1-2)	Satterthwaite	0.0943	-0.1953	0.3839			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	0.84	0.4271
Satterthwaite	Unequal	5.0086	0.84	0.4409

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	7.80	0.0716

---------- Test=Larval Endpoint=Percent Normal De Treatment=SD30 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	1.1948	0.0849	0.0380	1.0797	1.2989
Test	5	0.7596	0.1026	0.0459	0.6713	0.9298
Diff (1-2)		0.4353	0.0942	0.0596		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		1.1948	1.0894	1.3003	0.0849	0.0509	0.2441
Test		0.7596	0.6322	0.8869	0.1026	0.0614	0.2947
Diff (1-2)	Pooled	0.4353	0.2979	0.5726	0.0942	0.0636	0.1804
Diff (1-2)	Satterthwaite	0.4353	0.2971	0.5734			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	7.31	<.0001
Satterthwaite	Unequal	7.7319	7.31	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.46	0.7239

---------- Test=Neanthes Endpoint=Individual Growth Treatment=SD25 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.6227	0.1291	0.0577	0.4428	0.7989
Test	5	0.4498	0.0773	0.0346	0.3453	0.5427
Diff (1-2)		0.1728	0.1064	0.0673		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.6227	0.4624	0.7829	0.1291	0.0773	0.3709
Test		0.4498	0.3538	0.5459	0.0773	0.0463	0.2223
Diff (1-2)	Pooled	0.1728	0.0177	0.3280	0.1064	0.0719	0.2038
Diff (1-2)	Satterthwaite	0.1728	0.0114	0.3342			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	2.57	0.0332
Satterthwaite	Unequal	6.5447	2.57	0.0393

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	2.78	0.3451

---------- Test=Neanthes Endpoint=Individual Growth Treatment=SD26/27 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.6227	0.1291	0.0577	0.4428	0.7989
Test	5	0.5140	0.0578	0.0258	0.4539	0.6032
Diff (1-2)		0.1087	0.1000	0.0632		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.6227	0.4624	0.7829	0.1291	0.0773	0.3709
Test		0.5140	0.4422	0.5857	0.0578	0.0346	0.1660
Diff (1-2)	Pooled	0.1087	-0.0371	0.2545	0.1000	0.0675	0.1916
Diff (1-2)	Satterthwaite	0.1087	-0.0492	0.2666			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	1.72	0.1240
Satterthwaite	Unequal	5.5404	1.72	0.1405

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	4.99	0.1485

---------- Test=Neanthes Endpoint=Individual Growth Treatment=SD28 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.6227	0.1291	0.0577	0.4428	0.7989
Test	5	0.4552	0.0424	0.0190	0.4035	0.4948
Diff (1-2)		0.1674	0.0961	0.0608		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.6227	0.4624	0.7829	0.1291	0.0773	0.3709
Test		0.4552	0.4026	0.5079	0.0424	0.0254	0.1219
Diff (1-2)	Pooled	0.1674	0.0273	0.3076	0.0961	0.0649	0.1841
Diff (1-2)	Satterthwaite	0.1674	0.00982	0.3251			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	2.76	0.0248
Satterthwaite	Unequal	4.8539	2.76	0.0413

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	9.26	0.0533

---------- Test=Neanthes Endpoint=Individual Growth Treatment=SD29 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.6227	0.1291	0.0577	0.4428	0.7989
Test	5	0.3936	0.0749	0.0335	0.2752	0.4780
Diff (1-2)		0.2291	0.1055	0.0667		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.6227	0.4624	0.7829	0.1291	0.0773	0.3709
Test		0.3936	0.3006	0.4865	0.0749	0.0448	0.2151
Diff (1-2)	Pooled	0.2291	0.0752	0.3830	0.1055	0.0713	0.2021
Diff (1-2)	Satterthwaite	0.2291	0.0684	0.3899			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	3.43	0.0089
Satterthwaite	Unequal	6.4172	3.43	0.0125

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	2.97	0.3163

---------- Test=Neanthes Endpoint=Individual Growth Treatment=SD30 ----------

The TTEST Procedure

Variable: Result

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.6227	0.1291	0.0577	0.4428	0.7989
Test	5	0.5710	0.1011	0.0452	0.4649	0.7364
Diff (1-2)		0.0516	0.1159	0.0733		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.6227	0.4624	0.7829	0.1291	0.0773	0.3709
Test		0.5710	0.4455	0.6966	0.1011	0.0606	0.2906
Diff (1-2)	Pooled	0.0516	-0.1175	0.2207	0.1159	0.0783	0.2221
Diff (1-2)	Satterthwaite	0.0516	-0.1192	0.2224			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	0.70	0.5013
Satterthwaite	Unequal	7.5664	0.70	0.5024

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.63	0.6478

---------- Test=Larval Endpoint=Percent Normal De Treatment=SD29 ----------

The TTEST Procedure

Variable: rankit (Rank for Variable Result)

group	N	Mean	Std Dev	Std Err	Minimum	Maximum
RF02	5	0.7156	0.5923	0.2649	6.6E-17	1.5466
Test	5	-0.7156	0.5923	0.2649	-1.5466	6.6E-17
Diff (1-2)		1.4312	0.5923	0.3746		

group	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
RF02		0.7156	-0.0198	1.4510	0.5923	0.3549	1.7019
Test		-0.7156	-1.4510	0.0198	0.5923	0.3549	1.7019
Diff (1-2)	Pooled	1.4312	0.5674	2.2950	0.5923	0.4001	1.1347
Diff (1-2)	Satterthwaite	1.4312	0.5674	2.2950			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	8	3.82	0.0051
Satterthwaite	Unequal	8	3.82	0.0051

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	4	4	1.00	1.0000

APPENDIX C

CHAIN-OF-CUSTODY FORMS

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 , View Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13440

Destination Lab: NEWFIELDS PT. GAMBLE	Sample Originator: D. Dinkuhn / Parametrix	Report Results To: Parametrix	Phone: (360) 471-3917
Destination Contact: BRIAN HESTER	Contact Name: Dave Dinkuhn	Contact Name: D. Dinkuhn	Fax:
Date: 10/1/09	Address: 4660 Kitsap way, Suite A Bremerton, WA 98312	Address:	Email:
Turn-Around-Time: STANDARD	Phone: 360 377 0014		
Project Name: West Bay Park	Fax: 360 479 5961		
Contract/PO:	E-mail: DDinkuhn@parametrix.com		

Invoicing To: DAVID DINKUHN

Comments or Special Instructions: ★ HOLD PENDING CHEMICAL ANALYSIS. PER SMS (WAC 173-204-510)

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Analysis: BIOASSAYS ★	Preservation	Sample Temp Upon Receipt	LAB ID
1	WB-SD-SD25-0005	SD	1-5L	9/28 0915	X			
2	WB-SD-SD26-0005			0945	X			
3	WB-SD-SD27-0005			1000	X			
4	WB-SD-SD28-0005			0830	X			
5	WB-SD-SD29-0005			0845	X			
6	WB-SD-SD30-0005			0900	X			
7	WB-SD-SD30-1005			0915	X			
8	WB-SD-SD31-0005			0930	X			
9	WB-SD-RF01-0005			9/30 1300	X			
10	WB-SD-RF02-0005			1400	X			
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:
Print Name: Blaine Hardy	Print Name: Susan Munro	Print Name: Susan Munro	Print Name: Jay Ward
Signature:	Signature: Susan Munro	Signature: Susan Munro	Signature:
Affiliation: PMX	Affiliation: PMX	Affiliation: PMX	Affiliation: New Fields
Date/Time: 10/1/09 / 0850	Date/Time: 10/01/09 / 0850	Date/Time: 10/01/09 1040	Date/Time: 10/01/09 1040

Matrix Codes
FW = Fresh Water
WW = Waste Water
SB = Salt & Brackish Water
SS = Soil & Sediment
TS = plant & Animal Tissue
OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator

NEWFIELDS

NewFields Northwest, LLC.
Shipping: 4729 N[illegible]ew Dr.
Mailing: P.O. Box 216
Port Gamble, WA. 98364
Tel: (360) 297-6040, Fax: (360)297-7268

CHAIN OF CUSTODY

13503

Destination Lab: Paracletrix	Sample Originator: NewFields	Report Results To:	Phone:
Destination Contact: David Ankuma	Contact Name: Brian Hester	Contact Name:	Fax:
Date: 10.29.09	Address:	Address:	Email:
Turn-Around-Time			
Project Name	Phone:	Analysis	Invoicing To:
	Fax:		Comments or Special Instructions:
Contract/PO:	E-mail		

No.	Sample ID	Matrix	No. & Type of Container	Date & Time	Preservation	Sample Temp Upon Receipt	LAB ID
1	WB-SU-SD26/27-0005	SS	3 8oz G	10.27.09 1500	4°C		
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Relinquished by:	Recieved by:	Relinquished by:	Recieved by:	Matrix Codes
Print Name: Brian Hester	Print Name: DAVID QUACKENBUSH	Print Name:	Print Name:	FW = Fresh Water
Signature:	Signature:	Signature:	Signature:	WW = Waste Water
Affiliation: NewFields	Affiliation: PMX	Affiliation:	Affiliation:	SB = Salt & Brackish Water
Date/Time: 10.27.09 1700	Date/Time: 10/28/09 0835	Date/Time:	Date/Time:	SS = Soil & Sediment
				TS = plant & Animal Tissue
				OT = Other

WHITE – return to originator • YELLOW – lab • PINK – retained by originator