

December 11, 2015

ESA Associates, Inc. Project Number 711-007-106

Mr. Robert Knapp
Habitat Program Restoration Planner
Jamestown S'Klallam Tribe
1033 Old Blyn Highway
Sequim, WA 98382

**Subject: Remediation
Jamestown S'Klallam Tribe
Robinson Properties
121 and 131 Serenity Lane
Sequim, WA 98382**

Dear Mr. Knapp:

We are pleased to present this report of our Remediation of the above-referenced subject properties. We trust the information presented in this report meets your needs at this time.

We appreciate this opportunity to provide our services to the Jamestown S'Klallam Tribe. Should you require additional information or have any questions regarding this report, please contact us at (425) 870- 8481.

Sincerely,
ESA ASSOCIATES, INC



Kristen Burgess
President

**Remediation
Robinson Properties
121 and 131 Serenity Lane
Sequim, WA 98382**

Prepared for: Jamestown S'Klallam Tribe
1033 Old Blyn Highway
Sequim, WA 98382

Prepared by: ESA Associates, Inc.
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1.0 SUMMARY

At the request of the Jamestown S’Klallam Tribe, ESA Associates, Inc. (ESA Associates) has completed the remediation of the properties located along Serenity Lane in Sequim, Washington. The properties are known as the Robinson properties and consist of two parcels. Each parcel has an associated name and will be referred to throughout this review as follows: Robinson-3 (Tax parcel: 042902-110075) and Robinson-4 (Tax parcel: 042902-110400).

The following report is a summary of work performed using the guidelines set forth in Washington State Department of Ecology’s Model Toxics Control Act (MTCA). This report shall satisfy the requirements for conducting “all appropriate inquiry” under Section 101 (35) (B) (i) (I) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Small Business Liability Relief and Brownfields Revitalization Act. This report was prepared by a qualified *Environmental Professional* with ESA Associates as set forth in 40 CFR §312.10(b). The qualifications of the Environmental Professional are presented in Section 8.0 of this report and are included in Appendix D.

ESA Associates’ September 2015 Phase I ESA did reveal current recognized environmental conditions (RECs) in association with the subject properties as follows: Robinson-3 parcel located at 131 Serenity Lane had one area of improper solid waste disposal and remnants of burned household waste as well as an area to the south of the garage where auto mechanic work took place. The Robinson-4 parcel located at 121 Serenity Lane had one area of burning household waste. ESA Associates concluded that a Phase II ESA was necessary in order to determine whether the past use of the properties resulted in contamination of the soil and/or groundwater at the subject properties. The Phase II ESA targeted areas of concern identified as the following: 1) the burning of household waste on the Robinson-3 parcel; 2) the portion of land at the northern border of the Robinson-3 parcel, which appeared disturbed in the aerial photograph review; 3) the burning of waste on the Robinson-4 parcel; and 4) the area of auto work on the Robinson-3 parcel. The results of our November Phase I ESA revealed the following:

Robinson-4 Parcel Findings: 121 Serenity Lane

The soil encountered during our subsurface investigation revealed high levels of arsenic, methylene chloride, dioxins, and furans at concentrations well above the MTCA Method A cleanup levels for these constituents. The area impacted by these constituents measured 10 by 10 feet in plan dimensions and reached a depth of 1 foot.

Robinson-3 Parcel Findings: 131 Serenity Lane

The area where household waste had been burned in the past contained petroleum hydrocarbons quantified as heavy oil at **174,000 milligrams per kilogram (mg/kg)** exceeding the MTCA Method A cleanup level of 2,000 mg/kg. The upper two inches of soil also contained a dioxin/furan total toxic equivalent concentration or total TEQ (for notation purposes, the result is referred to as the TEQ) of 1.19 picograms per gram (pg/g), which was below MTCA's established screening level for terrestrial direct contact of 5.2 pg/g. The area impacted by petroleum hydrocarbons quantified as heavy oil measured 12 by 12 feet in plan dimensions and reached a depth of 0.5 feet.

Robinson-3 Parcel Findings: 131 Serenity Lane

The area on Robinson-3 where cars had been worked contained petroleum hydrocarbons quantified as heavy oil at a concentration of **40,700 mg/kg** exceeding the MTCA Method A cleanup level of 2,000 mg/kg. The area impacted by petroleum hydrocarbons quantified as heavy oil measured 5 feet by 10 feet in plan dimensions and reached a depth of 3 feet below ground surface (bgs).

Based on the results of our Phase II ESA, a Remedial Action Plan was designed and implemented on November 19, 2015. The results of our remedial activities are as follows:

Robinson-4 Parcel Remediation Burn Pile: 121 Serenity Lane

Soils from the area impacted by high levels of arsenic, methylene chloride, and dioxins/furans were excavated and transported to WASCO County Landfill (WASCO) in the Dalles, Oregon. Confirmation soil samples of the sidewalls and base indicate that the concentrations of arsenic, methylene chloride, and dioxin/furans have been reduced to non-detectable levels or below the respective MTCA Method A cleanup levels or screening level.

Robinson-3 Parcel Remediation Burn Pile: 131 Serenity Lane

Soils from the area impacted by petroleum hydrocarbons quantified as heavy oil measured were excavated and transported to WASCO Landfill in the Dalles, Oregon. Approximately 3 tons of contaminated soil were disposed of at WASCO. Confirmation soil samples of the sidewalls and base indicate that the concentrations of petroleum hydrocarbons quantified as heavy oil have been reduced to non-detectable levels or below the respective MTCA Method A cleanup levels. The removal of petroleum contaminated soil also reduced the dioxin/furan concentration to 0.42 pg/g.

Robinson-3 Parcel Remediation Car Maintenance Area: 131 Serenity Lane

Soils in the area impacted by petroleum hydrocarbons quantified as heavy oil were excavated and transported to WASCO. Approximately 7 tons of contaminated soil were disposed of at WASCO. Confirmation soil samples of the sidewalls and base indicate that the concentrations of petroleum hydrocarbons quantified as heavy oil have been reduced to non-detectable levels or below the respective MTCA Method A cleanup levels.

Conclusions

Approximately 15 tons of contaminated soil associated with the Robinson parcels were removed and transported to WASCO. An additional 0.48 tons of household garbage were also removed from the parcel located at 131 Serenity Lane. The confirmation soil samples from the resulting remedial excavations indicated that all identified constituents above MTCA cleanup levels have been successfully reduced to non-detectable concentrations or well below MTCA Method A cleanup levels. ESA Associates concludes that these parcels no longer pose a threat to human health or the environment.

2.0 BACKGROUND

Historical topographic maps, aerial photographs, records review, and local knowledge of the subject property indicate that the land was primarily forested from the 1930's to the late 1960's when portions of the property were developed for single family residences. From the late 1960's to 2015, the parcels comprising the subject property were single family residences, and they are currently functioning as rental properties. These residences all have functioning septic systems. All of the residences have electric baseboard heat with supplementary wood stove heat. Each home is on a private well. Given the age of the homes and our on-site observations, the homes likely contain lead based paint and/or asbestos containing building materials and will require lead based paint and asbestos surveys prior to demolition. ESA Associates' Phase I ESA review did reveal current RECs in association with some of the parcels of the subject property. Each parcel is discussed individually below:

Robinson-4: 121 Serenity Lane

The Robinson-4 parcel is occupied by a 1969, two bedroom mobile covering 1,144 square feet. It has an attached garage and a workshop. The parcel is on 1.28 acres. This parcel was rented by Randall Judd and was in reasonable condition. The home is currently not occupied. There was evidence from adjacent property renter statements that some burning of household items occurred at the west end of the property.

Robinson-3: 131 Serenity Lane

The Robinson-3 parcel is occupied by a 1976, three bedroom, wood framed home covering 1,778 square feet. It has a detached garage and a work shop. The parcel is on 1.54 acres. This parcel has a few areas of concern. There is a large burn pile of debris with evidence of burning plastic and household wastes; this is a current REC. There is a suspect area on the aerials along the property boundary to the north that looks like digging/burying activities took place. The current tenant also works as a mechanic on his own cars and has poor management practices that may have resulted in some surface contamination.

3.0 OBJECTIVE AND SCOPE OF SERVICES

ESA Associates excavated three remedial excavations in accordance with our authorized proposal dated November 2, 2015. ESA Associate's primary objective was to remediate the areas of concern identified in our Phase I ESA report dated September 30, 2015 and confirmed in our November 6, 2015 Phase II ESA report. Our sampling remediation and sampling plan was designed to: 1) provide valid data of known and documented quality to characterize the successful remediation of known sources of contamination in areas of identified concern; and 2) document threats or potential threats that the site may pose to human health or the environment. To accomplish our objectives, the following tasks were executed under this scope of services:

- Provided a Washington State registered geologist to observe the field activities and collect the appropriate number of soil and/or groundwater samples.
- Observed and documented soil sampling activities for each excavation. This included field screening soils for the presence of volatile organic compounds with a photoionization detector (PID) reading in parts per million by volume.
- Documented any obvious indications of soil or groundwater contamination (as indicated by free product, stained soils, odors, or "oily" sheen).
- Collected remedial excavation sidewall and base soil samples and documented the field screening results.
- Submitted the selected soil samples for petroleum hydrocarbons quantified as heavy oil by NWTPH-Dext; Arsenic by EPA Method 6020, Methylene Chloride (VOCs) by EPA Method 8260; and dioxins/furans by EPA Method 1613.
- Prepared a draft and final report.

4.0 SUBSURFACE INVESTIGATION

ESA Associates mobilized to the site on November 20, 2015 to remediate three areas of concern outlined in our Phase I and Phase II ESA reports. ESA Associates utilized Advance Environmental, Inc. to excavate the contaminated soils and Dietrich Trucking to haul the contaminated soils to WASCO Landfill in Oregon. The contaminated soil was excavated with a track-hoe as directed by an ESA Associates geologist. ESA Associates screened the soil in each excavation, characterized the subsurface soil, and inspected the soil for any obvious signs of solid waste disposal or fill material.

The subsurface sampling program consisted of discrete soil samples collected from the sidewalls and base of each remedial excavation. An ESA Associates geologist was present during the placement and excavation of each remedial excavation to observe and document soil conditions. (Note: The geologist of ESA Associates is a registered professional geologist with the State of Washington.)

All field sampling and decontamination procedures, sample preparation and shipping, and overall field procedures were performed in general accordance with protocol established by the EPA and the Washington State Department of Ecology. All soil classification was performed using the ASTM D2487 Soil Classification Method, "*Soil Survey Standard test Method, Unified Soil Classification System: Field Method*". Field procedures pertaining to the soil sampling and decontamination protocol are presented in Appendix A.

Soil samples were screened for the presence of volatile organic compounds (VOCs) using a photoionization detector (PID). The ESA Associates geologist documented the condition of the soil and visually inspected it for staining (sheen) or discoloration. The vapor reading and sheen tests were noted on the field logs. The soil sample that exhibited the highest potential for containing affected soil was selected for chemical analysis.

The site vicinity map is presented in Figure 1. The remedial excavations are presented on Figure 2. All representative samples were transported to an Ecology-approved analytical laboratory for appropriate analytical testing under chain-of-custody protocol. Chemical Analytical reports are included in Appendix B. Soil logs are included in Appendix C. The qualifications of the environmental professional are included in Appendix D. Soil disposal tickets are included in Appendix E.

4.1 Robinson-4

The Robinson-4 remedial excavation was located at 121 Serenity Lane where household waste had been burned in the past. The surface was charred ash and dirt with fragments of wires and nails. Soil samples were collected and field screened from each soil horizon along the sidewalls and base of the remedial excavation. Five soil samples (121-F-1 through 121-F-5) were collected from the sidewalls and base, respectively. The depth from which the soil samples were collected is recorded on the field log.

4.2 Robinson-3

The first Robinson-3 remedial excavation was located at 131 Serenity Lane where household waste had been burned in the past. The surface was charred ash and dirt with fragments of wires, plastics, glass, and nails. Subsurface soils encountered were two inches of charred debris and brown silty sand underlain by two inches of brown silty sand with no debris underlain by one foot of interbedded silts and silty fine sands. Soil samples were collected and field screened from each soil horizon along the sidewalls and base of the remedial excavation. Five soil samples (131-BF-1 through 131-BF-5) were collected from the sidewalls and base, respectively. The depth from which the soil samples were collected is recorded on the field log.

4.3 Robinson-3

The second Robinson-3 parcel remedial excavation was located at 131 Serenity Lane where cars had been worked on in the past. The surface was oil stained silty sand. Subsurface soils encountered were brown silty fine sand to the depth of the excavation at three feet bgs. Soil samples were collected and field screened from along the sidewalls and base of the remedial excavation. Five soil samples (131-CF-1 through 131-CF-5) were collected from the sidewalls and base, respectively. The depth from which the soil samples were collected is recorded on the field log.

5.0 LABORATORY ANALYSIS OF SOIL

The samples were submitted to Fremont Analytical of Seattle, Washington, a Washington State Department of Ecology (Ecology)-certified laboratory, for analysis in accordance with applicable Ecology and Environmental Protection Agency (EPA) Methods. Quality Assurance/Quality Control (QA/QC) included generally accepted procedures for sample collection, storage, tracking, and documentation. All sampling equipment was washed and rinsed prior to the collection of the samples. All samples were labeled with a sample number, date, time, and sampler name, and stored in an ice chest containing frozen “blue ice” under appropriate chain-of-custody documentation. Detailed information regarding the field sampling protocol and decontamination procedures is presented in Appendix A.

5.1 Soil Analyses

The soil sample that exhibited the highest potential for containing affected soil was selected for testing (i.e., elevated field screening readings or historic knowledge of depth of contamination). If groundwater was encountered during the subsurface investigation activities, soil samples were collected from the soil/groundwater interface. Copies of the laboratory analysis reports and Chain-of-Custody documentation are presented in Appendix B.

5.2 Chemical Analysis

Fifteen soil samples were collected from the three remedial excavations (five samples per excavation) and analyzed for one or more of the following: petroleum hydrocarbons (by Ecology Method NWTPH-Dext); Volatile Organic Compounds, specifically methylene chloride (by EPA Method 8260); Arsenic (by EPA Method 6020); and dioxins/furans (by EPA Method 1613).

6.0 SUBSURFACE FINDINGS AND ANALYTICAL RESULTS

In general, the site surface soils consisted of two feet of brown silty fine sand underlain by four feet of brown silty sand with boulders (river rock) to the depth of the excavations reaching a maximum depth of three feet bgs. Groundwater was not encountered in any of remedial excavations during our remedial activities; therefore no groundwater samples were collected.

6.1 Subsurface Soil Sampling

As stated in Section 4.0, three remedial excavations were completed during our subsurface activities at the subject properties. The soil from each excavation was placed in a dump truck provided by Dietrich Trucking and transported to WASCO County Landfill in the Dalles, Oregon. The resulting remedial excavations were backfilled with surrounding soils and compacted with the bucket of the trackhoe.

6.2 Subsurface Soil Analytical Results

The soil sample that exhibited the highest potential for containing affected soil was selected for chemical analysis. Five soil samples per excavation were submitted for chemical analysis. A total of 15 soil samples were submitted to the laboratory. Soil analytical results from the excavations presented on Table 1. Chemical analytical reports and the laboratory Quality Assurance/Quality Control (QA/QC) is presented in Appendix B.

6.2.1 Total Petroleum Hydrocarbons by Ecology Method NWTPH-D extended

Analytical results indicated total petroleum hydrocarbons quantified as diesel and heavy oil were non-detect in soil samples (131-CF-1 through 131-CF-5) collected from the car maintenance area.

Analytical results indicated that petroleum hydrocarbons quantified as diesel and heavy oil were non-detect in soil samples (131-BF- 1, 131-BF-2, 131-BF-3, and 131-BF-5) collected from the burn pile on 131 Serenity Lane. Soil sample (131-BF-4) collected from this burn pile contained petroleum hydrocarbons quantified as heavy oil at a concentration of 66.2 mg/kg which is well below the MCTA Method A cleanup level of 2,000 mg/kg. Diesel was non-detect in soil sample (131-BF-4).

6.2.2 Arsenic by EPA Method 6020

Analytical results from soil samples (121-F-1 through 121-F-5), collected from the burn pile located at 121 Serenity Lane, indicated arsenic was reduced to levels below the MTCA Method A cleanup level of 20 mg/kg to concentrations ranging from 2.71 mg/kg to 5.62 mg/kg.

6.2.3 Methylene Chloride Volatile Organic Compounds (VOCs) by EPA Method 8260

Analytical results from soil samples (121-F-1 through 121-F-4), collected from the burn pile located at 121 Serenity Lane, indicated methylene chloride was non-detect. Soil sample (121-F-5) collected from the base of the remedial excavation contained methylene chloride at a concentration 0.00657 mg/kg, which is well below the MCTA Method A cleanup level of 0.02 mg/kg.

6.2.4 Dioxin and Furans by EPA Method 1613

The dioxin/furan total toxic equivalent concentration or Total TEQ (for notation purposes, the result is referred to as the TEQ) was calculated using the Ecology Guidance “Dioxin/Furan/PCB (Ecological Risk Calculation Methodology)” dated November 15, 2013 and MTCA (WAC 173-340-7490 through 7494) (Ecology, 2007a). According to the Ecology guidance, Polychlorinated dibenzo-p-dioxin and polychlorinated dibenzofuran congeners (dioxins and furans) are generally present in the environment as a complex mixture of chemical “congeners” that differ in terms of the number and location of chlorine atoms. 2,3,7,8 – Tetrachlorodibenzo-p-dioxin (TCDD) is the most toxic and best studied of the 210 dioxin and furan congeners (Ecology, 2007b). Scientists have concluded that the 17 dioxin/furan congeners identified in MTCA act through a common biological mechanism and essentially behave like one chemical.

Because dioxins and furans are generally present in the environment as complex mixtures of chemical “congeners,” scientists have developed the Toxic Equivalency Factor (TEF) methodology to evaluate the toxicity and assess the risks associated with the whole mixture. In this method, each congener is assigned a TEF value. The TEF is the ratio of the estimated toxicity for a particular congener to the toxicity demonstrated by 2,3,7,8 Tetrachlorodibenzo-p-dioxin (TCDD) (Ecology, 2007c). The TEF approach is based on the concept that the various congeners of dioxin/furan essentially act as one chemical, affecting the Ah receptor (Aryl Hydrocarbon Receptor).

ESA Associates calculated the TEQ concentration of each of the seven [7] dioxin and ten [10] furan congeners by multiplying the individual congener analytical results by the appropriate TEF. The sum of the resulting calculations was used to determine a dioxin/furan TEQ. Analytical results for the TEQ of the total dioxins and furans are discussed for each area below:

6.2.6.1 121 Serenity Lane

The 2,3,7,8, TCDD TEQ for the soil sample (121-F-5) collected from the remedial excavation at 121 Serenity Lane was 0.03 pg/g, which is well below MTCA's established screening level for terrestrial direct contact of 5.2 pg/g.

6.2.6.2 131 Serenity Lane

The 2,3,7,8, TCDD TEQ for the soil sample (131-F-5) collected from the remedial excavation at 131 Serenity Lane was 0.42 pg/g, which is well below MTCA's established screening level for terrestrial direct contact of 5.2 pg/g.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The subsurface soil-sampling program consisted of discrete soil samples collected from three remedial excavations. Groundwater was not encountered; therefore, no groundwater samples were collected for this remedial program. A summary of our findings and recommendations for each area is presented below.

7.1 Robinson-4 Parcel: 121 Serenity Lane Burn Pile

The soil encountered during our subsurface investigation revealed high levels of arsenic, methylene chloride, dioxins, and furans at concentrations well above the MTCA Method A cleanup levels for these constituents. The area impacted by these constituents measured 10 by 10 feet in plan dimensions and reached a depth of 1 foot. Based on these measurements, approximately 5 tons of contaminated soil was removed from this area and disposed of at the WASCO County Landfill in the Dalles, Oregon. Confirmation soil samples of the sidewalls and base indicate that the concentrations of Arsenic, Methylene Chloride, and Dioxins/Furans have been reduced to non-detectable levels, below the respective MTCA Method A cleanup levels, or below established screening levels.

7.2 Robinson-3 Parcel: 131 Serenity Lane Burn Pile

The area where household waste had been burned in the past contained petroleum hydrocarbons quantified as heavy oil at **174,000 mg/kg** exceeding the MTCA Method A cleanup level of 2,000 mg/kg. The upper two inches of soil also contained a dioxin/furan TEQ of 1.19 pg/g, which was below MTCA's established screening level for terrestrial direct contact of 5.2 pg/g. The area impacted by petroleum hydrocarbons quantified as heavy oil measured 12 by 12 feet in plan dimensions and reached a depth of 0.5 feet. Based on these measurements approximately 3 tons of contaminated soil were removed from this area and disposed of at WASCO. Confirmation soil samples of the sidewalls and base indicate that the concentrations of petroleum hydrocarbons quantified as heavy oil and dioxins/furans have been reduced to non-detectable levels or below the respective MTCA Method A cleanup levels. The removal of petroleum contaminated soil also reduced the dioxin/furan concentration to 0.42 pg/g, which is well below MTCA's established screening level for terrestrial direct contact of 5.2 pg/g.

7.3 Robinson-3 Parcel: 131 Serenity Lane Car Maintenance Area

The area on Robinson-3 where cars had been worked contained petroleum hydrocarbons quantified as heavy oil at a concentration of **40,700 mg/kg** exceeding the MTCA Method A cleanup level of 2,000 mg/kg. The area impacted by petroleum hydrocarbons quantified as heavy oil measured 5 feet by 10 feet in plan dimensions and reached a depth of 3 feet bgs. Based on these measurements approximately 7 tons of contaminated soil was removed from this area and disposed of at WASCO. Confirmation soil samples of the sidewalls and base indicate that the concentrations of petroleum hydrocarbons quantified as heavy oil have been reduced to non-detectable levels or below the respective MTCA Method A cleanup levels.

7.4 Conclusions

Approximately 15 tons of contaminated soil associated with the Robinson parcels were removed and transported to WASCO. An additional 0.48 tons of household garbage were also removed from the parcel located at 131 Serenity Lane. The confirmation soil samples from the resulting remedial excavations indicated that all identified constituents above MTCA cleanup levels have been successfully reduced to non-detectable concentrations or well below MTCA Method A cleanup levels. ESA Associates concludes that these parcels no longer pose a threat to human health or the environment.

8.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312, and I have the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the subject *property*. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR part 312. Qualifications of the environmental professional who conducted this environmental site assessment are included in Appendix D.

Respectfully Submitted,
ESA ASSOCIATES, INC.

Kristen L Burgess,
Registered Geologist, No. 1322

9.0 LIMITATIONS

Our proposed scope of services is intended to provide a remediation contamination of soil on the subject property. Although we believe our work provides a thorough cleanup of areas of concern identified in our Phase II ESA, it was not designed to eliminate all risk associated with the subject property. Even the most rigorous of professional assessments may fail to identify all existing conditions. This work will not provide a guarantee regarding site contamination in areas not explored and sampled.

Property activities and regulations beyond ESA Associate's control could change at any time after the completion of our property visit. Therefore, ESA Associate's observations, findings and opinions are based solely upon site conditions of the date of the property visit.

Our report may be used only by the client and their designated representatives, only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both on site and off site) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use the generated report shall notify ESA Associates of such intended use. Based on the intended use of the report, ESA Associates may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release ESA Associates from any liability resulting from the use of the report by any unauthorized party.

No warranty, express or implied, is made.

TABLES

TABLE 1

Summary of Soil Samples Laboratory Analytical Results

Robinson Properties: Sequim, Washington

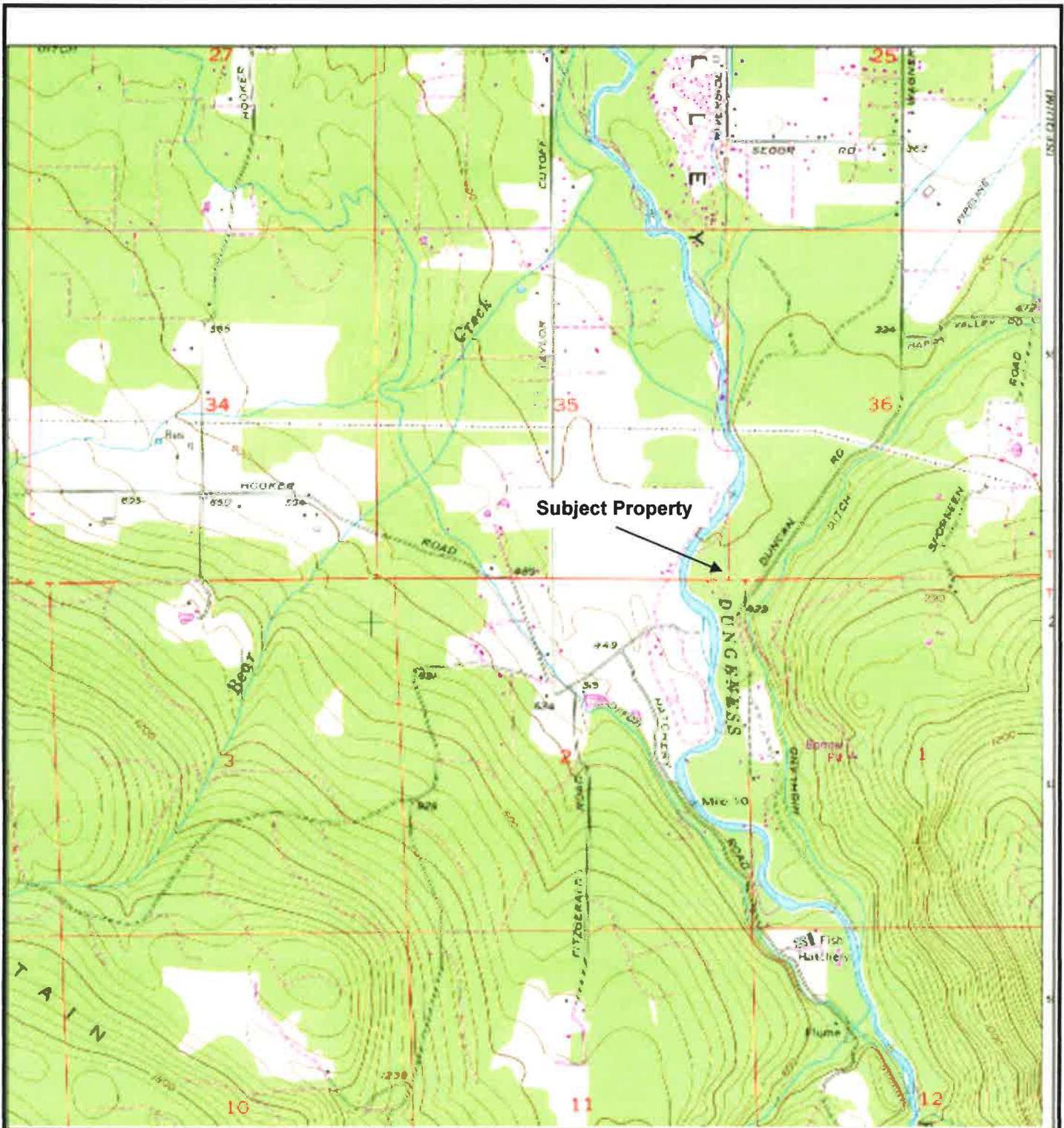
Sampled on November 19, 2015

Results in mg/kg for all results except for dioxins/furans which are in pg/g

Sample ID	Sample Depth (FT)	PID Reading (ppm)	Sheen Results	Methylene Chloride EPA Method 8260	Arsenic EPA Method 6020	NWTPH Dx (Diesel)	NWTPHDx ext (Heavy Oil)	Dioxins / Furans By EPA Method 1613
131-CF-1	2.5	0	NS	NA	NA	ND	ND	NA
131-CF-2	2.5	0	NS	NA	NA	ND	ND	NA
131-CF-3	2.5	0	NS	NA	NA	ND	ND	NA
131-CF-4	2.5	0	NS	NA	NA	ND	ND	NA
131-CF-5	3	0	NS	NA	NA	ND	ND	NA
131-BF-1	0.5	0	NS	NA	NA	ND	ND	NA
131-BF-2	0.5	0	NS	NA	NA	ND	ND	NA
131-BF-3	0.5	0	NS	NA	NA	ND	ND	NA
131-BF-4	0.5	0	SS	NA	NA	ND	66.2	NA
131-BF-5	1	0	NS	NA	NA	ND	ND	0.42
121-F-1	1	0	NS	ND	5.62	NA	NA	NA
121-F-2	1	0	NS	ND	4.27	NA	NA	NA
121-F-3	1	0	NS	ND	4.83	NA	NA	NA
121-F-4	1	0	NS	ND	5.81	NA	NA	NA
121-F-5	2	0	NS	0.00657	2.71	NA	NA	0.03
MTCA Method A Cleanup Level/Screening Level				0.02	20	2,000	2,000	5.2

NA: Not Analyzed ND: Non-detect NS: No Sheen SS: Slight Sheen

FIGURES



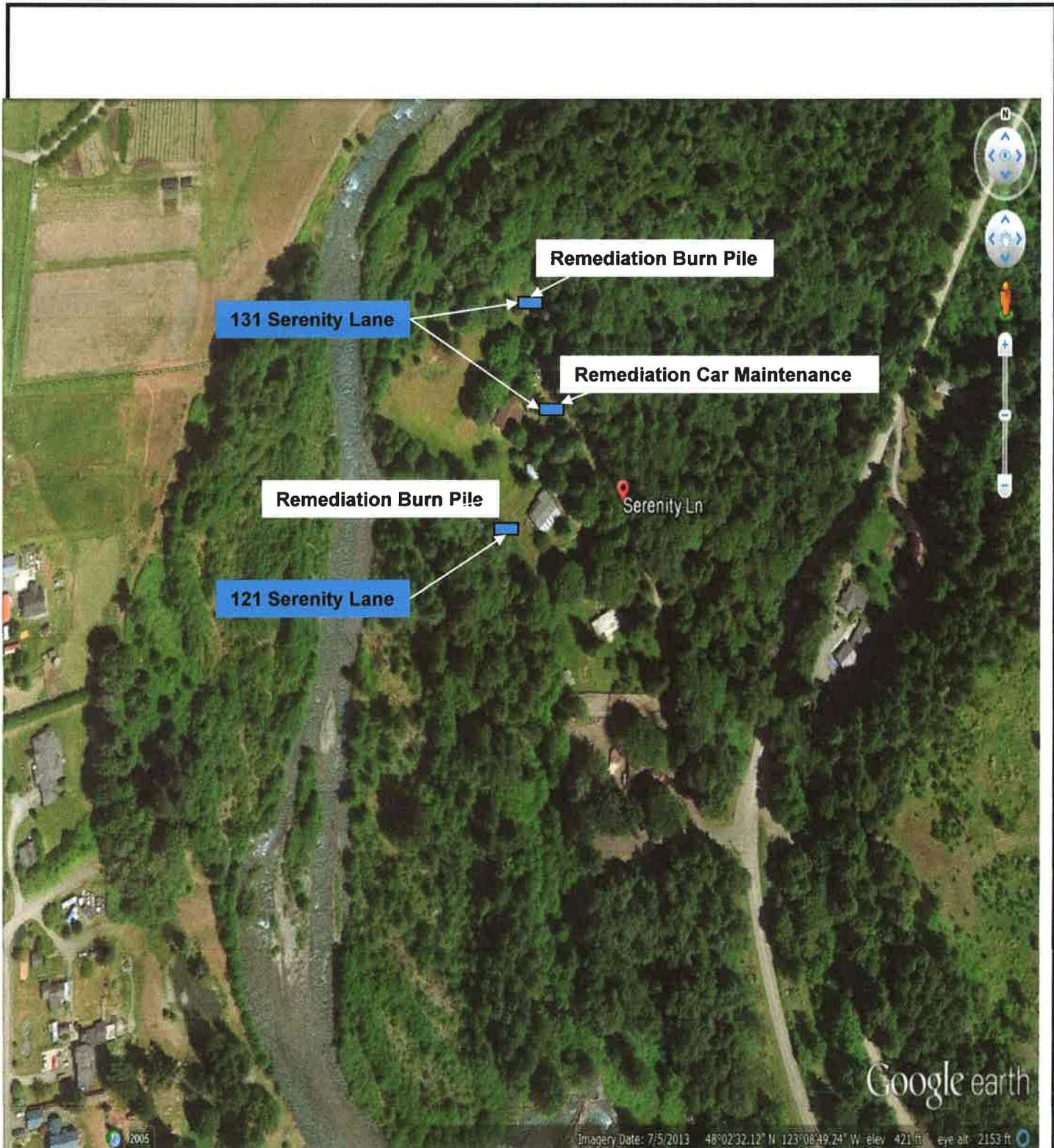
ESA Associates, Inc.

PROJECT NO. 711-007-106 December, 2015

Site Vicinity Map
 Robnson Properties
 121 and 131 Serenity Lane
 Sequim, Washington

FIGURE

1



 Remedial Excavation Location



ESA Associates, Inc.

PROJECT NO. 711-007-106 December, 2015

Remedial Excavation Locations

*Robinson Properties
121 and 131 Serenity Lane
Sequim, Washington*

FIGURE

2

APPENDICES

APPENDIX A
SITE EXPLORATION METHODS

SITE EXPLORATION METHODS

General

ESA Associates developed a health and safety plan for this project prior to the start of fieldwork. The health and safety plan included specifications for steel toe boots, hard hats, safety glasses, and protective clothing. For the protection of the crew, a photoionization detector (PID) was used to screen for the presence of volatile organic concentrations in the breathing zone during the excavation of remedial excavations. The PID was a Thermo Environmental Model 580B OVM, or equivalent, with a 10.5 ev lamp. The instrument was calibrated to 100 parts per million by volume (ppmv) with an isobutylene gas standard. The PID measures volatile organic compounds (VOCs) in the air in ppmv.

Soil Sampling

A track mounted excavator was used to dig each excavation. All sampling equipment was steam cleaned prior to mobilization to reduce the potential for cross contamination. Discrete soil samples are obtained using a stainless steel spoon. The spoon was decontaminated between sampling intervals to reduce the potential for cross contamination.

Collected soil samples were evaluated for evidence of contamination by visible discoloration of the soil sample or VOCs detected by the PID. A portion of each soil sample was placed into a plastic zip-lock bag, and the vapors were drawn through the PID for qualitative screening of VOCs. The vapor readings were documented as the field screening results. A new plastic bag was used each time a sample was screened.

Field screening on soil samples collected during subsurface explorations provide a relative indication of the degree of contamination. Field screening consists of inspecting the soil for stains indicative of contamination. Visual screening is generally effective in detecting the presence of heavy hydrocarbons such as diesel fuel or when the contaminant concentrations are high. Water sheen screening is also an effective way to detect lighter hydrocarbons such as gasoline as well as the heavier end hydrocarbons such as hydraulic oil.

Water sheen screening involves placing soil in a pan of distilled water and observing the water surface for signs of sheen. Sheen classifications are as follows:

No Sheen (NS)	No visible sheen
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly
Moderate Sheen (MS)	Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on the water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface maybe covered with sheen.

Where analysis of the complete suite of volatile organics is required, the procedure for sampling soils will include steps that are commensurate with EPA Method 5035a as follows:

After a fresh surface of the solid material is exposed to the atmosphere, the subsample collection process (splitting the sample: one to submit and the other for screening purpose) was completed in the least amount of time in order to minimize the loss of VOCs due to volatilization. Removing a subsample from a material was done in the least amount of disruption as possible. Additionally, rough trimming of the sampling location's surface was considered if the material may have already lost VOCs or if contaminated by other waste, different soil strata, or vegetation. Removal of surface layers was accomplished by scraping the surface using a clean spatula, scoop, knife, or shovel.

Subsamples of the appropriate size for analysis were collected using a metal or rigid plastic coring tool. For example, coring tools for the purpose of transferring a subsample were made from disposable plastic syringes by cutting off the tapered front end and removing the rubber cap from the plunger. When inserting a clean coring tool into a fresh surface for sample collection, air was not trapped behind the sample.

Soil samples were placed directly into laboratory-provided sample jars and sealed with a Teflon lined lid. The samples were then placed into an ice chest containing frozen "blue ice" for preservation. The sample was then forwarded to the analytical laboratory using proper Chain-of-Custody procedures. All soil sample containers were labeled with sample identification numbers, the date, and the sampler's name.

APPENDIX B
CHEMICAL ANALYTICAL REPORTS



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ESA Associates, Inc.
Kristen Burgess
2820 132nd Ave SE
Snohomish, WA 98290-4792

RE: Robinson JKT Dungeness
Lab ID: 1511228

November 30, 2015

Attention Kristen Burgess:

Fremont Analytical, Inc. received 16 sample(s) on 11/20/2015 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Dioxins by EPA Method 1613
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020
Volatile Organic Compounds by EPA Method 8260

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward
Project Manager



Date: 12/09/2015

CLIENT: ESA Associates, Inc.
Project: Robinson JKT Dungeness
Lab Order: 1511228

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1511228-001	121-F-1	11/19/2015 11:25 AM	11/20/2015 1:00 PM
1511228-002	121-F-2	11/19/2015 11:30 AM	11/20/2015 1:00 PM
1511228-003	121-F-3	11/19/2015 11:35 AM	11/20/2015 1:00 PM
1511228-004	121-F-4	11/19/2015 11:40 AM	11/20/2015 1:00 PM
1511228-005	121-F-5	11/19/2015 11:45 AM	11/20/2015 1:00 PM
1511228-006	131-CF-1	11/19/2015 12:10 PM	11/20/2015 1:00 PM
1511228-007	131-CF-2	11/19/2015 12:15 PM	11/20/2015 1:00 PM
1511228-008	131-CF-3	11/19/2015 12:20 PM	11/20/2015 1:00 PM
1511228-009	131-CF-4	11/19/2015 12:25 PM	11/20/2015 1:00 PM
1511228-010	131-CF-5	11/19/2015 12:30 PM	11/20/2015 1:00 PM
1511228-011	131-BF-1	11/19/2015 12:30 PM	11/20/2015 1:00 PM
1511228-012	131-BF-2	11/19/2015 12:35 PM	11/20/2015 1:00 PM
1511228-013	131-BF-3	11/19/2015 12:40 PM	11/20/2015 1:00 PM
1511228-014	131-BF-4	11/19/2015 12:45 PM	11/20/2015 1:00 PM
1511228-015	131-BF-5	11/19/2015 12:50 PM	11/20/2015 1:00 PM
1511228-016	Trip Blank	11/16/2015 12:00 PM	11/20/2015 1:00 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned



CLIENT: ESA Associates, Inc.
Project: Robinson JKT Dungeness

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

1511228-005C

O-DIOXIN has been Sub Contracted.

1511228-015C

O-DIOXIN has been Sub Contracted.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



CLIENT: ESA Associates, Inc.

Project: Robinson JKT Dungeness

Lab ID: 1511228-001

Collection Date: 11/19/2015 11:25:00 AM

Client Sample ID: 121-F-1

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260

Batch ID: 12478 Analyst: BC

Methylene chloride	ND	0.00684		mg/Kg-dry	1	11/25/2015 1:44:00 AM
Surr: Dibromofluoromethane	90.3	56.5-129		%Rec	1	11/25/2015 1:44:00 AM
Surr: Toluene-d8	95.5	64.3-131		%Rec	1	11/25/2015 1:44:00 AM
Surr: 1-Bromo-4-fluorobenzene	95.0	63.1-141		%Rec	1	11/25/2015 1:44:00 AM

Total Metals by EPA Method 6020

Batch ID: 12456 Analyst: TN

Arsenic	5.62	0.0898		mg/Kg-dry	1	11/24/2015 4:06:24 PM
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Sample Moisture (Percent Moisture)

Batch ID: R26246 Analyst: SL

Percent Moisture	18.1	0.500		wt%	1	11/23/2015 2:55:02 PM
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Lab ID: 1511228-002

Collection Date: 11/19/2015 11:30:00 AM

Client Sample ID: 121-F-2

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260

Batch ID: 12478 Analyst: BC

Methylene chloride	ND	0.00617		mg/Kg-dry	1	11/25/2015 2:13:00 AM
Surr: Dibromofluoromethane	90.1	56.5-129		%Rec	1	11/25/2015 2:13:00 AM
Surr: Toluene-d8	94.8	64.3-131		%Rec	1	11/25/2015 2:13:00 AM
Surr: 1-Bromo-4-fluorobenzene	94.1	63.1-141		%Rec	1	11/25/2015 2:13:00 AM

Total Metals by EPA Method 6020

Batch ID: 12456 Analyst: TN

Arsenic	4.27	0.0942		mg/Kg-dry	1	11/24/2015 4:09:57 PM
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Sample Moisture (Percent Moisture)

Batch ID: R26246 Analyst: SL

Percent Moisture	11.6	0.500		wt%	1	11/23/2015 2:55:02 PM
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CLIENT: ESA Associates, Inc.

Project: Robinson JKT Dungeness

Lab ID: 1511228-003

Client Sample ID: 121-F-3

Collection Date: 11/19/2015 11:35:00 AM

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Volatile Organic Compounds by EPA Method 8260</u>				Batch ID: 12478		Analyst: BC
Methylene chloride	ND	0.00788		mg/Kg-dry	1	11/25/2015 2:42:00 AM
Surr: Dibromofluoromethane	88.2	56.5-129		%Rec	1	11/25/2015 2:42:00 AM
Surr: Toluene-d8	94.9	64.3-131		%Rec	1	11/25/2015 2:42:00 AM
Surr: 1-Bromo-4-fluorobenzene	93.7	63.1-141		%Rec	1	11/25/2015 2:42:00 AM
<u>Total Metals by EPA Method 6020</u>				Batch ID: 12456		Analyst: TN
Arsenic	4.83	0.0932		mg/Kg-dry	1	11/24/2015 4:13:28 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R26246		Analyst: SL
Percent Moisture	11.3	0.500		wt%	1	11/23/2015 2:55:02 PM



Analytical Report

WO#: 1511228

Date Reported: 11/30/2015

CLIENT: ESA Associates, Inc.
Project: Robinson JKT Dungeness

Lab ID: 1511228-004

Collection Date: 11/19/2015 11:40:00 AM

Client Sample ID: 121-F-4

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260

Batch ID: 12478 Analyst: BC

Methylene chloride	ND	0.00630		mg/Kg-dry	1	11/25/2015 3:11:00 AM
Surr: Dibromofluoromethane	88.8	56.5-129		%Rec	1	11/25/2015 3:11:00 AM
Surr: Toluene-d8	95.0	64.3-131		%Rec	1	11/25/2015 3:11:00 AM
Surr: 1-Bromo-4-fluorobenzene	94.1	63.1-141		%Rec	1	11/25/2015 3:11:00 AM

Total Metals by EPA Method 6020

Batch ID: 12456 Analyst: TN

Arsenic	5.81	0.0955		mg/Kg-dry	1	11/24/2015 4:17:00 PM
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Sample Moisture (Percent Moisture)

Batch ID: R26246 Analyst: SL

Percent Moisture	19.5	0.500		wt%	1	11/23/2015 2:55:02 PM
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Lab ID: 1511228-005

Collection Date: 11/19/2015 11:45:00 AM

Client Sample ID: 121-F-5

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260

Batch ID: 12478 Analyst: BC

Methylene chloride	0.00657	0.00529		mg/Kg-dry	1	11/25/2015 3:39:00 AM
Surr: Dibromofluoromethane	87.6	56.5-129		%Rec	1	11/25/2015 3:39:00 AM
Surr: Toluene-d8	94.7	64.3-131		%Rec	1	11/25/2015 3:39:00 AM
Surr: 1-Bromo-4-fluorobenzene	94.2	63.1-141		%Rec	1	11/25/2015 3:39:00 AM

Total Metals by EPA Method 6020

Batch ID: 12456 Analyst: TN

Arsenic	2.71	0.0753		mg/Kg-dry	1	11/24/2015 4:20:32 PM
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Sample Moisture (Percent Moisture)

Batch ID: R26246 Analyst: SL

Percent Moisture	3.81	0.500		wt%	1	11/23/2015 2:55:02 PM
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Analytical Report

WO#: 1511228

Date Reported: 11/30/2015

CLIENT: ESA Associates, Inc.
Project: Robinson JKT Dungeness

Lab ID: 1511228-006

Collection Date: 11/19/2015 12:10:00 PM

Client Sample ID: 131-CF-1

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>					Batch ID: 12476	Analyst: EC
Diesel (Fuel Oil)	ND	20.6		mg/Kg-dry	1	11/24/2015 6:30:00 PM
Heavy Oil	ND	51.5		mg/Kg-dry	1	11/24/2015 6:30:00 PM
Surr: 2-Fluorobiphenyl	93.3	50-150		%Rec	1	11/24/2015 6:30:00 PM
Surr: o-Terphenyl	87.9	50-150		%Rec	1	11/24/2015 6:30:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Sample Moisture (Percent Moisture)</u>					Batch ID: R26246	Analyst: SL
Percent Moisture	7.03	0.500		wt%	1	11/23/2015 2:55:02 PM

Lab ID: 1511228-007

Collection Date: 11/19/2015 12:15:00 PM

Client Sample ID: 131-CF-2

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>					Batch ID: 12476	Analyst: EC
Diesel (Fuel Oil)	ND	18.9		mg/Kg-dry	1	11/24/2015 7:31:00 PM
Heavy Oil	ND	47.2		mg/Kg-dry	1	11/24/2015 7:31:00 PM
Surr: 2-Fluorobiphenyl	111	50-150		%Rec	1	11/24/2015 7:31:00 PM
Surr: o-Terphenyl	105	50-150		%Rec	1	11/24/2015 7:31:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Sample Moisture (Percent Moisture)</u>					Batch ID: R26246	Analyst: SL
Percent Moisture	5.67	0.500		wt%	1	11/23/2015 2:55:02 PM



CLIENT: ESA Associates, Inc.

Project: Robinson JKT Dungeness

Lab ID: 1511228-008

Collection Date: 11/19/2015 12:20:00 PM

Client Sample ID: 131-CF-3

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>					Batch ID: 12476	Analyst: EC
Diesel (Fuel Oil)	ND	22.0		mg/Kg-dry	1	11/24/2015 8:02:00 PM
Heavy Oil	ND	55.0		mg/Kg-dry	1	11/24/2015 8:02:00 PM
Surr: 2-Fluorobiphenyl	126	50-150		%Rec	1	11/24/2015 8:02:00 PM
Surr: o-Terphenyl	120	50-150		%Rec	1	11/24/2015 8:02:00 PM

Sample Moisture (Percent Moisture)

Batch ID: R26246 Analyst: SL

Percent Moisture	12.0	0.500		wt%	1	11/23/2015 2:55:02 PM
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Lab ID: 1511228-009

Collection Date: 11/19/2015 12:25:00 PM

Client Sample ID: 131-CF-4

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>					Batch ID: 12476	Analyst: EC
Diesel (Fuel Oil)	ND	18.2		mg/Kg-dry	1	11/24/2015 8:33:00 PM
Heavy Oil	ND	45.5		mg/Kg-dry	1	11/24/2015 8:33:00 PM
Surr: 2-Fluorobiphenyl	112	50-150		%Rec	1	11/24/2015 8:33:00 PM
Surr: o-Terphenyl	106	50-150		%Rec	1	11/24/2015 8:33:00 PM

Sample Moisture (Percent Moisture)

Batch ID: R26246 Analyst: SL

Percent Moisture	6.52	0.500		wt%	1	11/23/2015 2:55:02 PM
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CLIENT: ESA Associates, Inc.
Project: Robinson JKT Dungeness

Lab ID: 1511228-010

Collection Date: 11/19/2015 12:30:00 PM

Client Sample ID: 131-CF-5

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>				Batch ID: 12476		Analyst: EC
Diesel (Fuel Oil)	ND	20.8		mg/Kg-dry	1	11/24/2015 9:03:00 PM
Heavy Oil	ND	52.0		mg/Kg-dry	1	11/24/2015 9:03:00 PM
Surr: 2-Fluorobiphenyl	98.0	50-150		%Rec	1	11/24/2015 9:03:00 PM
Surr: o-Terphenyl	92.5	50-150		%Rec	1	11/24/2015 9:03:00 PM

Sample Moisture (Percent Moisture)

Batch ID: R26246 Analyst: SL

Percent Moisture	5.66	0.500		wt%	1	11/23/2015 2:55:02 PM
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Lab ID: 1511228-011

Collection Date: 11/19/2015 12:30:00 PM

Client Sample ID: 131-BF-1

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>				Batch ID: 12476		Analyst: EC
Diesel (Fuel Oil)	ND	23.6		mg/Kg-dry	1	11/24/2015 9:34:00 PM
Heavy Oil	ND	58.9		mg/Kg-dry	1	11/24/2015 9:34:00 PM
Surr: 2-Fluorobiphenyl	108	50-150		%Rec	1	11/24/2015 9:34:00 PM
Surr: o-Terphenyl	101	50-150		%Rec	1	11/24/2015 9:34:00 PM

Sample Moisture (Percent Moisture)

Batch ID: R26246 Analyst: SL

Percent Moisture	17.4	0.500		wt%	1	11/23/2015 2:55:02 PM
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CLIENT: ESA Associates, Inc.

Project: Robinson JKT Dungeness

Lab ID: 1511228-012

Collection Date: 11/19/2015 12:35:00 PM

Client Sample ID: 131-BF-2

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>					Batch ID: 12476	Analyst: EC
Diesel (Fuel Oil)	ND	22.9		mg/Kg-dry	1	11/24/2015 10:05:00 PM
Heavy Oil	ND	57.3		mg/Kg-dry	1	11/24/2015 10:05:00 PM
Surr: 2-Fluorobiphenyl	83.6	50-150		%Rec	1	11/24/2015 10:05:00 PM
Surr: o-Terphenyl	80.1	50-150		%Rec	1	11/24/2015 10:05:00 PM

<u>Sample Moisture (Percent Moisture)</u>					Batch ID: R26246	Analyst: SL
Percent Moisture	15.9	0.500		wt%	1	11/23/2015 2:55:02 PM

Lab ID: 1511228-013

Collection Date: 11/19/2015 12:40:00 PM

Client Sample ID: 131-BF-3

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>					Batch ID: 12476	Analyst: EC
Diesel (Fuel Oil)	ND	22.4		mg/Kg-dry	1	11/24/2015 11:37:00 PM
Heavy Oil	ND	56.0		mg/Kg-dry	1	11/24/2015 11:37:00 PM
Surr: 2-Fluorobiphenyl	100	50-150		%Rec	1	11/24/2015 11:37:00 PM
Surr: o-Terphenyl	92.6	50-150		%Rec	1	11/24/2015 11:37:00 PM

<u>Sample Moisture (Percent Moisture)</u>					Batch ID: R26246	Analyst: SL
Percent Moisture	15.1	0.500		wt%	1	11/23/2015 2:55:02 PM



CLIENT: ESA Associates, Inc.

Project: Robinson JKT Dungeness

Lab ID: 1511228-014

Collection Date: 11/19/2015 12:45:00 PM

Client Sample ID: 131-BF-4

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>					Batch ID: 12476	Analyst: EC
Diesel (Fuel Oil)	ND	20.5		mg/Kg-dry	1	11/25/2015 12:07:00 AM
Heavy Oil	66.2	51.2		mg/Kg-dry	1	11/25/2015 12:07:00 AM
Surr: 2-Fluorobiphenyl	76.0	50-150		%Rec	1	11/25/2015 12:07:00 AM
Surr: o-Terphenyl	73.3	50-150		%Rec	1	11/25/2015 12:07:00 AM

<u>Sample Moisture (Percent Moisture)</u>					Batch ID: R26246	Analyst: SL
Percent Moisture	17.3	0.500		wt%	1	11/23/2015 2:55:02 PM

Lab ID: 1511228-015

Collection Date: 11/19/2015 12:50:00 PM

Client Sample ID: 131-BF-5

Matrix: Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>					Batch ID: 12476	Analyst: EC
Diesel (Fuel Oil)	ND	22.3		mg/Kg-dry	1	11/25/2015 12:38:00 AM
Heavy Oil	ND	55.7		mg/Kg-dry	1	11/25/2015 12:38:00 AM
Surr: 2-Fluorobiphenyl	86.8	50-150		%Rec	1	11/25/2015 12:38:00 AM
Surr: o-Terphenyl	79.1	50-150		%Rec	1	11/25/2015 12:38:00 AM

<u>Sample Moisture (Percent Moisture)</u>					Batch ID: R26246	Analyst: SL
Percent Moisture	18.6	0.500		wt%	1	11/23/2015 2:55:02 PM



Date: 11/30/2015

Work Order: 1511228
 CLIENT: ESA Associates, Inc.
 Project: Robinson JKT Dungeness

QC SUMMARY REPORT
Total Metals by EPA Method 6020

Sample ID MB-12456	SampType: MBLK	Units: mg/Kg				Prep Date: 11/24/2015	RunNo: 26279				
Client ID: MBLKS	Batch ID: 12456					Analysis Date: 11/24/2015	SeqNo: 496216				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic ND 0.100

Sample ID LCS-12456	SampType: LCS	Units: mg/Kg				Prep Date: 11/24/2015	RunNo: 26279				
Client ID: LCSS	Batch ID: 12456					Analysis Date: 11/24/2015	SeqNo: 496217				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic 48.0 0.100 50.00 0 96.0 80 120

Sample ID 1511223-025ADUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 11/24/2015	RunNo: 26279				
Client ID: BATCH	Batch ID: 12456					Analysis Date: 11/24/2015	SeqNo: 496219				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic 4.28 0.0952 4.778 11.0 20

Sample ID 1511223-025AMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 11/24/2015	RunNo: 26279				
Client ID: BATCH	Batch ID: 12456					Analysis Date: 11/24/2015	SeqNo: 496221				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic 54.7 0.0952 47.62 4.778 105 75 125

Sample ID 1511223-025AMSD	SampType: MSD	Units: mg/Kg-dry				Prep Date: 11/24/2015	RunNo: 26279				
Client ID: BATCH	Batch ID: 12456					Analysis Date: 11/24/2015	SeqNo: 496222				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic 53.9 0.0976 48.81 4.778 101 75 125 54.69 1.39 20



Date: 11/30/2015

Work Order: 1511228
 CLIENT: ESA Associates, Inc.
 Project: Robinson JKT Dungeness

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID MB-12476	SampType: MBLK	Units: mg/Kg			Prep Date: 11/24/2015	RunNo: 26284					
Client ID: MBLKS	Batch ID: 12476				Analysis Date: 11/24/2015	SeqNo: 496308					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	18.1		20.00		90.7	50	150				
Surr: o-Terphenyl	17.1		20.00		85.3	50	150				

Sample ID LCS-12476	SampType: LCS	Units: mg/Kg			Prep Date: 11/24/2015	RunNo: 26284					
Client ID: LCSS	Batch ID: 12476				Analysis Date: 11/24/2015	SeqNo: 496307					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	509	20.0	500.0	0	102	65	135				
Surr: 2-Fluorobiphenyl	21.3		20.00		107	50	150				
Surr: o-Terphenyl	18.8		20.00		94.0	50	150				

Sample ID 1511228-006ADUP	SampType: DUP	Units: mg/Kg-dry			Prep Date: 11/24/2015	RunNo: 26284					
Client ID: 131-CF-1	Batch ID: 12476				Analysis Date: 11/24/2015	SeqNo: 496295					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	18.3						0		30	
Heavy Oil	ND	45.8						0		30	
Surr: 2-Fluorobiphenyl	18.5		18.32		101	50	150		0		
Surr: o-Terphenyl	17.4		18.32		95.0	50	150		0		

Sample ID 1511228-015ADUP	SampType: DUP	Units: mg/Kg-dry			Prep Date: 11/24/2015	RunNo: 26284					
Client ID: 131-BF-5	Batch ID: 12476				Analysis Date: 11/25/2015	SeqNo: 496293					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	21.7						0		30	
Heavy Oil	ND	54.2						0		30	
Surr: 2-Fluorobiphenyl	18.5		21.68		85.2	50	150		0		
Surr: o-Terphenyl	17.6		21.68		81.0	50	150		0		



Date: 11/30/2015

Work Order: 1511228
CLIENT: ESA Associates, Inc.
Project: Robinson JKT Dungeness

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID	1511228-015ADUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	11/24/2015	RunNo:	26284				
Client ID:	131-BF-5	Batch ID:	12476			Analysis Date:	11/25/2015	SeqNo:	496293				
Analyte		Result		RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual



Date: 11/30/2015

Work Order: 1511228
 CLIENT: ESA Associates, Inc.
 Project: Robinson JKT Dungeness

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID	LCS-12478	SampType:	LCS	Units:	mg/Kg	Prep Date:	11/24/2015	RunNo:	26294		
Client ID:	LCSS	Batch ID:	12478			Analysis Date:	11/24/2015	SeqNo:	496513		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Methylene chloride	0.886	0.0200	1.000	0	88.6	46.3	140				
Surr: Dibromofluoromethane	1.23		1.250		98.1	56.5	129				
Surr: Toluene-d8	1.16		1.250		93.0	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.20		1.250		96.0	63.1	141				

Sample ID	MB-12478	SampType:	MBLK	Units:	mg/Kg	Prep Date:	11/24/2015	RunNo:	26294		
Client ID:	MBLKS	Batch ID:	12478			Analysis Date:	11/24/2015	SeqNo:	496514		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Methylene chloride	ND	0.0200									
Surr: Dibromofluoromethane	1.12		1.250		90.0	56.5	129				
Surr: Toluene-d8	1.16		1.250		93.0	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.18		1.250		94.2	63.1	141				

Sample ID	1511210-004BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	11/24/2015	RunNo:	26294		
Client ID:	BATCH	Batch ID:	12478			Analysis Date:	11/25/2015	SeqNo:	496496		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Methylene chloride	ND	0.0217						0		30	
Surr: Dibromofluoromethane	1.20		1.354		88.3	56.5	129		0		
Surr: Toluene-d8	1.27		1.354		93.8	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.27		1.354		93.5	63.1	141		0		

Sample ID	1511252-001BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	11/24/2015	RunNo:	26294		
Client ID:	BATCH	Batch ID:	12478			Analysis Date:	11/25/2015	SeqNo:	496509		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Methylene chloride	ND	0.0181						0		30	
Surr: Dibromofluoromethane	0.991		1.129		87.8	56.5	129		0		
Surr: Toluene-d8	1.07		1.129		95.2	64.3	131		0		



Date: 11/30/2015

Work Order: 1511228
 CLIENT: ESA Associates, Inc.
 Project: Robinson JKT Dungeness

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID	1511252-001BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	11/24/2015	RunNo:	26294			
Client ID:	BATCH	Batch ID:	12478			Analysis Date:	11/25/2015	SeqNo:	496509			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1-Bromo-4-fluorobenzene		1.06		1.129		94.3	63.1	141		0		

Sample ID	1511252-004BMS	SampType:	MS	Units:	mg/Kg-dry	Prep Date:	11/24/2015	RunNo:	26294			
Client ID:	BATCH	Batch ID:	12478			Analysis Date:	11/25/2015	SeqNo:	496620			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride		0.769	0.0169	0.8442	0	91.0	54.7	142				
Surr: Dibromofluoromethane		1.03		1.055		97.8	56.5	129				
Surr: Toluene-d8		1.02		1.055		96.4	64.3	131				
Surr: 1-Bromo-4-fluorobenzene		1.03		1.055		97.7	63.1	141				



Work Order: 1511228
CLIENT: ESA Associates, Inc.
Project: Robinson JKT Dungeness

QC SUMMARY REPORT
Sample Moisture (Percent Moisture)

Sample ID 1511228-001ADUP	SampType: DUP	Units: wt%			Prep Date: 11/23/2015	RunNo: 26246					
Client ID: 121-F-1	Batch ID: R26246				Analysis Date: 11/23/2015	SeqNo: 495449					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	18.2	0.500						18.10	0.591	20	

Sample ID 1511228-002ADUP	SampType: DUP	Units: wt%			Prep Date: 11/23/2015	RunNo: 26246					
Client ID: 121-F-2	Batch ID: R26246				Analysis Date: 11/23/2015	SeqNo: 495451					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	10.2	0.500						11.58	13.1	20	



Analytical Resources, Incorporated

Analytical Chemists and Consultants

December 7, 2015

Michael Ridgeway
Fremont Analytical
3600 Fremont Avenue North
Seattle, WA 98103

RE: Project: 1511228
ARI Job No: ARI4

Dear Mr. Ridgeway:

Please find enclosed the original Chain-of-Custody record (COC), sample receipt documentation, and final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted two soil samples on November 19, 2015. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for dioxin/furans, as requested on the COC.

Analysis was performed using the application specific RTX-Dioxin 2 column, which has a unique isomer separation for the 2,3,7,8-TCDF, eliminating the need for a second column confirmation.

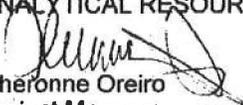
The method blank contained reportable responses for several compounds. Associated sample results less than ten times the levels found in the method blank have been flagged with a "B" qualifier. No further corrective action was taken.

Specific results have been "EMPC" flagged indicating a response not meeting requirements of positive identification. The EMPC values are treated as non-detects under some programs and as hits under programs with more conservative protocols.

The TEQ is presented with WHO2005 with ND=0 for non-detectes and ND=1/2 for non-detects, with EMPCs included as hits.

An electronic copy of this report and all supporting raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to contact me at any time.

Sincerely,
ANALYTICAL RESOURCES, INC.


Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile ARI4

Enclosures

ARI4:00002



ARI4

CHAIN OF CUSTODY RECORD

Omega COCID 192

PAGE: 1 OF: 1

ADDRESS

Fremont Analytical, Inc.
 3600 Fremont Ave. N.
 Seattle, WA 98103
 TEL: 206-352-3790
 FAX: 206-352-7178
 Website: www.fremontanalytical.com

SUB CONTRACTOR: ARI		COMPANY: Analytical Resources Inc.		SPECIAL INSTRUCTIONS / COMMENTS: Please email results to Michael Ridgeway and Chelsea Ward - mridgeway@fremontanalytical.com; cward@fremontanalytical.com					
ADDRESS: 4611 South 134th Place, Suite 100									
CITY, STATE, ZIP: Tukwila, WA 98168									
PHONE:		FAX:						EMAIL:	
ACCOUNT #:									

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description
1	1511228-005C	121-F-5	CLEAR JARS 4 O	Soil	11/19/2015 11:45:00 AM	1	
	O-DIOXIN (SWB290)						
2	1511228-015C	131-BF-5	CLEAR JARS 4 O	Soil	11/19/2015 12:50:00 PM	1	
	O-DIOXIN (SWB290)						

Relinquished By: <i>[Signature]</i>	Date: 11-23-15	Time: 10:35	Received By: <i>[Signature]</i>	Date: 11-23-15	Time: 10:35
Relinquished By: <i>[Signature]</i>	Date: 11-23-15	Time: 7:33	Received By: <i>[Signature]</i>	Date: 11-23-15	Time: 14:35
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard **RUSH** Next BD 2nd BD 3rd BD
 3 weeks Note: RUSH requests will incur surcharge!

REPORT TRANSMITTAL DESIRED:
 HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY
 Temp of samples _____ °C Attempt to Cool? _____
 Comments: _____



Cooler Receipt Form

ARI Client: Fremont

Project Name: _____

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Hand Delivered Other: _____

Assigned ARI Job No: ARI4

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 1.3

Time: _____ Temp Gun ID#: D002565

If cooler temperature is out of compliance fill out form 00070F

Cooler Accepted by: CA Date: 11/23/15 Time: 1435

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI: _____ NA

Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____ Split by: _____

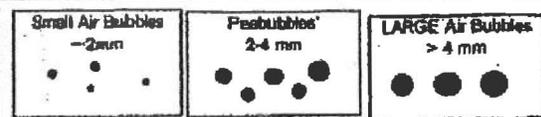
Samples Logged by: CA Date: 11/24/15 Time: 1513

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



- Small → "sm" (< 2 mm)
- Peabubbles → "pb" (2 to < 4 mm)
- Large → "lg" (4 to < 6 mm)
- Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report



ARI Job No: ARI4
Client: Fremont Analytical
Project Event: 1511228
Project Name: N/A

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. 121-F-5	ARI4A	15-22746	Soil	11/19/15 11:45	11/23/15 14:35
2. 131-BF-5	ARI4B	15-22747	Soil	11/19/15 12:50	11/23/15 14:35

Printed 11/24/15 Page 1 of 1

ARI4:00004



Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Duplicate RPD is not within established control limits
- B Reported value is less than the CRDL but \geq the Reporting Limit
- N Matrix Spike recovery not within established control limits
- NA Not Applicable, analyte not spiked
- H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
- L Analyte concentration is ≤ 5 times the Reporting Limit and the replicate control limit defaults to ± 1 RL instead of the normal 20% RPD

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria ($< 20\%$ RSD, $< 20\%$ Drift or minimum RRF).



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Analytical Chemists and Consultants

- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**



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Geotechnical Data

- A** The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
- F** Samples were frozen prior to particle size determination
- SM** Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
- SS** Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
- W** Weight of sample in some pipette aliquots was below the level required for accurate weighting

ORGANICS ANALYSIS DATA SHEET

Dioxins/Furans by EPA 1613B

Page 1 of 1

Sample ID: 121-F-5

Lab Sample ID: ARI4A

LIMS ID: 15-22746

Matrix: Soil

Data Release Authorized: *mmw*

Reported: 12/07/15

QC Report No: ARI4-Fremont Analytical

Project: 1511228

NA

Date Sampled: 11/19/15

Date Received: 11/23/15

Date Extracted: 11/30/15

Date Analyzed: 12/04/15 07:46

Instrument/Analyst: AS1/PK

Acid Cleanup: Yes

Silica-Carbon Cleanup: No

Sample Amount: 10.2 g-dry-wt

Final Extract Volume: 20 uL

Extract Split: 1.00

Silica-Florisil Cleanup: Yes

Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result
2,3,7,8-TCDF		0.65-0.89	0.0493	0.985	< 0.0493 U
2,3,7,8-TCDD		0.65-0.89	0.0512	0.985	< 0.0512 U
1,2,3,7,8-PeCDF	0.99	1.32-1.78		0.985	0.0650 JEMPC
2,3,4,7,8-PeCDF		1.32-1.78	0.0571	0.985	< 0.0571 U
1,2,3,7,8-PeCDD		1.32-1.78	0.0768	0.985	< 0.0768 U
1,2,3,4,7,8-HxCDF		1.05-1.43	0.0788	0.985	< 0.0788 U
1,2,3,6,7,8-HxCDF		1.05-1.43	0.0749	0.985	< 0.0749 U
2,3,4,6,7,8-HxCDF		1.05-1.43	0.0847	0.985	< 0.0847 U
1,2,3,7,8,9-HxCDF	1.25	1.05-1.43		0.985	0.0788 BJ
1,2,3,4,7,8-HxCDD		1.05-1.43	0.122	0.985	< 0.122 U
1,2,3,6,7,8-HxCDD		1.05-1.43	0.128	0.985	< 0.128 U
1,2,3,7,8,9-HxCDD		1.05-1.43	0.128	0.985	< 0.128 U
1,2,3,4,6,7,8-HpCDF	0.68	0.88-1.20		0.985	0.309 BJEMPC
1,2,3,4,7,8,9-HpCDF		0.88-1.20	0.217	0.985	< 0.217 U
1,2,3,4,6,7,8-HpCDD	0.94	0.88-1.20		0.985	1.15 B
OCDF	1.10	0.76-1.02		1.97	1.03 BJEMPC
OCDD	0.91	0.76-1.02		9.85	11.0 B

Homologue Group	EDL	RL	Result
Total TCDF	0.0493	0.985	< 0.0493 U
Total TCDD	0.0512	0.985	< 0.0512 U
Total PeCDF		1.97	0.0656 EMPC
Total PeCDD	0.0768	0.985	0.0540 EMPC
Total HxCDF		1.97	0.0792
Total HxCDD	0.128	1.97	< 0.128 U
Total HpCDF		1.97	1.01 EMPC
Total HpCDD		1.97	2.32

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.03

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 0.13

Reported in pg/g

ORGANICS ANALYSIS DATA SHEET
 Dioxins/Furans by EPA 1613B
 Page 1 of 1



Sample ID: 121-F-5

Lab Sample ID: ARI4A
 LIMS ID: 15-22746
 Matrix: Soil
 Data Release Authorized: *mm*
 Reported: 12/07/15

QC Report No: ARI4-Fremont Analytical
 Project: 1511228
 NA
 Date Sampled: 11/19/15
 Date Received: 11/23/15

Date Extracted: 11/30/15
 Date Analyzed: 12/04/15 07:46
 Instrument/Analyst: AS1/PK

Sample Amount: 10.2 g-dry-wt
 Final Extract Volume: 20 uL
 Extract Split: 1.00
 Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.77	0.65-0.89	80.0	24-169	
13C-2,3,7,8-TCDD	0.76	0.65-0.89	78.6	25-164	
13C-1,2,3,7,8-PeCDF	1.55	1.32-1.78	79.5	24-185	
13C-2,3,4,7,8-PeCDF	1.54	1.32-1.78	71.8	21-178	
13C-1,2,3,7,8-PeCDD	1.59	1.32-1.78	74.7	25-181	
13C-1,2,3,4,7,8-HxCDF	0.51	0.43-0.59	92.1	26-152	
13C-1,2,3,6,7,8-HxCDF	0.51	0.43-0.59	89.9	26-123	
13C-2,3,4,6,7,8-HxCDF	0.51	0.43-0.59	86.6	28-136	
13C-1,2,3,7,8,9-HxCDF	0.51	0.43-0.59	76.3	29-147	
13C-1,2,3,4,7,8-HxCDD	1.26	1.05-1.43	95.8	32-141	
13C-1,2,3,6,7,8-HxCDD	1.26	1.05-1.43	90.5	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.44	0.37-0.51	75.7	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.45	0.37-0.51	65.4	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.04	0.88-1.20	79.7	23-140	
13C-OCDD	0.90	0.76-1.02	58.4	17-157	
37Cl4-2,3,7,8-TCDD			88.6	35-197	

Reported in Percent Recovery

ARI4: 00005

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
 Page 1 of 1

Sample ID: 131-BF-5

Lab Sample ID: ARI4B
 LIMS ID: 15-22747
 Matrix: Soil
 Data Release Authorized: *MW*
 Reported: 12/07/15

QC Report No: ARI4-Fremont Analytical
 Project: 1511228
 NA
 Date Sampled: 11/19/15
 Date Received: 11/23/15

Date Extracted: 11/30/15
 Date Analyzed: 12/04/15 08:40
 Instrument/Analyst: AS1/PK
 Acid Cleanup: Yes
 Silica-Carbon Cleanup: No

Sample Amount: 10.2 g-dry-wt
 Final Extract Volume: 20 uL
 Extract Split: 1.00
 Silica-Florisil Cleanup: Yes
 Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result	
2,3,7,8-TCDF	0.84	0.65-0.89		0.985	0.173	J
2,3,7,8-TCDD		0.65-0.89	0.0473	0.985	< 0.0473	U
1,2,3,7,8-PeCDF	0.89	1.32-1.78		0.985	0.128	JEMPC
2,3,4,7,8-PeCDF	2.29	1.32-1.78		0.985	0.120	JEMPC
1,2,3,7,8-PeCDD	1.89	1.32-1.78		0.985	0.209	JEMPC
1,2,3,4,7,8-HxCDF		1.05-1.43	0.104	0.985	< 0.104	U
1,2,3,6,7,8-HxCDF	1.07	1.05-1.43		0.985	0.0867	J
2,3,4,6,7,8-HxCDF	2.12	1.05-1.43		0.985	0.0966	JEMPC
1,2,3,7,8,9-HxCDF		1.05-1.43	0.132	0.985	< 0.132	U
1,2,3,4,7,8-HxCDD	1.63	1.05-1.43		0.985	0.146	JEMPC
1,2,3,6,7,8-HxCDD	1.46	1.05-1.43		0.985	0.351	JEMPC
1,2,3,7,8,9-HxCDD	1.37	1.05-1.43		0.985	0.327	BJ
1,2,3,4,6,7,8-HpCDF	0.80	0.88-1.20		0.985	0.875	BJEMPC
1,2,3,4,7,8,9-HpCDF		0.88-1.20	0.296	0.985	< 0.296	U
1,2,3,4,6,7,8-HpCDD	1.12	0.88-1.20		0.985	3.69	B
OCDF	0.79	0.76-1.02		1.97	1.87	BJ
OCDD	0.84	0.76-1.02		9.85	27.0	B

Homologue Group	EDL	RL	Result
Total TCDF		0.985	3.45 EMCP
Total TCDD	0.0473	0.985	3.00 EMPC
Total PeCDF		1.97	1.50 EMPC
Total PeCDD		0.985	3.26 EMPC
Total HxCDF		1.97	1.01 EMPC
Total HxCDD		1.97	4.78 EMPC
Total HpCDF		1.97	1.81 EMPC
Total HpCDD		1.97	8.10

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.42

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 0.46

Reported in pg/g

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
 Page 1 of 1

Sample ID: 131-BF-5

Lab Sample ID: ARI4B
 LIMS ID: 15-22747
 Matrix: Soil
 Data Release Authorized: *MW*
 Reported: 12/07/15

QC Report No: ARI4-Fremont Analytical
 Project: 1511228
 NA
 Date Sampled: 11/19/15
 Date Received: 11/23/15

Date Extracted: 11/30/15
 Date Analyzed: 12/04/15 08:40
 Instrument/Analyst: AS1/PK

Sample Amount: 10.2 g-dry-wt
 Final Extract Volume: 20 uL
 Extract Split: 1.00
 Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.77	0.65-0.89	89.4	24-169	
13C-2,3,7,8-TCDD	0.77	0.65-0.89	84.7	25-164	
13C-1,2,3,7,8-PeCDF	1.55	1.32-1.78	87.5	24-185	
13C-2,3,4,7,8-PeCDF	1.57	1.32-1.78	79.3	21-178	
13C-1,2,3,7,8-PeCDD	1.57	1.32-1.78	81.8	25-181	
13C-1,2,3,4,7,8-HxCDF	0.51	0.43-0.59	99.7	26-152	
13C-1,2,3,6,7,8-HxCDF	0.51	0.43-0.59	94.6	26-123	
13C-2,3,4,6,7,8-HxCDF	0.51	0.43-0.59	95.1	28-136	
13C-1,2,3,7,8,9-HxCDF	0.51	0.43-0.59	84.2	29-147	
13C-1,2,3,4,7,8-HxCDD	1.27	1.05-1.43	103	32-141	
13C-1,2,3,6,7,8-HxCDD	1.21	1.05-1.43	94.2	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.44	0.37-0.51	82.3	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.45	0.37-0.51	74.3	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20	85.7	23-140	
13C-OCDD	0.89	0.76-1.02	64.8	17-157	
37C14-2,3,7,8-TCDD			95.6	35-197	

Reported in Percent Recovery

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
 Page 1 of 1

Sample ID: OPR-113015

Lab Sample ID: OPR-113015
 LIMS ID: 15-22746
 Matrix: Soil
 Data Release Authorized: *MW*
 Reported: 12/07/15

QC Report No: ARI4-Fremont Analytical
 Project: 1511228
 NA
 Date Sampled: NA
 Date Received: NA

Date Extracted: 11/30/15
 Date Analyzed: 12/03/15 16:24
 Instrument/Analyst: AS1/PK
 Acid Cleanup: Yes
 Silica-Carbon Cleanup: No

Sample Amount: 10.0 g-dry-wt
 Final Extract Volume: 20 uL
 Dilution Factor: 1.00
 Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	RL	Result
2,3,7,8-TCDF	0.68	0.65-0.89	1.00	21.1
2,3,7,8-TCDD	0.78	0.65-0.89	1.00	21.6
1,2,3,7,8-PeCDF	1.46	1.32-1.78	1.00	109
2,3,4,7,8-PeCDF	1.43	1.32-1.78	1.00	106
1,2,3,7,8-PeCDD	1.56	1.32-1.78	1.00	106
1,2,3,4,7,8-HxCDF	1.14	1.05-1.43	1.00	108
1,2,3,6,7,8-HxCDF	1.13	1.05-1.43	1.00	104
2,3,4,6,7,8-HxCDF	1.16	1.05-1.43	1.00	107
1,2,3,7,8,9-HxCDF	1.15	1.05-1.43	1.00	108
1,2,3,4,7,8-HxCDD	1.22	1.05-1.43	1.00	107
1,2,3,6,7,8-HxCDD	1.23	1.05-1.43	1.00	107
1,2,3,7,8,9-HxCDD	1.31	1.05-1.43	1.00	98.7
1,2,3,4,6,7,8-HpCDF	0.99	0.88-1.20	1.00	110
1,2,3,4,7,8,9-HpCDF	0.97	0.88-1.20	1.00	108
1,2,3,4,6,7,8-HpCDD	1.03	0.88-1.20	1.00	107
OCDF	0.87	0.76-1.02	2.00	202
OCDD	0.85	0.76-1.02	10.0	223

Homologue Group	EDL	RL	Result
Total TCDF		1.00	22.1 EMPC
Total TCDD		1.00	22.3 EMPC
Total PeCDF		2.00	221 EMPC
Total PeCDD		1.00	106 EMPC
Total HxCDF		2.00	429 EMPC
Total HxCDD		2.00	314 EMPC
Total HpCDF		2.00	219 EMPC
Total HpCDD		2.00	111

Reported in pg/g

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
 Page 1 of 1

Sample ID: OPR-113015

Lab Sample ID: OPR-113015
 LIMS ID: 15-22746
 Matrix: Soil
 Data Release Authorized: *mmw*
 Reported: 12/07/15

QC Report No: ARI4-Fremont Analytical
 Project: 1511228
 NA
 Date Sampled: NA
 Date Received: NA

Date Extracted: 11/30/15
 Date Analyzed: 12/03/15 16:24
 Instrument/Analyst: AS1/PK

Sample Amount: 10.0 g-dry-wt
 Final Extract Volume: 20 uL
 Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.77	0.65-0.89	83.2	24-169	
13C-2,3,7,8-TCDD	0.78	0.65-0.89	82.2	25-164	
13C-1,2,3,7,8-PeCDF	1.54	1.32-1.78	79.1	24-185	
13C-2,3,4,7,8-PeCDF	1.55	1.32-1.78	73.9	21-178	
13C-1,2,3,7,8-PeCDD	1.58	1.32-1.78	75.4	25-181	
13C-1,2,3,4,7,8-HxCDF	0.52	0.43-0.59	99.2	26-152	
13C-1,2,3,6,7,8-HxCDF	0.52	0.43-0.59	101	26-123	
13C-2,3,4,6,7,8-HxCDF	0.52	0.43-0.59	92.5	28-136	
13C-1,2,3,7,8,9-HxCDF	0.52	0.43-0.59	77.9	29-147	
13C-1,2,3,4,7,8-HxCDD	1.26	1.05-1.43	102	32-141	
13C-1,2,3,6,7,8-HxCDD	1.28	1.05-1.43	99.2	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.45	0.37-0.51	85.4	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.44	0.37-0.51	71.0	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.03	0.88-1.20	82.1	23-140	
13C-OCDD	0.88	0.76-1.02	61.5	17-157	
37C14-2,3,7,8-TCDD			89.8	35-197	

Reported in Percent Recovery

ORGANICS ANALYSIS DATA SHEET

Dioxins/Furans by EPA 1613B

Page 1 of 1

Sample ID: OPR-113015

Lab Sample ID: OPR-113015

LIMS ID: 15-22746

Matrix: Soil

Data Release Authorized: *TWW*

Reported: 12/07/15

QC Report No: ARI4-Fremont Analytical

Project: 1511228

NA

Date Sampled: NA

Date Received: NA

Date Extracted: 11/30/15

Date Analyzed: 12/03/15 16:24

Instrument/Analyst: AS1/PK

Sample Amount: 10.0 g-dry-wt

Final Extract Volume: 20 uL

Dilution Factor: 1.00

Analyte	OPR	Spiked	Recovery	Limits
2,3,7,8-TCDF	21.1	20.0	106	75-158
2,3,7,8-TCDD	21.6	20.0	108	67-158
1,2,3,7,8-PeCDF	109	100	109	80-134
2,3,4,7,8-PeCDF	106	100	106	68-160
1,2,3,7,8-PeCDD	106	100	106	70-142
1,2,3,4,7,8-HxCDF	108	100	108	72-134
1,2,3,6,7,8-HxCDF	104	100	104	84-130
2,3,4,6,7,8-HxCDF	107	100	107	70-156
1,2,3,7,8,9-HxCDF	108	100	108	78-130
1,2,3,4,7,8-HxCDD	107	100	107	70-164
1,2,3,6,7,8-HxCDD	107	100	107	76-134
1,2,3,7,8,9-HxCDD	98.7	100	98.7	64-162
1,2,3,4,6,7,8-HpCDF	110	100	110	82-132
1,2,3,4,7,8,9-HpCDF	108	100	108	78-138
1,2,3,4,6,7,8-HpCDD	107	100	107	70-140
OCDF	202	200	101	63-170
OCDD	223	200	112	78-144

Reported in pg/g

ORGANICS ANALYSIS DATA SHEET

Dioxins/Furans by EPA 1613B

Page 1 of 1

Sample ID: MB-113015

Lab Sample ID: MB-113015

LIMS ID: 15-22746

Matrix: Soil

Data Release Authorized: *mm*

Reported: 12/07/15

QC Report No: ARI4-Fremont Analytical

Project: 1511228

NA

Date Sampled: NA

Date Received: NA

Date Extracted: 11/30/15

Date Analyzed: 12/03/15 14:40

Instrument/Analyst: ASI/PK

Acid Cleanup: Yes

Silica-Carbon Cleanup: No

Sample Amount: 10.0 g-dry-wt

Final Extract Volume: 20 uL

Dilution Factor: 1.00

Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result
2,3,7,8-TCDF		0.65-0.89	0.140	1.00	< 0.140 U
2,3,7,8-TCDD		0.65-0.89	0.156	1.00	< 0.156 U
1,2,3,7,8-PeCDF		1.32-1.78	0.120	1.00	< 0.120 U
2,3,4,7,8-PeCDF		1.32-1.78	0.128	1.00	< 0.128 U
1,2,3,7,8-PeCDD		1.32-1.78	0.220	1.00	< 0.220 U
1,2,3,4,7,8-HxCDF		1.05-1.43	0.184	1.00	< 0.184 U
1,2,3,6,7,8-HxCDF		1.05-1.43	0.170	1.00	< 0.170 U
2,3,4,6,7,8-HxCDF		1.05-1.43	0.196	1.00	< 0.196 U
1,2,3,7,8,9-HxCDF	1.53	1.05-1.43		1.00	0.248 JEMPC
1,2,3,4,7,8-HxCDD		1.05-1.43	0.176	1.00	< 0.176 U
1,2,3,6,7,8-HxCDD		1.05-1.43	0.188	1.00	< 0.188 U
1,2,3,7,8,9-HxCDD	0.91	1.05-1.43		1.00	0.226 JEMPC
1,2,3,4,6,7,8-HpCDF	0.66	0.88-1.20		1.00	0.346 JEMPC
1,2,3,4,7,8,9-HpCDF		0.88-1.20	0.280	1.00	< 0.280 U
1,2,3,4,6,7,8-HpCDD	0.95	0.88-1.20		1.00	3.09
OCDF	0.81	0.76-1.02		2.00	2.27
OCDD	0.93	0.76-1.02		10.0	26.1

Homologue Group	EDL	RL	Result
Total TCDF	0.140	1.00	< 0.140 U
Total TCDD	0.156	1.00	< 0.156 U
Total PeCDF	0.128	2.00	< 0.128 U
Total PeCDD	0.220	1.00	0.196 EMPC
Total HxCDF		2.00	0.247 EMPC
Total HxCDD		2.00	1.86 EMPC
Total HpCDF		2.00	0.905 EMPC
Total HpCDD		2.00	7.90

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.09

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 0.35

Reported in pg/g

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
 Page 1 of 1

Sample ID: MB-113015

Lab Sample ID: MB-113015
 LIMS ID: 15-22746
 Matrix: Soil
 Data Release Authorized: *mw*
 Reported: 12/07/15

QC Report No: ARI4-Fremont Analytical
 Project: 1511228
 NA
 Date Sampled: NA
 Date Received: NA

Date Extracted: 11/30/15
 Date Analyzed: 12/03/15 14:40
 Instrument/Analyst: AS1/PK

Sample Amount: 10.0 g-dry-wt
 Final Extract Volume: 20 uL
 Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.77	0.65-0.89	90.1	24-169	
13C-2,3,7,8-TCDD	0.78	0.65-0.89	88.0	25-164	
13C-1,2,3,7,8-PeCDF	1.58	1.32-1.78	84.9	24-185	
13C-2,3,4,7,8-PeCDF	1.56	1.32-1.78	80.5	21-178	
13C-1,2,3,7,8-PeCDD	1.60	1.32-1.78	82.6	25-181	
13C-1,2,3,4,7,8-HxCDF	0.52	0.43-0.59	113	26-152	
13C-1,2,3,6,7,8-HxCDF	0.50	0.43-0.59	112	26-123	
13C-2,3,4,6,7,8-HxCDF	0.52	0.43-0.59	106	28-136	
13C-1,2,3,7,8,9-HxCDF	0.52	0.43-0.59	87.3	29-147	
13C-1,2,3,4,7,8-HxCDD	1.28	1.05-1.43	114	32-141	
13C-1,2,3,6,7,8-HxCDD	1.26	1.05-1.43	111	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.46	0.37-0.51	96.8	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.44	0.37-0.51	77.2	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.04	0.88-1.20	95.5	23-140	
13C-OCDD	0.89	0.76-1.02	73.4	17-157	
37C14-2,3,7,8-TCDD			97.9	35-197	

Reported in Percent Recovery



Client Name: ESA	Work Order Number: 1511228
Logged by: Erica Silva	Date Received: 11/20/2015 1:00:00 PM

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
5. Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact) Yes No Not Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°C * Yes No NA
8. Sample(s) in proper container(s)? Yes No
9. Sufficient sample volume for indicated test(s)? Yes No
10. Are samples properly preserved? Yes No
11. Was preservative added to bottles? Yes No NA
12. Is there headspace in the VOA vials? Yes No NA
13. Did all samples containers arrive in good condition(unbroken)? Yes No
14. Does paperwork match bottle labels? Yes No
15. Are matrices correctly identified on Chain of Custody? Yes No
16. Is it clear what analyses were requested? Yes No
17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____	Date _____
By Whom: _____	Via: <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding: _____	
Client Instructions: _____	

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	4.3
Sample	6.4

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



Fremont

ANALYTICAL

2600 Fremont Ave N.
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Date: Nov 20, 2015

Page: 2 of 2

Laboratory Project No (Internal): 1511228

Chain of Custody Record

Client: SSA Associates, Inc.
Address: 2830 133rd Ave SE
Bothell, WA 98020
City, State, Zip: Bothell, WA 98020
Telephone: 425-870-8481 Fax: _____

Project Name: Robinson JRT Durgness
Project No: 711-067-106
Location: SEADWA WA
Report To (PM): K. Burgess
Pdt Email: rsakb@earthlink.net

*Matrix Codes: A = Air, AQ = Aquatics, B = Bulk, O = Other, P = Product, S = Soil, SU = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 816 / 821)	GV/TEX	BTEX	Gasoline Range Organics (GRO)	Hydrocarbon Mentilation (HCD)	Distillate/Heavy Oil Range Organics (DHO)	SVOC (EPA 8170 / 825)	PAH (EPA 8170 - SM)	PCB (EPA 8082 / 808)	Metals** (EPA 6020 / 200.5)	Total (T) Disinfect (DI)	Ames (IC)***	EDR (9011)	DIAPYLS/PCANS	Comments
1 131-BF-1	11/9/15	12:30	Soil															
2 131-BF-2		12:35																
3 131-BF-3		12:40																
4 131-BF-4		12:45																
5 131-BF-5		12:50																
6																		
7																		
8																		
9																		
10																		

** Metals Analysis (Circle): MTCA-5 RCRA-4 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Ni No Pb Pp Sb Se Sr Sn Tl U V Zn

*** Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Inorganic-Azide

Sample Disposal: Return to Client Disposal by Lab (A bar may be removed if sampling site is not returned after 30 days.)

Requisitioned: [Signature] Date/Time: 11/20/15 1:00 Received: [Signature] Date/Time: 11/20/15 @ 1:50

Reference: [Signature] Date/Time: _____

TAT → Same Day Next Day 2 Day 3 Day STD

*Please coordinate with the lab in advance

APPENDIX C

FIELD LOGS

ESA Associates, Inc.

2820 132nd Avenue SE
Snohomish, WA 98290

Field Log

Project NO: 711-007-106	Client: Jamestown S'Klallam Tribe
Location: 121 and 131	Subcontractor: Advance Environmental
Start Date: November 19, '15	Remedial Excavation ID: 121-F, 131-BF, and 131-CF
Dan Venable	Completion Date: November 19, 2015
Total Depth: 0.5 to 1'	Rig Type: Tire-Mounted Backhoe
Water Level: not encountered	Surface Elevation: 259'
MP Elevation: NA	Logged By: Kristen Burgess

Depth BGS	Sample ID	Field Sheen	PID	Sample Description	Lithology
1'	121-F-1	NS	0	brown si sand north sidewall	SP-SM
1'	121-F-2	NS	0	brown si sand east sidewall	SP-SM
1'	121-F-3	NS	0	brown si sand south sidewall	SP-SM
1'	121-F-4	NS	0	brown si sand north sidewall	SP-SM
2'	121-F-5	NS	0	brown si sand base	SP-SM

6"	131-BF-1	NS	0	brown si sand north sidewall	SP-SM
6"	131-BF-2	NS	0	brown si sand east sidewall	SP-SM
6"	131-BF-3	NS	0	brown si sand south sidewall	SP-SM
6"	131-BF-4	SS	0	brown si sand north sidewall	SP-SM
1'	131-BF-5	NS	0	brown si sand base	SP-SM

2.5'	131-CF-1	NS	0	brown si sand north sidewall	SP-SM
2.5'	131-CF-2	NS	0	brown si sand east sidewall	SP-SM
2.5'	131-3-B	NS	0	brown si sand south sidewall	SP-SM
2.5'	131-3-2	NS	0	brown si sand north sidewall	SP-SM
3'	131-3-C	NS	0	brown si sand base	SP-SM

APPENDIX D

QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL



State of Washington
DEPARTMENT OF LICENSING
 GEOLOGIST PROGRAM
 P O Box 9045
 Olympia, WA 98507

ADDRESS SERVICE REQUESTED

DPU 1023

KRISTEN L BURGESS
 2820 132ND AVE SE
 SNOHOMISH WA 98290

STATE OF WASHINGTON

GEOLOGIST

KRISTEN L BURGESS
 2820 132ND AVE SE
 SNOHOMISH WA 98290

1322 05/16/2016
 CERT/LIC NO. EXP. DATE

Pat Kohler
 Pat Kohler, Director

STATE OF WASHINGTON
 DEPARTMENT OF LICENSING – BUSINESS AND PROFESSIONS DIVISION
 THIS CERTIFIES THAT THE PERSON NAMED HEREON IS AUTHORIZED, AS PROVIDED BY LAW, AS A

GEOLOGIST

KRISTEN L BURGESS
 2820 132ND AVE SE
 SNOHOMISH WA 98290

Cert/Lic No. 1322 **Issued Date** 07/11/2002 **Expiration Date** 05/16/2016

Pat Kohler
 Pat Kohler, Director

APPENDIX E
WEIGHT TICKET

WASCO COUNTY LANDFILL
 2550 Steele Road
 The Dalles, OR 97058
 (541) 296-4082

Printed 11/30/15

DATE	PAGE
11/30/15	1

INVOICE NUMBER
8456

AMOUNT DUE	AMOUNT PAID
499.23	\$

ESA ASSOCIATES
 Kristen Burgess
 2820 132nd Ave SE
 Snohomish WA 98290

ACCOUNT NO.
768

DETACH AND RETURN TOP PORTION WITH REMITTANCE

DATE	TICKET	VEHICLE	REFERENCE	DESCRIPTION	QUANTITY	AMOUNT
/ / 11/04/15 11/20/15	01-00174228	TRAIL	8509	Previous amount due Last payment received PETR CONT SOIL - OUT	15.48	
	Net weight	15.48		Invoice total Total amount due		